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**MONASH UNIVERSITY**  
THESIS ACCEPTED IN SATISFACTION OF THE  
REQUIREMENTS FOR THE DEGREE OF  
DOCTOR OF PHILOSOPHY

ON..... 25 November 2003 .....

.....  
Sec. Research Graduate School Committee

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## ERRATA

- p.8: Line3: "performance-based" for "performance based"
- p.16: line 12: "practised" for "practiced"
- p.162: fourth quote: delete this quote ( a repeat of the first quote on this page).
- p.172: first line, Paragraph 5.7: "its" for "it's"
- p.177: first quote: "cuts" for "custs"
- p.276: fourth line from bottom of page: "indicate" for "indicates"
- p. 282: line 3: "was" for "were"
- p.347: 3<sup>rd</sup> reference: "Lyll H." for "Ms.Heather Lyall"

## ADDENDUM

- p. iv: Add under 7.1.4.6 (Table of contents):  
7.2 Limitations of the research.....p.285

p.7: Line 22 end the quotation mark.

p.9: Add between paragraph 1 and 2:

Hospitals, as they existed in Australia during the period of this research were divided into two main sectors: public and private. Public hospitals are federally and state funded whereas private hospitals are privately managed and run.

p.33: line 15 : add to end of sentence:

(For a definition of impress see Chapter 4, p. 75).

p.51: Add to second sentence, first paragraph (Pilot study):

i.e. to 20 of each respondent type.

p.53 Add new paragraph after first paragraph (Data analysis):

Qualitative analysis was conducted on verbatim comments from doctors, nurses, pharmacists and patients (in both surveys). A manual analysis of all comments led to the identification of common themes and patterns that were used as headings or subheadings, much as occurs in factor analysis. The frequency with which themes were commented upon was noted and used to describe the qualitative data in a simpler manner. For a more detailed explanation see Miles and Huberman (1994) Chapter 4 p.69 and Chapter 7 p.172.

p.73, p.128, p.199, 200, 216, 217: data on demographics: Comment: the demographic data describes the respondent population in each survey and the results on these pages show that a representative spread of respondent types was achieved of either doctors, nurses, pharmacists or patients in the hospitals.

p.76: second paragraph: add at end of sentence:

(see Tables 4.7 and 4.8).

p.62. paragraph 4: hospital in the home, add footnote \* (under footnote no.29):

\**Hospital in the home* is the provision by the hospital to the patient (in their home) of a service similar to what they would receive if they were an inpatient in the hospital.

p. 131 Footnote 10: first sentence, replace with:

An additional 20% (approximately) or more pharmacists supported the provision of these services above the percentage who indicated these services were already provided (see "yes %" response in Table 5.6).

p.146. Add to footnote number 24:

A paired samples t-test showed the mean ratings between the two entries to be statistically different. However, the intention was not to focus on this rather to illustrate the way respondents react in a questionnaire. More doctors and nurses gave a rating for the first entry of this measure in the questionnaires than for the second, therefore the first rating is used for subsequent analysis and comparison in this study.

p.189. Add footnote to end of paragraph 1: \*

\*See Chapter 7 p.258 Section 7.1.1.3.2.

p.322: Line 1 replace 'basic' with 'basic/ traditional'

p.285: Add after last paragraph:

#### **7.2 Limitations of the research**

Follow up may have improved the response rates although the response numbers achieved were considered to be significant because of the size of the research study and the power. However, it would have been useful to track a sample of the target population who did not respond to check for bias. Follow up was not undertaken in the study because of the logistic difficulty of tracking individuals who were given a questionnaire by hospital executives. This research was conducted during a period of great change in the healthcare sector in Victoria and follow up would have required considerably more input and time from the hospitals that chose to distribute questionnaires themselves rather than provide mailing lists. This may have resulted in less cooperation or refusal by hospitals to take part in the study. The surveys took place in an environment of high stress for hospitals due to the change process.

The questions surrounding the amount of contact doctors and nurses have with their pharmacists and pharmacy departments raised numerous issues regarding how to effectively measure this. In designing a survey instrument, the length and complexity of the questionnaire continually limits how much information can be sought without losing the cooperation of the participant. Asking respondents a few more questions might have simplified the evaluation of their responses about the "contact" they have.

The 1999/2000 questionnaires for doctors, nurses and pharmacists clarified some terminology issues regarding pharmacy services which in hindsight may have simplified the interpretation by respondents of the meaning of some services in the earlier survey. When respondents indicated that a service was provided, the extent to which this was done such as comprehensive, partial, limited or selective, was not determined in this study. This could be included in future research if desired, although this will add considerably to the size of the survey instrument.

The 1999/2000 survey of inpatients and outpatients asked them to indicate what services or information they want from their hospital pharmacies and the importance of various measures of customer service to them. Unfortunately, the same specific questions were not included in the first survey which would have allowed for finer tracking of responses.

**EVALUATION OF HOSPITAL  
PHARMACY SERVICES IN VICTORIA,  
AUSTRALIA - A SIX YEAR  
COMPARATIVE STUDY OF CUSTOMER  
SERVICE**

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## **ABSTRACT**

Two large surveys were conducted as part of a wide ranging study of customer service in Victorian hospital pharmacies, one in 1993/94 and the other in 1999/2000. Over 8,800 doctors, nurses, pharmacists and patients were surveyed in the two studies.

The aim of the research was to determine customer perceptions, awareness and requirements, ratings of performance, develop a model of customer service and identify change and its impact upon hospital pharmacy services in Victoria, Australia.

Five thousand five hundred and eighteen users of hospital pharmacy services from a stratified random sample of thirty-nine hospitals in Victoria were surveyed in the first and 3,405 at 36 hospitals in the second survey. Four individual, self-administered, mail-back questionnaires were designed and used, a common one for doctors and nurses, and one each for pharmacists, inpatients and outpatients.

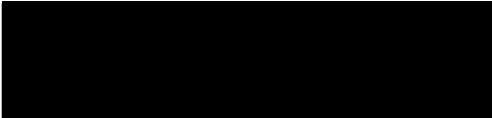
This research has benchmarked hospital pharmacy performance, identified customer service requirements, and determined customer perceptions of existing pharmacy services. The importance of taking into account the influences of respondent type and hospital size and location on perceptions, service requirements and performance evaluation were emphasised in this study. Change and the various factors that have brought about change within hospital pharmacies and the healthcare sector more broadly over the time frame of this study were identified and their impact on pharmacy services documented. Statistically significant changes in performance of the pharmacy services on measures of customer service and service requirements were identified between both surveys. The survey instruments were validated.

The customer service models developed identified gaps in service requirements between customers and pharmacists. The models were expanded to reflect the influence of hospital size and location on service requirements.

This research provides the first comprehensive evaluation of customer service in hospital pharmacy practice in Australia.

## STATEMENT OF AUTHORSHIP

This thesis, except with the committee's approval contains no material which has been accepted for the award of any other degree or diploma in any university or other institution and I affirm that to the best of my knowledge, the thesis contains no material previously published or written by another person, except where due reference is made in the text of the thesis.

..........

Sally Wilson

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# CHAPTER 1

## INTRODUCTION

### 1.0 Introduction

The past decade has seen the concept of customer service gaining greater prominence in the healthcare industry even though its importance in other service industries has been recognised for some time. So, with the healthcare professions becoming more patient focused and falling under greater scrutiny (Hepler and Strand, 1990; Vogel 1993; Harper and Proust, 1995; Wilson, 2002a), customer service has become an important element of hospital pharmacy practice.

Customer service is important because it is a fundamental component of quality, and determining customer requirements is integral to quality management and to providing quality care or services (Deming, 1986; Christopher et al., 1994). The centrepiece of quality is knowing who the customers are and what their requirements are. Organisations can plan effective and targeted services by ascertaining and documenting customer requirements but to date very little has been done to evaluate customer service and define the elements of customer service as they pertain to hospital pharmacy practice.

This thesis reports customer service in relation to hospital pharmacy practice and presents the results of a six-year comparative study of hospital pharmacies in Victoria. The findings are ground-breaking because there is the development of a model of customer service for hospital pharmacies that has not been done before, a model which is applicable to different hospital demographics, and there is a comprehensive documentation of perceptions, awareness and requirements of the customers of hospital pharmacies. In addition, this study has established measures and ratings of performance of services provided by hospital pharmacies, so providing benchmarks against which other hospital pharmacies in Australia can measure their performance.

Importantly, this thesis reports on pharmacy services from the wider perspective of its customers, rather than from just within the pharmacy departments themselves, a situation which has tended to be the norm in the past.

The first survey conducted in 1993/94 targeted 5,518 customers of hospital pharmacy services in Victoria: doctors; nurses; pharmacists; and patients. The second survey in 1999/2000 targeted 3,405 customers from amongst the same groups.

Services in hospital pharmacies were evaluated during a period of great change within the healthcare sector in Victoria, so the six-year comparison provided an opportunity to measure change and identify differences in service provision that have occurred over this time (Harper and Proust, 1995; Walsh, 1996; Ryan, 1996; Wilson, 2002a). Some of the events that occurred during this period include the adoption of modern business management strategies, rationalisation of services, introduction of casemix funding, and a much greater customer focus. Customer service, hitherto not a major issue in healthcare generally and hospital pharmacy in particular, was finally being discussed.

The importance of this thesis is emphasised by the release of a report to the Victorian Health Minister in August 2002 by the Health Services Commissioner (Wilson, 2002a) following an inquiry into the Royal Melbourne Hospital (RMH). This report addressed issues that impacted on quality of patient care at that hospital, including medication mismanagement. The report noted that, in common with all metropolitan hospitals, the RMH had experienced major structural changes from the mid 1990s and found that the networks had become too large, and that there had been an emphasis on commercial viability at the expense of quality patient care and staff support. A decline in the rigour of medication control during this period of time was noted. There was also an increased focus on fiscal management and an over emphasis on change for its own sake, with a resulting neglect of service delivery. Although the report focused on nurses it acknowledged the role of pharmacists in medication management.

### **1.1 Research Objectives.**

The research reported in this thesis had four objectives:

- (1) Understand perceptions and requirements of the customers of Victorian hospital pharmacies.
- (2) Establish measures and ratings of performance of hospital pharmacy services.
- (3) Develop a model of customer service.
- (4) Identify change in the healthcare environment and the impact of this change on hospital pharmacy services.

### **1.2 Structure of the thesis**

Following on from this first chapter which "sets the scene", the second gives a brief description of the healthcare environment in Australia leading up to and including the time of this study. Included in the second chapter is a review that addresses quality from a business and marketing perspective, and then from a medical and pharmacy perspective.

The third chapter describes the methodology for the study and details the logistics: the process undertaken for the design of the study; decisions regarding sample size; hospital demographics (size and location); questionnaire design and development; and survey distribution and analysis.

The fourth chapter reports on one aspect of the first survey: the results from the doctors, nurses and pharmacists. The other aspect, the results from a survey of patients, is reported in Chapter 6<sup>1</sup>.

The fifth chapter reports the results of the second survey, again only including the results from the doctors, nurses and pharmacists. Results from the survey of patients are also reported in Chapter 6.

---

<sup>1</sup> The results from the survey of patients both in 1993/94 and in 1999/2000 are reported in chapter six so as to keep this part of the study together as a complete unit. The surveys of doctors and nurses formed the largest part of this study, hence the decision to report results from each survey period as a separate chapter of this thesis (Chapter 4 and Chapter 5).

The seventh chapter discusses the development of the customer service survey instruments and subsequent validation.

The eighth chapter is about the customer service model and its development.

The ninth chapter identifies statistical changes in customer requirements, performance ratings of the pharmacy services, and perceptions that have occurred over the six-year period of the study.

The tenth, and final, chapter is the conclusion.

## CHAPTER 2

### QUALITY, CUSTOMER SERVICE AND PERCEPTIONS

#### 2.0 Introduction

In 1994/95 acute care hospitals in Australia consumed 76% of state and territory spending on health. The percentage of Gross Domestic Product spent on health had stabilised at 8.5% but was roughly double the amount in 1960 (Swerissen and Duckett, 1997)<sup>1</sup>. Sansom (1998) noted that a total of \$4.2 billion was spent on pharmaceuticals in 1994/95, or 11.6% of recurrent healthcare expenditure and during a five-year period this spending increased by 70.5%, compared to the 36% increase in overall health expenditure.<sup>2</sup>

Pharmacists have an important role in ensuring pharmaceuticals are used efficiently and effectively, doing so by informing and educating patients and hospital staff about the medication, and by ensuring that drugs and medication are available and supplied in a timely, efficient, safe, and cost-effective manner. How they provide this service and also contribute to the care of patients through the various other services, such as clinical pharmacy, and their relationships with other healthcare providers is important in assuring an effective healthcare outcome. In recent years, Bond, Raehl and Franke (1999a) have reported that some clinical services were associated with lower mortality rates in United States hospitals, and increased staff levels of clinical pharmacists and the provision of certain clinical services were associated with reduced drug costs (Bond, Raehl, Franke, 1999b). This and other reports (Boyko et al., 1997; Schumock et al., 1996; Galt, 1998; Hatoum et al., 1986; Hatoum, 1993) show that pharmacists can make a difference in patient care and pharmaceutical costs.

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<sup>1</sup> As reported in Baum, 1998.

<sup>2</sup> Sansom quotes from a report published in 1997 which reports on health expenditure in the early 1990s quoting figures from 1989-90 to 1995/96.

Therefore, establishing perceptions of the role of pharmacists and how they are viewed by their customers is important, because if customers see pharmacists as enhancing patient care through their services and activities it should help support hospital pharmacy departments justify their funding needs, and encourage their further development.

This thesis examines perceptions held by doctors, nurses, pharmacists and patients about hospital pharmacy services and how this influences their awareness and requirements of these services. It also measures their perception of pharmacy service performance.

The 1990s have seen a greater focus on customer service and patient focused care in the healthcare sector. This has been a result of hospitals adopting management principles previously the domain of industry and other service areas. Whilst quality of care has been discussed within the health sector for years, quality of services is a newer phenomenon. Quality management practices, such as total quality management (TQM) and continuous quality improvement (CQI), introduced into businesses by pioneers such as Edward Deming, along with Joseph Juran and Philip Crosby, are now being applied to the health care sector to various degrees (Gaucher and Coffey, 1993; Gitlow and Melby, 1991; Godwin and Sanborn, 1995; Mount, 1994; Claus, 1991; Moss and Garside, 1995). These quality management practices are built around determining and meeting customer requirements.

## **2.1 Public healthcare environment in Australia.**

Baum (1998) has provided an excellent description of the contemporary healthcare environment from an Australian perspective. Briefly, between the Second World War and the 1970s there was a period in which available medical therapies mushroomed and it was a time when Western economies were growing and money was available for welfare and social initiatives. New drugs were discovered, medical technology and therapy developed and grew, and funding was available for medical research and for services to utilise and expand the new discoveries.

From the 1980s things changed as economic rationalism began to enter the political scene. The environment became one of cutting costs in many health services areas and in research and development: short term gains were seen as attractive rather than long term strategic achievements (Baum, 1998; Linsley, 1997).

Public health direction in the 1990s has to be seen within the context of rapid changes in the management, administration and focus of health services in general, heightened by the Council of Australian Government's wide-ranging reform agenda that aimed to improve the efficiency and effectiveness of health and community service delivery by restructuring the planning, organisation and funding relationships between commonwealth and state governments (Swerissen and Duckett, 1997<sup>3</sup>).

As a result of this economic rationalism, trade barriers were lowered, the labour market deregulated, and private sector management techniques applied to public service departments. There was a roll back of state activities, privatisation and contracting out of public services was undertaken, and state funding was cutback for a range of activities, including health.

There were several effects on public health: the application of market logic to public health; privatisation of public services and the services then delivered as "products; transformation of bureaucracies to funders and purchasers of services through organisational structures based on the private sector; an emphasis on short term measurable outcomes; growing inequities evident under economic rationalist policies; no commitment to broader social goals; and the placing of activities such as public health below those with a direct economic improvement goal (Baum, 1998).

The concern with these issues is that public health is not simply a product that can be purchased or sold but also has a preventative component. Public health is often associated with undertaking long term strategies or planning rather than considering short term measures which focus on profit. Privatisation may result in inequality in access to health

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<sup>3</sup> As reported in Baum, 1998.



services occurring amongst the socially disadvantaged. In addition to this, deregulation may result in changes in employment conditions and standards, which may also be impacted upon by contractual arrangements and performance based incentives for managers or health service planners where the focus may be on fiscal matters above healthcare and equity.

During the 1990s there were also changes of government, both federally and in the states. The focus by governments was on the privatisation of public organisations. The policies of the two main federal political parties, Labor and Liberal-National, tended to align on many issues whereas prior to this period they were more distinct, with the result that reduction in government expenditure, privatisation of government services, minimisation of government involvement in service provision, and freeing up the market became part of the political "language" (Hilmer, 1993). Economic rationalism had arrived.

Both the Federal Labor (till 1996) and Liberal-National Coalition Governments (from 1996 onwards) adopted economic rationalist policies, although the Labor Government included a degree of commitment to social policy to counter the effects of this (Baum 1998).

There has been a greater focus on reducing welfare payments, privatising public health services or cutting costs and deregulation with the current Liberal-National Coalition Government.

As well as these changes within federal politics, the state government in Victoria also changed in 1993 from Labor to a Liberal- National coalition that embraced many of the management and business principles of economic rationalism. The advent of this government saw the introduction of Casemix funding into Victorian hospitals in 1993-94 as part of a program of public sector restructuring to reduce expenditure and improve efficiency (Duckett, 1998). Rationalising of services, restructuring of hospitals, the introduction of networks of hospitals, privatisation of some hospitals, increased throughput of patients and major cost-cutting occurred across the hospital sector.

Cost shifting also took place, with some hospitals privatising their outpatient services. For hospital pharmacies this meant that patients who were issued prescriptions from privatised outpatient clinics had them dispensed in community pharmacies rather than within the hospitals, effectively shifting the cost of drug expenditure from the State to the Federal Government. Hospitals were seen as businesses and new management structures were introduced.

In the early 1990s many hospital pharmacies within Victoria had to justify the services they provided, as well as their staff numbers. Various consultants were asked to evaluate services within hospitals and to suggest ways of reducing hospital expenditure.<sup>4</sup> Comparisons were made between hospital pharmacies, without taking into account the different patient mix that they serviced. There was a paucity of information available to pharmacy departments that they could use to justify service provision and show that they had identified their customers' requirements (Hatoum et al., 1992; Low, 1994; Shane, 1997; Hughes, 1998; Peterson, 2000).

In October 1999 a Labor Government was elected in Victoria which has set about dismantling some of the hospital networks, as well as providing more funding to the hospital sector.

One of the reasons for the research reported in this thesis was to address a lack of information about pharmacists and hospital pharmacies from the point of view of their customers. Pharmacy departments need to be able to clearly state which services they provide so that customers know what services are available, and then should identify the requirements of their customers and those services which are important to them. Identifying the customers of hospital pharmacy departments and their requirements is fundamental to providing quality services.

## 2.2 Quality

Customer service cannot be discussed without considering quality and the quality of

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<sup>4</sup> Booze, Allen consultants, 1992, enlisted by the Victorian Government to review the hospital sector.

services because a key element of customer service is defining customer requirements. The focus should not just be on the product but also on the service. The products associated with hospital pharmacy practice are the medications that are manufactured or dispensed and the sterile and non-sterile preparations that are compounded. The services are more extensive and less tangible and include for example, the counselling of patients, and reviewing medication charts. How these services are performed and provided has a large effect on the perceptions of the customers.

### 2.2.1 Definitions and service quality models

Quality, according to Deming (1982), the major proponent of TQM and the founding father of the quality movement, has no meaning except as defined by the desires and needs of customers (Gabor, 1990). He prescribed fourteen major points for improving quality (Table 2.1):

**Table 2.1. Deming's 14 points for improving quality<sup>a, b</sup>**

(1) Establish the objective of constant innovation and improvement	(8) Drive out fear, so people will feel secure to point out problems and ask for information.
(2) Adopt a new philosophy, we cannot accept the old mistakes and defects.	(9) Break down barriers between departments and with suppliers and customers so there will be open, effective communication.
(3) Cease dependence on mass inspection, require statistical evidence that quality is built in.	(10) Eliminate posters and slogans, they don't help people solve problems. Go to work and show people how.
(4) End the practice of awarding business on the basis of price.	(11) Eliminate work standards that prescribe a numerical quota, they disregard quality and put a ceiling on production
(5) Use statistical methods to find trouble spots.	(12) Remove barriers between workers and their right to pride in workmanship.
(6) Institute modern methods of training on the job.	(13) Institute a vigorous retraining program to keep up with changes and new developments.
(7) Improve supervision- do what is right for the company, don't just turn out the required quantity.	(14) Create a top management structure that will push every day for these points.

<sup>a</sup> As printed in Dillworth, (1993).

<sup>b</sup> The fourteen points are key quality management practices that have come to be accepted in most best practice companies in the United States and Japan, and a guide to building customer awareness, to reducing variation, and to nurturing constant change and improvement throughout a corporation (Gabor, 1990).

The cost of poor quality is the cost incurred when things are not done correctly the first time (Gaucher and Coffey, 1993).<sup>5</sup> A simple example is a pharmacist having to call a physician because the prescription was not clear or a dose was incorrect.

<sup>5</sup> Gaucher & Cofey (1993) state that experts estimate that the cost of poor quality in well-managed organisations runs about 25% of the revenues.

Deming's approach is one where the culture within an organisation empowers staff so that they feel that they are relevant and contribute to the overall organisation in a worthwhile and relevant manner: all people within the organisation work together as distinct from separately to enhance the service or the role of the organisation; and they all work towards doing things correctly the first time round to eliminate waste, and towards providing quality services or products.

There have been many reports and texts on quality including that of Crosby (1979) who defined quality as conformance to requirements: if requirements are clearly stated then they can be managed, and conformance to requirements measured. The cost of quality is the expense of nonconformance, the cost of doing things wrongly. Therefore, quality management is concerned with preventing problems from occurring by creating the attitudes and controls to make prevention possible. Crosby developed fourteen steps to quality improvement (Table 2.2).

**Table 2.2 Crosby's fourteen steps to quality improvement<sup>a</sup>.**

(1) Management commitment	(8) Supervisor training
(2) Quality improvement team	(9) Zero defects day
(3) Quality measurement-determine the status of quality throughout the organisation	(10) Goal setting
(4) Cost of quality evaluation	(11) Error cause removal
(5) Quality awareness	(12) Recognition
(6) Corrective action- to correct problems identified	(13) Establish Quality councils
(7) Establish an Ad Hoc committee for the zero defects program (doing things right the first time).	(14) Do it over again

<sup>a</sup> The focus of this program is for continual improvement.

Another founding father of the quality movement, Juran (1988, 1992), describes three managerial processes (The Juran Trilogy) of managing for quality: quality planning; quality control; and quality improvement. Identifying who the customers are and determining their needs is included in the quality planning process. He cites an example of measurement of error from the perspective of a hospital and a patient in that "hospitals define a medication error as a deviation from the physician's order- a nonconformance to specification. The patient's definition of an error is in terms of any failure to provide a cure."

In defining quality, Murdick et al. (1990) noted that the quality of a service or product is

determined by the user's perception. It is the degree to which the bundle of service attributes as a whole satisfies the user: the expectations-to perception match.

Other authors have described dimensions of quality. For example, Garvin (1987) proposed eight critical dimensions of quality (Table 2.3), and Parasuraman, Zeithaml and Berry (1985), and Parasuraman, Berry and Zeithaml (1991a) found in their extensive research on service quality that customers assess quality in terms of ten dimensions (Table 2.4).

**Table 2.3. Garvin's eight dimensions of quality**

(1) performance	(6) serviceability, i.e. the speed, courtesy, competence, and ease of repair
(2) features	(7) aesthetics, i.e. the look, the feel
(3) reliability	(8) perceived quality – reputation
(4) conformance e.g. to specifications	
(5) durability	

In discussing his eight dimensions of quality, Garvin (1987) noted that some of these are always mutually reinforcing, some are not. He states that "managers have to stop thinking about quality as merely an effort to gain control of the production process, and start thinking more rigorously about consumers' needs and preferences. Quality is not simply a problem to be solved; it is a competitive opportunity".

**Table 2.4 Dimensions of service quality<sup>a</sup>**

(1) Reliability- accuracy, performing the service on time	(6) Communication- keeping the customers informed in language they can understand and listening to them
(2) Responsiveness- giving prompt service	(7) Credibility- trustworthiness, believability, honesty-having the customer's best interest at heart
(3) Competence-knowledge and research capability of the organisation	(8) Security-freedom from danger, risk or doubt.
(4) Access- approachability and ease of contact	(9) Understanding/ knowing the customer- making an effort to understand the customers needs
(5) Courtesy- friendliness, politeness	(10) Tangibles- this includes the physical evidence of the service, e.g. Tools or equipment used to provide the service.

<sup>a</sup> Parasuraman, Zeithaml and Berry, (1985)

Murdick et al.<sup>6</sup> concluded that:

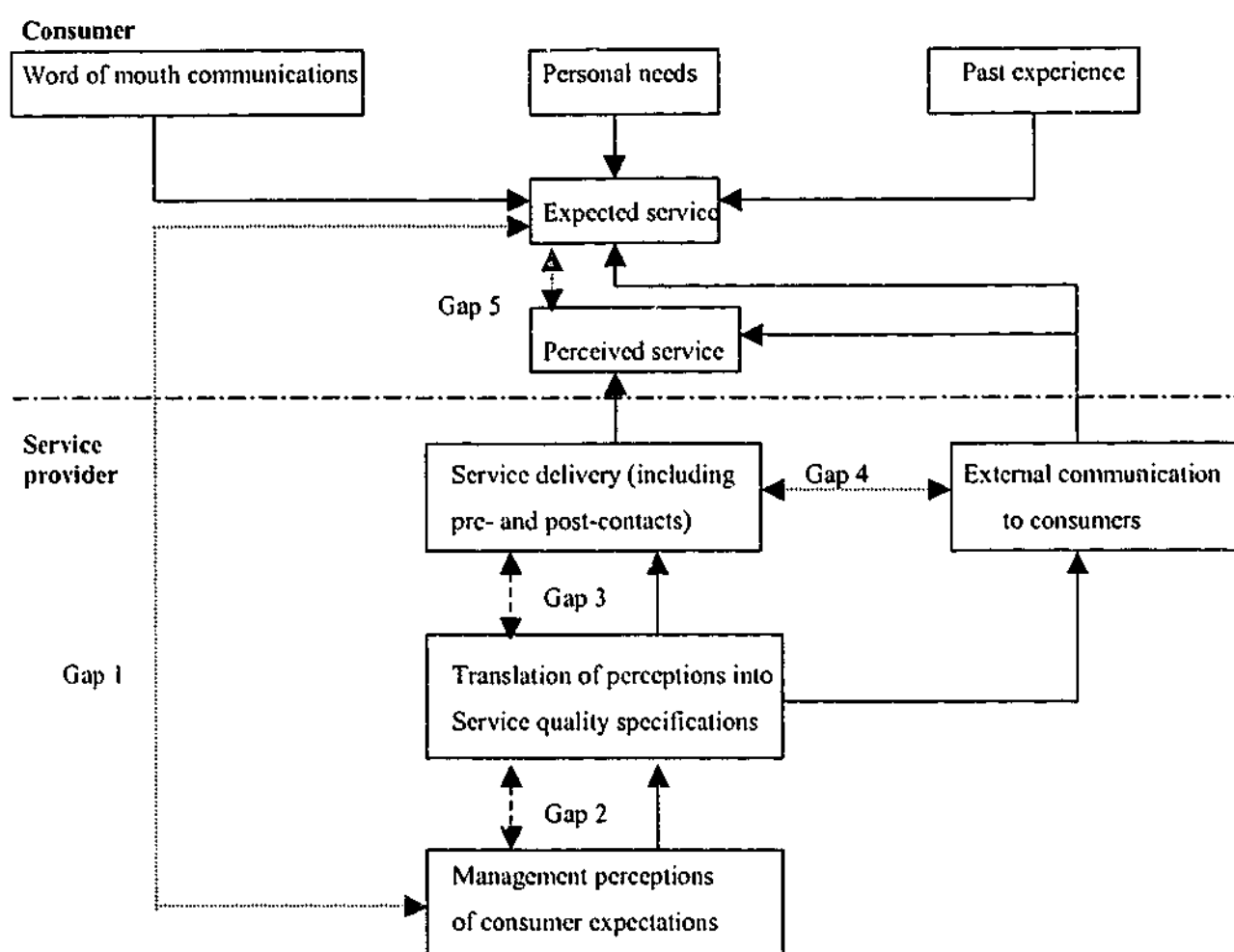
- (1) Consumer perceptions of service quality result from a comparison of their expectations before they receive the service to their actual service experience.
- (2) Quality perceptions are derived from the service process as well as from the service outcome. In other words, how the service is performed.

<sup>6</sup> As reported in Murdick et al. (1990) commenting on Parasuraman et al., 1985.

(3) Service quality is of two types, normal and exceptional.

A service quality model was developed by Parasuraman et al. (1985) (Figure 2.1) which identified five gaps between perceptions and expectations that can be used to evaluate service quality. If these gaps are narrowed then better service quality is achieved.

Figure 2.1 Service Quality Model<sup>a</sup>



<sup>a</sup>Service Quality Model: as printed in Murdick et al. (1990).

Parasuraman et al. (1988) developed a multiple-item scale for measuring service quality-SERVQUAL<sup>7</sup>, and further work by them resulted in a narrowing down of the dimensions

<sup>7</sup> A number of articles refer to the refinement and application of this instrument (Carman, 1990; Parasuraman et al., 1991c, 1993; Vandamme and Leunis, 1993; Pitt et al., 1995). Vandamme and Leunis (1993) found the instrument may not be easily generalizable to hospital services or health care services in general. Carman (1990) states that "in order to really manage quality in service industries, we need to marry notions of quality as a customer perception with technical quality."

of service quality to five overall: reliability; tangibles; responsiveness; assurance; and empathy (Parasuraman et al., 1988, 1991a, 1991b).<sup>8</sup>

A handbook of marketing scales compiled by Bearden, Netemeyer and Mobley (1993) describes multi-item measures for marketing and consumer behaviour research including the service quality instrument developed by Parasuraman et al. (1988). For each scale included they attempted to define the construct, described the scale, described how it was developed and samples used, evidence of validity, scores obtained, the source of the scale, critical references, and scale items.

From Finland, and based on Scandinavian management experience, Grönroos (1990) discussed the nature of services and service quality. He gave a definition of a service as "an activity or series of activities of more or less intangible nature that normally, but not necessarily, take place in interactions between the customer and service employees and/or physical resources or goods and/or systems of the service provider, which are provided as solutions to customer problems."

Grönroos introduced a service-oriented approach to quality in the services marketing literature in the early 1980s with the introduction of the concept of "perceived service quality" and the model of total service quality. These are based on research into consumer behaviour and the effects of expectations on postconsumption evaluations. Most ongoing service quality research and theory development in services marketing is based on the perceived quality approach.

To talk about better quality without defining what it is, how it is perceived by customers, and how it can be improved and enhanced is of limited value (Grönroos, 1990). The quality of a service as perceived by customers has two dimensions: a technical or

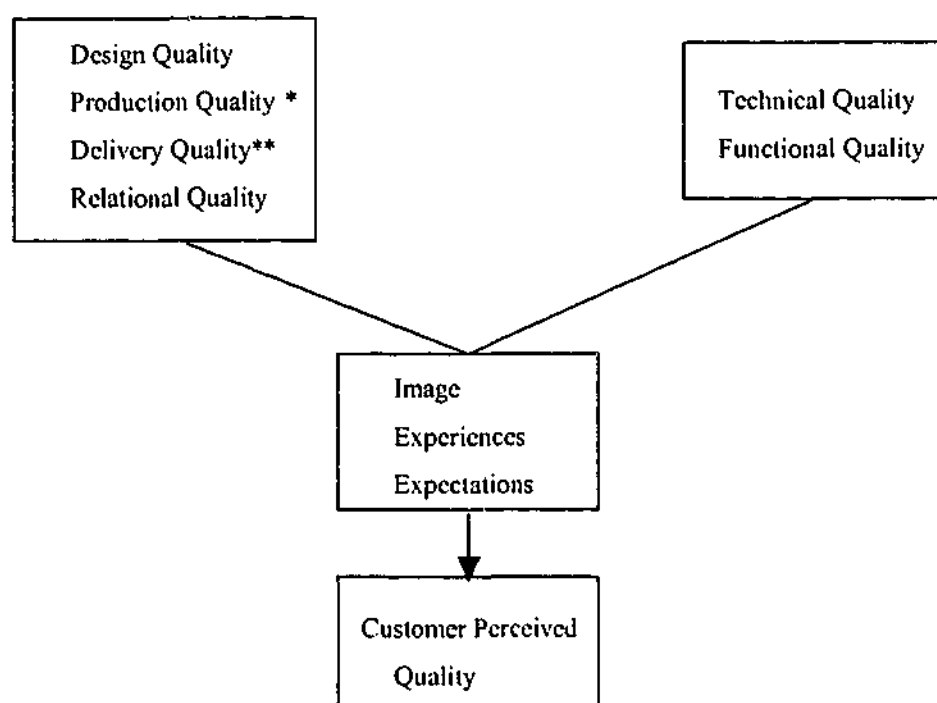
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<sup>8</sup> Assurance includes competence, courtesy, credibility and security. Empathy includes access, communication and understanding the customer. They found from their research that reliability (largely concerned with service outcome), was the most important dimension in meeting customer expectations, and the process dimensions, in particular assurance, responsiveness, and empathy, are most important in exceeding customer expectations.

outcome dimension and a functional or process-related dimension. Corporate and/ or local image also impacts on the perception of quality. The level of total perceived quality is not determined by the level of the technical and functional quality dimensions only, but rather by the play between the expected and experienced quality (Grönroos, 1990).

A quality model developed by Grönroos and a colleague, Gummesson is shown in Figure 2.2 (Grönroos, 1990).

**Figure 2.2 The Grönroos-Gummesson Quality Model <sup>a</sup>**



\* Invisible/ Visible Noninteractive/ Interactive

\*\*Own/ Subcontracted

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<sup>a</sup>The Grönroos-Gummesson Quality Model. From Grönroos C. Service Management and Marketing Maxwell Macmillan Publishing, Singapore, 1990. P. 66.

In 1988, the Society of Hospital Pharmacists of Australia (SHPA) published its policy guidelines for hospital quality assurance programs (Larmour et al., 1988). The SHPA defined quality assurance as the procedures which are used to set, promote, maintain and monitor the desired standards for service or products, and mentioned the use of questionnaires or interviews so that users of products and services could be asked for their assessment and satisfaction with particular services or products.



The Australian Council on Healthcare Standards (ACHS) Accreditation Guide (1992) describes quality of care as the extent to which particular health services meet the desired health outcomes for individuals and specific groups, and are consistent with current professional knowledge and practice. The Council describes quality assurance as a formal process whereby the quality and appropriateness of patient care and / or departmental performance is documented and evaluated by the professional group responsible or within a multidisciplinary team. The process involves a planned and systematic approach to monitoring and assessing the care provided, or the service being delivered, which identifies opportunities for improvement and provides a mechanism through which action is taken to make and maintain these improvements. Regular feedback of results is mentioned.

The concepts of TQM or CQI became an issue in the early 1990s in the health sector in Australia, although quality assurance was already being practiced prior to this time. Duckett (1995) notes that despite much rhetoric to the contrary, measurement of quality was not a routine part of hospital management in Australia at the time. He highlights that there was relatively little information about quality either between agencies, or, more importantly in terms of achieving improvements, within individual agencies over time.

Larmour et al. (1998) outlined an approach to quality enhancement in hospital pharmacy practice in Australia, and noted that in hospital practice, quality implies safety, accuracy, efficiency, effectiveness and meeting expectations of all clients, both internal and external. These measures were some of the measures used to evaluate customer service reported and discussed in this thesis.

Traditional quality assurance programs conducted by hospital pharmacy departments have tended to be more internally directed rather than external. The research reported in this thesis takes on a greater external focus in examining the user's perceptions of pharmacy services provided. The users are the customers.

### 2.3 Customer Service

Customer service is one important element of quality. It can be used as the basis for ascertaining the needs and expectations of customers, which in turn can lead to the design and implementation of more effective services.

Gillem (1988), a director of quality education and communication at Hospital Corporation of America in the USA, quoting Deming, noted that meeting customer needs must be a primary concern in the continuous improvement process. Inside hospitals, each department or work area is an internal customer receiving some work produced elsewhere in the institution and, in turn, each is a supplier to the other departments or areas. He stated that hospitals are being drawn into a new age in health care where there is an emerging demand by patients and payers that quality health care be provided at best value.

Gillem noted that hospitals need to make the transformation from the current practice of attempting to assure quality to actually measuring and improving the quality of care. He reports that according to Deming, learning to listen carefully to external customers and to identify and improve internal customer-supplier relationships are fundamental steps in the continuous improvement of quality. However, Gillem noted that the use of Deming's principles<sup>9</sup> in hospitals is almost non-existent, and that until hospital leaders understand how their customers, the patients, physicians, and purchasers of health care, measure and draw conclusions about the quality of hospital services, the leaders cannot really be specific about the roles of employees or what the workers should do to improve quality.

Customer service is a broad concept about which there is a wealth of literature (Ballou, 1985, 1987; LaLonde and Zinser, 1976; Coyle, Bardi and Langley, 1988, 1996; Bowersox, Closs and Helfreich, 1986; Lambert and Stock, 1982). It can be simply thought of as those activities or processes that an organisation performs in order to directly satisfy a demand or request by a customer. It may be a product or a service. Customer service usually involves activities such as order taking, order filling,

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<sup>9</sup> See Table 2.1

monitoring delivery and setting inventory levels to determine a percentage of orders to successfully fill. A classical measure of customer service in a community pharmacy setting is an order, being a prescription, filled in full and on time.

LaLonde and Zinser (1976)<sup>10</sup> identified three principal ways in which people think of customer service:

- (1) as an activity. This "level" treats customer service as a particular task that must be accomplished to satisfy the needs of the customer.
- (2) as performance measures. This level emphasises customer service in the context of specific performance measures such as numbers of orders processed within acceptable time limits. However, it is important to look beyond the performance measures themselves, and to see that customer satisfaction is achieved.
- (3) as a philosophy. This level elevates the interpretation of customer service to a firmwide (organisational) commitment to customer satisfaction through the provision of superior levels of customer service. This way of viewing customer service is entirely consistent with today's emphasis by many firms or organisations on quality management. This explanation involves a dedication to customer service which pervades the entire firm, and becomes ingrained in all of its activities.

LaLonde and Zinser (1976) also categorised the elements of customer service into three groups:

- (1) Pre-transactional elements – include the organisational structure, service policies, and management services which are in place before the actual distribution of a product in response to a customer order.
- (2) Transactional elements- the dimensions of customer service that occur simultaneously with the actual distribution or movement of product from source to customer.
- (3) Post transaction elements – occur after the sale and distribution of the product.

Applying these elements to the processes associated with dispensing a prescription in a hospital pharmacy would involve the patient seeing a doctor, and a prescription or

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<sup>10</sup> As reported in Coyle, Bardi and Langley, 1988.

medication order being written (pre-transaction). The prescription would then be received in the pharmacy, checked for safety, appropriateness, interactions, dispensed, sent to the ward or given to the patient, and the patient counselled (transactional elements), and then further information regarding the treatment supplied and follow-up provided (post transaction elements). Post transaction elements could also include complaints or returns, or documentation associated with regulatory requirements, such as filing approval forms for restricted stock or special access scheme medication.

The availability of stock is an element of customer service. It is a pre-transactional element but it is also a measure of quality because if a drug is ordered but not readily available this can affect the quality of treatment provided to the patient in that the delay may compromise the effective management of the patient. The availability of the drug comes under the dimensions of reliability and responsiveness as determined by Parasuraman et al. (1985, 1991a, 1991b), or reliability, one of Garvin's (1987) eight dimensions of quality.

The advice given by a pharmacist about a drug can be pre-transactional, transactional or even post- transactional in terms of customer service, depending where in the process it is sought or offered. It can also be a quality measure when it falls under the dimension of competence of the pharmacist or pharmacy service, or the dimension of responsiveness using the measures developed by Parasuraman et al. (1985, 1991a).

Coyle, Bardi and Langley (1988, 1996) described four traditional dimensions of customer service as viewed from a logistics function point of view as: time, dependability, communications, and convenience, which align with the concepts described by Lalonde and Zinser, and the dimensions of service quality<sup>11</sup> which were used to develop the constructs for the questionnaires used in the study reported in this thesis.<sup>12</sup>

<sup>11</sup> Dimensions of service quality as defined by Parasuraman et al. (1985) and Garvin (1987).

<sup>12</sup> Another view of customer service, offered by Christopher, Payne and Ballantyne (1994), is being concerned with the building of bonds with customers and other markets or groups to ensure long-term relationships of mutual advantage. They add that the provision of quality customer service involves understanding what the customer buys and determining how additional value can be added to the product or service being offered.

Acknowledging employee needs in the healthcare environment is also important because by creating a cohesive, supported, empowered and 'happy' environment for hospital personnel to work in, there is a positive impact on patients because staff are more enthusiastic and committed to their organisation. This follows on from the concept of TQM which recognises the need to involve employees in the process of quality improvement (Deming, 1982, Crosby, 1979).

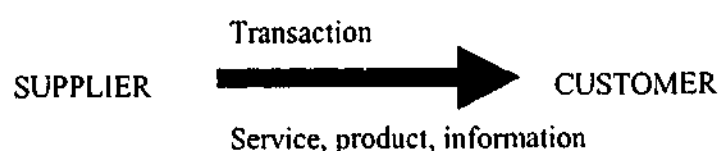
White and Lee (1990) presented a case study where quality was achieved by focussing on customer service and service excellence in a hospital in Hawaii, USA, and which illustrated the positive effects of employee involvement in programs to improve services and solve problems.

Discussions on customer service invariably lead to discussions on quality. To talk about the service provided by an organisation is not sufficient, the quality of the service also needs to be considered. In other words, working to achieve the highest possible standards of service or excellence is associated with the concept of providing quality or 'value' added to the service. This concept flows into quality assurance and quality improvement processes and, in turn, customer service becomes a component of these quality-driven programs. Quality has also been defined as the satisfaction of customer requirements and aspirations, real and perceived with the lowest consumption of resources (Holthof, 1991). Therefore it is important to understand the requirements of customers and to establish measures of performance to meet these requirements.

Customers can be internal or external to an organisation. In hospitals, the main internal customers are the doctors, nurses, personnel in other departments and administrative staff. Pharmacists are also internal customers since they work in a clinical setting or provide services to other areas within their departments. External customers include both inpatients and outpatients. Knowing the needs or requirements of customers is a fundamental requirement of quality services.

Any person, department or organisation supplying a service, product or information, is the supplier at that time. The person, department or organisation receiving the service, product or information is the customer (Figure 2.3).<sup>13</sup>

**Figure 2.3 The supplier –customer relationship<sup>a</sup>**



<sup>a</sup> (adapted from Gaucher and Coffey, 1993)

There is strong emphasis on customer satisfaction in industry and manufacturing in particular. In the healthcare sector the total satisfaction of a patient is not the only factor that will contribute to quality of care or service. In examining customers' perceptions of service in a hospital setting there is a need to temper the emphasis that is placed on patient satisfaction and perceptions of service: the total package of care and management offered by all the healthcare service providers is what is important. Patients often do not have the knowledge required to determine what service or treatment is best for them in the hospitals. If the patient is not totally satisfied with the medical service provided to them, but leaves the hospital in a much better state of health than on admission, it could be argued that the patient has still received a satisfactory level of service.<sup>14</sup>

In terms of hospital pharmacy services, it could be argued that the perceptions and expectations of the medical and nursing staff could be considered as significant as those of patients because the inter-relationship between the pharmacists and doctors and nurses is important in helping to ensure the best and most effective usage of medications. If all

<sup>13</sup> Customers within an organisation can in turn also be suppliers of a service, product or information to other departments, persons or organisations e.g. doctors in their own right provide a service as do nurses.

<sup>14</sup> Donnabedian (1988) also refers to the contribution patients and their family members make towards care and the success or failure of care. Patients and family members also have a responsibility in the care process because if the care, as implemented by the patient is inferior, then the patient has had an impact on the outcome. Their role relative to pharmacists and other health care personnel may involve issues related to their compliance to treatment being offered, and the information or feedback they give to healthcare personnel.

these groups work together effectively and cooperatively, and seek to determine how best they can meet each others requirements and those of their patients, then it could be argued that medication usage would be enhanced and the quality of service would improve.

In their book on Total Quality in Healthcare, Gaucher and Coffey (1993) state that one of the problems is that the definitions of quality change depending on who is defining the term. On many occasions patients are not competent to judge what constitutes quality in healthcare relative to the technical and scientific aspects of care. However, they go on to add that healthcare professionals have not helped to define technical measures of quality of care, and demonstrate how multiple customers should evaluate healthcare services. Nonetheless, patient feedback can be a useful tool for evaluating and improving quality (Wiseman and Koch, 1989), and patient satisfaction is widely considered an integral part of quality care (Cleary et al., 1989).

Because of the importance of determining customer requirements for hospital pharmacies it is necessary to establish what those requirements are.

In Australia, Alderman and Linsley (1997) noted that there was a focus on customer needs in hospital pharmacy practice and stressed the importance of hospital pharmacies understanding customer requirements and the need to develop models of service based on this. The research reported in this thesis directly addresses these concerns.

Discussions about quality and customer service cannot be considered without mentioning perceptions, because perceptions are a major factor in how quality and services are evaluated by individuals as well as how they are defined.

## **2.4 Perceptions**

The quality of care offered by an organisation is a perception, and to achieve an image of quality, healthcare executives must commit to and effectively manage customer perceptions as well as clinical quality (Louden, 1989). Much of the literature on quality

refers to the "perceived quality" or to satisfaction as "perceived" by the patient or customer. In effect, by asking customers about their knowledge or awareness of services, or their requirements, what is being determined is their perceptions.

Perception is largely an active process of selecting, organizing and constructing sensory data into stable meaningful experience, and consists of interdependent sets of relationships with sensation, learning and thinking (Muldary, 1983). How an individual perceives and interacts with another person is, in part, dependent on how the other person perceives and interacts with that individual (Pennington, 1986). Accurate and realistic perceptions of other individuals are crucial to the health professionals' ability to function properly (Muldary, 1983).

Perceptions of customer service can vary with customer type and organisation (Chant, 1990), and the meaning of quality varies and is defined from the customer's point of view (Crosby, 1979). Quality, as determined by the customer, is based on their perceptions and experiences, therefore the perceptions of the customer need to be managed so that they align with the service provider in terms of what is good service or a quality service. Customer service is perceptual, and whatever an organisation's internal measures of service might say about the service performance, perceptions are the reality (Christopher, 1992).<sup>15</sup>

Customers understandably state their needs based on perceptions (Juran 1988, 1992) but what they think is provided as a service may not accurately reflect the real situation. In the pharmacy context their perceptions are determined by their experience of the various pharmacy services, such as their interactions with pharmacy personnel, their view of their own role relative to that of the pharmacists and other healthcare personnel, their attitudes and beliefs, their cultural values, and any other prejudices they may carry towards other professions. Within a hospital setting, healthcare professionals may feel they "own" a

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<sup>15</sup> Christopher (1992) adds that "it is critical to develop a set of service criteria that are meaningful to customers. Organisations need to identify the key components of customer service as seen by customers; establish the relative importance of those service components to customers; and identify 'clusters' of customers according to similarity of service preferences."



particular activity or service. For instance, nurses may believe that, because they administer medication to patients, they alone should explain the purpose of the medication. This highlights the need to be alert to the possibility of real needs behind the stated needs of customers (Juran, 1988).

In the case of patients, their health status, experience in the healthcare sector, knowledge of pharmacy services and their cultural background all contribute to the perceptions they carry of pharmacists.

How the service provider thinks they are perceived by the customer and how the customer actually perceives them can often be a great distance apart (Albrecht and Zemke, 1985). Understanding the perceptions of the customer can be critical to the success of a service orientated business. Customers are not concerned with the every day issues and problems confronting an organisation, rather they are concerned with the actual service they receive and having their needs met. It is not sufficient to just give good service; the customer must perceive the fact that they are getting good service. A continuous, satisfying level of service must be the basis of customer loyalty (Albrecht and Zemke, 1985).

Numerous articles appear in the literature discussing the concept of quality, CQI, and quality assurance in healthcare (Lehr and Strosberg, 1991; Holthof, 1991; Enright and Flagstad, 1991; Gitlow and Melby, 1991; Angaran, 1991; Mehl, 1993; Mount, 1994; Godwin and Sanborn, 1995). Much has been published about the need for quality services, quality improvement, quality care, better health outcomes and the need for involving patients in setting standards of care or determining levels of service and care. However, little is published on the actual measurement of these factors.

Articles related to healthcare quality and pharmacy services appeared in the literature as early as the 1970s and some of the more important articles are discussed below. From the late 1980s onwards there was increased interest shown by government and healthcare

providers on quality, and the adoption and application of business principles and economic rationalism to the healthcare sector from this time onwards.

The review of the literature on customer service, quality, perceptions, customer surveys and practice surveys has identified a few key 'players' in the healthcare sector. These key players are discussed first when considering quality.

## **2.5 The meaning of quality in healthcare**

Donnabedian (1988,1989), a physician and medical educator was one of the first to write about quality in healthcare in the USA and identified the three components of quality care: the technical care; the interpersonal relationship; and the amenities. The quality of technical care or performance is measured against best practice in terms of current knowledge and technology, and is proportionate to its effectiveness and its ability to achieve the greatest improvement in health. The quality of the interpersonal relationship involves all those concerned with the care, especially between the patient and healthcare practitioner and how they are able to work together to maximise care and a positive outcome. The amenities refers to the setting in which the care is provided. He referred to the need to consider structure, process and outcome when assessing quality, terminology which has now made its way into healthcare practice and assessment of quality in hospitals (including assurance and outcomes).<sup>16</sup>

Indeed, much discussion in the pharmacy profession revolves around clinical, pharmacoeconomic and humanistic outcomes in establishing the value of pharmaceutical products and services (Reeder, 1995a, 1995b).

Donnabedian (1988) emphasised the importance of patient satisfaction, that it may be considered to be one of the desired outcomes of care, and the need to question patients

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<sup>16</sup> The structure refers to the attributes of the setting in which care occurs, including attributes of material resources, human resources, and or organisational structure. Process denotes what is actually done in giving and receiving care. Outcome is the effects of care on the health status of patients and populations. See The ACHS Accreditation Guide, 1992; Enright and Flagstad, 1991; Kozma, 1995; Reeder, 1995a; Gouveia and Chapman, 1995; Mullins et al, 1996.

about their experiences of care. He also discussed performance monitoring and how this needs to be fueled by a desire to learn and improve rather than the urge to restrain and punish (Donnabedian, 1989), a feature of TQM as espoused by Deming (1982), which encourages eliminating errors rather than apportioning blame.

### 2.5.1 Patient satisfaction

Many articles have appeared in the medical literature on patient satisfaction with healthcare (Ware et al., 1978; Pascoe, 1983; Ware and Davies, 1983a; Roberts and Tugwell, 1987; Ware and Hays, 1988; Cleary and McNeil, 1988; Hall and Dornan, 1988; Weiss, 1988; Weisman and Koch, 1989; Rubin 1990a; Rubin, 1990b in Meterko et al., 1990; Vuori, 1991, Fitzpatrick, 1991a; Westbrook, 1993; Scott and Smith, 1994; Draper and Hill, 1996).<sup>17</sup>

Ware et al. (1983b) define the dimensions of patient satisfaction with medical care as: interpersonal manner; technical quality; accessibility/ convenience; finances; efficacy/ outcomes; continuity; physical environment; and availability.<sup>18</sup>

Numerous patient satisfaction questionnaires were discussed in various articles in the literature: the Patient Satisfaction Questionnaire (PSQ) (Ware, et al., 1983b); the Patients Judgement of Health Quality questionnaire (PJHQ) (Meterko et al., 1990)<sup>19</sup>; the Patient Judgement System, developed by Hospital Corporation of America (Nelson et al., 1989); and the patient satisfaction questionnaire developed by Cleary et al. (1989). Patient judgement questionnaires or questionnaires aimed at determining quality of care reported in the literature tend to deal with the patient's perceptions of medical and nursing staff and their accommodation and stay in the hospital (Cleary et al., 1989; Meterko et al., 1990; Rubin, 1990a, 1990b; Rubin et al., 1990c; Hays et al., 1991; John, 1991; Carey and Seibert, 1993; Meredith and Wood, 1995). Information specifically addressing aspects of

<sup>17</sup> Ware et al., (1978), and Pascoe, (1983), present comprehensive reviews of the literature on patient satisfaction and measurement.

<sup>18</sup> See also Ware et al., 1978.

<sup>19</sup> This is a complete supplement in Medical Care dedicated to the Patient Judgements of Hospital Quality edited by Meterko et al., 1990. The PJHQ questionnaire is included in the Appendix to this supplement S44-S56.

pharmacy services was not sought in any of these studies.<sup>20</sup>

In their report for the Department of Health and Family Services in Australia, Draper and Hill (1996) discuss the role of patient satisfaction surveys in a national approach to hospital quality management. They gave examples of surveys that have been conducted in the United Kingdom, the United States and Australia. At the time of their report they mentioned a particular survey had been used in New South Wales and Queensland: the PJHQ, developed by the Hospital Corporation of America, Harvard community health plan and the Rand Corporation (mentioned earlier in this literature review, Meterko et al., 1990).

The PJHQ questionnaire is a rating instrument and attempts to measure satisfaction by rating satisfaction with particular aspects of care. It contains sections on admission, care in hospital, nursing care, medical care, other hospital staff, living arrangements and the hospital environment, discharge, billing and overall satisfaction (Meterko et al., 1990).

The patient satisfaction survey used in Victoria at this time was the Picker-Commonwealth Survey developed by Cleary and his colleagues at Harvard (Cleary et al., 1991<sup>21</sup>) for the Picker Commonwealth Program for Patient Centred Care.<sup>22</sup> This survey has also been used in Canada and the UK. The survey was developed from seven dimensions of patient care: respect for patient's values, preferences and expressed needs; coordination and integration of care; information, communication, and education; physical comfort; support and alleviation of fear and anxiety; involvement of family and friends; transition and continuity. The survey doesn't use patient satisfaction rating scales, rather it relies on patient reports. An example given is "Were you told about the purpose of your medication in a way you could understand?" (Cleary et al., 1991, as reported in Draper and Hill, 1996).

<sup>20</sup> Most early work considers satisfaction with medical care in general, though reports of patient satisfaction with pharmacy services appeared as early as 1977 (Ludy, Gagnon and Caiola, 1977; Somani, Daniels and Jermstad, 1982).

<sup>21</sup> As reported in Draper and Hill 1996.

<sup>22</sup> In 1995/96 when the report by Draper and Hill (1996) was compiled.

An executive summary for the Department of Human Services of the Patient Satisfaction Survey of Victorian Public Hospitals (Quint and Fergusson, 1997) was available on the internet (<http://hna.ffh.vic.gov.au/ahs/patsat/index.html>). The questionnaire sought to measure overall satisfaction with the hospital and to rate overall care received. Feedback was sought on aspects of the patient's hospital stay, including issues related to admission such as waiting period, information at admission, cancellation or rescheduling of admission, availability and communication of doctors and nurses, courtesy of doctors, nurses and non-medical staff, compassionate, reassuring attitude of all staff, cleanliness of room, restful atmosphere, quality of food, perceived adequacy of length of stay, complaints while in hospital, and willingness to return to same hospital.

The Picker Institute questionnaire was used in 1997 and involved computer-assisted telephone interviews. Patients were asked information about pain relief. The results regarding communication related to medication state that "among patients receiving new medicines in the hospital, 92% said the purpose of new medication was explained. However, it appears there is scope for greater provision of information on side-effects of new medication, evidenced by 24% of patients receiving new medication not being informed of possible side effects."

Five predictors of patient satisfaction with pharmacy services were identified by Fincham and Wertheimer, (1987) in a study of Health Maintenance Organisation (HMO) patients in the USA. These were convenience of prescription filling, self-assessed positive health status, communication between provider and patient, satisfaction with the HMO in general, and view of prescription drugs as expensive.

MacKeigan and Larson (1989), and Larson and MacKeigan (1994), developed a pharmacy specific survey instrument to measure patient satisfaction with pharmacy services in the community setting based on the patient satisfaction questionnaire developed by Ware et al. (1976)<sup>23</sup>. Respondents were required to select one of five options on an agree/ disagree continuum as a response. Dimensions of satisfaction

<sup>23</sup> Ware, Snyder, Wright, 1976, as referenced in MacKeigan and Larson, (1989).

identified were explanation, consideration, technical competence, financial aspects, accessibility, drug efficacy, over-the-counter product availability, and the quality of the drug product

Airaksinen, Ahonen and Enlud (1995) developed a customer service instrument for community pharmacy in Finland that applied the 10 service quality dimensions identified by Parasuraman et al. (1985). They evaluated various customer service components which included, for example, time for customers, readiness to give advice, comprehensibility of the drug information, expertise on drugs, and waiting time.

These three studies were community based, although some of the reported studies of patient satisfaction were hospital based (e.g. Larson, 1998; Erstad et al., 1994<sup>24</sup>). For example, Larson (1998) reported the results of a survey assessing ongoing patient satisfaction with ambulatory care pharmaceutical services in veterans affairs tertiary care institutions in the USA.

The conceptualisation of satisfaction, and different ways of measuring patient satisfaction, was discussed in an interesting article by Schommer and Kucukarslan (1997). They state that "no single standard measure of patient satisfaction is applicable to all pharmacy situations". In Wales, Williams (1994) raised the need to be cautious about the interpretation of patient satisfaction studies because patients may have a complex set of important and relevant beliefs which cannot be embodied in simple expressions of satisfaction. He stated that "many satisfaction surveys provide only an illusion of consumerism producing results which tend only to endorse the status quo."

From a different perspective Kahaleh et al. (1998) conducted a national survey of members of the American Society of Health System Pharmacists (ASHP) in 1997 to study the effects of downsizing on institutional pharmacists. The three most common

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<sup>24</sup> The study reported by Erstad et al. (1994) demonstrated that patients desire and appreciate being visited regularly by a pharmacist.

negative comments about the impact of downsizing were reduction in quality of patient care, increased stress, and lowered morale.

## 2.6 Hospital pharmacy services

The periodic surveys of hospital pharmacy services in the USA conducted by the American Society of Hospital Pharmacists (ASHP), (Stolar, 1988; Crawford, 1990; Crawford and Myers, 1993; Crawford and Santell, 1994; Santell, 1995; Reeder et al., 1997; Reeder, Kozma, O'Malley, 1998; Ringold et al., 1999; Knapp, Blalock, O'Malley, 1999; Ringold, Santell, Schneider, 2000), and those conducted by Raehl, Bond and Pitterle (1990, 1992, 1993, 1998), Bond Pitterle and Raehl (1992), Bond, Raehl, and Pitterle (1994, 1995), and Pitterle, Bond, Raehl (1990, 1992)<sup>25</sup> which have developed a greater clinical focus in recent years<sup>26</sup>, are the main surveys reported in the literature that attempt to document trends and changes in service provision in the hospital sector.<sup>27</sup> The surveys only target directors of pharmacy services at the hospitals. The two research groups both break up data by hospital size and ownership, but only the ASHP studies

<sup>25</sup> Surveys included a regional study (Raehl, Bond and Pitterle, 1990), national surveys of hospital based pharmacy services (Raehl, Bond and Pitterle, 1992, 1993), costs of pharmaceutical services (Bond, Pitterle, Raehl, 1992; Bond, Raehl and Pitterle, 1995), and clinical pharmacy services studies (Bond, Raehl and Pitterle, 1994; Raehl, Bond and Pitterle, 1998). Pitterle, Bond and Raehl (1990, 1992) developed and validated a numerical index for measuring the provision of pharmaceutical care- the pharmaceutical-care index, which quantifies the presence and extent of pharmaceutical services. This index was applied in their latter research (Raehl, Bond and Pitterle, 1993). Their national surveys of hospital pharmacy services took on a wider format than that used in the earlier ASHP surveys by including a wider range of clinical services, determining the extent to which services were offered rather than just the prevalence, reasons for curtailment of clinical services, and plans for expanding services. Effect of hospital size on the provision of services was also considered.

The authors summarise that "the provision of pharmacists' direct patient activity through either specific clinical pharmacy services or broader pharmaceutical care programs frequently varies by at least six factors. Hospital size, hospital teaching affiliation, pharmacy director's education, hospital ownership, pharmacist's location, and geographic region confirm the continued heterogeneity of hospital-based pharmacy practice."

<sup>26</sup> The national clinical pharmacy studies conducted by Bond, Raehl and Pitterle (1994) and Raehl, Bond and Pitterle (1998) are designed to assess the evolution of hospital based clinical pharmacy services and track direct patient care involvement of pharmacists. The authors state that "the national clinical pharmacy service study is the largest hospital-based pharmacy data base in the USA".

<sup>27</sup> Zellmer (1993) commenting on some of the findings of the ASHP survey conducted in 1992 states that "this series of surveys continues to provide the best available overview of pharmacy department activities in short-term non-federal hospitals in the USA". He also noted that drug therapy costs in hospitals were continuing to rise and provided a powerful incentive for expanded use of the pharmacist's expertise.

divide results into urban or rural to allow for comparisons.<sup>28</sup> Neither group takes into account perceptions of the users of the hospital pharmacy services.

In more recent years, Bond, Raehl, and Franke (1999a) reported research evaluating associations between clinical pharmacy services and mortality rates in United States hospitals.<sup>29</sup> They found that four clinical pharmacy services (clinical research, drug information, drug admission histories, and participation on a cardiopulmonary resuscitation team) were associated with lower mortality rates. Their evaluation of direct relationships and associations among clinical pharmacy services, pharmacist staffing, and drug costs in USA hospitals found increased staff levels of clinical pharmacists were associated with reduced drug costs, and where provided, in-service education, drug information, drug protocol management and admission drug histories were associated with lower drug costs (Bond, Raehl, and Franke, 1999b).

Schumock et al., (1996) in the USA reviewed, summarised and critiqued economic evaluations of clinical pharmacy services between 1988-1995. They concluded that studies that were well conducted were more likely to demonstrate positive results such as net savings or positive benefit: cost ratios. The outcomes measured tended to focus on financial consequences and not to include clinical and patient consequences. They made a number of recommendations for future economic evaluations amongst which they included sound study designs and methodology, the inclusion of non-financial outcomes and the costs of providing the service, and evaluating practice in alternative settings.

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<sup>28</sup> Schumock, Manasse and Hutchinson (1992) reported results of a survey of pharmaceutical services in rural hospitals in Illinois in 1991 and compared results with previously published national and regional surveys. Two nationwide surveys of pharmaceutical services in psychiatric hospitals in the USA were reported, McKee, 1991; and Rascati and Kirk, 1991.

<sup>29</sup> Further evaluation by Bond et al. (1999c) on association among hospital characteristics, staffing levels of health care professionals, and mortality rates in 3763 United States hospitals, found that mortality rates decreased as staffing level per occupied bed increased for medical residents, registered nurses, registered pharmacists, medical technologists, and total hospital personnel.



In the United Kingdom, Cotter, Barber and McKee (1994)<sup>30</sup>, and Cotter et al. (1996a)<sup>31</sup> reported results from a survey of clinical pharmacy services in United Kingdom National Health Service hospitals that identified the extent to which clinical services were provided. Pharmacists were surveyed for this information.

In their report, which also discussed the factors which influence the provision of clinical pharmacy services, Cotter et al. (1996a) found that a critical number of pharmacists is required to provide many services, and the provision of certain services influences the likelihood of provision of others.

In Australia, apart from the study conducted in 1988 by Peterson, Freezer and Naismith (1990) which documented the extent to which eleven pharmacy services were provided in private hospitals, there appear to be no earlier published studies which documented comprehensive service provision. However, Larmour et al. (1984) reported on the results of a clinical ward pharmacy<sup>32</sup> survey sent to 52 Victorian hospitals in 1982 which sought to determine what duties were performed by ward pharmacists from a list of 19. They found that drug chart review, ward drug distribution and providing drug information were the aspects of service most commonly provided. Jones et al., (1984) documented the level of participation of pharmacists in eight clinical activities at six major hospitals in Western Australia and found the most common clinical service undertaken was review of medication charts.

Tenni and Hughes (1996) determined the extent of provision of clinical pharmacy services in Australia with a nationwide survey conducted in 1995. Their survey found

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<sup>30</sup> The percentage of pharmacies providing any of thirty-six listed clinical pharmacy services was shown. Services listed included for example, monitoring drug therapy for acute inpatients, counselling patients about their medication, participating in medical ward rounds, and providing education for physicians. The response was 416 questionnaires of 508 sent. Services commonly provided were inpatient drug therapy monitoring (96%), participation in drug and therapeutic committees (97%), clinical trials support (92%), formulary management (89%) and on-site drug information centre (60%).

<sup>31</sup> Factors which influenced the provision of clinical services were discussed.

<sup>32</sup> *Clinical ward pharmacy*, *ward pharmacy* and *clinical pharmacy* are terms that are variously used to describe clinical pharmacy services. Throughout the thesis *clinical pharmacy* will be used.

that clinical services are offered at most Australian hospitals, but that the range and extent of services provided varied considerably.

The surveys conducted by Larmour et al., (1984) and Tenni and Hughes (1996) appear to be the earliest published surveys to document clinical service provision in Victoria and Australia respectively, but these did not take into account the comprehensive range of pharmacy services provided by hospitals in Australia.<sup>33</sup> However, the 1998 national survey of hospital pharmacy services conducted in Australia by Wilson et al. (2000a), did consider the broader spectrum of services provided by hospital pharmacies and was based in part on the work by Wilson and Chapman (2000b), which forms the basis of this thesis. All these four surveys were sent to directors of pharmacy services.

Wilson et al. (2000a) reported the extent of comprehensive pharmacy service provision in Australia in 1998 from a national survey. Respondents were asked to select the services provided by their particular hospitals from a list of 26 commonly provided.<sup>34</sup> The most frequently available services from hospital pharmacies throughout Australia were inpatient, informal drug education for hospital staff, review of medication charts, control of drug purchasing for the hospital, and inpatient dispensing.

A recent report by McLennan and Dooley (2000) presents the results of a national survey in Australia undertaken as part of a larger project aimed at developing a standardised approach to clinical activity documentation. The questionnaire sought information relating to several key areas: provision of clinical services; methods of collecting clinical activity data; knowledge of a pharmacy specific activity classification system (ICD-10-AM); and practices involving this system. The authors concluded that "despite the

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<sup>33</sup> Hughes (1992) reported that a 1990 survey of Australian hospital pharmacy departments found that 88% provided clinical services. However, the methodology and specific details about the survey were not included in the report.

<sup>34</sup> The 26 services from which respondents were asked to identify those provided at their hospitals were used in both surveys described in this thesis.

prevalence of documentation, there was no uniformity in clinical activity definitions or the level of documentation.”<sup>35</sup>

Wilson and Chapman (2000b) published some baseline results from a wide-ranging survey of customer service in Victorian hospital pharmacies in Australia which developed a perceptual baseline of hospital pharmacy services and identified services provided from the pharmacists’ perspective. The results presented were from pharmacists surveyed in the first survey of hospital pharmacy services and presented in this thesis.

## **2.7 Internal customer surveys**

Much of the literature that focused on attitudes or perceptions of doctors, nurses and other healthcare providers towards pharmacy services reported specific pharmacy services, such as drug information services, or aspects of the pharmacists’ clinical role, rather than the full gamut of services provided (for example, Lambert et al., 1977; Haymond et al., 1977; Elenbaas et al., 1977; Shearer et al., 1978; Hayman et al., 1978; Dodds, Archambault, 1979; Moss et al., 1980; Fisher and Pathak, 1980; Ludwig and Abramowitz, 1983; Fincham, 1986; Nelson et al., 1978).

In the USA, Ritchey and Raney (1981) reported the results of a survey of physicians which measured the extent to which they agreed hospital pharmacists should provide five clinical services and the effect of exposure to clinical pharmacists upon their responses. They found that where physicians were exposed to clinical pharmacists this was associated with them having a more favourable regard toward the clinical role of pharmacists.

Physicians and nurses thought there was improvement in the quality of patient care as a result of pharmacists’ participation in the patient care team at a teaching hospital (Fink et al. 1982), whilst Fine et al. (1982) found a “minimal knowledge base regarding the

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<sup>35</sup> A subsequent phase of this project was reported by Dooley et al. (2000) in which they described the pilot implementation of guidelines for the standard documentation of clinical pharmacy activities in clinical practice settings in a range of Australian hospitals. The project also targeted directors or managers of hospital pharmacy services.

clinical pharmacy services provided" in a study of the acceptance by registered nurses of the clinical activities of pharmacists.

One of the earliest studies which sought to develop a validated instrument to measure doctor's attitudes toward the clinical pharmacist's role was that by Grussling et al. (1984). They developed a final scale with 5 sub-scales: teaching quality; perceived value; perceived competence; general role; and impact on prescribing. In their study, the attitudes of physicians were shown to be very favourable at the study hospital which had an extensive presence of clinical pharmacists. Differences were found in attitudes between sub-scales, by some specialties, and by physician status and age. For example, higher status physicians showed lower favourability toward clinical pharmacists. Interestingly, no differences were shown by amount of exposure to clinical pharmacists.

Hatoum and colleagues (1986, 1993) provided useful and comprehensive reviews of the literature on documentation regarding the value and acceptance of clinical pharmacy, and the acceptance of ambulatory care provided by pharmacists.<sup>36</sup> They conclude that it is evident the profession has made significant strides in building a scientific base to support the value for clinical services, however, many of the articles alone could not justify clinical pharmacy as cost effective although the body of work reviewed provides an invaluable resource.<sup>37</sup>

A questionnaire mailed to 1000 hospital administrators nationwide in the USA found that they had a positive perception of the abilities of pharmacy directors but believed that there was still room for improvement, and that it was very important for pharmacy departments to be involved in therapeutic drug monitoring and medication counselling, and to be progressive in their offerings of service (Raiford, Clark, and Anderson, 1991).

Hedval and Paltschik (1991) presented results from Sweden where they conducted a study, in a community pharmacy setting, using the ten determinants of service quality

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<sup>36</sup> The review by Hatoum and Akhras, 1993, tended to focus on community pharmacy practice.

<sup>37</sup> See Hatoum et al., 1986.

developed by Parasuraman et al. (1985) which compared ratings of customers and pharmacists to various service attributes and also allowed the need for quality improvement to be identified. They found pharmacists were more critical of service quality than the customers.

Cotter, McKee and Strong (1996b), and Cotter and McKee (1997) also conducted an interview survey at eight hospitals in the UK which obtained the views of 129 pharmacy, nursing, medical and managerial staff on pharmacy service development and management, and provision of pharmaceutical care. Cotter and McKee (1997) found strong support for the provision of pharmaceutical care services that educate patients about their drugs, monitor the safety of prescribing and advise doctors on individual patient's therapy. However, the information obtained did not indicate whether this should be provided directly to the patient (by the pharmacists) or by others in the healthcare team (e.g. nurses). Lack of resources was seen as a barrier to increased service provision, and poor image that pharmacists had of themselves within the healthcare team and in their clinical role were seen as obstacles to the provision of pharmaceutical care. They noted the importance of informing patients and health professionals of their role.

In Australia, George, Hampton and Carson (1987) evaluated staff and patient attitudes towards potential pharmacy services in a hospital that previously had no such services. This was one of the first studies in Australia to consider user requirements. A later unpublished study by Vienet and George (1987) surveyed hospital pharmacists and members of the general public to identify and compare their perceptions of the role played by Australian hospital pharmacists. The major findings of that survey were that differences existed in what hospital pharmacists and the general public perceived the role of the hospital pharmacist to be.

Cukierman-Wilson (1990) evaluated customer service at a large metropolitan teaching hospital in Melbourne by surveying doctors, nurses, patients, administrators and dietitians. This study focused on the customers of the pharmacy department and sought their perceptions to evaluate service rather than traditional internal departmental reviews.

Cukierman-Wilson (1992) subsequently published results from the internal customers of the pharmacy department. Prior to this study customer service as such, was not discussed in the pharmacy literature in Australia. The 1990 study was one of the first published in Australia that considered customer perceptions and requirements of a hospital pharmacy service and actually discussed customer service.

A few smaller studies that considered the opinions or perceptions of hospital pharmacy customers in Australia appeared in the literature (Clifford et al., 1993; Lew and Suen, 1994; Imberger et al., 1994).<sup>38</sup> The study conducted by Clifford et al. (1993) considered doctors' opinions of clinical pharmacy services in a single hospital, and commented that it appeared that doctors were not fully aware of the full role of pharmacists.

Later research reported by Wilson and Chapman (2000b) built on the earlier research by Cukierman-Wilson (1990, 1992) and reported some baseline results of the survey of customer service in Victorian hospital pharmacies that was the first survey in the six-year comparative study reported in this thesis. The report focused on results from pharmacists in the hospitals surveyed, and determined their service requirements in addition to their awareness and perceptions of services provided.

A subsequent paper (Wilson and Chapman, 2002b) reported on the perceptions, awareness and service requirements of doctors and nurses that were based on some of the results from the 1993/94 survey reported in this thesis. A relatively poor awareness of pharmacy service availability in hospitals was identified, service requirements were documented, and the customer service model developed and discussed in Chapter 8 of this thesis was presented. The research found that doctors perceived the pharmacists' role

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<sup>38</sup> Lew and Suen (1994) surveyed patients and medical and nursing staff in a hospital in Melbourne to capture clients' perspectives on existing and potential services they might like to receive. They concluded the study provided valuable insight into clients' needs in terms of hospital pharmacy and enabled relevant strategic planning within the department.

Imberger et al. (1994) examined perceptions regarding the ward pharmacy service and suggestions to aid in improving service. They reported that medical staff indicated more involvement in ward rounds and liaising more closely with residents and registrars as a way to improve services, whilst nurses suggested extending weekend services, improving delivery of discharge medications and providing more frequent inservice education sessions.

as predominantly dispensing and providing information and education on drugs, whereas nurses supported some clinical roles for the pharmacists, although not as extensively as pharmacists.

## **2.8 Conclusions**

This chapter has described the management, economic and political environment in which hospitals were operating at the time of this study. It has also discussed the concepts of quality and customer service from a business and industry point of view, and then linked this with how these have been applied to research in the healthcare sector. The research undertaken into patient satisfaction, quality, evaluation and documentation of pharmacy services, and perceptual/ attitudinal studies regarding pharmacy services in the hospital sector, in particular, and to a lesser degree in the community practice setting, has been highlighted.

The review has shown that, even though numerous studies were conducted to measure patient satisfaction with services both in the medical or pharmacy sector, customer service was not discussed. Airaksinen et al. (1995) did identify elements of customer service in the community pharmacy setting, but hospital pharmacy tended not to use this terminology. The changing environment that hospitals found themselves in during the 1990s required the application of business practices to the health sector. Quality and total quality management or continuous improvement meant that the needs of customers gained greater prominence. Patient satisfaction studies in hospitals gained importance.

Many of the studies reported in the literature used statements related to activities or aspects of pharmacy service to which respondents had to indicate agreement or disagreement. Few required respondents to indicate which services they wanted from the hospital pharmacy. Prior to the research reported in this thesis, and the earlier work reported by Cukierman-Wilson (1990, 1992), there were no studies that discussed the elements of customer service in hospital practice or attempted to determine customer requirements on a wider scale and from the perspective of the major internal and external customers.

The lesson for the pharmacy profession is that there is the need to acknowledge the perceptions of the customers and to consider their requirements in service provision so that services can be targeted more appropriately, efficiently and justifiably. This thesis has sought to address this deficiency.

As Mehl (1993) stated, "excellence must be measured by the services provided with regards to the resources available. Excellence in practice is dependent on factors such as political and social norms, standards of practice, available resources, perceptions, time, the motivation to progress to a higher level, and the continuous innovation required to reshape the profession to meet the needs of society." He stated "As a profession we must be able to practice our basic services at a certain level of excellence in order to be accepted in new roles by other health professions. We cannot lose sight of the fact that service is everything. If you cannot satisfy the needs of your customer- the physician, the nurse, the administrator, the patient, and now the third-party-payers- you cannot succeed."

The importance of understanding the concepts of quality, customer service and perceptions is that they relate to quality customer service because they seek to establish requirements and measure the perceptions of the customers/ users of pharmacy services.



## **CHAPTER 3**

### **METHODOLOGY**

#### **3.0 Introduction**

This chapter describes the study methodology for the two surveys conducted in this six-year comparative study: one in 1993/1994 (first survey) and another in 1999/2000 (second survey).

#### **3.1 The First Survey**

A statistically drawn random sample of 5,518 users of pharmacy services from a stratified random sample of 39 hospitals in Victoria were surveyed using four self-administered, mail-back questionnaires. The sample included doctors, registered nurses, inpatients, outpatients and pharmacists. Each of these were considered to be either internal or external customers of the pharmacy department. Pharmacists were included because in their clinical role they receive a service from the pharmacy department, even though they in turn provide services in a clinical setting to doctors, nurses, patients and others in a hospital.

##### **3.1.1 Study population and sample size determination.**

Sample size was determined with the assistance of a biostatistician at Monash University's Department of Social and Preventive Medicine (Ugoni, 1992), drawing on the sample size used in earlier research conducted by Cukierman-Wilson at the Alfred Hospital (Cukierman-Wilson, 1990). Based on that research the first survey would have 90% power.

The sample frame of hospitals was obtained from the contact list provided by the Society of Hospital Pharmacists of Australia (Victorian Branch) 1992, and the stratified random sample of hospitals used was based on this. Seventy-two public and private hospitals in Victoria met the selection criteria of having at least one full or part time pharmacist.

Hospital size and location formed the strata but teaching status and whether a hospital was public or private were not used because further stratification of hospitals would have required a sample of hospitals greater than available in Victoria. However, specialist hospitals were included because they still provided a common range of pharmacy services, except for psychiatric hospitals because it was felt that surveying patients would be difficult.

The population of doctors, nurses, pharmacists and available inpatient beds within the sample frame of public hospitals was compiled from information provided by the Health Department of Victoria (1992) and directors of pharmacy services in the hospitals. In the case of private hospitals, this information was obtained from the Australian Private Hospital Association or the hospitals themselves.

Hospitals with 200 or more available inpatient beds were determined to be large and those with less than 200 beds small. This division was chosen because it reflected the hospital demographics at the time of the study and was consistent with the breakdown used by Raehl, Bond and Pitterle (1990,1992,1993)<sup>1</sup>. Approximately 61.5% of the hospitals in the survey had less than 200 beds.

Initially 46 hospitals were selected from the 72 which met the selection criteria (Table 3.1) but seven declined to participate in the study for various reasons resulting in a final sample consisting of 39 hospitals: 11 large city hospitals, 8 small city hospitals, 4 large country hospitals and 16 small country hospitals. The number of hospitals in the final sample represented approximately 54% of Victorian hospitals that fitted the selection criteria (Table 3.2).

All 39 hospitals in the study allowed at least one of the survey groups of doctors, nurses or pharmacists to be approached. However, only thirty allowed both their doctors and nurses to be surveyed. Twenty-six hospitals allowed their inpatients to be surveyed and

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<sup>1</sup> Raehl et al. divided hospitals with less than 200 beds into small, 200-399 as medium and more than or equal to 400 as large. Because of the smaller hospital population in Victoria than in the USA, the large and small division was used.

ten of these allowed their outpatients to be surveyed.

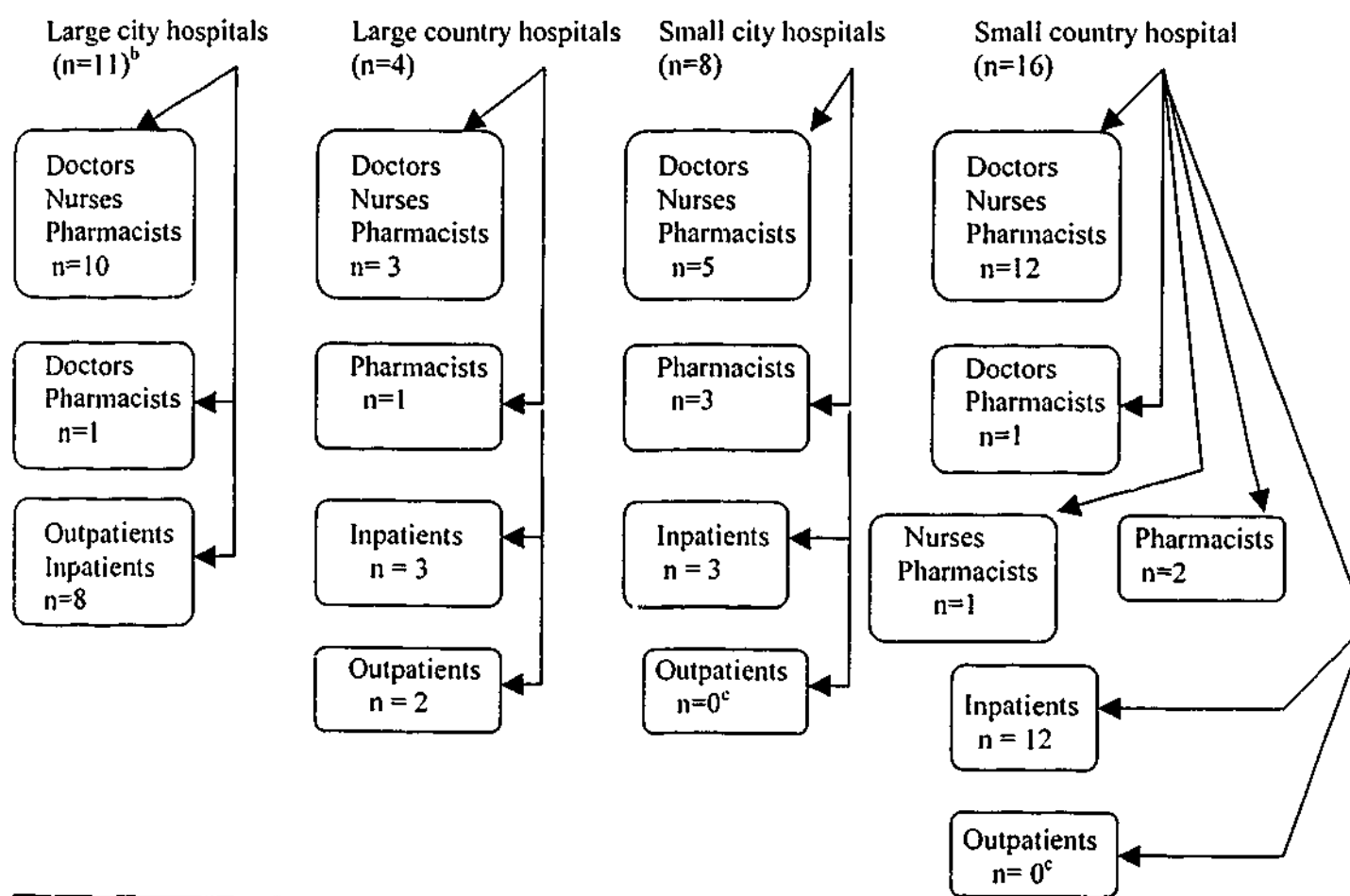
**Table 3.1. Number of hospitals fitting selection criteria for this study and number of hospitals in the final sample (1993/94)**

Hospital size	Number of hospitals			
	City		Country	
	Population <sup>a</sup>	Sample	Population <sup>a</sup>	Sample
Large	17	11	6	4
Small	19	8	30	16

<sup>a</sup>Number of hospitals having at least one full or part time pharmacist

The inclusion of 16 small country hospitals was necessary to obtain the required number of doctors and nurses for the sample to be representative. The respondent groups that were surveyed from each of the hospitals are shown in Figure 3.1.

**Figure 3.1 Respondent groups surveyed at each hospital (1993/94) <sup>a</sup>**



<sup>a</sup> From each hospital size and location.

<sup>b</sup> n= number of hospitals

<sup>c</sup> Formal outpatient services were not provided at small city and country hospitals. Accident and emergency services were only available.

Table 3.2 Hospitals surveyed and sample sizes (1993/94)<sup>a</sup>

HOSPITAL <sup>a</sup>	POPULATION				SAMPLE				
	BEDS	DOCTORS	NURSES	PHARM <sup>b</sup>	IN PATIENT	OUT PATIENT	DOCTORS	NURSES	PHARM <sup>b</sup>
<b>LARGE CITY</b>									
RMH	861	640	974	40	110	135	271	224	39
AUSTIN	565	300	850	28	43	63	129	165	28
HEIDELBERG	537	220	-	21	0	0	95	0	21
MMC	747	350	1330	31	56	74	150	257	37
RWH	429	189	839	11	32	40	88	162	11
WESTERN	575	306	659	24	43	65	132	128	24
CABRINI	318	270	550	8	24	57	116	106	7
BOX HILL	285	95	443	8	21	20	41	86	8
PANCH	312	130	450	13	24	27	56	87	12
DANDENONG	285	-	50	12	0	0	25	25	12
EPWORTH	332	700	493	12	0	0	180	95	12
<b>LARGE COUNTRY</b>									
BENDIGO	216	80	305	4	20	20	34	59	4
ST JOHN OF GOD	224	173	298	7	25	0	74	60	7
MILDURA BASE	309	69	229	4	0	0	0	0	4
GEE LONG	433	103	467	18	38	40	44	90	15
<b>SMALL CITY</b>									
PETER MAC	141	-	-	17	0	0	0	0	17
AVENUE	126	300	115	5	20	0	129	40	5
ANGLISS	112	-	-	5	0	0	0	0	5
DANDENONG PRIV.	104	100	200	2	0	0	43	39	1
SANDRINGHAM	95	-	-	3	0	0	0	0	2
MAROONDAH <sup>a</sup>	154	160	188	7	40	0	69	36	7
ESSENDON <sup>c</sup>	<200	-	-	-	0	0	4	15	1
KINGSTON CENTRE	96	14	50	4	20	0	14	20	4
<b>SMALL COUNTRY</b>									
WANGARATTA	146	50	220	5	20	0	24	43	5
LATROBE REGIONAL <sup>a</sup>	112	151	509	11	26	0	65	99	11
HAMILTON BASE	96	15	90	3	11	0	8	17	3
WIMMERA BASE	182	31	210	3	20	0	16	41	3
WODONGA	96	-	-	3	0	0	0	0	3
BAIRNSDALE <sup>a</sup>	95	21	165	2	20	0	10	32	2
COLAC DISTRICT	88	-	-	1	0	0	0	0	1
WEST GIPPSLAND	90	68	179	3	0	0	29	35	3
SWAN HILL	76	21	83	2	10	0	10	16	2
ECHUCA	82	30	132	3	10	0	13	26	3
MT ALEXANDER	180	12	0	3	5	0	3	0	3
BENALLA	71	0	110	1	5	0	0	21	1
WONTHAGGI	60	15	80	3	5	0	6	15	2
GRACE MACKELLAR <sup>a</sup>	51	37	15	4	0	0	20	15	4
STAWELL	40	6	67	1	6	0	6	13	1
NIHILL	61	10	34	1	8	0	3	10	1

<sup>a</sup> Figures for available beds sometimes varied significantly between that given in the Hospital Comparative Data Rainbow Book and provided by the hospitals (from the Directors of Pharmacy). For those cases, the available acute beds listed in the Rainbow Book were used to determine bed numbers.

<sup>b</sup> Abbreviations: Pharm = pharmacists; RMH = Royal Melbourne Hospital (The); Heidelberg = Heidelberg Repatriation; MMC = Monash Medical Centre; RWH = Royal Women's Hospital (The); PANCH = Preston and Northcote Community Hospital; Peter Mac = Peter MacCallum Cancer Institute; Dandenong Private = Dandenong Valley Private Hospital; Essendon = Essendon and District Memorial Hospital; Sandringham = Sandringham and District Memorial Hospital; Wangaratta = Wangaratta District Base Hospital; Wodonga = Wodonga District; Bairnsdale = Bairnsdale Regional Health Service; Swan Hill = Swan Hill District; Mt Alexander = Mount Alexander; Benalla = Benalla and District; Wonthaggi = Wonthaggi and District; Grace McKellar = Grace McKellar Centre; Stawell = Stawell District

<sup>c</sup> Essendon and District Memorial Hospital was connected to the Royal Melbourne Hospital, not initially targeted, but included through RMH pharmacy which provided the pharmacy services within the hospital.

Approximately three times the number of respondents required for the study (Table 3.3) were surveyed because it was assumed a response rate of 30% would be achieved based on other surveys of doctors (Ritchey and Raney, 1981; Shearer, Gagnon and Eckel, 1978; Ludwig and Abramowitz, 1983; Cukierman-Wilson, 1990, 1992).

**Table 3.3 Respondent numbers required at the hospitals (1993/94)**

Survey group	Hospital			
	large city	large country	small city	small country
Doctors (total =740)	531	83	93	33
Nurses (total=740)	489	76	76	99
Pharmacists <sup>a</sup> (total=331)	212	30	41	48

<sup>a</sup> All pharmacists were surveyed at the hospitals

This study ultimately targeted approximately 41% of the doctors, 20% of the nurses, and all pharmacists employed in the hospitals included in the survey.

### 3.1.2 Questionnaire development.

Four individual questionnaires were developed, one common questionnaire for doctors and registered nurses, one for pharmacists, and the remaining two questionnaires for inpatients and outpatients.<sup>2</sup> All were self-administered.

The development was based on the earlier work by Cukierman-Wilson (1990) and on guidelines and recommendations in the social research literature (Peterson, 1988; Aaker and Day, 1990; Hague, 1993; Schuman and Presser, 1996; Polgar and Thomas, 1991; Moser and Kalton, 1971; Neuman, 1994; Miles and Huberman, 1994), along with reports on questionnaire design and survey research (Fitzpatrick, 1991b; Smith, 1997a, 1997b 1999, 2000; Harrison and Draugalis, 1997) and articles and texts related to psychometric and psychological testing (Nunnally, 1972; Cronbach, 1990; Anastasi, 1988; Kerlinger, 1973; Carmines and Zeller, 1979; and Kaplan and Saccuzzo, 1989; Bloom, Fischer and Orme, 1995). The questionnaire development process aimed to create an instrument that

<sup>2</sup> Even though the doctors and nurses had a common questionnaire the front cover and letter enclosed explaining the survey were addressed to the particular respondent type. Copies of each of the questionnaires are provided in Appendix 1.

would meet the requirements of reliability and validity, and provide a measure for comparison between hospital pharmacies in Australia

### 3.1.2.1 Questions related to services

It was important to determine services provided by hospital pharmacies because it allowed determination of a baseline of awareness that respondents had of these services.

The questionnaires used by Cukierman-Wilson (1990) in the earlier research sought to identify the knowledge that doctors, nurses, and hospital administrators had of the services, and their requirements. Prior to this research, few formal studies had identified the comprehensive range of pharmacy services provided in hospitals.<sup>3</sup> The responses obtained by Cukierman-Wilson (1990) then provided a list of pharmacy services in terminology understood and used by doctors, nurses and administrators to describe pharmacy services, as distinct from pharmacists. These responses and subsequent consultation with leading hospital pharmacists, university academics with experience in surveys and a leading market researcher (Hargreaves, 1993; Tong, 1993; Lyall, 1993; Stewart, 1993; Chapman, 1993; Brien, 1993; Wilson, 1993; Chant, 1993) helped develop a list of commonly provided hospital pharmacy services. Tenni and Hughes (1996) later published the results of a national survey of clinical pharmacy services which described clinical pharmacy activities, and The Society of Hospital Pharmacists of Australia (1996a, 1996b) published their Practice Standards and Definitions.<sup>4</sup>

Ultimately, 23 hospital pharmacy services were chosen from which respondents in the first survey could select those which they thought were already provided (their awareness and perceptions of services provided) and those which they believed should be provided (their service requirements).<sup>5</sup> The 23 services were listed on the questionnaires and there

<sup>3</sup> For example, Larmour et al., (1984) and Jones et al., (1984) focused on clinical services, and Peterson et al., (1990) reported on the provision of some pharmacy services, a number of which were clinical in nature.

<sup>4</sup> The first SHPA policy guidelines for the practice of clinical pharmacy was published in 1984 (Martin et al.) and referred to eight tasks provided by clinical pharmacists. Subsequent reports have expanded the guidelines by publishing standards of practice for the performance of selected clinical activities (Martin et al., 1987a, 1987b, 1988, 1990a, 1990b).

<sup>5</sup> Perceptions and awareness are inter-related. However, awareness denotes higher order cognitive processes that are derived from sensory perceptions. See Chapter 2 section 2.4.

was an opportunity to add further services if needed, and to indicate if they didn't know a service was provided or if it should be provided.<sup>6</sup>

### 3.1.2.2 Customer service elements

The services which hospital pharmacies provide are all elements or processes of customer service.

When applying the ten dimensions of service quality as identified by Parasuraman, Zeithaml and Berry, (1985) to hospital pharmacy practice, it shows which elements of customer service fall under each quality category (Table 3.4).<sup>7</sup>

Garvin's eight dimensions of quality were also incorporated within the elements of service evaluated (see Table 2.3, Chapter 2). For instance, serviceability is taken to include the elements of timeliness, cooperation and friendliness of the pharmacy staff, and reliability includes the reliability of the service and availability of stock.

The elements of customer service identified in this study also overlap with the dimensions of customer service from the logistics perspective (Coyle, Bardi and Langley, 1996). For instance, response to drug information queries, or timeliness of provision of medication relates to the dimension of time. The availability of stock and reliability of service relates to dependability, advice given on general queries relates to communication as exists with users of the service, and after hours service links to convenience.<sup>8</sup>

Doctors, nurses and pharmacists were asked to rate how effective the performance of the pharmacy service at their hospitals was on a number of measures of customer service

<sup>6</sup> Respondents were given the choice of 'yes', 'no', and 'don't know' for each service. Open-ended questions allowed respondents to identify other services that were not listed in the questionnaire.

<sup>7</sup> Reliability, responsiveness, competence, access, courtesy, communication, credibility, security, understanding/ knowing the customer, tangibles.

<sup>8</sup> Categorisation of elements of customer service as described by LaLonde and Zinser (1976) can also be applied to the measures customers were asked to rate in the two surveys. (An example was given in Chapter 2, section 2.3).

Table 3.4 Customer service elements within dimensions of quality.<sup>a</sup>

Dimensions of service quality	Element of customer service <sup>b</sup>
Reliability	reliability of the service; accuracy of dispensing; timeliness of provision of medication; timeliness of response to drug information queries, timeliness of response to general queries; availability of stock.
Responsiveness	timeliness of provision of medication; timeliness of response to drug information queries; timeliness of response to general queries; availability of stock; efficiency of the pharmacy service.
Competence	medical and pharmaceutical knowledge of the pharmacists; drug information service provided; advice given on drug information queries; advice given on general queries; discharge medication counselling of patients; patient information and education on drugs/ medicines; drug education for hospital staff-informal; in-service, structured lectures to hospital staff; extent of pharmacy department involvement in research.
Access	For the pharmacists' survey: continuing education for staff pharmacists and education and training of non-pharmacist pharmacy staff fall into this category. after hours service; timeliness of provision of medication; timeliness of response to drug information queries; timeliness of response to general queries; availability of stock; discharge dispensing; efficiency of the pharmacy service
Courtesy	cooperation of the pharmacy staff to users of the service; friendliness of the pharmacy staff to users of the service; this attribute also touches on advice given to customers, communication.
Communication	communication with users of the service; pharmacy publications/ bulletins In addition understanding and knowing the needs of the users, cooperation and friendliness, advice given, discharge medication counselling, all influence communication.
Credibility	overall service provided to the users of the service as this summarises the view the customers have of the pharmacy departments and service, the general overview.
Security	Security is not so much defined by physical, financial safety, security and confidentiality as determined in Berry et al.'s research, but would be more appropriately addressed by accuracy of the service, reliability of the service and efficiency of the pharmacy service for the purpose of this study.
Understanding/ knowing the customer	understanding and knowing the needs of the users; and cooperation of pharmacy staff also affects this.
Tangibles <sup>c</sup>	Tangibles is described as physical evidence of the service. Parasuraman et al. focus on physical facilities, appearance of personnel, tools and equipment to provide the service. For the purpose of this study individual services provided are considered much more relevant and appropriate to ask the customers to rate on rather than how well dressed staff are. This research has been about the provision of professional services where there is a general understanding that presentation and appearance of the personnel needs to be "professional". The researcher did not consider asking customers to rate the appearance of the pharmacists as important as asking them about significant aspects of service or services. Services which could be included under tangibles include: participation in ward rounds; review of medication charts; adverse drug reaction monitoring; therapeutic drug monitoring service; sterile / intravenous preparations. <sup>c</sup>

<sup>a</sup> As determined by Parasuraman, Zeithaml, Berry, (1985).<sup>b</sup> Some measures fall under more than one dimension of service quality, e.g. timeliness of response to general queries is a measure of reliability and responsiveness.<sup>c</sup> These services could also be included under the other dimensions as their provision helps determine the overall service which is aimed at meeting users needs and requirements.



which were chosen so as to include all aspects of pharmacy practice. They drew on earlier research by Cukierman-Wilson (1990), LaLonde and Zinser (1976), Coyle, Bardi and Langley (1996), Garvin (1987), Parasuraman, Zeithaml, Berry (1985, 1988), and Parasuraman, Berry and Zeithaml, (1991a, 1991b), along with discussions with hospital pharmacy practitioners, university academics and personal knowledge based on approximately 11 years in hospital pharmacy practice.

The performance of each pharmacy on 31 measure of customer service were rated by doctors and nurses.<sup>9</sup> For pharmacists, 33 measures of service were rated.

### 3.1.2.3 Choice of rating scale.

A ten point rating scale was chosen to enable respondents to rate each pharmacy's services (Chant, 1993). It was felt that such a scale would allow for a finer grading of ratings than by using a narrow scale (such as a five point scale), and would also be more suitable when applying multivariate statistical analyses to the data.

The scale used was made up of a combination of a *ratio* scale which allows for comparison to be made of differences in scores and magnitude of scores and a *nominal* scale which is a classification scale that measures "not applicable" and "no opinion" responses. The use of these two scales in the one question allowed a more accurate reflection of the position of each respondent with regards to the item being measured, but it resulted in more complicated statistical interpretation of the results.

Numerous studies reported in the literature used Likert scales, often 5 point<sup>10</sup> (Ware et al., 1983b; Rubin et al., 1990c; Meterko et al., 1990; MacKeigan and Larson, 1989; Larson and MacKeigan 1994; Airaksinen, Ahonen and Enlund, 1995; Tam and Lim, 1997).

Some of the studies in the literature did not allow respondents to indicate that they had no

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<sup>9</sup> In 1993/94.

<sup>10</sup> For example, strongly agree, agree, not sure-neutral, disagree, strongly disagree.

opinion thereby forcing them to choose an option listed. The problem with this is that if respondents are not sufficiently informed about the aspect being measured, but have to make a judgement because they are unable to indicate "don't know", their responses may not accurately reflect their perceptions or attitudes thereby creating a misleading database, which does not accurately reflect the true situation for respondents. Schuman and Presser (1996) stated that for virtually any question in a survey a possible reply is "don't know". They suggested that respondents should be allowed, even encouraged, to see this as a legitimate response in attitude surveys. Therefore, care was taken to develop questions reported in this thesis that were framed as objectively as possible, without bias and neutral in tone. Statements presented for doctors, nurses and pharmacists about the presence or absence of services, and the rating of the services, were simply listed without any positive or negative statement attached.

With regard to patient surveys, Schommer and Kucukarslan (1997) in their paper on the measurement of patient satisfaction with pharmaceutical services, state that "satisfaction measures defined from a health-system perspective force the respondent to make an evaluation that is limited to what the system has designated as important. Such measures of satisfaction provide only an illusion of patient-centered care and produce results that tend to endorse the status quo." They go on to add that "it has been argued that questionnaires that fail to take patients' perceptions and assessments of a service into account act as a form of censorship. Such questionnaires give misleading results, limit the opportunity of patients to express their concerns about aspects of care, and can encourage health care professionals to believe that patients are satisfied when they are actually highly discontented." When developing the questionnaires for patients, therefore, opportunity was provided to allow patients to comment on the hospital's pharmacy services.

#### **3.1.2.4 The questionnaire for doctors and nurses<sup>11</sup>**

The questionnaires for doctors and nurses were designed to determine their awareness

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<sup>11</sup> Only registered nurses were surveyed in this study. However, they will be referred to as nurses for the remainder of this thesis.

and perceptions of pharmacy services (what services they think their hospital pharmacy provides), and to determine their service requirements (what they think their hospital pharmacy should provide). In addition, the questionnaires also measured the performance of the pharmacy services by obtaining ratings to 31 measures of customer service.<sup>12</sup> Doctors and nurses were also required to rate the importance of the pharmacist as a member of the health team in their hospitals.

#### 3.1.2.5 The questionnaire for pharmacists.

A separate questionnaire was designed to determine the awareness pharmacists had of the availability of pharmacy services, as well as those services they believe should be provided. Twenty-four services were listed and respondents were able to include additional services that were not included in the list.<sup>13</sup> Pharmacists were also asked to rate how effective the performance of the pharmacy service at their hospitals was on 33 measures of service<sup>14</sup>, to rate pharmacists as members of the healthcare team in their hospitals, and to score the importance of 26 areas of knowledge or skills with regards to these areas being covered in the undergraduate education and pre-registration training of pharmacists to prepare them for work in hospitals.<sup>15</sup>

Even though different questionnaires were used for the doctors, nurses and pharmacists, key questions relating to services provided, services required and performance ratings were common to all three groups.

#### 3.1.2.6 The questionnaires for patients

The questionnaires developed for inpatients and outpatients are briefly discussed here but

<sup>12</sup> On a 10 point scale, where 0 was very poor performance and 10 excellent performance. They were able to indicate whether they didn't know or didn't wish to express an opinion, or if the service listed was not applicable at their hospital.

<sup>13</sup> In addition to the 23 services doctors and nurses were asked to indicate were provided or should be provided, an extra service, *training of pharmacy trainees and students*, was included for pharmacists.

<sup>14</sup> The 33 measures of customer service pharmacists were required to rate included two pharmacy specific measures related to *continuing education of staff pharmacists* and *education and training of non-pharmacist pharmacy staff*.

<sup>15</sup> The question regarding the importance of 26 areas of knowledge and skills required by pharmacists to prepare them for work in hospitals is not discussed in this thesis. A separate report was written and given to the Dean of the Victorian College of Pharmacy in February, 1996.

expanded upon in Chapter 6.

#### **3.1.2.6.1 The questionnaire for inpatients.**

A questionnaire was designed for inpatients. The first question sought to establish what knowledge patients had of the pharmacists' role within the hospital. Inpatients were then asked a number of questions to help identify their awareness of clinical ward pharmacists, a rating of the performance of pharmacists, and suggestions for improving the service. The questionnaire also sought to establish information regarding administration and explanation of medicines to patients.

#### **3.1.2.6.2 The questionnaire for outpatients.**

As well as seeking to ascertain outpatients' knowledge of the role of pharmacists within the hospital the questionnaire sought information on usage of the outpatient pharmacy service. Reasons for use of the service, waiting times, ratings of the pharmacy's performance, and suggestions for improvement of the service were amongst the issues addressed.

### **3.2 Pilot Study**

The questionnaires were extensively reviewed, modified and piloted at the Alfred Hospital in Melbourne in 1993. Twenty pilot questionnaires were distributed to doctors, nurses, pharmacists, inpatients and outpatients within the hospital. Respondents were asked to make comments regarding the questionnaires, such as whether they were easy to complete, if the questions were clear and easy to understand, and if the questionnaires were too long.

As a result of the pilot study, along with independent comments by an Australian market researcher with extensive experience in questionnaire design, and discussions with senior hospital pharmacists and academic staff in the Department of Pharmacy Practice at Monash University and the Business Faculty at RMIT University with experience in surveys, further modifications were made to the questionnaires (Chant, 1993; Hargreaves, 1993; Tong, 1993; Stewart, 1993; Chapman, 1993; Wilson, 1993).

### 3.3 Distribution of questionnaires and data collection.

In July 1993, directors of pharmacy in the hospitals were contacted by telephone to discuss the aims and purpose of the project, and their interest in participating in the study. The provision of inpatient and outpatient pharmacy services was determined.<sup>16</sup> Names of the Chief Executive Officer (CEO), Director of Medical Services (DMS), Director of Nursing Services (DON) and Quality Assurance Officer (QA) employed at their hospital were ascertained.<sup>17</sup>

During August 1993, a letter from the Dean of the Victorian College of Pharmacy, Monash University was sent to all the directors of pharmacy services, CEOs, DMSs and DONs in the hospital sample to be surveyed.<sup>18</sup> The letters outlined the purpose of the study and asked for their support with it. The letters also requested mailing lists of staff, the availability of a quality assurance officer who could assist with patient questionnaires, the number of doctors working at or servicing the hospitals, the number of registered nurses employed at the hospitals, the number of pharmacists employed at the hospitals (both full and part-time) and the number of inpatient beds available at the hospitals.<sup>19</sup>

Where possible, mailing lists of pharmacists, doctors and nurses employed at the hospitals were obtained to better target the survey. From the lists a random sample of doctors and nurses was drawn until the sample size quota was achieved and then questionnaires distributed to them through the mail to their respective hospitals. Directors of medical, nursing and pharmacy services were asked to distribute questionnaires where hospitals did not provide such lists. Quality assurance personnel employed at the various

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<sup>16</sup> Most smaller hospitals only provided an inpatient service.

<sup>17</sup> Support for the study was obtained from the principal administration, medical, nursing and pharmacy executives in the hospitals to be surveyed. It was decided to obtain support from the hospital executive as it was felt that given the size and scope of the study, their support would expedite the process as well as allay any concerns from the pharmacy directors regarding access to staff and patients at the hospitals.

<sup>18</sup> The letters to all the executive were signed by the Dean of the Victorian College of Pharmacy, who was the supervisor of this study, as it was felt that the study would be perceived as relevant, important and under the auspices of the Victorian College of Pharmacy, Monash University.

<sup>19</sup> A small questionnaire seeking this information was enclosed together with a free post envelope. The hospitals were requested to respond by 18 August 1993. The hospital executive (CEO, DMS and DON) were also sent a draft copy of each of the questionnaires so that they would be aware of the types of questions being asked.

hospitals and directors of nursing services were asked to distribute the questionnaires for patients.

All questionnaires were in a booklet format. Inside the front cover was a letter from the Dean of the Victorian College of Pharmacy addressed to the doctor, nurse, pharmacist, inpatient or outpatient, explaining the purpose of the study, enlisting their support and emphasising the confidentiality of the survey. The questionnaires were voluntary, and written or formal consent was not sought as the act of completing and returning the questionnaire was evidence of consent. A reply-paid, mail-back envelope was placed inside the front cover and questionnaires were issued in a sealed envelope to doctors, nurses and pharmacists (see Appendix 1).

Questionnaires began arriving back at the Victorian College of Pharmacy in November 1993 and data entry commenced in January 1994.<sup>20</sup> A flow chart of the study methodology is shown in Figure 3.2.

### 3.4 Data Analysis.

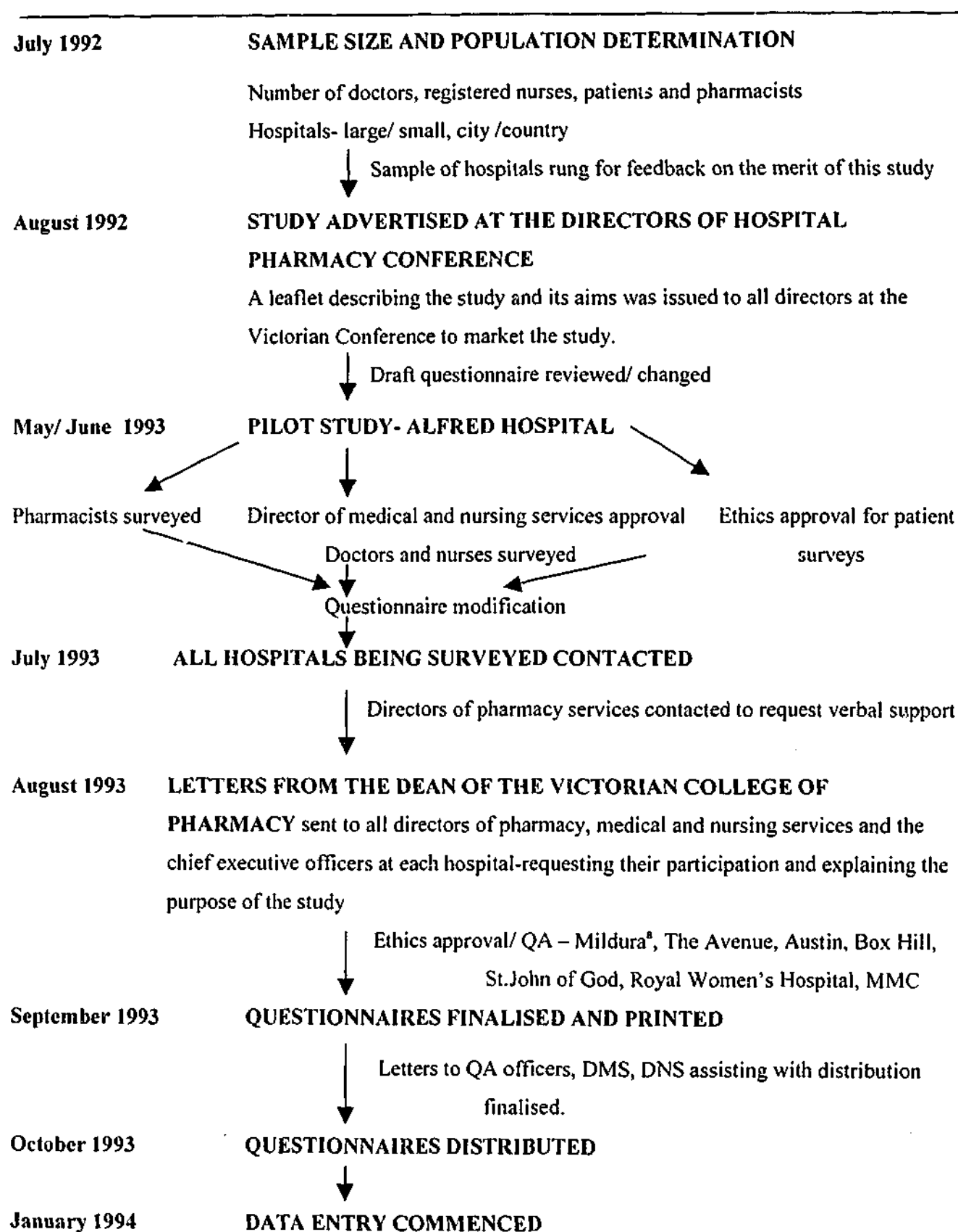
Data were coded and entered into a DBXL database. Subsequently, the database was transferred onto SPSS for Windows PC Version 6.1.3 for analysis using frequencies, cross-tabulations, comparison of means and chi-square for significance of the relationships, and independent sample t-test for equality of means. An analysis of variance was also conducted on ratings. Cronbach's alpha was used to test reliability. Data were also analysed using Excel Version 5.

The *a priori* level of significance was  $p < 0.05$ . Relationships examined included the influence of respondent type and hospital size and location on responses.

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<sup>20</sup> Even though surveys were given a reply by date in November they were still accepted early in 1994 as in a few cases hospitals had forgotten to distribute the surveys earlier and the reply by date was extended into early 1994.

Figure 3.2 Study Methodology (1993/94)



<sup>a</sup> The Director of Medical Services at Mildura Base hospital did not bring the project before the relevant committee in November, so the pharmacy department was only surveyed. In all other hospitals ethics or quality committee approval was granted.

### 3.5 The Second Survey

A statistically drawn random sample of 3,405 users of pharmacy services from a stratified random sample of 36 hospitals in Victoria were surveyed. One hundred and five questionnaires were returned unopened therefore the sample size was 3,300. The methodology undertaken for the second survey which was conducted in 1999/ 2000 was based on that developed for the first survey, and was undertaken to:

- (a) test the robustness of the Customer Service Model developed in the first survey.
- (b) determine whether customer requirements had changed over the previous 6 years.
- (c) measure change and its effects on services over the previous 6 years.
- (d) calibrate the survey instruments.<sup>21</sup> The calibration was done to fine-tune the terminology used in the questionnaires and to adapt the questionnaires to changes in practice over time in order to maintain their relevance.

The second survey targeted the same group of hospitals which took part in the first one because, by maintaining the stratified random sample originally drawn, it was felt that any changes within the organisations and the pharmacy departments themselves could be more accurately measured. Even though medical, nursing and pharmacy staff move over time, by maintaining the same hospital strata population this gave more opportunity to determine what had changed.

A flow chart of the study methodology used for the second survey is shown in Figure 3.3.

#### 3.5.1 Hospital networks

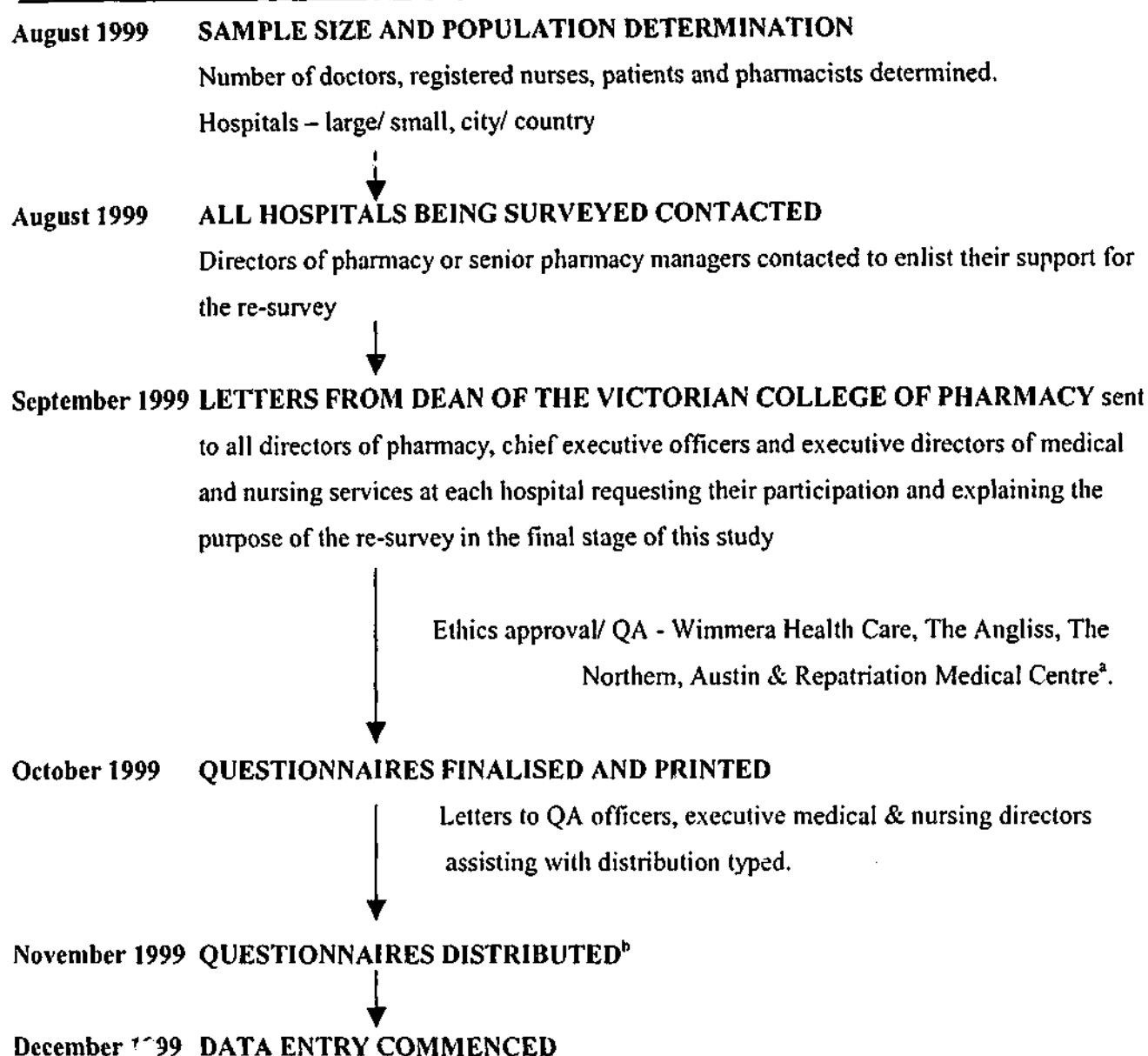
Amongst the changes made by the Government in Victoria following their election in 1993 were the abolition of Boards of Management in hospitals in Victoria and the establishment of Hospital Networks. The rationale behind this was that hospitals would operate as networks based on regions, and that new tiers of management would be established with a chief executive to oversee a group of hospitals within the network. As a consequence, the medical and nursing executives became network directors of medical

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<sup>21</sup> The term survey instrument is used in psychometric texts when describing the development, structure and content of the questionnaire. The terms survey instrument and questionnaire are used interchangeably in this thesis.



Figure 3.3 Study Methodology (1999/ 2000)



<sup>a</sup> The Austin and Repatriation Medical Centre ultimately decided that the survey was not an ethics issue but a quality management exercise.

<sup>b</sup> Some hospitals did not distribute questionnaires till December as they were awaiting internal ethics approval or due to time constraints, for instance some patient questionnaires were not issued till early in the new year because this was the earliest convenient time for hospitals to do so.

or nursing services, and network directors of pharmacy were created.

Some of the hospitals in the original sample became part of the hospital networks. In addition to these changes, some public hospitals were privatised, which meant that they were required to continue providing a service to public patients, but were run by private management.

Even though some of the hospitals involved in the second survey were part of the networks, or were privatised, they were still surveyed as separate institutions, with the exception of the Austin and Repatriation Medical Centre which was created by the amalgamation of the Austin Hospital and the Heidelberg Repatriation Hospital. This hospital requested being surveyed as one hospital.

### 3.5.2 Study population and sample size determination

The first survey provided results that identified differences in responses between doctors and nurses, and obtained a large number of responses from them to ratings of performance of the pharmacy departments on various measures of service. For the second survey it was decided that the sample size would be determined in such a way that the survey would be sensitive enough to detect changes in ratings of performance between the first and second surveys of 1 point (+1 or -1) on a rating scale.<sup>22,23</sup> This allowed the two sample t-test to be applied.

The size of "n" for the 2 sample t-test became:

$$n = \frac{(\sigma_n^2 - \sigma_o^2) (Z_{1-\alpha} + Z_{1-\beta})^2}{(\mu_n - \mu_o)^2} \quad \begin{array}{l} \sigma = \text{standard deviation} \\ (Z_{1-\alpha} + Z_{1-\beta}) = \text{multiplier for a significance} \end{array}$$

$\mu_n$  = new mean rating,  $\mu_o$  = original mean rating of 0.05 and power of 0.99.

If the standard deviations are equal

$$n = \frac{2\sigma^2 (Z_{1-\alpha} + Z_{1-\beta})^2}{(\mu_n - \mu_o)^2} \quad \begin{array}{l} \Delta (\text{delta}) = (\mu_n - \mu_o)^2 \text{ acceptable difference for} \\ \text{rating change} = 1 \end{array}$$

therefore for a significance of 0.05 and power of 0.99

$$n = \frac{2\sigma^2 \times 18.37}{1}$$

The largest standard deviation (3.52) obtained for a rating given by the doctors in the first survey was for the performance of the pharmacy service on *participation in ward rounds*. When substituted into the above formula:

<sup>22</sup> Personal communication, Ugoni, 1999.

<sup>23</sup> Rating changes from doctors and from nurses between the first and second surveys.

$$n = 2 \times 12.39 \times 18.37$$

$$= 455.2$$

$$= 456 \text{ doctors were required for a significance of } 0.05 \text{ and a power of } 0.99$$

This number of doctors would make the results from the second survey statistically powerful. As a 30% response was obtained from the first survey of doctors the plan was to survey 3x 456 doctors, or 1366 doctors in order to obtain the 30% response once again, however, 1,333 doctors were sent a questionnaire.<sup>24</sup>

In the case of the nurses, the standard deviation was also widest (3.64) for their ratings of the performance of the pharmacy service on *participation in ward rounds*. Therefore

$$n = \frac{2 \times 13.25 \times 18.37}{1}$$

$$1$$

$$= 487 \text{ nurses required for a significance of } 0.05 \text{ and a power of } 0.99.$$

As a response rate of greater than 50% was obtained in the first survey of nurses, the second survey targeted 2 x 487 or 974 nurses to obtain a 50% response again. However, 992 questionnaires were ultimately sent to nurses.<sup>25</sup>

Sample size calculation for patients, based on results from the first survey, resulted in the decision to survey approximately 140 inpatients and outpatients. Almost three times this number were ultimately targeted because a response rate of over 30% was obtained from outpatients and 50% from inpatients in the first survey. No formal hypotheses were tested to measure differences between the two studies because patients were required to rate an expanded list of measures of pharmacy service and pharmacist performance for the second survey. The sample size was determined to have a tight confidence interval so that the rating would be a good, tight estimate. With a narrow confidence interval, large numbers of patients were not needed to be representative of the patient population in hospitals. A confidence interval of 1.96 standard errors was used, which results in a

<sup>24</sup> Adjusted number of questionnaires distributed to doctors.

<sup>25</sup> Adjusted number of questionnaires distributed to nurses.

confidence interval of the mean of  $\bar{X} \pm 1.96\sigma/\sqrt{n}$ , where  $\bar{X}$  = mean

The width of the confidence interval is  $\Delta=1$  for this study

$$n = \left( \frac{2 \times 1.96 \times \sigma}{\Delta} \right)^2$$

For inpatients the widest standard deviation obtained in the first survey was 2.94 for the rating for advice given about how to take medication, therefore substituting this into the above formula,  $n = 133$ .

For outpatients the widest standard deviation from the earlier study was 2.67 for the rating of the waiting room facilities. Substituting this into the above formula results in  $n = 110$ .

Altogether 392 inpatient and 246<sup>26</sup> outpatient surveys were distributed to the participating hospitals.

Some smaller country hospitals amalgamated as part of the restructuring which occurred within the hospital system, or absorbed smaller hospitals into their groups. These are mentioned below, together with the hospitals surveyed and sample sizes (Table 3.5).

The population of doctors, nurses, pharmacists and available inpatients beds in public hospitals was compiled from information provided by the Victorian Department of Human Services Acute Health Division (1995/6, 1998).

Where information was incomplete, clarification was obtained from the executive of the hospitals.<sup>27</sup> Private hospital information was once again obtained from the Australian Private Hospital Association of Victoria (Jackson, 1999) and the hospitals themselves.

<sup>26</sup> The adjusted number of questionnaires sent to outpatients, 335 were originally distributed but 89 were returned unopened.

<sup>27</sup> The CEO, DMS, DON or director of pharmacy services.

Table 3.5 Hospitals surveyed and sample sizes (1999/2000)

HOSPITAL	POPULATION				SAMPLE				
	BEDS	DOCTORS	NURSES	PHARM <sup>a</sup>	IN PATIENT	OUT PATIENT	DOCTORS	NURSES	PHARM <sup>a</sup>
<b>LARGE CITY</b>									
AUSTIN REPAT <sup>b</sup>	613	640	1200	50	31	47	142	95	50
RMH <sup>j</sup>	384	650	900	42	20	38	145	71	41
MMC <sup>j</sup>	650	337	985	45	36	55	81	80	45
WESTERN <sup>j</sup>	348	278	696	17	18	30	62	56	17
CABRINI	354	300	650	10	18	27	67	52	10
DANDENONG <sup>j</sup>	360	117	400	15	18	0	26	32	15
RWH <sup>k</sup>	213	262	760	9	11	27	58	60	9
BOX HILL	312	321	700	8	16	24	71	56	8
EPWORTH	500	700	493	13	26	12	150	40	13
MAROONDAH	240	100	277	6	12	0	21	22	6
NORTHERN <sup>c,j</sup>	226	113	484	10	11	17	40	40	10
<b>LARGE COUNTRY</b>									
BENDIGO <sup>d</sup>	361	106	650	9	18	28	25	52	9
ST JOHN OF GOD	205	150	222	4	10	0	33	18	4
LATROBE REGIONAL <sup>e</sup>	257	200	300	11	13	0	45	24	11
GEELONG	388	273	552	18	20	30	61	44	18
WANGARATTA & DISTRICT BASE	206	74	334	5	10	0	16	27	5
<b>SMALL CITY<sup>h</sup></b>									
PETER MAC	151	118	223	13	0	0	0	0	13
AVENUE	126	300	115	5	0	0	0	0	5
ANGLISS	145	146	452	6	8	0	40	36	6
VALLEY PRIVATE	126	300	200	3	6	0	100	16	3
SANDRINGHAM <sup>i</sup>	94	100	200	3	6	0	22	16	3
KINGSTON CENTRE <sup>i</sup>	120	14	45	8	6	0	12	10	8
<b>SMALL COUNTRY</b>									
MILDURA BASE	119	55	176	3	6	0	12	14	3
HAMILTON BASE	176	45	150	2	9	0	10	12	2
WIMMERA HEALTH <sup>f</sup>	168	44	157	3	10	0	12	12	3
WODONGA DISTRICT	141	109	220	5	7	0	24	17	5
BAIRNSDALE RHS	169	39	156	2	10	0	9	12	2
COLAC	65	30	100	2	3	0	7	10	2
WEST GIPPSLAND <sup>g</sup>	80	-	-	-	0	0	0	0	0
SWAN HILL	79	28	82	1	5	0	6	7	1
ECHUCA	165	50	230	2	8	0	11	18	2
MT ALEXANDER	45	-	-	2	0	0	0	0	2
BENALLA	53	15	95	1	5	0	3	10	1
WONTHAGGI	117	12	92	2	7	0	3	7	2
GRACE MACKELLAR	51	90	171	4	0	0	20	14	4
STAWELL	40	9	27	1	4	0	3	6	1
WEST WIMMERA <sup>g</sup>	56	15	95	3	4	0	3	10	3

<sup>a</sup> Abbreviations: Pharm = pharmacists; RMH = Royal Melbourne Hospital (The); MMC = Monash Medical Centre; RWH = Royal Women's Hospital (The); Peter Mac = Peter MacCallum Cancer Institute; Sandringham = Sandringham and District Memorial Hospital; Wimmera Health = Wimmera Health Care Group; Bairnsdale RHS = Bairnsdale Regional Health Service; Colac = Colac Community Health Services Hospital; Echuca = Echuca Regional Health; Swan Hill = Swan Hill District; Wonthaggi = Wonthaggi and District; Stawell = Stawell District; West Wimmera = West Wimmera Health Service.

<sup>b</sup> Austin and Repatriation Medical Centre was previously the separate Austin hospital and Heidelberg Repatriation Hospital.

<sup>c</sup> The Northern hospital was built in Epping to replace PANCH (Preston and Northcote community hospital) which was subsequently closed when services shifted to the Northern.

<sup>d</sup> Bendigo Health Care Group resulted from the amalgamation of Bendigo Health Care Group and Anne Caudle Centre.

<sup>e</sup> Latrobe Regional Hospital was the result of the Moe and Traralgon campuses combining on one campus which was newly built and is now privately run.

<sup>f</sup> Wimmera Health Care Group is the amalgamation of the Wimmera and Dimboola hospitals.

<sup>g</sup> West Wimmera Health Service was the amalgamation of Nhill and Kaniva hospitals.

<sup>h</sup> Essendon and District hospital closed.

<sup>i</sup> The pharmacy service at the West Gippsland Health Care Group were out-sourced and privatised.

<sup>j</sup> The Royal Melbourne, Western and Northern hospitals were part of the North Western Health Care Network.

<sup>k</sup> The Royal Women's Hospital became part of the Women and Childrens Health Care Network.

<sup>l</sup> The Monash Medical Centre, Sandringham, Dandenong hospitals and Kingston Centre were part of the Southern Health Care Network. Nonetheless, each hospital was surveyed as a separate entity to allow for comparison with the earlier study.

Because of restructuring and closures which took place since the first survey, 37 hospitals remained in the sample. Furthermore, the West Gippsland hospital withdrew from the study after initially having agreed to take part because the Manager of Pharmacy Services resigned and the hospital executive were concerned about conducting a survey at their hospital because they had just completed one of their own. This left 36 hospitals<sup>28</sup> but only 33 allowed their medical, nursing and pharmacy staff to participate. The three remaining hospitals only allowed their pharmacists to be surveyed. Thirty-two of the hospitals allowed inpatients to be surveyed and 11 of these allowed their outpatients to be surveyed.

The required numbers of doctors and nurses for each hospital size and location are shown in Table 3.6.

Table 3.6 Respondent numbers required at the hospitals (1999/2000)

Survey group	Hospital size and location				
	Total	large city	large country	small city	small country
Doctors	456	283	60	72	41
Nurses	487	292	80	48	67
Pharmacists <sup>a</sup>	342	224	47	38	33

<sup>a</sup> All pharmacists were surveyed at the hospitals n=342.

### 3.5.3 Questionnaire development.

The four individual questionnaires developed for the first survey were once again used for the second one with some modifications to reflect newer services that hospitals were providing, refinement in terminology used based on learning and feedback during this

<sup>28</sup> Eleven large city hospitals, 6 small city hospitals, 5 large country hospitals and 14 small country hospitals.

period (Wilson et al. 2000a; Tong, 1998; Tsui, 1998), and to allow ICD10-AM<sup>29</sup> categorisation of services to be utilised. Copies of questionnaires are provided in Appendix 3.

### 3.5.3.1 The questionnaire for doctors and nurses

The question in the first survey that asked doctors and nurses which services they believed were provided at their hospitals was omitted. All other questions were retained but some were modified.

The question regarding *sterile preparations/ intravenous preparations* services was broken into *sterile manufacture: intravenous preparations* and *sterile manufacture: cytotoxics*, similarly *pharmacy purchasing* was changed to read *pharmacy controls and performs drug purchasing*, and *pharmacy store* became *pharmacy store (bulk storage, reserve stock)* for added clarity. *Adverse drug reaction monitoring* became *adverse drug reaction monitoring/ management* so as to be in-line with the ICD10-AM terminology.

*Medication history interview*, *drug usage evaluation* and *hospital in the home* were added as further services.

These modifications resulted in a total of 27 services being listed. Additional space was once again provided for any further services to be added by respondents.

In the questions asking respondents to rate the effectiveness of the performance of the pharmacy service *medication history interview* was added and *sterile preparations/ intravenous preparations* was broken into *sterile manufacture: intravenous preparations* and *sterile manufacture: cytotoxics*.

<sup>29</sup> ICD10-AM is an Australian modification (from the Nation Centre of Classification in Health) of the "International Statistical Classification of Diseases and Health related Problems (ICD)" where ICD-10 is a clinical classification of morbidity and mortality. The Australian version contains additional classifications for medical procedures and allied health interventions. ICD-10-AM contains pharmacy specific activity codes which provide a framework for (clinical) activity documentation (McLennan and Dooley, 2000) and was not available in 1993.

In order to measure and determine the changes which had occurred since the first survey two new questions were included. The first asked respondents to list the main factors that had changed over the past 6 years in the way the pharmacy service operates at their hospitals, and they were then required to indicate the effect these changes had on services. The second question asked them whether the pharmacy service at their hospital had improved, stayed the same or was worse then 6 years ago or up to a 6 year period.

Questions were framed in a neutral manner so as to not suggest possible responses because it was felt this method of inquiry would better determine change and not insinuate responses.

A further question was added to the questionnaire asking respondents to rate the *overall service provided by their hospital's pharmacy* and was done to clearly determine their perceptions of the service.

#### **3.5.3.2 The questionnaire for pharmacists**

All the same changes made to the questionnaires used for doctors and nurses were made to the questionnaire to pharmacists.

#### **3.5.3.3 The questionnaires for patients**

The questionnaires for patients are briefly discussed here but expanded upon in Chapter 6. The question, common to both inpatients and outpatients in the first survey, that asked patients to indicate from a list provided which services or activities they thought pharmacists do in their hospitals, was omitted because responses received in the first survey indicated they had a satisfactory understanding of this.

##### **3.5.3.3.1 The questionnaire for inpatients**

The inpatient questionnaire was the same as the one used in the first survey, except for a new question which asked inpatients *what services or information they want from their hospital pharmacy* and a few more measures were included to rate the pharmacy's performance (see Appendix 3).



#### 3.5.3.3.2 The questionnaire for outpatients

The outpatient questionnaire was the same as the one used in the first survey, except that there was the addition of another two questions which asked outpatients *how important a number of listed pharmacy services were to them* and *what services or information they want from the pharmacy at their hospital*. The list of services upon which outpatients were asked to rate the pharmacy's performance was also expanded to incorporate services which they were asked to rate in terms of importance (see Appendix 3).

#### 3.5.4 Distribution of questionnaires and data collection

Contact was made with the directors of pharmacy services or senior pharmacy managers at each of the hospitals in early August 1999 to inform them of this study and once again obtain their support. Any changes in senior executive staff at the hospitals was noted.

Letters from the Dean of the Victorian College of Pharmacy were sent to all directors of pharmacy in the hospitals in early September 1999, and to chief executive officers and the executive medical and nursing directors in mid-September to inform them that this was the final stage of a research project, and to once again enlist their support and assistance with the study.

Distribution of questionnaires was as described for the first study.<sup>30</sup>

Hospital executives were asked for numbers of staff at their hospitals because the Victorian Department of Human Services Acute Health Division (1995/6) publication of Hospital Comparative Data listed numbers by Effective Full Time (EFT) employment and in many hospitals the real numbers were much larger when taking into account part-time staffing situations. This was particularly so for nursing and pharmacist numbers.

Questionnaires were distributed to patients by nursing or quality managers. Intensive care

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<sup>30</sup> Contact was made with senior hospital executives and quality assurance managers at each hospital to 'fine-tune' the processes regarding coordination and distribution of questionnaires. This resulted in a more wide-spread support for the whole study.

patients, patients in isolation<sup>31</sup>, and psychiatric patients were not given the questionnaires. Questionnaires to outpatients were distributed over a period of one week, or longer if a large number of surveys were being issued, so as to capture the spectrum of patients attending the hospital for various services or clinics.

Questionnaires were finalised and printed in a booklet format, along the lines of the first survey, in late October 1999. Inside the front cover was a letter from the Dean of the Victorian College of Pharmacy addressed to all participants, explaining the purpose of the study, enlisting their support, and emphasising the voluntary nature and confidentiality of the survey. A complaints clause was included on the front cover of each questionnaire following a directive from Monash University Human Ethics Committee. Distribution of questionnaires commenced early November 1999.

All questionnaires included a reply-paid envelope for completed questionnaires to be mailed back to the university, and those for doctors, nurses and pharmacists were issued in a sealed envelope.

Data entry began early December 1999 and continued in 2000 because some respondents took their time in sending questionnaires back.

### **3.5.5 Follow up**

Follow up was not undertaken in both surveys. Instead, the senior staff at each of the hospitals was urged to encourage personnel under their management to complete the questionnaires, and a satisfactory response rate was ultimately achieved.

### **3.5.6 Data Analysis**

Data were coded and entered into an Excel database which was subsequently transferred onto SPSS for Windows PC Version 10 for analysis. Data were also analysed using Excel Version 7. Analysis undertaken was as described previously (Section 3. 4).

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<sup>31</sup> For instance, burns patients or those being barrier nursed due to infections.

### 3.6 Reliability and Validity

The reliability and validity refers to the section of the questionnaires where doctors, nurses and pharmacists were required to rate how effective the performance of the pharmacy service was on various measures of customer service, and are discussed more comprehensively in Chapter 7. However, the reliability and the types of validity that need to be considered in the development of questionnaires are briefly discussed in this section.

#### 3.6.1 Validity

Validation is inquiry into the soundness of interpretation (Cronbach, 1990). The measuring instrument is not validated but rather the use to which the instrument is put (Nunnally (1972). It concerns what the test measures and how well it does so (Anastasi, 1988). The validation process involves testing the instrument in the population for which it is to be used to ensure the responses are a true reflection of the variables or attributes of interest (Smith, 1997b). Three types of validity are commonly discussed in the literature: criterion-related; content-related; and construct-related. Another type of validity, face validity, is also mentioned in the literature but this does not refer to what the test actually measures, rather what it appears superficially to measure: it is concerned about whether the test or instrument "looks valid" to those completing it, to untrained observers, or those choosing to use it (Anastasi, 1988). This was considered in the development of the questionnaires for this research study, both in the design phase and when they were piloted through feedback from customers and colleagues.

##### 3.6.1.1 Criterion-related validity and validation

Criterion-related validity refers to the extent to which the instrument or questions correlate with other measures of the same variable. To demonstrate criterion validity, the results are compared with established methods of collecting the same information (Smith, 1997b).<sup>32</sup> There are two types of criterion-related validity: predictive validity that is more concerned with the predictive ability of the test; and concurrent validity that assesses the

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<sup>32</sup> Criterion-related validity is studied by comparing tests or scale scores with one or more external variables, or criteria, known or believed to measure the attribute under study (Kerlinger, 1973).

simultaneous relationship between the test and the criterion. The questionnaires designed for the customer service study reported here were developed to evaluate customer service, rather than act as predictors of some behaviour or measurement. Therefore consideration of criterion-related validity is not relevant to the validity of the questionnaires used in this study.

### **3.6.1.2 Content-related validity**

Content validity is the level of representation or sampling adequacy of the content, the substance, the matter, and the topics of a measuring instrument (Kerlinger, 1973). Therefore, in terms of hospital pharmacies, do the instruments and sampling of questions adequately consider the scope of customer service and pharmacy services as applied to pharmacists in a hospital? Do the questionnaires allow a range of responses that will accurately reflect respondents views? Are respondents given the opportunity to express their views?

Content-related validity is associated with judgement: judgement of the researcher or others about the relevance of items included in the instrument (Kerlinger, 1973).

Two major standards for ensuring content-related validity are a representative collection of items and "sensible" methods of test construction (Nunnally, 1972). The questionnaires developed for the research reported in this thesis were reviewed by a leading Australian market researcher with extensive experience in questionnaire design and application, by university academics with extensive experience in questionnaire development and use, and by leading hospital pharmacists (Chant, 1993; Stewart, 1993; Wilson, 1993; Chapman, 1993; Brien, 1993; Hargreaves, 1993; Tong, 1993; Lyall, 1993; Tong, 1998; Tsui, 1998; Stewart, 1999; Brien, 1999; Chapman, 1999; Wilson, 1999). The content-related validity is based on the theoretical development of measures of customer service which were discussed in Chapter 2, and Table 3.4.

Opportunity was provided for respondents to express their views in each of the

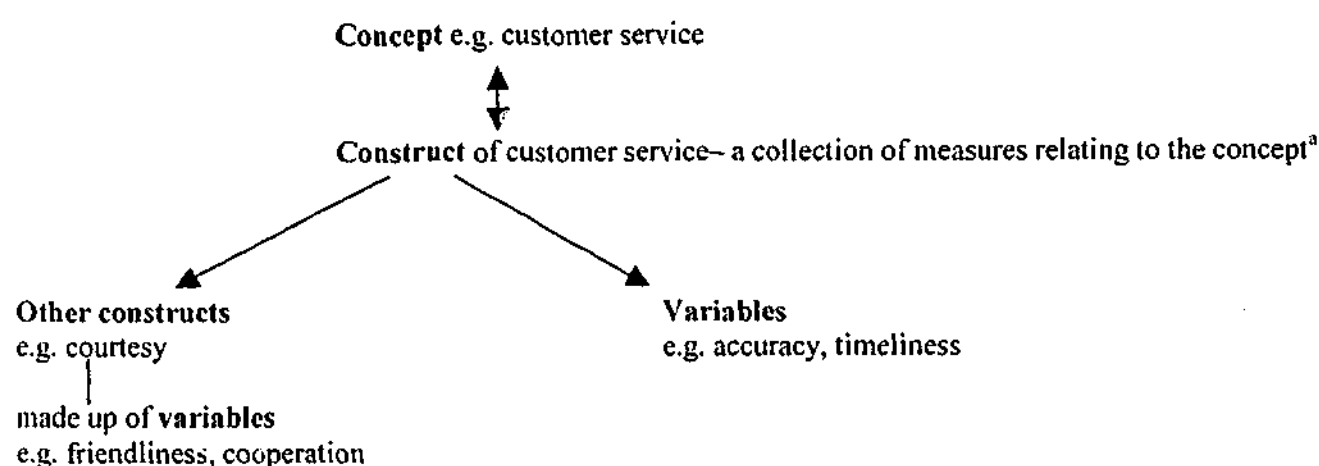
questionnaires developed. Only three respondents, all doctors, chose to criticise the questionnaires in this study.

### 3.6.1.3 Construct-related validity

The construct-related validity of a test is the extent to which it may be said to measure a theoretical construct or trait (Anastasi, 1988), or whether a question or a group of questions corresponds to what is understood by a construct or concept (Smith, 1997b). In terms of this research, do the questionnaires developed really measure customer service?<sup>33</sup> Ideally it can be argued that the test needs to be sensitive enough to measure change in the construct over time so that the questionnaire maintains its validity on reapplication.<sup>34</sup>

A construct is made up of characteristics or traits that are measured by questions. The characteristics or traits are measured as variables, therefore a construct is made up of a collection of variables. Variables are things which can be measured and by definition change with individuals (respondents) due to their different experiences and perceptions. A construct can also be considered an operational definition of a concept as illustrated in Figure 3.4.

Figure 3.4 Relationship between concept, construct and variables



<sup>a</sup> The construct can be made up of variables or other constructs which in turn are made up of variables.

<sup>33</sup> For a further explanation of Construct validity see Trochim, 2002.

<sup>34</sup> This also tests the reliability of the questionnaire which is concerned with the results being reproducible on reapplication of the questionnaire.

The concept or main construct under consideration in this thesis is customer service and is made up of underlying constructs or variables as shown in Table 3.4 (dimensions of service quality) and expanded upon in Chapter 7. The constructs used in the questionnaires were developed from the customer service, service quality and total quality management literature.<sup>35</sup> The construct of customer service is best developed by variables that can be directly measured, such as accuracy of dispensing, or measures of service time. In the outpatient questionnaire, the construct of time is addressed by asking patients about waiting-time for prescriptions.

Kerlinger (1973) notes that factor analysis is a powerful method of construct-related validation. However, this was not applied to the questionnaires reported in this thesis because a significant number of respondents chose not to rate services. Instead, they responded with "no opinion" or "not applicable", responses which are categorical and not subject to factor analysis. Correlation coefficients were therefore used to determine the groupings of measures developed to define characteristics of customer service.

Convergence and discriminability are required in construct validation. Convergence means that evidence from different sources gathered in different ways indicate the same or similar meaning of the construct. Different methods of measurement should converge on the construct. The evidence yielded by administering the measurement to different groups in different places should yield similar meanings or, if not, should account for differences (Kerlinger, 1973).

Discriminability means that one construct can be differentiated from others that may be similar, and that variables which are uncorrelated with the construct are identified (Kerlinger, 1973). For example, the variable *medical knowledge of the pharmacist* would not be expected to correlate highly with *after hours service*. However, *cooperation of the*

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<sup>35</sup> Parasuraman, Berry and Zeithaml, (1985); Murdick, Render and Russell (1990); Garvin (1987); Coyle, Bardi and Langley (1988) (1996); Zemke and Schaaf, 1990; Albrecht and Zemke, 1985; Crosby, 1979.

*pharmacy staff* would be expected to correlate highly with *friendliness of the pharmacy staff*, both of which were developed to measure the construct of courtesy in the questionnaires.<sup>36</sup>

Construct-related validity was addressed in this thesis by correlating the various measures of customer service with each other to see whether those which correlated highly with each other were indeed those designed to measure a particular construct.

The second survey provided the opportunity to test the validity and reliability of the questionnaires and obtained results consistent with the first survey, showing that questionnaires were sensitive enough to measure change, but provided consistent results over time.

The questionnaires used for both the inpatients and outpatients also sought ratings of the performance of pharmacists or pharmacies, and were based on constructs of customer service as previously discussed for the doctors, nurses and pharmacists. However, the questionnaires were of a more exploratory nature aimed at developing an understanding of patients' requirements and perceptions of hospital pharmacy services and were not of such an extensive and comprehensive nature as those used for the doctors, nurses and pharmacists.

### 3.6.2 Reliability

Reliability is considered the accuracy or precision of a measuring instrument (Kerlinger, 1973), or the relative absence of errors of measurement (Nunnally, 1972). It relates to the extent to which the findings are repeatable, reproducible or internally consistent. (Smith, 1997b). A survey instrument can be highly reliable but not valid, but to be highly valid it needs to be highly reliable (Nunnally, 1972).<sup>37</sup>

Poor reliability can be due to ambiguity in wording of questions, inconsistent

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<sup>36</sup> A dimension of quality services (Parasuraman et al, 1985).

<sup>37</sup> The instrument may not actually be measuring what it has been designed to measure.

interpretation of questions, variation in the administration of questionnaires, and the inability of respondents to provide accurate information resulting in guessing or estimates. Reliability of a survey instrument can be improved by increasing the length of the instrument because this reduces errors due to guessing, sampling of the content and fluctuations in the individual (Nunnally, 1972).<sup>38</sup>

One of the reasons for conducting a second survey was to test the reliability of the original questionnaires. If results showed consistency and stability over time, and were not dramatically different from those initially obtained, this indicated that the questionnaires were probably reliable.

One of the most commonly used reliability coefficients is Cronbach's alpha, a statistical measure that reflects the correlations between questionnaire items which are intended to be part of the same measure (Smith, 1997b) and is used to measure the internal consistency of an instrument. This measure was applied to the results from the first and second surveys. Researchers employing this method generally consider a figure of not less than 0.7 as acceptable (Smith 1997b), with some of the better standardised instruments having a reliability coefficient over 0.90 (Nunnally, 1972). Reliability estimates in the range of 0.70 to 0.80 are good enough for most purposes in basic research (Kaplan and Saccuzzo, 1989).

The Cronbach's alpha obtained for the measures of customer service for the first survey was 0.961 for doctors and 0.965 for nurses, and in the second survey the figures were 0.957 and 0.968 respectively. This demonstrates that the questionnaires are reliable.

The combination of the two surveys has confirmed the survey instruments as being consistent, reliable and valid. This will be elaborated upon in Chapter 7.

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<sup>38</sup> If more questions are included in a questionnaire this enables a more complete analysis of the topic being studied (a broader sampling of the content). Fluctuations in the individual refer to random effects acting on the respondent such as being momentarily distracted.



## CHAPTER 4

### THE 1993/ 1994 SURVEY

#### 4.0 Introduction

This chapter presents the results and associated discussion from the first survey and is divided into three sections. The first examines the awareness of services provided by hospital pharmacists, along with the services the major customer groups: doctors, nurses and pharmacists believed should be provided. The second examines the performance ratings of the hospital pharmacies on various measures of customer service by these same three groups, and the final section documents the perceived importance of the pharmacist as a member of the healthcare team. The results from the patients are presented and discussed in Chapter 6.

#### 4.1 Response rates and respondent demographics

The response rate for the hospital pharmacies was 100% of hospitals targeted but the rate for the pharmacists as individuals was 63.7%, a response rate considered adequate given that the survey was a one hit, no follow up study.<sup>1</sup> The results were considered representative because responses were obtained from each hospital in the survey and included pharmacists of all ranks and experience.<sup>2</sup>

The response rate for doctors was 32.4% and 55.8% for nurses, with an overall response rate for both of 44.6%. The majority of respondents were from large city hospitals (Table 4.1).

**Table 4.1 Questionnaires sent and respondent numbers**

Survey group	Hospitals								Total	
	Large city sent	Large city responded	Large country sent	Large country responded	Small city sent	Small city responded	Small country sent	Small country responded	sent	responded
doctors	1283	402	152	62	259	63	213	91	1907	618
nurses	1335	701	209	130	150	95	383	234	2077	1160
pharmacists	211	137	30	19	42	20	48	35	331	211

<sup>1</sup> Follow up was not undertaken because hospitals were undergoing major restructuring in 1993/94 and the hospital executives who assisted with distribution of questionnaires were reluctant to take on any extra work which could impose on their time.

<sup>2</sup> The number of pharmacists originally targeted, (n=331), represented over half the number of practising hospital pharmacists in Victoria at the time of the study.

The ages of pharmacists ranged from 20 to 70 years, with most being under 50 years of age, and 31% were male.

Most doctors were male (80.6%)<sup>3</sup> and their ages ranged from 20 to over 70 years of age, with over 75% being under 50 years old. The most common type of doctors were consultants followed by registrars and resident medical officers, with medical administrators, professors, heads of departments, general practitioners and visiting medical officers also being represented.<sup>4</sup>

Over 90% of nurses were female, and their ages ranged from 20 to over 70 years, with the majority being under 50 years (over 90%). The most common nurses were registered nurses followed by associate charge nurses and charge nurses/ nursing officers. Other categories included nursing administrators, nurse educators, midwives, clinical nurse specialists/ consultants and heads of department.

The average length of employment of the pharmacists in this survey at their particular hospitals is shown in Table 4.2<sup>5</sup>. The average time they had been practising in hospital pharmacy was 11.4 years, (standard deviation 7.8 years, range 6 months to 36 years).<sup>6</sup> Most pharmacists were working full-time (76.6%).

The length of time doctors and nurses were employed at the various hospitals (Table 4.2) suggests sufficient opportunity had existed for them to have developed awareness of the various pharmacy services.

**Table 4.2 Length of employment of respondents at their hospitals**

Respondent type	Mean (years)	Standard deviation (years)	Range
Doctors <sup>a</sup>	8.23	8.21	1 month to 40 years
Nurses <sup>a</sup>	6.39	5.31	1 month to 49 years
Pharmacists <sup>a</sup>	7.26	6.09	1 month to 30 years 2months

<sup>a</sup> for doctors n=542, for nurses n=1110, and for pharmacists n=205 respondents.

The average length of employment of doctors and nurses was slightly longer in country

<sup>3</sup> Of 607 responses.

<sup>4</sup> Most residents, registrars, consultants, and heads of department indicated their frequency of contact with the pharmacy departments were from one to more than five times a week. Some doctors classified their position as a combination of options listed e.g. consultant and visiting medical officer, head of department and professor and consultant.

<sup>5</sup> Length of employment at the hospital in which they were taking part in the survey.

<sup>6</sup> The total length of time they had been practicing in hospital pharmacy which included work at any other hospitals at any other time.

hospitals than city hospitals, whereas for pharmacists employment was longer in large hospitals than in small hospitals in both the city and country (Table 4.3).

**Table 4.3 Length of employment of respondents by hospital size and location**

Respondent type	Large city			Large country			Small city			Small country		
	mean years	std dev <sup>a</sup>	n <sup>b</sup>	mean years	std dev <sup>a</sup>	n <sup>b</sup>	mean years	std dev <sup>a</sup>	n <sup>b</sup>	mean years	std dev <sup>a</sup>	n <sup>b</sup>
doctors	8.03	7.98	363	10.21	9.27	52	5.45	5.22	47	9.53	9.43	80
nurses	5.60	4.44	670	8.51	7.18	126	4.07	3.13	92	8.52	6.11	222
pharmacists	7.65	6.33	133	7.87	7.64	18	7.01	5.71	20	5.54	4.02	34

<sup>a</sup> std dev = standard deviation (years)

<sup>b</sup> n = number of respondents who responded to this question

Most doctors and nurses had regular contact with staff in the pharmacy department of their hospital (Table 4.4).<sup>7</sup>

**Table 4.4 Frequency of contact by doctors and nurses with their hospital's pharmacy department<sup>a</sup>**

Frequency of contact	Doctors <sup>b</sup> (%)	Nurses <sup>c</sup> (%)
More than five times a week	39.3	55.5
One to five times a week	33.4	32.3
Less than once a week	16.7	5.5
Less than once a month	7.7	3.6
Other (yearly)	0.8	1.3
Never	2.1	1.7

<sup>a</sup> contact of any sort (including written communications, prescriptions, telephone and face to face).

<sup>b</sup> percentage of 611 respondents. <sup>c</sup> percentage of 1155 respondents

#### **4.2 Awareness of services provided and service requirements: pharmacists<sup>8</sup>**

The services pharmacists thought were provided by their hospital pharmacies and the ones they believed should be provided are listed in Table 4.5.

For the purpose of this study, the services being evaluated are commonly provided by pharmacy departments, as discussed earlier.

When pharmacists were asked to indicate whether a particular service should be provided, as distinct from whether they thought it was already provided, more of them

<sup>7</sup> Even though the type of contact the doctors and nurses were able to indicate they had with the pharmacy department ranged from face to face to writing prescriptions, and in the case of doctors the latter option was most common, doctors and nurses should be informed and aware of pharmacy services offered because medications are a core component of treatment in hospitals. If doctors write prescriptions for hospital patients then they should have been informed sufficiently about what services the pharmacies provide so that they can expect the medications ordered to be available and readily supplied. This should be irrespective of whether they have face to face contact with a pharmacist or tap into the pharmacy system through another means (telephone, prescriptions or hand delivered queries or instructions).

<sup>8</sup> The awareness that "customers" have of services is based upon their perceptions of the services. See footnote 5, Chapter 3.

Table 4.5 Service awareness and requirements for pharmacists <sup>a</sup>

Service	Does hospital provide the service?				Should hospital provide the service?			
	Yes	No	DK <sup>b</sup>	Yes	Yes	No	DK <sup>b</sup>	Yes
	Number of respondents			(%) <sup>c</sup>	Number of respondents			(%) <sup>c</sup>
Outpatient dispensing	190	20	0	90.5	183	21	3	88.4
Inpatient dispensing	210	1	0	99.5	207	2	0	99
Sterile/ intravenous preparations	192	19	0	91	198	9	1	95.2
Drug information	208	3	0	98.6	208	0	1	99.5
Participation in ward rounds	152	54	2	73.1	200	6	3	95.7
Review of medication charts	206	5	0	97.6	207	1	1	99
Adverse drug reaction monitoring	195	15	0	92.9	209	1	0	99.5
Intervention in/ monitoring patient drug therapy	203	7	0	96.7	208	1	0	99.5
Imprest <sup>d</sup>	205	6	0	97.2	205	3	1	98.1
Manufacturing (non-sterile-eg. creams, lotions, mixtures)	208	3	0	98.6	199	8	2	95.2
Therapeutic drug monitoring	177	33	0	84.3	204	1	4	97.6
Dispensing for hospital staff	170	40	1	80.6	164	36	9	78.5
Pharmacy purchasing	208	2	0	99	208	0	1	99.5
Pharmacy store	201	8	1	95.7	204	1	4	97.6
Discharge medication counselling	199	12	0	94.3	209	0	0	100
Patient information and education on drugs/ medicines	199	10	1	94.8	209	0	0	100
Pharmacy publications/ bulletins	174	35	2	82.5	204	4	1	97.6
Drug education for hospital staff-informal	197	9	5	93.4	207	1	1	99
In-service, structured lectures for hospital staff	179	24	7	85.2	204	2	4	97.1
Training of pharmacy trainees and students	183	28	0	86.7	190	18	1	90.9
Seven day a week service	154	55	0	73.7	177	24	8	84.7
Research activities / opportunities	123	71	14	59.1	176	20	10	85.4
Clinical trial support	169	40	2	80.1	187	20	2	89.5
Drug cost monitoring	189	14	8	89.6	204	2	3	97.6

<sup>a</sup> n=211; <sup>b</sup> DK= don't know; <sup>c</sup> Valid % of respondents i.e. excludes missing values; <sup>d</sup> Imprest is a ward stock of frequently used medications that are re-stocked by the pharmacy department on a regular basis.

indicated that the service should be provided, with the greatest increases being *participation in ward rounds* and *research activities/ opportunities*. The exceptions were *outpatient* and *inpatient dispensing*, *manufacturing*, and *dispensing for staff*, which all showed a decrease. The "don't know" response increased slightly for 13 of the 24 services listed, most noticeably for *dispensing for hospital staff*, *manufacturing*, *outpatient dispensing*, *therapeutic drug monitoring*, provision of a *pharmacy store* and a *seven day a week service*.

Statistical analysis showed some hospital effects on answers given by pharmacists (Table 4.6) and these effects are evident when examining Tables 4.7 and 4.8.<sup>9</sup>

<sup>9</sup> Chi-square

Table 4.6 Services with hospital size and location influence <sup>a, b</sup>

Services pharmacists believe are provided	Services pharmacists believe should be provided
Sterile/ intravenous preparation	Outpatient dispensing
Drug information service	Sterile/ intravenous preparations
Participation in ward rounds	Intervention in/ monitoring of patient drug therapy
Review of medication charts	Imprest
Imprest	Manufacturing
Manufacturing	Dispensing for hospital staff
Therapeutic drug monitoring	Seven day a week service
Dispensing for hospital staff	Research activities/ opportunities
Pharmacy store	Clinical trial support
Discharge medication counselling for patients	Training of pharmacy trainees and students
Patient information and education on drugs/ medicines	
Pharmacy publications/ bulletins	
Drug education for hospital staff- informal	
In-service, structured lectures for hospital staff	
Seven day a week service	
Research activities/ opportunities	
Clinical trial support	
Drug cost monitoring	
Training of pharmacy trainees and students	

<sup>a</sup> Significant hospital effect,  $p < 0.05$ , chi-square test.

<sup>b</sup> No significant hospital effect was seen for those services listed in Table 4.5 and not included in Table 4.6.

The results show that from the perspective of pharmacists large city hospitals provided a more extensive range of services than did large country and small hospitals, with large hospitals providing more services than small ones.<sup>10</sup> The service mix provided also tended to vary according to hospital size and location.<sup>11</sup>

The range of services pharmacists from all hospitals believed should be provided were more extensive than those they thought were available, with pharmacists from large hospitals indicating that a wider range of services should be offered than did their counterparts in small hospitals.

<sup>10</sup> This can be seen when considering the numbers of services which 90% or more of pharmacists indicated were provided at their hospitals.

<sup>11</sup> These were: *ward round participation; pharmacy publications and bulletins; research activities and opportunities; clinical trial support; seven-day-a-week service; outpatient dispensing, sterile or intravenous preparations; therapeutic drug monitoring; dispensing for hospital staff, and training of pharmacy trainees and students* which were less common in small hospitals.

The provision of *in-service and structured lectures, and informal drug education to hospital staff* was less from small city hospitals on the whole.

It is not clear whether respondents interpreted *outpatient dispensing* as being accident and emergency dispensing or formal outpatient clinic dispensing, or if they included on-call services as part of a *seven day service*, which may colour the responses to some degree on these services.

Table 4.7 Pharmacists' awareness of existing hospital pharmacy services <sup>c</sup>

Hospital															
Large city				Large country				Small city				Small country			
Service <sup>a</sup> (sorted)	%	%	DK <sup>b</sup>	Service <sup>a</sup> (sorted)	%	%	DK <sup>b</sup>	Service <sup>a</sup> (sorted)	%	%	DK <sup>b</sup>	Service <sup>a</sup> (sorted)	%	%	DK <sup>b</sup>
Inpatient dispensing	100			outpatient dispensing	100			Inpatient dispensing	100			drug information	100		
Drug information	100			inpatient dispensing	100			Review med. chart	100			review med. chart	100		
Review med chart <sup>b</sup>	100			sterile preparations	100			Drug information	95	5		imprest	100		
Imprest	100			manufacturing	100			Intervention/ monitoring	95	5		purchasing	100		
Manufacturing <sup>b</sup>	100			staff dispensing	100			Purchasing	95	5		staff drug education	100		
Pharmacy store	100			purchasing	100			Imprest	90	10		inpatient dispensing	97.1	2.9	
Medication counselling <sup>b</sup>	100			staff drug education	100			Manufacturing	90	10		manufacturing	97.1	2.9	
Sterile preparations <sup>b</sup>	98.5	1.5		training	100			Patient info & education	90	10		intervention/monitoring	94.3	5.7	
Intervention/ monitoring <sup>b</sup>	98.5	1.5		pharmacy store	94.7	5.3		ADR monitoring	85	15		ADR monitoring	85.7	14.3	
Purchasing	99.3	0.7		lectures	94.7		5.3	Pharmacy store	85	10	5	pharmacy store	85.7	14.3	
Patient info & education <sup>b</sup>	99.3	0.7		seven day service	94.7	5.3		Medication counselling	85	15		medication counselling	85.7	14.3	
Training <sup>b</sup>	99.3	0.7		drug information	89.5	10.5		Outpatient dispensing	80	20		patient info & education	85.7	11.4	2.9
Outpatient dispensing	97.1	2.9		ADR monitoring	89.5	10.5		Staff drug education	75	20		lectures	85.7	11.4	2.9
ADR monitoring <sup>b</sup>	96.3	3.7		intervention/monitoring	89.5	10.5		Drug cost monitoring	75	20		drug cost monitoring	85.7	11.4	2.9
Pharmacy bulletins <sup>b</sup>	96.4	2.9	0.7	clinical trial support	89.5	10.5		Sterile preparations	65	35		sterile preparations	71.4	28.6	
Clinical trial support	95.6	4.4		TDM <sup>b</sup>	84.2	15.8		TDM <sup>b</sup>	63.2	36.8		TDM <sup>b</sup>	68.6	31.4	
Drug cost monitoring	95.6	2.2	2.2	patient info & education	84.2	15.8		Staff dispensing	60	40		outpatient dispensing	64.7	35.3	
Staff drug education <sup>b</sup>	93.4	3.6	2.9	imprest	78.9	21.1		Lectures	50	50		pharmacy bulletin	60	37.1	2.9
Staff dispensing	92	7.3	0.7	medication counselling	78.9	21.1		Training	40	60		training	57.1	42.9	
Ward round participation	91.2	8.1	0.7	pharmacy bulletin	78.9	21.1		Ward round participation	35	65		seven day service	52.9	47.1	
TDM <sup>b</sup>	91.2	8.8		review med.chart	73.7	26.3		Seven day service	35	65		clinical trial support	40	57.1	2.9
Lectures	89	7.4	3.7	drug cost monitoring	68.4	15.8	15.8	Research	35	60	5	staff dispensing	37.1	62.9	
Seven day service <sup>b</sup>	81.6	18.4		ward round participation	63.2	31.6	5.3	Clinical trial support	35	60	5	ward round participation	27.3	72.7	
Research <sup>b</sup>	71.6	19.4	9	research	63.2	31.6	5.3	Pharmacy bulletin	30	70		research	22.9	77.1	

<sup>a</sup> Tables are sorted by "yes" responses. Services are ranked from highest to lowest awareness.

<sup>b</sup> Abbreviations: DK= don't know; review med chart = review medication chart; manufacturing = non-sterile manufacturing; medication counselling = discharge medication counselling of patients; sterile preparations = sterile/ intravenous preparations; patient info & education = patient information and education on drugs/ medicines; training = training of pharmacy trainees and students; ADR monitoring = adverse drug reaction monitoring; pharmacy bulletins = pharmacy publications/ bulletins; staff drug education = drug education for hospital staff- informal; TDM= therapeutic drug monitoring; lectures = in-service, structured lectures for hospital staff; seven day service = seven day a week service; research = research activities/ opportunities.

<sup>c</sup> The table indicates the percentage of respondents that indicated "yes", "no" or "don't know" to services they thought were provided at their hospitals.

Table 4.8 Services pharmacists believe should be provided at their hospitals <sup>b</sup>  
Hospital

Large city				Large country				Small city				Small country			
Service (sorted) <sup>a</sup>	%	%	%	Service (sorted) <sup>a</sup>	%	%	%	Service (sorted) <sup>a</sup>	%	%	%	Service (sorted) <sup>a</sup>	%	%	%
	yes	no	DK		yes	no	DK		yes	no	DK		yes	no	DK
sterile preparations	100			inpatient dispensing	100			Inpatient dispensing	100			drug information	100		
intervention/ monitoring	100			sterile preparations	100			Drug information	100			review med. charts	100		
impres	100			drug information	100			Review med.charts	100			ADR monitoring	100		
medication counselling	100			ADR monitoring	100			ADR monitoring	100			intervention/ monitoring	100		
patient info & education	100			manufacturing	100			Intervention/ monitoring	100			purchasing	100		
training	100			purchasing	100			TDM	100			medication counselling	100		
inpatient dispensing	99.3	0.7		pharmacy store	100			Purchasing	100			patient info & education	100		
drug information	99.3		0.7	medication counselling	100			Medication counselling	100			staff drug education	100		
review med. chart	99.3		0.7	patient info & education	100			Patient info & education	100			inpatient dispensing	97.1	2.9	
ADR monitoring	99.3	0.7		pharmacy bulletins	100			Staff drug education	100			impres	97.1		2.9
manufacturing	98.5	0.7	0.7	staff drug education	100			Impres	94.7	5.3		pharmacy bulletins	97.1	2.9	
TDM	98.5		1.5	lectures	100			Pharmacy store	94.7		5.3	TDM	94.3	2.9	2.9
purchasing	99.3		0.7	clinical trial support	100			Pharmacy bulletin	94.7		5.3	lectures	94.3	2.9	2.9
pharmacy store	99.3		0.7	training	100			Lectures	95	5		drug cost monitoring	94.3	2.9	2.9
staff drug education	98.5	0.7	0.7	ward round participation	94.7	5.3		Drug cost monitoring	94.7		5.3	ward round participation	91.4	2.9	5.7
drug cost monitoring	99.3		0.7	review med. charts	94.7	5.3		Ward round participation	89.5	10.5		pharmacy store	91.4	2.9	5.7
ward rounds	97.8	1.5	0.7	intervention/monitoring	94.7	5.3		Manufacturing	84.2	10.5	5.3	manufacturing	85.7	14.3	
pharmacy bulletins	97.8	2.2		TDM	94.7	5.3		Sterile preparations	77.8	22.2		sterile preparations	82.9	14.3	2.9
lectures	97.8		2.2	drug cost monitoring	94.7	5.3		Outpatient dispensing	72.2	27.8		training	74.3	25.7	
outpatient dispensing	96.3	2.2	1.5	outpatient dispensing	94.4	5.6		Research	72.2	22.2	5.6	seven day service	68.6	22.9	8.6
clinical trial support	96.3	2.9	0.7	impres	89.5	10.5		Clinical trial support	68.4	31.6		clinical trial support	68.6	28.6	2.9
research	94.1	3.7	2.2	staff dispensing	89.5	10.5		Staff dispensing	63.2	26.3	10.5	outpatient dispensing	62.9	34.3	2.9
seven day service	92.6	4.4	2.9	seven day service	89.5	10.5		Seven day service	52.6	42.1	5.3	research	62.9	25.7	11.4
staff dispensing	89	8.1	2.9	research	76.5	11.8	11.8	Training	47.4	47.4	5.3	staff dispensing	40	51.4	8.6

<sup>a</sup> Tables are sorted by "yes" responses. Services are ranked from those most respondents believe should be provided to those they least believe should be provided.

<sup>b</sup> The table indicates the percentage of respondents that indicated "yes", "no" or "don't know" to services they believe should be provided at their hospitals.

Examination of the responses regarding services that should be provided identifies service requirements of pharmacists, and the relative degree of consensus amongst them for these services (Table 4.9). Where there is good consensus it was taken to be indicative of the significance that they placed upon a particular service.

**Table 4.9 Service requirements of pharmacists<sup>a</sup>**

90% or more pharmacists <sup>c</sup>	80 to less than 90% of pharmacists	70 to less than 80% of pharmacists
Inpatient dispensing	Outpatient dispensing	Dispensing for hospital staff
Sterile/ intravenous preparations	Seven day a week service	
Drug information service	Research activities/ opportunities	
Participation in ward rounds		
Review of medication charts <sup>c</sup>		
Adverse drug reaction monitoring		
Intervention in/ monitoring patient drug therapy <sup>c</sup>		
Imprest		
Manufacturing (non-sterile)		
Therapeutic drug monitoring		
Pharmacy purchasing		
Pharmacy store		
Discharge medication counselling for patients		
Patient information and education on drugs/medicines		
Pharmacy publications/ bulletins		
Drug education for hospital staff-informal <sup>d</sup>		
In-service/ structured lectures for hospital staff <sup>d</sup>		
Training of pharmacy trainees and students		
Clinical trial support <sup>b</sup>		

<sup>a</sup> Showing relative support of required services. <sup>b</sup> 89.5% rounded up to the nearest whole number (90%).

<sup>c</sup> *Intervention in/ monitoring patient drug therapy* and *review of medication charts* are considered as separate services for the purpose of this study. *Reviewing medication charts* is as the term implies, however, *intervention in/ monitoring therapy* is considered to encompass an overview of the patients drug therapy management (which certainly would involve *review of medication charts*), involvement in discussion with medical and nursing staff over the therapy and decisions in drug therapy, monitoring drug levels, biochemical results to assist in this process.

<sup>d</sup> *Drug education for hospital staff-informal* and *in-service, structured lectures for hospital staff* are considered to be separate services in this study. *Informal drug education* is seen as the pharmacist or department identifying a need for some information to be supplied to a ward/ nurse/ doctor or allied health worker to inform them about e.g. a new drug, an aspect of drug therapy, dosing information or general drug information for the recipient to read to better inform them of a drug treatment or medication being used. *In-service, structured lectures* is interpreted as meaning formal education programs offered by the pharmacy department in conjunction with or in response to requests from medical/ nursing departments or clinical educators.

<sup>e</sup> These are the fundamental services.



### 4.2.1 Fundamental services

In this thesis it was decided to classify a service as fundamental where at least 90% of each respondent type indicated that the service should be provided. The list of fundamental hospital pharmacy services from the perspective of pharmacists is shown in Table 4.9.

The fundamental hospital pharmacy services can then be subdivided according to the various hospital sizes and locations (Table 4.10).

Table 4.10 Fundamental hospital pharmacy services for pharmacists <sup>a,b</sup>

All hospitals			
Inpatient dispensing Drug information service Intervention in/ monitoring patient drug therapy Reviewing medication charts Adverse drug reaction monitoring Therapeutic drug monitoring Discharge medication counselling for patients Patient information and education on drugs/ medicines Drug education for hospital staff- informal In-service, structured lectures for hospital staff Participation in ward rounds <sup>b</sup> Drug cost monitoring Pharmacy publications/ bulletins Imprest <sup>b</sup> Pharmacy store Pharmacy purchasing			
Large city	Large country	Small city	Small country
Research activities/ opportunities	Dispensing for hospital staff <sup>b</sup>	nothing further for small city and small country Hospitals	
Sterile/ intravenous preparations			
Manufacturing			
Outpatient dispensing			
Seven day a week service <sup>b</sup>			
Training of pharmacy trainees and students			
Clinical trial support			

<sup>a</sup> At least 90% of pharmacists indicated the service should be provided.

<sup>b</sup> Where 89.5% of pharmacists indicated a service should be provided this has been rounded up to 90%. This applies to *imprest*, *dispensing for hospital staff*, and *seven day a week service* for large country hospitals, and *participation in ward rounds* for small city hospitals.

When comparing fundamental services for pharmacists as a group against pharmacists from the various hospital sizes and locations, there were some differences (Table 4.10)

with some services only fundamental from the perspective of pharmacists working in large hospitals as distinct from the small hospitals.<sup>12</sup>

#### 4.2.2 Pharmacy services provided by Victorian hospitals

Responses from pharmacists at each individual hospital were combined (Table 4.11) to present a hospital perspective of services provided.<sup>13</sup> These data are from a crosstabulation of responses.

Some differences were identified in the awareness pharmacists had of services provided by their departments. Where variations in responses within a particular hospital existed, the majority of responses influenced whether a "yes" or "no" to service provision was recorded for that hospital.<sup>14</sup> This approach differs from other surveys where only directors of pharmacy services provided information on service availability.

#### 4.3 Awareness of services provided and service requirements: doctors and nurses

The services all respondents thought were provided, and those they believed should be provided at their hospitals are listed in Table 4.12. There were some significant differences between the doctors and nurses in both categories of responses. Those for which there were no statistically significant differences between doctors and nurses are shown in Table 4.13.

On the other hand, there was a considerable degree of agreement amongst doctors and nurses<sup>15</sup> about the services which they believed should be provided (Table 4.14).<sup>16</sup>

<sup>12</sup> Only those services common to pharmacists across all hospitals were fundamental for small hospitals, whereas for large hospitals six further services were common to them, whilst *research activities/opportunities* were fundamental only to large city hospitals and *dispensing for hospital staff* was fundamental to large country hospitals only (Table 4.10).

<sup>13</sup> This was done so as to allow for comparisons to be made with other published studies which only surveyed directors of pharmacy services.

<sup>14</sup> Where there was a variation in responses and the director of the pharmacy services was one of the respondents, then the response from the director was used.

<sup>15</sup> Between doctors as one group and between nurses as another.

<sup>16</sup> Where at least 90% of all doctors or nurses indicated that a particular service should be provided, it was designated as fundamental (see Table 4.14).

Table 4.11 Pharmacy services<sup>a</sup> provided by Victorian hospitals<sup>b</sup>

Service	Number of hospitals <sup>c</sup>			
	Yes	No	Indeterminate <sup>d</sup>	Don't know <sup>e</sup>
Outpatient dispensing	28 (71.8%)	6 (15.4%)	5 (12.8%)	
Inpatient dispensing	39 (100%)			
Sterile / Intravenous preparations	29 (74.4%)	9 (23.1%)	1 (2.6%)	
Drug information service	38 (97.4%)	1 (2.6%)		
Participation in ward rounds	16 (41%)	19 (48.7%)	4 (10.3%) <sup>f</sup>	
Review of medication charts	38 (97.4%)	1 (2.6%)		
Adverse drug reaction monitoring	33 (84.6%)	2 (5.1%)	4 (10.3%)	
Intervention in/ monitoring of patient drug therapy	37 (94.9%)		2 (5.1%)	
Imprest	37 (94.9%)	2 (5.1%)		
Manufacturing	37 (94.9%)	2 (5.1%)		
Therapeutic drug monitoring	25 (64.1%)	10 (25.6%)	4 (10.3%)	
Dispensing for hospital staff	24 (61.5%)	14 (35.9%)	1 (2.6%)	
Pharmacy purchasing	38 (97.4%)	1 (2.6%)		
Pharmacy store	33 (84.6%)	5 (12.8%)		1 (2.6%)
Discharge medication counselling for patients	33 (84.6%)	5 (12.8%)	1 (2.6%)	
Patient information and education of drugs/ medicines	34 (87.2%)	2 (5.1%)	3 (7.7%)	
Pharmacy publications/ bulletins	25 (64.1%)	12 (30.8%)	2 (5.1%)	
Drug education for hospital staff (informal)	37 (94.9%)	2 (5.1%)		
In-service, structured lectures for hospital staff	30 (76.9%)	5 (12.8%)	3 (7.7%)	1 (2.6%)
Training of pharmacy trainees and students	25 (64.1%)	12 (30.8%)	2 (5.1%)	
Seven day a week service	20 (51.3%)	17 (43.6%)	2 (5.1%)	
Research activities/ opportunities	20 (51.3%)	17 (43.6%)	2 (5.1%)	
Clinical trial support	19 (48.7%)	15 (38.5%)	5 (12.8%)	
Drug cost monitoring	31 (79.5%)	2 (5.13%)	5 (12.8%)	1 (2.6%)

<sup>a</sup> Services provided as perceived by pharmacists.<sup>b</sup> Total n=39.<sup>c</sup> Percentage in brackets<sup>d</sup> Where the individual pharmacists within a hospital did not know whether a service is provided and the responses did not allow for me to clearly establish whether the service is available, the result is recorded as "indeterminate".<sup>e</sup> The "don't know" response for a particular hospital reflects the actual response given by the pharmacist to the question of whether a service is provided at their hospital.<sup>f</sup> Of the four hospitals included in the "indeterminate" response for *participation in ward rounds*, pharmacists from one hospital did not give a response at all but their hospital is included here since the 'no-response' did not allow for any other alternative.

Table 4.12 Service awareness and requirements for doctors and nurses <sup>a</sup>

Service	Doctors' responses % <sup>b</sup>				Nurses' responses % <sup>b</sup>			
	Believe provide		Should provide		Believe provide		Should provide	
	Yes	DK <sup>c</sup>	Yes	DK <sup>c</sup>	Yes	DK <sup>c</sup>	Yes	DK <sup>c</sup>
Outpatient dispensing	82	6.1	85.1	3.7	82.2	7.7	87.1	2
Inpatient dispensing	98.3	1.3	99.2	0.7	98.1	0.7	99	0.2
Sterile/ intravenous preparations	89.6	9.1	93.9	4.2	89.6	2.6	96.7	0.8
Drug information	84.9	12.9	97.5	1.2	91.5	6.5	99.5	0.4
Participation in ward rounds	33.1	28.1	58.8	9.3	42.3	15.1	73.1	6.1
Review medication charts	71.6	22.5	86.6	4.1	76	10.1	91.8	2.3
Adverse drug reaction monitoring	66	31.8	94.6	2	57.3	30.6	95.4	1.8
Intervention in/ monitoring patient drug therapy	60.5	28.7	77.4	7	68.8	20.4	90.1	4
Imprest	73.9	24	84.1	14.8	92.8	3.3	96.9	1.9
Manufacturing	41.3	53.7	66.9	20.9	58.7	30.6	75.5	12.2
Therapeutic drug monitoring	48.6	37.7	76.2	7.9	52.3	37.1	87.9	7.6
Dispensing for hospital staff	49	43	72.1	11	56.7	19.3	82.2	4.1
Pharmacy purchasing	55.4	43.8	76.1	22.7	56.9	36.2	81.9	15.8
Pharmacy store	63.8	32.2	79.7	17.9	68.5	22.9	85.5	10.7
Discharge medication counselling	51.5	38.2	89.1	4.2	62.7	20.6	93.6	1.9
Patient information & education on drugs/ medicines	59.1	34.3	94.2	2.7	68.4	19.4	96.6	1
Pharmacy publications/ bulletins	66.6	20.8	88.5	5.1	70.7	17.7	94.9	3.7
Drug education for hospitals staff- informal	65.1	28.8	93.2	4.2	77.1	10.9	99	0.5
In-service, structured lectures for hospital staff	13.7	57.9	71	11.1	42	24.4	96.4	1.6
Seven day a week service	61.2	16	86	5.9	66.6	4.4	89	2
Research activities/ opportunities	22.5	65.1	76.2	14.9	19.8	64.8	83.2	11.8
Clinical trial support	46.1	46.2	88.6	7.6	40.4	49.1	84.1	11.9
Drug cost monitoring	62.9	35.8	93.8	4.6	59.5	36.7	95.7	3.6

<sup>a</sup> Only the "yes" and "don't know" responses are shown (the "no" response accounts for the remaining responses)<sup>b</sup> For doctors n=618 and for nurses n=1160 <sup>c</sup> DK = don't knowTable 4.13 Services with no statistically significant difference in responses between doctors and nurses <sup>a</sup>

Services respondents believe are provided	Services respondents believe should be provided
Inpatient dispensing	Inpatient dispensing
Outpatient dispensing	Outpatient dispensing
Therapeutic drug monitoring	Adverse drug reaction monitoring
Pharmacy publications/ bulletins	Drug cost monitoring
Research activities/ opportunities	

<sup>a</sup> For all other services there were significant differences between doctors and nurses,  $p < 0.05$ , chi-square test

Table 4.14 Service requirements of doctors and nurses <sup>a</sup>

Doctors	Nurses
At least 90% of doctors <sup>d</sup>	At least 90% of nurses <sup>d</sup>
Inpatient dispensing	Inpatient dispensing
Sterile/ intravenous preparations <sup>b</sup>	Sterile/ intravenous preparations <sup>b</sup>
Drug information service	Drug information service
Adverse drug reaction monitoring	Adverse drug reaction monitoring
Patient information and education on drugs/ medicines	Patient information and education on drugs/ medicines
Drug education for hospital staff-informal	Drug education for hospital staff-informal
Drug cost monitoring	Drug cost monitoring
	Review of medication charts
	Intervention in/ monitoring of patient drug therapy
	Imprest
	Discharge medication counselling for patients
	Pharmacy publications/ bulletins
	In-service, structured lectures for hospital staff
80 to less than 90% of doctors	80 to less than 90% nurses
Outpatient dispensing	Outpatient dispensing
Seven day a week service	Seven day a week service
Clinical trial support	Clinical trial support
Review of medication charts	Therapeutic drug monitoring
Imprest	Dispensing for hospital staff
Discharge medication counselling for patients	Pharmacy purchasing
Pharmacy publications/ bulletins	Pharmacy store
Pharmacy store <sup>c</sup>	Research activities/ opportunities
70 to less than 80% doctors	70 to less than 80% nurses
Intervention in/ monitoring of patient drug therapy	Participation in ward rounds
Therapeutic drug monitoring	Manufacturing
Dispensing for hospital staff	
Pharmacy purchasing	
In-service, structured lectures for hospital staff	
Research activities/ opportunities	

<sup>a</sup> Showing relative support of required services. <sup>b</sup> 89.6% rounded up to the nearest whole number (90%)  
<sup>c</sup> 79.7% rounded up to 80%. <sup>d</sup> Fundamental services  
Of the remaining services not listed, 58.8% of doctors indicated pharmacists should *participate in ward rounds*, and 66.9% indicated pharmacists should provide *non-sterile manufacturing*.

Whilst there was some degree of agreement between doctors and nurses about services they thought should be provided, there were some differences: clinical services featured more prominently for nurses who supported their provision more extensively. However, *ward round participation* and *non-sterile manufacturing* were poorly supported by both groups.

A crosstabulation of the level of contact doctors and nurses had with their pharmacy departments with their awareness of services provided, showed that where respondents indicated they had less than weekly contact with their pharmacy departments, this group

generally indicated a relatively higher uncertainty ("don't know" response) than did those who had contact at least weekly with their pharmacies. However, the proportion of these responses was not such that it accounted totally for the "don't know" responses. For example, 22.5% of doctors indicated they did not know if their pharmacies undertook *review of medication charts*, however, of these doctors only 46.6% indicated contact ranging from less than weekly to never, whilst 53.4% indicated contact of at least once a week or more. All but one hospital had indicated they provided this service (Table 4.11).

#### 4.3.1 Hospital size and location influences on awareness and requirements of services

The responses from doctors and nurses showing their awareness of existing pharmacy services are shown in Tables 4.15 and 4.16. The greatest uncertainty observed amongst doctors from large city and country hospitals concerned *research activities* undertaken by the pharmacy departments.<sup>17</sup> There was also uncertainty about *clinical trial support* services at small city hospitals. For the nurses, the service which they appeared to be most uncertain about was whether the pharmacies provided *research activities or opportunities*.

Statistical analysis, using chi-square analyses, showed significant hospital size and location effects on respondent's awareness of most existing services. Only few services showed no significant differences in responses from doctors and nurses from the various hospital groups (Table 4.17). The lack of awareness of pharmacy services by doctors and nurses is more evident when the "don't know"<sup>18</sup> and "no" responses are examined.<sup>19</sup>

<sup>17</sup> As seen by the large "don't know" responses.

<sup>18</sup> i.e. uncertainty

<sup>19</sup> For instance, 28.5% of doctors from large city hospitals did not know whether their pharmacists *intervened in, or monitored patient drug therapy*, compared with 39.3% from large country hospitals, and 41.1% of doctors from small city hospitals, whilst only 14.3% from small country hospitals indicated they didn't know (Table 4.15).

Table 4.15 Doctors' awareness of existing hospital pharmacy services <sup>b</sup>

Hospital															
Large city				Large country				Small city				Small country			
	%	%	%		%	%	%		%	%	%		%	%	%
Service <sup>a</sup>	yes	No	DK	service <sup>a</sup>	yes	no	DK	service <sup>a</sup>	yes	no	DK	service <sup>a</sup>	yes	No	DK
Inpatient dispensing	98.7	0.3	1	inpatient dispensing	100			inpatient dispensing	98.4		1.6	inpatient dispensing	95.3	1.2	3.5
sterile preparations	91.9	1.0	7.1	sterile preparations	96.7		3.3	sterile preparations	77.4	3.2	19.4	review med. chart	88.1		11.9
drug information	91.6	1.3	7.1	drug information	72.1	1.6	26.2	impresst	71.7	1.7	26.7	sterile preparations	82.6	2.3	15.1
Outpatient dispensing	91.1	4.6	4.3	seven day service	68.9	16.4	14.8	drug information	62.9	8.1	29	drug information	79.1	2.3	18.6
Pharmacy bulletins	81	5.1	14	outpatient dispensing	67.2	24.6	8.2	review med. chart	62.9	6.5	30.6	intervention/monitoring	75	9.5	14.3
Imprest	79.3	0.3	20.5	pharmacy store	61.7	6.7	31.7	outpatient dispensing	59.7	24.2	16.1	impresst	75		25
review med.chart	73.8	5.2	21	ADR monitoring	58.3	5	36.7	seven day service	53.2	29	17.7	ADR monitoring	69	1.2	29.8
ADR monitoring	69.6	1.3	29.1	staff drug education	57.4	3.3	39.3	staff drug education	48.4	11.3	40.3	drug cost monitoring	68.6		31.4
staff drug education	69.9	4.3	25.5	purchasing	55.9		44.1	ADR monitoring	46.8	6.5	46.8	pharmacy store	67.1	2.4	30.6
drug cost monitoring	69.6	1.5	28.8	pharmacy bulletin	51.7	15	33.3	intervention/ monitoring	44.6	14.3	41.1	outpatient dispensing	66.3	27.9	5.8
Pharmacy store	66.9	3.8	29.3	drug cost monitoring	49.2	1.6	49.2	medication counselling	43.5	14.5	41.9	purchasing	65.9		34.1
patient info& education	65.3	4.1	30.6	patient info & education	47.5	11.5	41	pharmacy store	41.9	4.8	53.2	staff drug education	60.5	11.6	27.9
seven day service	63.4	19.3	17	intervention/monitoring	44.6	16.1	39.3	patient info & education	35.5	11.3	53.2	TDM	56.5	12.9	30.6
Intervention/monitoring	52.1	9.5	28.5	review med.chart	44.3	18	37.7	manufacturing	26.2	9.8	63.9	patient info & education	55.8	11.6	32.6
staff dispensing	58.6	6.3	35	medication counselling	40.7	25.4	33.9	purchasing	25.8	3.2	71	seven day service	51.8	37.6	10.6
clinical trial support	59.1	4.1	36.8	impresst	39.7	17.2	43.1	drug cost monitoring	25.8	1.6	72.6	medication counselling	50	18.6	31.4
Purchasing	57.7	0.8	41.5	TDM	38.3	13.3	48.3	staff dispensing	24.2	9.7	66.1	pharmacy bulletin	41.9	27.9	30.2
Medication counselling	54.7	5.6	39.7	staff dispensing	38.3	1.7	60	pharmacy bulletin	24.2	37.1	38.7	manufacturing	32.6	14	53.5
TDM	52.8	12	35.2	manufacturing	36.1	1.6	62.3	TDM	21	25.8	53.2	staff dispensing	30.2	18.6	51.2
Manufacturing	46.4	2.8	50.8	clinical trial support	31.1	3.3	65.6	ward round participation	13.3	46.7	40	clinical trial support	27.1	18.8	54.1
ward round participation	42.1	33.0	24.9	lectures	23	18	59	clinical trial support	4.8	17.7	75.8	ward round participation	22.9	48.2	28.9
Research	28.8	8.2	63	research	9.8	8.2	82	lectures	3.3	34.4	62.3	lectures	17.6	40	42.4
Lectures	13	26.6	60.4	ward round participation	8.6	55.2	36.2	research	1.6	23	73.8	research	17.6	25.9	56.5

<sup>a</sup> Tables are sorted by "yes" responses. Services are ranked from highest to lowest awareness.

<sup>b</sup> The table indicates the percentage of respondents that indicated "yes", "no" or "don't know" to services they know are provided at their hospitals.

Table 4.16 Nurses' awareness of existing hospital pharmacy services

				Hospital											
Large city				Large country				Small city				Small country			
Service	% yes	% no	% DK	service	% yes	% no	% DK	service	% yes	% no	% DK	service	% yes	% no	% DK
Inpatient dispensing	99	0.3	0.7	inpatient dispensing	97.7	0.8	1.5	inpatient dispensing	100			inpatient dispensing	99.6		0.4
Imprest	97.3	1	1.7	drug information	98.4		1.6	impres	92.6	4.3	3.2	inpatient dispensing	94.9	4.7	0.4
sterile preparations	96.1	1.1	2.7	sterile preparations	96.9	2.3	0.8	sterile preparations	87.4	8.4	4.2	drug information	93.5	2.6	3.9
Outpatient dispensing	91.7	2.4	5.9	staff drug education	82.8	10.9	6.3	drug information	83	7.4	9.6	review med. chart	89.2	3.0	7.8
drug information	90.6	1.4	7.9	pharmacy bulletin	82.2	7.8	10.1	review med. chart	82.8	14	3.2	sterile preparations	87.1	10.3	2.6
review med chart	75.9	12.4	11.7	outpatient dispensing	80.8	10	9.2	staff drug education	78.3	18.5	3.3	staff drug education	86.6	8.6	4.7
Pharmacy bulletins	73.4	6.1	20.5	seven day service	73.1	24.6	2.3	pharmacy store	68.8	7.5	23.7	intervention/monitoring	80.1	4.9	15
staff drug education	72.7	12.4	14.9	staff dispensing	72.1	14.7	13.2	patient info & education	67	20.2	12.8	patient info & education	72.7	15.2	12.1
seven day service	73.1	20.8	6	pharmacy store	71.1	9.4	19.5	outpatient dispensing	64.5	23.7	11.8	drug cost monitoring	66.7	3.8	29.5
Pharmacy store	69.6	6.9	23.4	manufacturing	66.7	10.9	22.5	pharmacy bulletin	60.6	21.3	18.1	ADR monitoring	64.9	6.5	28.1
staff dispensing	67.9	13.7	18.4	patient info & education	66.9	16.2	16.9	intervention/ monitoring	58.9	20	21.1	pharmacy store	63.8	13.5	22.7
Intervention/monitoring	67	10	23	intervention/monitoring	65.3	19.4	15.3	medication counselling	55.3	31.9	12.8	medication counselling	63.9	22.7	13.3
patient info& education	67.4	9.4	23.2	purchasing	64.8	3.9	31.3	purchasing	53.7	13.7	32.6	outpatient dispensing	61.6	27.2	10.8
Manufacturing	62.1	6	31.7	drug cost monitoring	60.8	3.8	35.4	drug cost monitoring	53.7	6.3	40	pharmacy bulletin	60.2	26.4	13.4
drug cost monitoring	57.6	3.5	39	ADR monitoring	57	19.5	23.4	ADR monitoring	47.8	19.6	32.6	TDM	57.8	9.8	32.4
ADR monitoring	56.1	11.3	32.6	impres	57	25.8	17.2	seven day service	47.4	50.5	2.1	purchasing	57.6	9.6	32.8
Purchasing	55.6	5.6	38.8	TDM	56.3	13.3	30.5	manufacturing	41.1	25.3	33.7	lectures	54.8	33	12.2
TDM	53.2	7.9	38.6	medication counselling	55.5	25.8	18.8	lectures	40.9	43	16.1	manufacturing	51.5	17.7	30.7
ward round participation	47.9	35.3	16.9	clinical trial support	52.3	9.2	38.5	staff dispensing	32.6	50.5	16.8	seven day service	51.3	47	1.7
clinical trial support	46.3	5.3	48.3	lectures	50.8	32	17.2	TDM	26.9	26.9	46.2	ward round participation	33.2	52.9	13
Medication counselling	64.6	11	24.4	review med.chart	48.5	40.8	10.8	ward round participation	22.5	62.9	14.6	staff dispensing	24.7	48.9	26.4
Lectures	36.3	32.7	31	ward round participation	43.8	46.3	9.9	clinical trial support	20	25.3	54.7	clinical trial support	24.5	20.2	55.4
Research	21.2	9.8	68.9	research	33.1	15.4	51.5	Research	8.4	34.7	56.8	research	12.5	24.6	62.9



**Table 4.17 No statistically significant hospital size and location effect on awareness of services <sup>a,b</sup>**  
Respondent type

Doctors	Nurses
Inpatient dispensing	Pharmacy store
	Drug cost monitoring

<sup>a</sup>  $p < 0.05$ , chi-square test

<sup>b</sup> A significant hospital effect was seen for those services listed in Table 4.12 and not included in Table 4.17

Services that doctors and nurses believe should be provided and which helped determine their service requirements are shown in Tables 4.18 and 4.19.<sup>20</sup>

*Ward round participation* by pharmacists was the least supported service in the opinion of doctors from large hospitals and small city hospitals, with *dispensing for staff* being the least supported service in the opinion of doctors from small country hospitals.<sup>21</sup> In the case of nurses, *manufacturing* was the least supported service in large city hospitals, *ward round participation* in large country and small city hospitals, and *dispensing for staff* in small country hospitals.

Services which respondents believed should be provided at their hospitals, and where no significant hospital size and location effect was seen are shown in Table 4.20.

<sup>20</sup> Doctors and nurses were asked if their hospital pharmacy should provide the service, therefore this term is used interchangeably with service requirements.

<sup>21</sup> As seen by the "yes" responses (Table 4.18).

Table 4.18 Services doctors believe should be provided at their hospitals <sup>b</sup>

Table 4.18 Services doctors believe should be provided at their hospitals

Hospital															
Large city				Large country				Small city				Small country			
	%	%	%		%	%	%		%	%	%		%	%	%
Service <sup>a</sup>	yes	no	DK	Service <sup>a</sup>	yes	no	DK	Service <sup>a</sup>	yes	no	DK	Service <sup>1a</sup>	yes	no	DK
Inpatient dispensing	99.2		0.8	inpatient dispensing	100			inpatient dispensing	98.3		1.7	inpatient dispensing	98.8	1.2	
drug information	97.7	1.6	0.8	sterile preparations	98.3		1.7	drug information	96.6		3.4	drug information	97.7	1.2	1.2
drug cost monitoring	96.1	0.8	3.1	drug information	96.7	1.7	1.7	patient info & education	94.9	3.4	1.7	ADR monitoring	97.7	1.2	1.2
sterile preparations	95.4	1.3	3.4	patient info & education	93.3	6.7		sterile preparations	91.5	3.4	5.1	drug cost monitoring	94.2	2.3	3.5
patient info& education	94.8	2.3	2.9	seven day service	93.3	3.3	3.3	medication counselling	91.5	5.1	3.4	staff drug education	93	3.5	3.5
clinical trial support	94.8	1.6	3.6	ADR monitoring	91.5	5.1	3.4	staff drug education	91.5		8.5	review med. chart	91.9	3.5	4.7
ADR monitoring	95	3.1	1.8	staff drug education	91.7		8.3	ADR monitoring	90	5	3.3	patient info & education	91.9	3.5	4.7
staff drug education	93.8	3.1	3.1	pharmacy bulletin	84.7	8.5	6.8	drug cost monitoring	86.7	5	8.3	sterile preparations	86	4.7	9.3
Outpatient dispensing	92.8	4.9	2.3	drug cost monitoring	85	3.3	11.7	imprest	86.2		13.8	medication counselling	86	7	7
Pharmacy bulletins	92.2	2.8	4.7	clinical trial support	81.7	1.7	16.7	review med. chart	83.3	10	6.7	intervention/monitoring	80.7	12	7.2
Medication counselling	90.9	5.5	3.6	medication counselling	80	15	5	seven day service	81.7	5	13.3	imprest	81.2		18.8
seven day service	88.1	6.2	5.7	purchasing	76.7		23.3	pharmacy bulletin	78	16.9	5.1	pharmacy store	81.4	1.2	17.4
review med.chart	87.5	9.4	3.1	review med.chart	76.3	16.9	6.8	clinical trial support	72.1	14.8	13.1	pharmacy bulletin	81.4	12.8	5.8
Imprest	87.3	0.5	11.9	pharmacy store	75	5	20	outpatient dispensing	69	22.4	8.6	purchasing	80.2		19.8
Research	83.4	4.9	11.7	lectures	73.3	6.7	20	intervention/ monitoring	65.5	24.1	10.3	clinical trial support	76.7	8.1	15.1
Pharmacy store	82.9	1.6	15.6	research	73.3	8.3	18.3	lectures	63.3	25	11.7	TDM	76.2	19	4.8
TDM	80.7	11.6	7.7	outpatient dispensing	71.7	23.3	5	pharmacy store	61.7	6.7	31.7	seven day service	73.8	22.6	3.6
Intervention/monitoring	80.5	13.6	5.9	manufacturing	71.7	8.3	20	purchasing	60	1.7	38.3	outpatient dispensing	70.9	23.3	5.8
staff dispensing	79.1	10.3	10.6	TDM	70	21.7	8.3	staff dispensing	59.3	28.8	11.9	lectures	70.9	16.3	12.8
Purchasing	77.6	1.6	20.8	imprest	65.5	3.4	29.3	manufacturing	57.6	16.9	25.4	manufacturing	62.8	18.6	18.6
Lectures	71.8	18.9	9.3	staff dispensing	65	23.3	11.7	TDM	53.3	33.3	13.3	research	62.8	12.8	24.4
Manufacturing	68.5	10.3	20.9	intervention/monitoring	64.3	25	10.7	research	51.7	30	18.3	ward round participation	55.3	34.1	9.4
ward round participation	65.4	27.7	6.8	ward round participation	35.7	48.2	16.1	ward round participation	42.1	38.6	19.3	staff dispensing	54.7	33.7	11.6

<sup>a</sup> Tables are sorted by "yes" responses. Services are ranked from those most respondents believe should be provided to those they least believe should be provided.

<sup>b</sup> The table indicates the percentage of respondents that indicated "yes", "no" or "don't know" to services they believe should be provided at their hospitals.

Table 4.19 Services nurses believe should be provided at their hospitals

Table 4.19 Services nurses believe should be provided at their hospitals

Hospital															
Large city				Large country				Small city				Small country			
	%	%	%		%	%	%		%	%	%		%	%	%
Service	yes	no	DK	service	yes	no	DK	service	yes	no	DK	service	yes	no	DK
drug information	99.7	0.1	0.1	inpatient dispensing	98.4	0.8	0.8	drug information	100			imprest	99.6		0.4
Inpatient dispensing	99.3	0.6	0.1	sterile preparations	98.4	0.8	0.8	staff drug education	100			staff drug education	99.6	0.4	
Imprest	98.5	0.6	0.7	drug information	98.4		1.6	inpatient dispensing	98.9	1.1		drug information	99.1	0.4	0.4
staff drug education	98.8	0.4	0.7	staff drug education	97.7	1.6	0.8	lectures	98.9	1.1		patient info & education	99.1	0.9	
sterile preparations	98.1	1.2	0.6	pharmacy bulletin	94.5	1.6	3.9	imprest	97.8	1.1	1.1	inpatient dispensing	98.3	1.7	
patient info& education	96.5	2.2	1.3	lectures	94.5	2.3	3.1	patient info & education	97.8	1.1	1.1	review med. chart	97	1.3	1.7
ADR monitoring	96.4	2	1.6	drug cost monitoring	95.3	0.8	3.9	sterile preparations	95.6	3.3	1.1	lectures	96.5	2.2	1.3
Lectures	96.4	1.9	1.6	staff dispensing	93.8	2.3	3.9	pharmacy bulletin	95.7	1.1	3.2	ADR monitoring	96.1	1.3	2.6
seven day service	95.5	3.2	1.3	patient info & education	91.4	7	1.6	ADR monitoring	94.6	3.3	2.2	medication counselling	95.7	2.6	1.7
drug cost monitoring	96.1	0.7	3.2	seven day service	90.6	7.9	1.6	drug cost monitoring	94.6	1.1	4.3	drug cost monitoring	95.3	0.4	4.3
Medication counselling	94.6	3.6	1.7	outpatient dispensing	89.8	7.9	2.4	review med. chart	93.5	4.3	2.2	pharmacy bulletin	94.4		5.6
Pharmacy bulletin	95.1	1.9	3	ADR monitoring	89.8	8.7	1.6	medication counselling	92.5	4.3	3.2	intervention/monitoring	92.6	3.1	4.4
Outpatient dispensing	93.1	5.5	1.4	TDM	88.3	5.5	6.3	intervention/ monitoring	87.4	9.2	3.4	sterile preparations	92.1	6.6	1.3
review med chart	91.7	6.1	2.2	pharmacy store	86.8	4.7	8.5	pharmacy store	84.8	4.3	10.9	TDM	88.7	3.5	7.8
Intervention/monitoring	90.9	4.9	3.9	research	86.7	5.5	7.8	seven day service	81.7	15.1	3.2	pharmacy store	81.7	5.7	12.2
TDM	88.6	3.8	7.4	purchasing	85.3	0.8	14	TDM	79.1	11	9.9	purchasing	80.2	3.5	15.7
staff dispensing	88	8.5	3.3	medication counselling	85.2	12.5	2.3	purchasing	79.1	5.5	15.4	clinical trial support	75.4	5.6	19
Research	88	2.2	9.8	intervention/monitoring	83.7	12.2	4.1	outpatient dispensing	77.5	20.2	2.2	research	72.7	8.7	18.6
Clinical trial support	88	2.2	9.7	clinical trial support	83.6	3.9	12.5	clinical trial support	77.4	12.9	9.7	seven day service	71.7	24.5	3.9
Pharmacy store	86.6	2.8	10.6	manufacturing	82.8	9.4	7.8	staff dispensing	71.4	25.3	3.3	outpatient dispensing	71.3	25.2	3.5
Purchasing	82	1.7	16.3	review med.chart	81.9	14.2	3.9	research	68.5	16.3	15.2	manufacturing	68.1	18.5	13.4
Ward round participation	79.5	15.5	5	imprest	82.4	6.4	11.2	manufacturing	63	22.8	14.1	ward round participation	66.7	26.8	6.6
Manufacturing	78.3	9.3	12.4	ward round participation	64.3	26.2	9.5	ward round participation	53.8	38.5	7.7	staff dispensing	62.9	30.2	6.9

Table 4.20 *No statistically significant hospital effect on service requirements of doctors and nurses<sup>a,b</sup>*

Respondent type	
Doctors	Nurses
Inpatient dispensing	Inpatient dispensing
Drug information service	Drug information service
Pharmacy purchasing	Pharmacy purchasing
Drug education for hospital staff (informal)	Drug education for hospital staff (informal)
In-service, structured lectures for hospital staff	In-service, structured lectures for hospital staff
Review of medication charts	Intervention in/ monitoring of patient drug therapy
Adverse drug reaction monitoring	Therapeutic drug monitoring
Manufacturing	Pharmacy store
Discharge medication counselling for patients	Pharmacy publications/ bulletins
Patient information and education on drugs/ medicines	Drug cost monitoring

<sup>a</sup>  $p < 0.05$  chi-square test<sup>b</sup> A significant hospital effect was seen for those services listed in Table 4.12 and not included in Table 4.20

#### 4.3.2 Influence of hospital size and location on fundamental services.

From an examination of the data presented above, a list of fundamental hospital pharmacy services can be determined for the various hospital sizes and locations (Tables 4.21 and 4.22).

Table 4.21 *Fundamental hospital pharmacy services for doctors<sup>a</sup>*

All hospitals			
	Inpatient dispensing Drug information service Adverse drug reaction monitoring Drug education for hospital staff- informal Patient information and education on drugs/ medicines		
Large city	Large country	Small city	Small country
Sterile/ intravenous preparations	Sterile/ intravenous preparations	Sterile/ intravenous preparations	Reviewing medication charts
Discharge medication counselling for patients	Seven day a week service	Discharge medication counselling for patients	Drug cost monitoring
Drug cost monitoring			
Outpatient dispensing			
Pharmacy publications/ bulletins			
Clinical trial support			

<sup>a</sup> At least 90% of doctors from each hospital size and location indicated that the service should be provided.

Table 4.22 Fundamental hospital pharmacy services for nurses<sup>a</sup>

All hospitals			
	Drug information service Inpatient dispensing Sterile/ intravenous preparations Drug education for hospital staff-informal Patient information and education on drugs/ medicines In-service, structured lectures for hospital staff Adverse drug reaction monitoring <sup>b</sup> Drug cost monitoring Pharmacy publications/ bulletins		
Large city	Large country	Small city	Small country
Reviewing medication charts	Seven day a week service	Reviewing medication charts	Reviewing medication charts
Discharge medication counselling	Outpatient dispensing <sup>b</sup>	Discharge medication counselling	Discharge medication counselling
Imprest		Imprest	Imprest
Intervention in/ monitoring patient drug therapy			Intervention in/ monitoring patient drug therapy
Outpatient dispensing			

<sup>a</sup> At least 90% of nurses from each hospital size and location indicated that the service should be provided.

<sup>b</sup> Where 89.8% of nurses from large country hospitals indicated *outpatient dispensing and adverse drug reaction monitoring* should be provided, this has been rounded up to 90%

There was an impact of hospital size and location on fundamental service requirements, since doctors and nurses from large city hospitals supported a more extensive range than their counterparts in other hospitals.

Nurses supported many clinical services at large city hospitals, but doctors only supported *adverse drug reaction monitoring, discharge medication counselling, drug information, patient information and education, and informal drug education for hospital staff services*.

Doctors and nurses from large country hospitals only supported those fundamental clinical services common to doctors across all hospital sizes and locations, with the addition of *in-service, structured lectures* for nurses.

Fundamental service requirements for doctors and nurses from small city hospitals showed support for only a limited range of clinical services beyond those fundamental to doctors across all hospital sizes and locations, with both groups including *discharge*

*medication counselling*, and nurses including the *review of medication charts* and *in-service, structured lectures*.

The fundamental hospital pharmacy service requirements for nurses from both large city hospitals and small country hospitals had much in common with each other, with the exception of *outpatient dispensing* which was only included as a fundamental service for nurses from large city hospitals.

#### 4.4 Performance ratings

Doctors, nurses and pharmacists were asked in the first survey to rate how effective the performance of the pharmacy services were at their hospitals (Table 4.23). Pharmacists were asked to rate 33 measures of service, and doctors and nurses 31, with the difference due to pharmacists being also asked to rate *continuing education for staff pharmacists*, *education and training of non-pharmacist pharmacy staff*, and *presentation of medicines*. Pharmacists were not asked to rate *pharmacy bulletins and publications*.

**Table 4.23 Measures of customer service**

Measures of customer service on which respondents had to rate the effectiveness of performance of the pharmacy service	
Cooperation of pharmacy staff to users of the service	Discharge dispensing
Friendliness of pharmacy staff to users of the service	Timeliness of provision of medication
Medical knowledge of the pharmacist	Availability of stock
Pharmaceutical knowledge of the pharmacist	Sterile manufacture-intravenous preparations
Drug information service provided	Sterile manufacture-cytotoxics
Advice given on drug information queries	Discharge medication counselling of patients
Timeliness of response to drug information queries	Patient information & education on drugs/ medicines
Advice given on general queries	Pharmacy bulletins/ publications <sup>b</sup>
Timeliness of response to general queries	Drug education for hospital staff-informal
Participation in ward rounds	In-service, structured lectures for hospital staff
Review of medication charts	Extent of pharmacy department involvement in research
Medication history interview	Reliability of service
Adverse drug reaction monitoring/ management	Communication with users of the service
Intervention in/ monitoring patient drug therapy	After hours service
Therapeutic drug monitoring service (pharmacokinetic)	Overall service provided to the users of the service
Understanding and knowing the needs of the users	Presentation of medicines <sup>a</sup>
Efficiency of the pharmacy service	Continuing education for staff pharmacists <sup>a</sup>
Accuracy of dispensing	Education and training of non-pharmacist pharmacy staff <sup>a</sup>

<sup>a</sup> These measures were only rated by pharmacists

<sup>b</sup> Only rated by doctors and nurses in the 1993/94 survey.

All groups were asked to rate performance in a range between 0 and 10, where 0 was very poor performance and 10 was excellent performance. If the service was "not

applicable" at their hospital or they had "no opinion" regarding the particular measure, they were asked to tick a box related to these two options.

#### 4.4.1 Results

The ratings of effectiveness of the performance of the pharmacy services at the various hospitals are given in Table 4.24.<sup>22</sup> Frequency diagrams showing the range of ratings for each measure are included in Appendix 2 (Figures A2.1 to A2.31).

Table 4.24. Performance ratings on measures of pharmacy services

Measure of service	Doctors			Nurses			Pharmacists		
	mean	Std dev. <sup>d</sup>	n <sup>a</sup>	mean	Std dev. <sup>d</sup>	n <sup>b</sup>	mean	Std dev. <sup>d</sup>	n <sup>c</sup>
Cooperation of pharmacy staff to users of the service	8.43	1.80	539	8.19	1.88	1097	8.29	1.30	211
Friendliness of pharmacy staff to users of the service	8.49	1.75	534	8.30	1.89	1110	8.41	1.30	211
Medical knowledge of the pharmacist	7.58	1.69	407	8.12	1.69	892	6.92	1.41	206
Pharmaceutical knowledge of the pharmacist	8.73	1.13	451	8.88	1.37	1009	7.96	1.15	208
Drug information service provided	8.28	1.93	463	7.72	2.23	1019	7.78	1.69	206
Advice given on drug information queries	8.53	1.65	494	8.45	1.77	1085	8.17	1.29	204
Timeliness of response to drug information queries	8.54	1.58	475	8.09	1.89	1047	7.82	1.37	200
Advice given on general queries	8.43	1.50	472	8.26	1.72	1056	8.23	1.03	208
Timeliness of response to general queries	8.45	1.59	447	8.03	1.83	1031	8.29	1.11	204
Participation in ward rounds	6.02	3.52	177	5.74	3.64	498	6.63	2.34	154
Review of medication charts	7.73	2.16	304	7.38	2.72	791	8.19	1.58	196
Medication history interview									
Adverse drug reaction monitoring/ management	7.37	2.37	270	6.71	2.92	629	6.83	1.83	191
Intervention in/ monitoring patient drug therapy	7.34	2.32	261	6.89	2.74	689	7.67	1.70	199
Therapeutic drug monitoring service (pharmacokinetic)	7.29	2.54	221	6.82	2.84	545	6.83	2.12	177
Understanding and knowing the needs of the users	7.09	2.15	383	7.21	2.28	894	7.49	1.45	200
Efficiency of the pharmacy service	7.75	1.83	488	7.37	2.01	1086	7.68	1.40	208
Accuracy of dispensing	9.01	1.10	467	8.78	1.43	1068	8.65	1.00	211
Discharge dispensing	8.42	1.69	415	8.05	1.93	902	8.37	1.13	202
Timeliness of provision of medication	7.90	1.91	450	7.17	2.06	1036	7.87	1.10	210
Presentation of medicines							8.61	1.06	210
Availability of stock	7.60	2.01	441	7.46	2.05	1077	8.14	1.21	209
Sterile manufacture-intravenous preparations	8.84	1.33	349	8.52	1.69	910	8.37	1.44	191
Sterile manufacture-cytotoxics									
Discharge medication counselling of patients	7.08	2.56	224	6.42	3.11	745	7.79	1.58	203
Patient information & education on drugs/ medicines	7.06	2.43	234	6.29	2.93	789	7.59	1.53	201
Pharmacy bulletins/ publications	7.17	2.46	359	6.11	2.92	825			
Drug education for hospital staff-informal	7.2	2.27	303	6.48	2.79	965	7.38	1.62	193
In-service, structured lectures for hospital staff	4.34	3.38	134	4.74	3.29	784	6.90	2.06	177
Extent of pharmacy department involvement in research	5.88	3.12	139	5.27	3.42	225	4.92	2.57	145
Reliability of service	8.49	1.44	497	7.80	1.89	1073	8.33	1.05	210
Communication with users of the service	7.92	2.04	456	7.44	2.22	1004	7.80	1.34	206
After hours service	6.15	2.76	370	5.26	3.07	897	7.94	1.66	198
Overall service provided to the users of the service	8.02	1.62	510	7.80	1.71	1059	8.10	1.01	210
Continuing education for staff pharmacists							7.20	1.94	203
Education and training of non-pharmacist pharmacy staff							5.91	2.35	185

<sup>a</sup> Number of doctors who responded to the question of 618 (total doctor respondents).

<sup>b</sup> Number of nurses who responded out of 1160

<sup>c</sup> Number of pharmacists who responded out of 211 cases

<sup>d</sup> Standard deviation

<sup>22</sup> Mean ratings

Some differences are notable: doctors and nurses rated more highly than pharmacists the *pharmaceutical knowledge of the pharmacists*; and doctors rated more highly than both nurses and pharmacists *drug information services, advice given on drug information queries, timeliness of response to drug information queries, timeliness of response to general queries, adverse drug reaction monitoring, accuracy of dispensing, discharge dispensing and sterile manufacture of intravenous preparations*.

The ratings that pharmacists gave themselves were higher than those provided by doctors and nurses for *participation in ward rounds, review of medication charts, intervention in or monitoring drug therapy, patient information and education on drugs and medicines, in-service, structured lectures for hospital staff and availability of stock*. Pharmacists did not rate their *involvement in research* as highly as did doctors and nurses, although a large percentage of doctors and nurses did not give a rating for this at all.

Nurses gave a lower rating for *discharge medication counselling of patients and informal drug education for hospital staff* than did doctors and pharmacists, and the *reliability of the service* was also rated lower by nurses, possibly reflecting their lower ratings for *timeliness of provision of medication and availability of stock*. Nurses also gave a poorer rating for the *after hours service* of the pharmacy departments, probably reflecting a frustration they often voice regarding access to medication after hours.

Statistically significant differences (t-test) in ratings between doctors and nurses existed except for: *friendliness of pharmacy staff to users of the service; advice given on drug information queries; advice given on general queries; participation in ward rounds; understanding and knowing the needs of the users; availability of stock; in-service or structured lectures for hospital staff; and extent of pharmacy department involvement in research*.<sup>23</sup>

In order to test the means for more than two samples, ANOVA was used.<sup>24</sup> The

<sup>23</sup> The independent samples t-test for the equality of means.

<sup>24</sup> Analysis of variance



comparison of the means for the measures of customer service for the doctors, nurses and pharmacists gave an F value with a significance less than 0.05 for all the measures tested except: *friendliness of the pharmacy staff*; *advice given on general queries*; *therapeutic drug monitoring service*; and *understanding and knowing the needs of the users*.<sup>25</sup>

#### 4.4.2 The “no opinion” and “not applicable” responses

A troubling observation from the results was the large number of respondents who gave “no opinion” or “not applicable” responses, particularly to measures associated with clinical pharmacy services (Figures 4.1 to 4.4).

These responses are far greater than would be expected, given the number of hospitals that indicated that they actually provided the services (Table 4.11). For instance 35.6% of doctors and 13.6% of nurses had no opinion about the performance by pharmacists in the *review of medication charts*, and 9.9% and 15.3% respectively indicated it was not applicable. This is in contrast to another question which asked doctors if their hospital pharmacy provided a *review of medication charts*, (Table 4.12) for which 71.6% of doctors indicated that they did.<sup>26</sup>

The analysis of the ratings, therefore, has to take into account the fact that a significant number of doctors and nurses failed to rate some measures.<sup>27</sup> Factor analysis and regression analysis could not be used to analyse the responses because, in some instances, only 116 out of 1778 doctors and nurses gave ratings for all customer service measures.<sup>28</sup>

<sup>25</sup> One reason for the statistically significant differences found here between each of the respondent groups may be because of the large sample size and number of responses as this would allow smaller “differences” to be identified than if this study were dealing with a very small population of respondents.

<sup>26</sup> In fact pharmacists in 95.3% of hospitals in Australia, and 97.8% in Victoria performed this function Wilson et al. (2000a) and Tenni and Hughes (1996) indicated 96% of Australian hospitals provide this service. The research reported in this thesis (from the first survey) found 97.4% of hospitals provided this service (Table 4.11).

<sup>27</sup> Choosing instead to selected a nominal response i.e. “no opinion” or “not applicable”.

<sup>28</sup> Certainly the mean ratings given for each measure which was given a “no opinion” or “not applicable” response could have been substituted, as is done in market research, however statistical advice indicated that this would be inappropriate (Clark, 1999). Another opinion suggests that a no opinion response is equivalent to a 5 (out of 10) rating (i.e. a neutral rating) which could then be substituted for all cases where a no opinion response was indicated. (Stopher, 2001).

Figure 4.1 Frequency of "no opinion" responses given by doctors to performance of the pharmacy on measures of service (n=618)

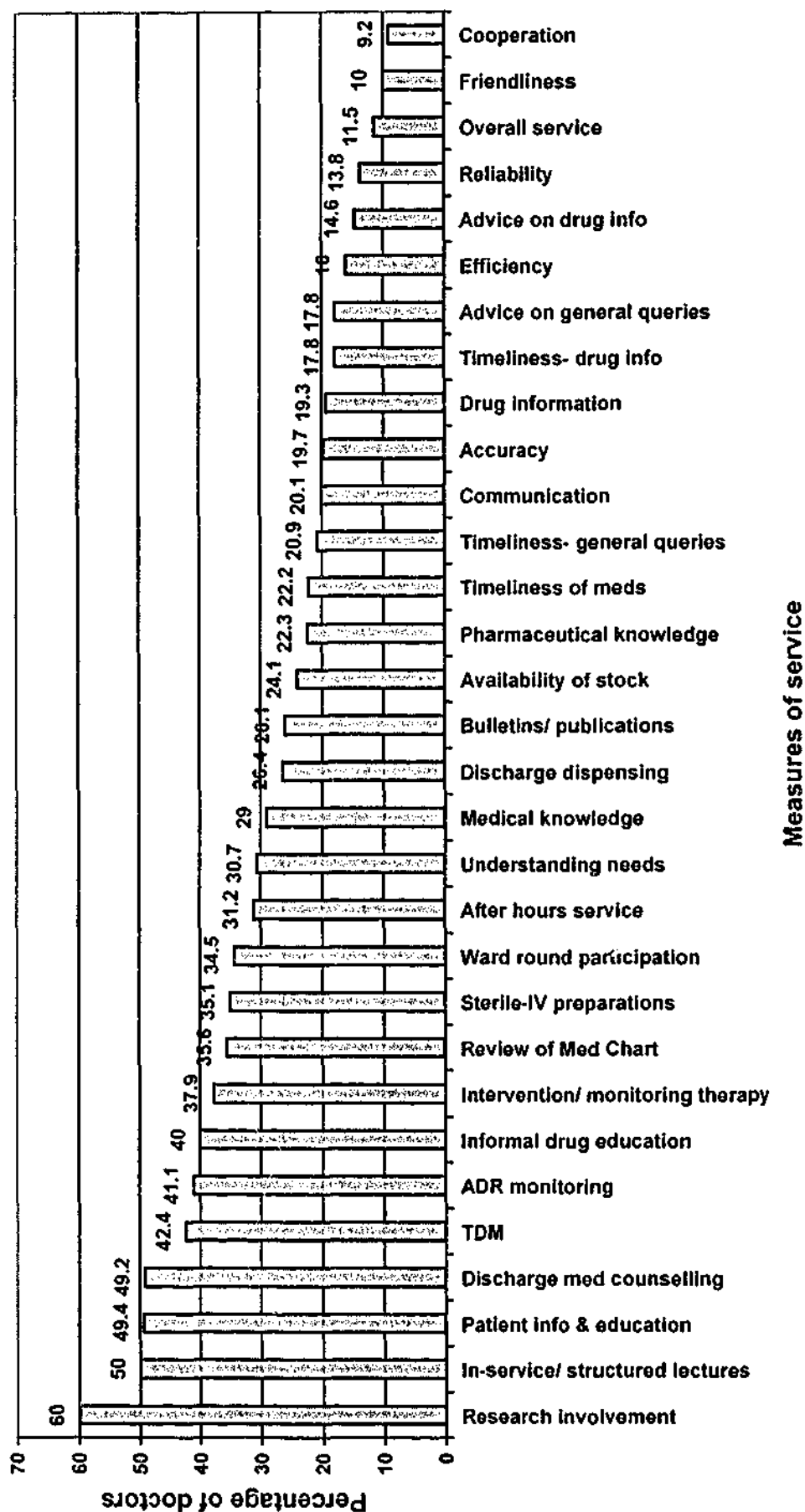


Figure 4.2 Frequency of "not applicable" responses given by doctors to performance of the pharmacy on measures of service (n=618)

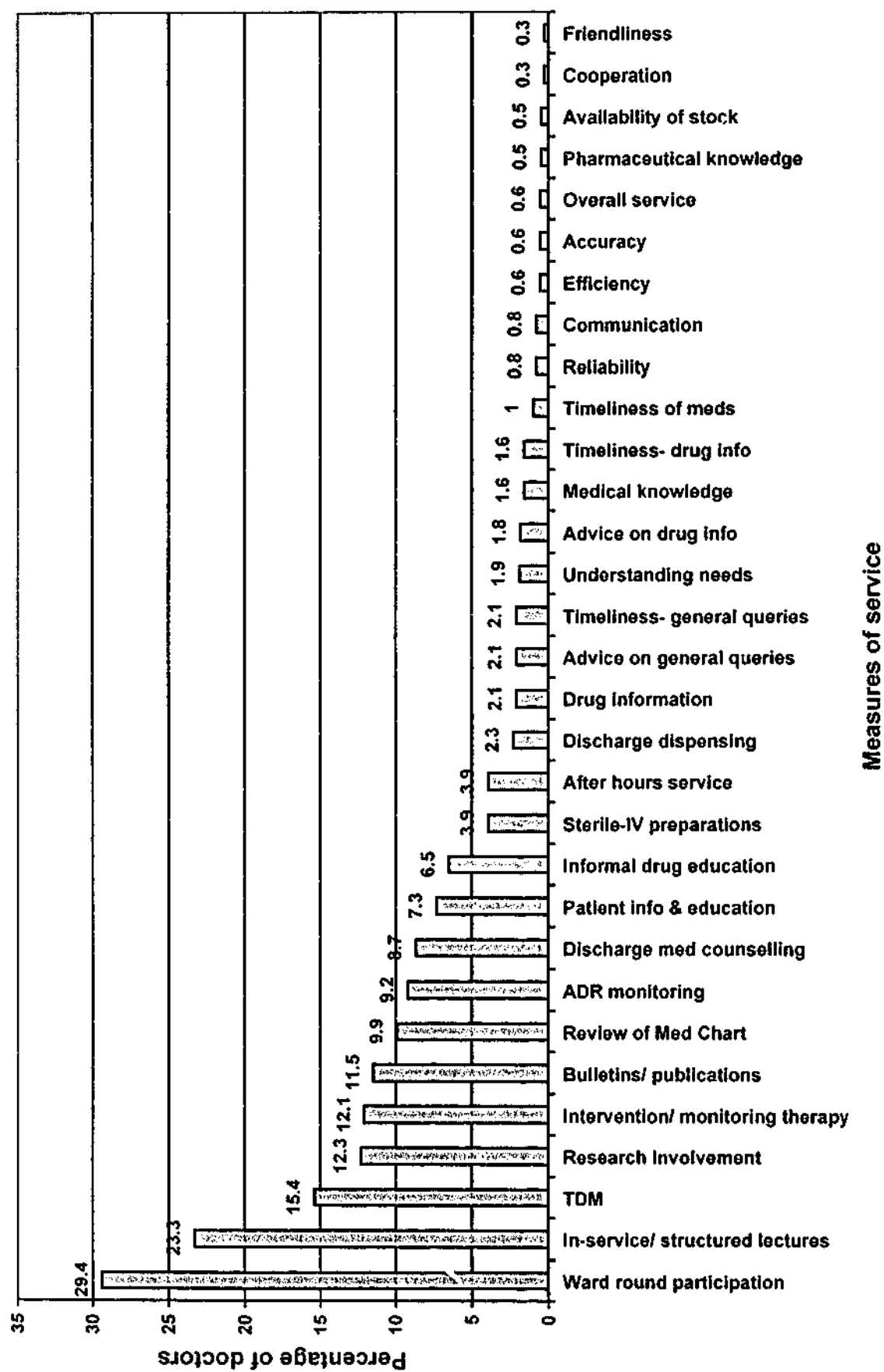


Figure 4.3 Frequency of "no opinion" responses given by nurses to performance of the pharmacy on measures of service (n=1160)

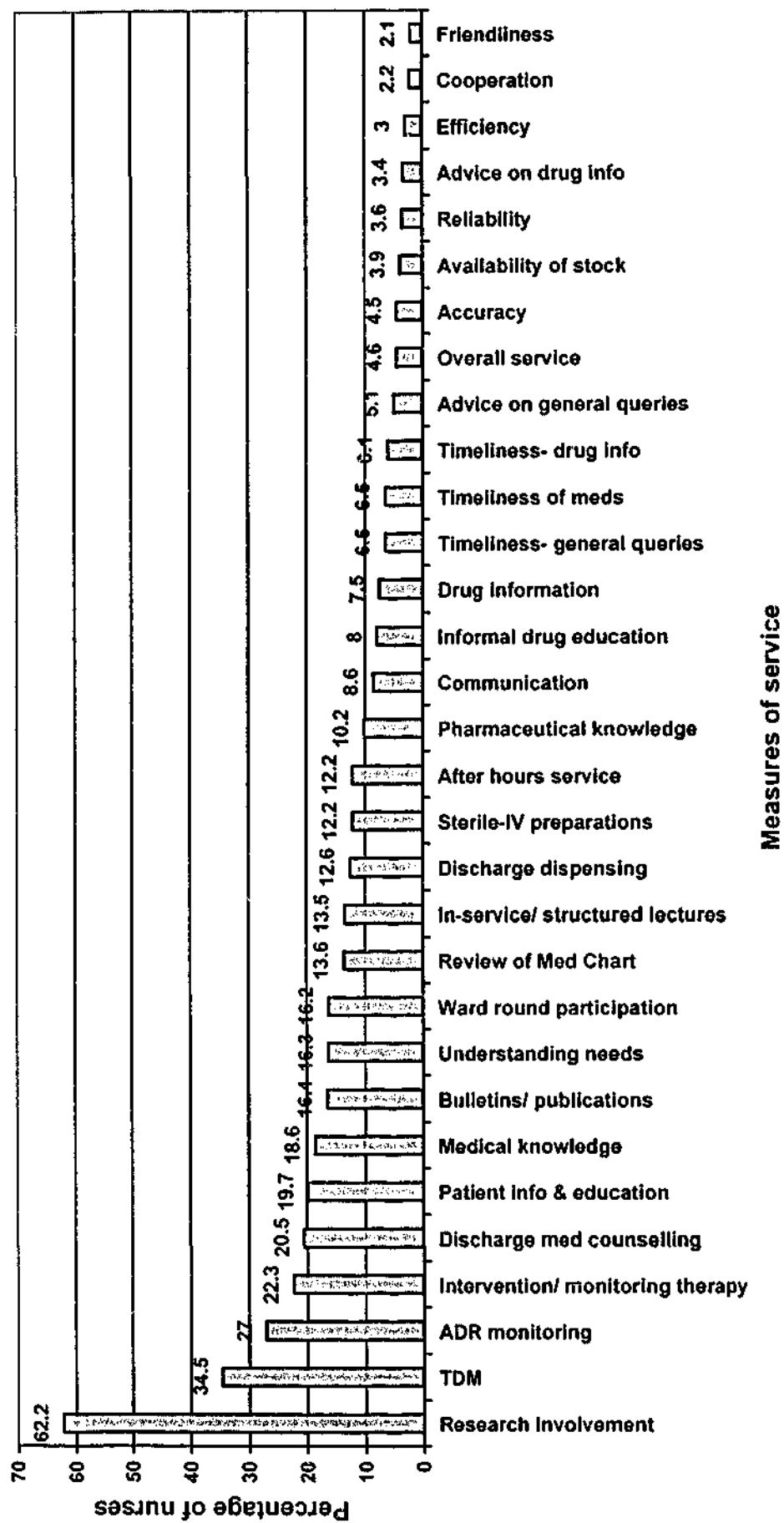
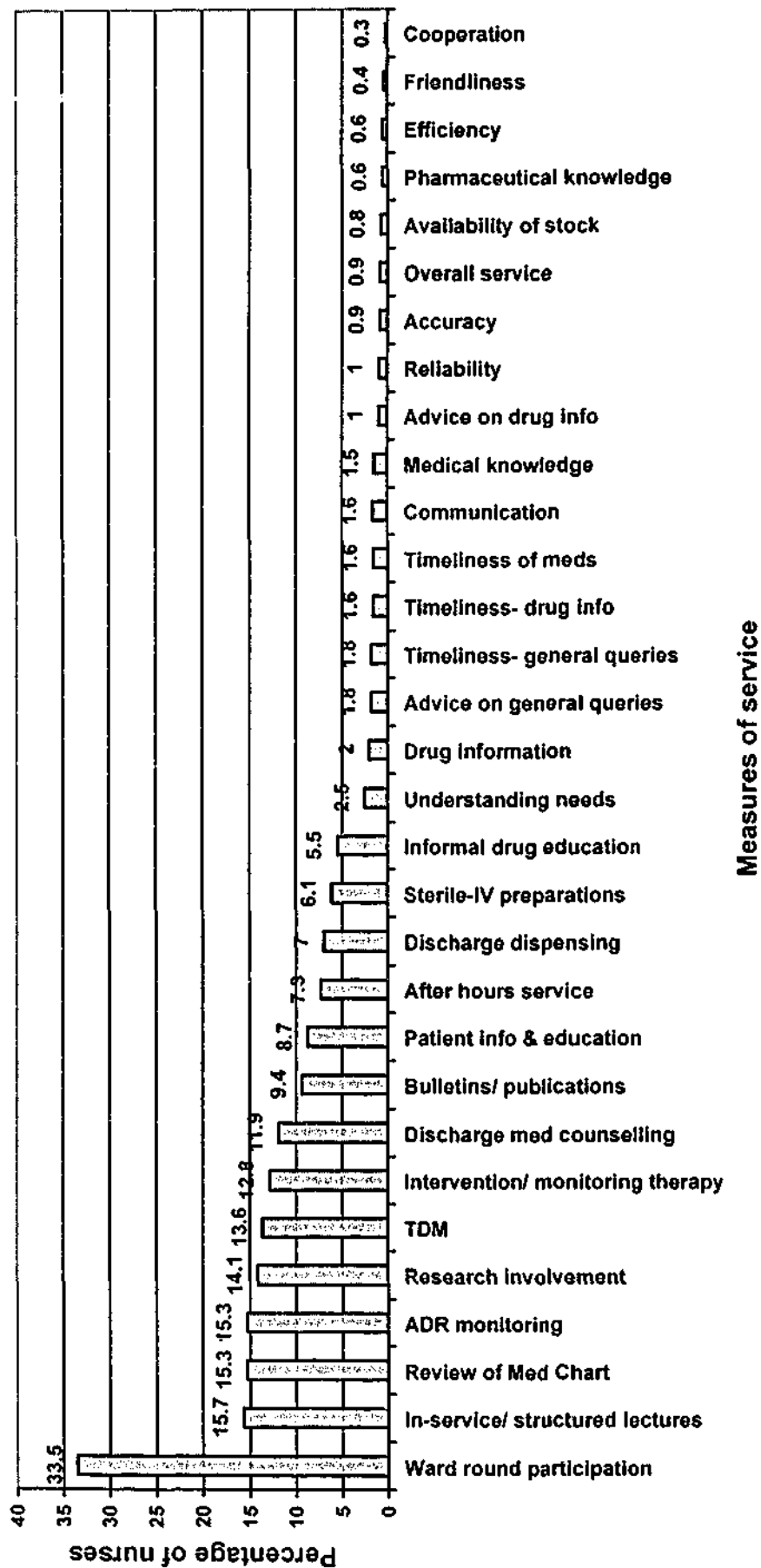


Figure 4.4 Frequency of "not applicable" responses given by nurses to performance of the pharmacy on measures of service (n=1160)



#### 4.4.3 Influence of hospital size and location

The performance ratings obtained for pharmacy services were determined for each hospital size and location (Tables 4.25, 4.26, and 4.27) and statistically significant differences are shown in Table 4.28.

**Table 4.25 Performance ratings by doctors across the hospital sizes and locations**

Measure of service	Large city hospitals			Large country hospitals			Small city hospitals			Small country hospitals		
	Mean	Std dev <sup>a</sup>	n <sup>b</sup>	mean	Std dev <sup>a</sup>	n <sup>b</sup>	mean	Std dev <sup>a</sup>	n <sup>b</sup>	Mean	Std. dev <sup>a</sup>	n <sup>b</sup>
Cooperation of pharmacy staff to users of the service	8.48	1.52	358	9.02	1.21	55	7.59	2.78	49	8.32	2.34	77
Friendliness of pharmacy staff to users of the service	8.53	1.49	349	8.91	1.51	54	7.80	2.69	50	8.49	2.11	81
Medical knowledge of the pharmacist	7.50	1.57	262	7.95	1.72	43	7.55	2.25	33	7.67	1.80	69
Pharmaceutical knowledge of the pharmacist	8.69	1.03	295	8.91	1.21	46	8.60	1.61	35	8.80	1.20	75
Drug information service provided	8.53	1.56	316	7.95	2.0	38	6.90	3.19	39	8.14	2.14	70
Advice given on drug information queries	8.59	1.52	323	8.75	1.26	51	7.64	2.61	44	8.66	1.55	76
Timeliness of response to drug information queries	8.54	1.47	315	9.13	1.06	48	7.77	2.44	43	8.65	1.55	69
Advice given on general queries	8.46	1.28	311	8.64	1.37	47	7.76	2.61	41	8.55	1.55	73
Timeliness of response to general queries	8.44	1.44	293	8.67	1.40	45	7.85	2.71	41	8.72	1.37	68
Participation in ward rounds	6.47	3.22	146	2.25	2.06	4	2.22	3.49	9	5.11	4.46	18
Review of medication charts	7.79	2.09	211	6.62	1.66	13	7.30	2.98	23	7.96	2.08	57
Adverse drug reaction monitoring	7.43	2.27	192	6.87	1.89	16	6.50	3.76	18	7.61	2.22	44
Intervention in monitoring patient drug therapy	7.40	2.20	184	6.42	2.11	12	6.85	3.17	20	7.56	2.43	45
Therapeutic drug monitoring service (pharmacokinetic)	7.32	2.42	167	6.44	2.07	9	5.80	4.13	10	7.80	2.54	35
Understanding and knowing the needs of the users	7.12	1.96	254	7.61	1.94	38	6.38	2.72	32	7.03	2.63	59
Efficiency of the pharmacy service	7.68	1.74	317	8.54	1.45	52	7.27	2.39	49	7.80	1.88	70
Accuracy of dispensing	8.97	1.06	308	9.20	1.30	51	8.76	1.32	42	9.17	0.95	66
Discharge dispensing	8.36	1.66	277	8.82	1.71	45	8.22	1.84	36	8.49	1.72	57
Timeliness of provision of medication	7.87	1.84	294	8.37	1.67	49	7.76	2.28	41	7.80	2.10	66
Availability of stock	7.67	1.89	280	8.47	1.37	49	6.74	2.87	43	7.19	1.98	69
Sterile intravenous preparations	8.81	1.29	235	9.17	0.88	36	8.24	2.03	25	9.04	1.32	53
Discharge medication counselling of patients	7.34	2.24	158	6.54	2.70	13	6.15	3.83	20	6.61	2.87	33
Patient information & education on drugs/ medicines	7.32	2.09	170	6.80	2.82	10	6.00	3.64	19	6.43	2.88	35
Pharmacy bulletins/ publications	7.60	2.08	282	6.92	2.52	24	4.29	3.51	17	5.33	2.88	36
Drug education for hospital staff-informal	7.51	1.91	211	7.00	2.34	20	5.57	3.54	21	6.65	2.64	51
In-service, structured lectures for hospital staff	4.55	3.31	86	4.50	3.84	10	1.10	2.85	10	4.79	3.15	28
Extent of pharmacy department involvement in research	6.57	2.64	108	6.11	3.86	9	1.00	2.45	6	2.94	2.82	16
Reliability of service	8.46	1.29	332	9.00	1.09	50	8.02	2.25	42	8.53	1.60	73
Communication with users of the service	8.00	1.76	299	8.40	1.64	47	7.08	3.29	39	7.72	2.37	71
After hours service	5.91	2.70	243	7.48	2.14	44	6.54	3.39	26	6.00	2.89	57
Overall service provided to the users of the service	8.10	1.31	334	8.47	1.37	53	7.09	2.85	46	7.95	1.79	77

<sup>a</sup>Std dev = standard deviation

<sup>b</sup>n = number of respondents

Table 4.26 Performance ratings by nurses across the hospital sizes and locations

Measure of service	Large city hospitals			Large country hospitals			Small city hospitals			Small country hospitals		
	mean	Std dev	n	mean	Std dev	n	mean	Std dev	n	Mean	Std. dev	n
Cooperation of pharmacy staff to users of the service	8.10	1.86	658	8.37	1.58	126	7.89	2.08	85	8.43	2.00	228
Friendliness of pharmacy staff to users of the service	8.21	1.86	664	8.54	1.66	126	8.08	2.07	88	8.53	1.98	232
Medical knowledge of the pharmacist	8.01	1.72	532	8.38	1.55	109	8.30	1.70	70	8.23	1.67	181
Pharmaceutical knowledge of the pharmacist	8.80	1.32	599	9.02	1.29	118	9.06	1.18	83	8.94	1.57	209
Drug information service provided	7.76	2.17	601	7.66	2.26	121	7.36	2.42	81	7.76	2.31	216
Advice given on drug information queries	8.40	1.70	648	8.44	1.84	125	8.28	2.08	86	8.66	1.81	226
Timeliness of response to drug information queries	7.97	1.85	619	8.30	1.77	124	8.06	1.94	84	8.31	2.01	220
Advice given on general queries	8.16	1.68	625	8.51	1.65	125	8.02	1.61	84	8.49	1.87	222
Timeliness of response to general queries	7.90	1.81	615	8.22	1.80	122	7.82	1.76	82	8.36	1.88	212
Participation in ward rounds	5.92	3.58	324	7.02	3.16	60	2.91	3.57	33	5.23	3.67	81
Review of medication charts	7.32	2.82	465	7.48	3.22	69	7.03	2.69	67	7.61	2.25	190
Adverse drug reaction monitoring	6.67	2.97	365	7.04	2.96	69	5.62	3.27	47	6.99	2.55	148
Intervention in/ monitoring patient drug therapy	6.84	2.85	396	7.17	2.66	78	6.23	2.90	48	7.05	2.43	167
Therapeutic drug monitoring service (pharmacokinetic)	6.68	2.89	328	7.59	2.58	68	5.68	3.09	34	7.06	2.66	115
Understanding and knowing the needs of the users	7.20	2.25	523	7.09	2.23	103	6.93	2.46	73	7.42	2.31	195
Efficiency of the pharmacy service	7.18	2.06	655	7.89	1.79	122	7.25	1.70	89	7.67	2.20	203
Accuracy of dispensing	8.73	1.45	635	8.80	1.24	124	8.62	1.39	89	8.97	1.46	220
Discharge dispensing	7.86	1.97	546	8.35	1.47	105	8.22	1.64	77	8.37	2.11	174
Timeliness of provision of medication	6.86	2.16	611	7.88	1.47	120	7.24	1.89	84	7.62	1.92	221
Availability of stock	7.41	2.09	642	7.87	1.68	126	7.24	1.99	89	7.45	2.14	220
Sterile intravenous preparations	8.48	1.59	555	8.85	1.39	111	7.94	2.36	69	8.70	1.80	175
Discharge medication counselling of patients	6.49	3.08	451	6.40	2.95	77	5.47	3.43	59	6.57	3.13	158
Patient information & education on drugs/ medicines	6.19	2.99	460	6.48	2.79	99	6.29	3.00	62	6.45	2.86	168
Pharmacy bulletins/ publications	6.38	2.75	489	6.65	2.61	110	5.09	3.09	65	5.34	3.29	161
Drug education for hospital staff- informal	6.23	2.85	565	6.90	2.61	116	6.31	2.53	75	6.98	2.73	209
In-service, structured lectures for hospital staff	4.28	3.28	454	5.78	2.97	97	4.77	3.53	61	5.38	3.17	172
Extent of pharmacy department involvement in research	5.34	3.37	128	6.45	3.16	42	4.27	3.13	11	4.18	3.57	44
Reliability of service	7.69	1.92	640	8.32	1.50	125	7.48	1.93	89	7.98	1.94	219
Communication with users of the service	7.35	2.17	588	7.85	2.03	117	6.70	2.28	86	7.79	2.32	213
After hours service	4.81	2.98	530	6.24	2.87	116	4.90	3.36	72	6.09	3.04	179
Overall service provided to the users of the service	7.72	1.64	633	8.08	1.53	123	7.34	1.76	87	8.04	1.92	216

Table 4.27 Performance ratings by pharmacists across the hospital sizes and locations

Measure of service	Large city hospitals			Large country hospitals			Small city hospitals			Small country hospitals		
	mean	Std dev	n	mean	Std dev	n	mean	Std dev	n	Mean	Std. dev	n
Cooperation of pharmacy staff to users of the service	8.29	1.15	137	8.05	2.09	19	8.25	1.83	20	8.43	0.98	35
Friendliness of pharmacy staff to users of the service	8.31	1.14	137	8.16	2.09	19	8.65	1.73	20	8.77	1.00	35
Medical knowledge of the pharmacist	6.95	1.37	133	7.11	1.82	19	6.47	1.90	19	6.97	0.95	35
Pharmaceutical knowledge of the pharmacist	7.99	1.14	135	8.11	1.29	19	7.42	1.54	19	8.06	0.76	35
Drug information service provided	8.14	1.50	134	7.78	1.80	18	6.79	2.04	19	6.94	1.66	35
Advice given on drug information queries	8.34	1.21	132	8.11	1.33	19	7.78	1.44	18	7.74	1.38	35
Timeliness of response to drug information queries	7.86	1.28	127	8.05	1.58	19	7.63	1.42	19	7.66	1.57	35
Advice given on general queries	8.22	1.02	134	8.00	1.25	19	8.35	0.88	20	8.31	1.02	35
Timeliness of response to general queries	8.32	1.07	130	8.11	1.29	19	8.30	0.92	20	8.26	1.24	35
Participation in ward rounds	6.85	1.92	117	7.83	1.59	12	4.91	4.04	11	5.14	3.21	14
Review of medication charts	8.27	1.64	129	8.07	1.64	14	8.05	1.43	19	8.00	1.41	34
Adverse drug reaction monitoring	7.05	1.70	127	6.73	2.05	15	6.11	2.72	18	6.42	1.48	31
Intervention in/ monitoring patient drug therapy	7.87	1.64	130	7.73	1.98	15	6.89	1.97	19	7.34	1.51	35
Therapeutic drug monitoring service (pharmacokinetic)	7.05	2.04	122	6.80	2.31	15	5.13	2.60	16	6.87	1.65	24
Understanding and knowing the needs of the users	7.55	1.25	129	6.82	2.21	17	7.35	1.69	20	7.65	1.54	34
Efficiency of the pharmacy service	7.54	1.37	136	8.06	2.04	18	7.70	1.42	20	8.03	1.00	34
Accuracy of dispensing	8.64	0.89	137	8.42	1.50	19	8.55	1.32	20	8.91	0.89	35
Discharge dispensing	8.36	1.05	136	8.13	1.63	16	8.65	1.31	20	8.33	1.06	30
Timeliness of provision of medication	7.73	1.09	137	8.21	1.03	19	7.95	1.19	20	8.18	1.06	34
Presentation of medicines	8.66	1.01	137	8.42	1.12	19	8.30	1.42	20	8.71	0.97	34
Availability of stock	8.20	1.05	135	8.26	1.19	19	7.35	1.93	20	8.29	1.15	35
Sterile intravenous preparations	8.46	1.24	134	8.58	1.17	19	6.57	2.56	14	8.71	1.16	24
Discharge medication counselling of patients	8.09	1.31	137	7.33	1.18	15	7.05	2.82	20	7.19	1.45	31
Patient information & education on drugs/ medicines	7.77	1.30	134	7.50	1.46	16	6.79	2.66	19	7.34	1.49	32
Drug education for hospital staff-informal	7.43	1.53	121	7.63	1.26	19	6.63	2.67	19	7.47	1.28	34
In-service, structured lectures for hospital staff	7.09	1.89	116	7.44	1.62	18	5.13	2.95	15	6.68	2.04	28
Extent of pharmacy department involvement in research	5.24	2.43	105	5.92	2.68	12	2.82	2.96	11	3.65	2.09	17
Reliability of service	8.28	1.02	136	8.47	1.17	19	8.55	1.28	20	8.34	1.00	35
Communication with users of the service	7.78	1.19	132	7.32	2.16	19	7.90	1.68	20	8.06	1.03	35
After hours service	8.03	1.38	133	8.26	1.45	19	6.38	2.94	16	8.20	1.67	30
Overall service provided to the users of the service	8.11	0.82	136	7.95	1.96	19	8.20	1.20	20	8.09	0.89	35
Continuing education for staff pharmacists	7.65	1.56	136	6.56	2.53	18	5.76	2.91	17	6.41	1.79	32
Education and training of non-pharmacist pharmacy staff	6.05	2.20	125	5.88	2.18	17	3.81	3.33	16	6.56	1.87	27



Table 4.28 *Significant hospital influence upon ratings*<sup>a</sup>

Doctors	Nurses	Pharmacists <sup>b</sup>
Cooperation of pharmacy staff to users of the service	Cooperation of pharmacy staff to users of the service	
Friendliness of pharmacy staff to users of the service	Friendliness of pharmacy staff to users of the service	
Drug information service provided		Drug information service provided
Advice given on drug information queries		Advice given on drug information queries
Timeliness of response to drug information queries		
Advice given on general queries	Advice given on general queries	
Timeliness of response to general queries	Timeliness of response to general queries	
Participation in ward rounds	Participation in ward rounds	Participation in ward rounds
	Adverse drug reaction monitoring	
	Therapeutic drug monitoring service	Therapeutic drug monitoring service
Efficiency of the pharmacy service	Efficiency of the pharmacy service	
	Discharge dispensing	
	Timeliness of provision of medication	
Availability of stock		Availability of stock
Sterile / intravenous preparations	Sterile / intravenous preparations	Sterile / intravenous preparations
Drug education for hospital staff-informal	Drug education for hospital staff-informal	
In-service, structured lectures to hospital staff	In-service, structured lectures to hospital staff	In-service, structured lectures to hospital staff
		Discharge medication counselling of patients
Patient information and education on drugs/ medicines		Patient information and education on drugs/ medicines
Pharmacy bulletins/ publications	Pharmacy bulletins/ publications	
Extent of pharmacy department involvement in research	Extent of pharmacy department involvement in research	Extent of pharmacy department involvement in research
Reliability of the service	Reliability of the service	
Communication with users of the service	Communication with users of the service	
After hours service	After hours service	After hours service
Overall service provided to the users of the service	Overall service provided to the users of the service	

<sup>a</sup> ANOVA, F value significance <0.05<sup>b</sup> There was also an hospital size and location difference on pharmacists' mean ratings for *continuing education for staff pharmacists*, and *education and training of non-pharmacy pharmacy staff*, which were specific to the pharmacists questionnaire only.

The most noticeable difference between ratings by doctors from different hospitals were the lower ratings by those in small city hospitals for most measures apart from *after hours service*, which received low ratings by doctors from large city and small country

hospitals. Some other differences were that doctors from large country hospitals rated the *efficiency* and *reliability* of the pharmacy service higher than their counterparts elsewhere. The *overall service provided to the users* was rated slightly higher by doctors from large hospital than small hospitals.

Nurses from small city hospitals gave a lower rating for *cooperation* and *friendliness of pharmacy staff* and *adverse drug reaction monitoring* than those from the other hospitals. The *overall service provided to the users of the pharmacy service* measure was rated slightly higher by country nurses than city nurses.

Doctors and nurses from small city hospitals rated many services lower than did their counterparts elsewhere, whilst doctors and nurses from large country hospitals gave higher ratings to many services compared to those from other hospitals.

For some measures there appeared to be differences in ratings (Tables 4.25, 4.26 and 4.27) but these were not statistically significant.

#### **4.5 Perceived importance of the pharmacist as a member of the healthcare team**

Doctors, nurses and pharmacists were asked to rate the importance of the pharmacist as a member of the healthcare team in their hospitals.<sup>29</sup> This question was asked because pharmacists have long believed they have a role in clinical pharmacy but little research has been undertaken to determine how others see this role. In the earlier study by Cukierman-Wilson, (1990, 1992) most staff rated the pharmacist as being important or very important as a member of the healthcare team.

##### **4.5.1 Rating of importance**

The rating of the importance of the pharmacist as a member of the healthcare team was

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<sup>29</sup> They were asked to give a score between 0 and 10, where 0 = not at all important (i.e. lowest rating) and 10 = very important (i.e. highest rating).

slightly higher by nurses than doctors and pharmacists themselves (Table 4.29).<sup>30</sup>

**Table 4.29 Rating of the importance of the pharmacist as a member of the healthcare team**

	Doctors <sup>a</sup>	Nurses <sup>b</sup>	Pharmacists <sup>c</sup>
Mean	7.33	7.92	7.55
Standard deviation	2.20	2.00	1.48
No response given	48	30	1

<sup>a</sup> n=618 doctors. <sup>b</sup> n=1160 nurses. <sup>c</sup> n=211 pharmacists.

When the rating of the importance of the pharmacist as a member of the healthcare team was further broken up by hospital size and location (Table 4.30) there was no statistically significant difference between the hospital groups for doctors even though doctors from small city hospitals gave a slightly lower rating than their counterparts from the other hospitals.<sup>31</sup>

**Table 4.30 Ratings of the importance of the pharmacist as a member of the healthcare team by hospital**

Hospital size and location	Doctors			Nurses			Pharmacists		
	Mean	Std. Dev.	n <sup>a</sup>	Mean	Std. Dev.	n <sup>b</sup>	Mean	Std. Dev.	n <sup>c</sup>
Large city	7.37	2.09	375	7.89	1.98	681	7.70	1.27	136
Small city	6.95	2.92	57	7.48	2.30	93	7.35	2.08	20
Large country	7.54	1.97	59	7.95	1.98	127	7.58	1.84	19
Small country	7.24	2.26	79	8.15	1.93	229	7.06	1.57	35

<sup>a</sup> number of 570 doctors who responded. <sup>b</sup> number of 1130 nurses who responded

<sup>c</sup> number of 210 pharmacists who responded

Nurses in small country hospitals gave a slightly higher rating of the importance of the pharmacist than their counterparts elsewhere, and nurses from small city hospitals rated this lowest.<sup>32</sup>

Pharmacists rated their importance slightly higher in large city hospitals than other hospitals but there was no significant difference.<sup>33</sup>

<sup>30</sup> The t-test of two independent samples for the mean rating from doctors and nurses showed a significant difference existed between them (2-tailed significance = 0.000).

A comparison of the mean for doctors, nurses and pharmacists (ANOVA) showed a significance of F (17.05) = 0.000. In other words the means between the three groups were significantly different.

<sup>31</sup> ANOVA, F=0.843, significance = 0.471

<sup>32</sup> ANOVA showed some statistically significant difference existed (ANOVA, F = 2.568, significance = 0.053).

<sup>33</sup> ANOVA, F=1.906, significance = 0.13.

#### 4.5.2 Reasons for ratings of importance

Some comments made by doctors, nurses and pharmacists about the reasons for their ratings of importance of the pharmacists are detailed in Appendix 2 (Tables A2.1 to A2.3) and a selection is included here to indicate the types of reasons given:

When pharmacists had a clinical involvement they seemed to feel that they were important as members of the health team:

*"Pharmacists are seen as reliable members of the team by nurses and doctors and have a lot of involvement in medical round and direct patient care. Consultation is often widely sought and our contribution, I believe, is highly valued."*

*"Important member in areas where have a large input. Wards without pharmacist don't rate pharmacists with the same importance as ward with pharmacist."*

Pharmacists said that by being actively involved on the wards they were visible, accessible and seen to have a team role:

*"The involvement is largely up to the individual and so can vary from next to none (merely a supply function) to very high clinical involvement."*

*"Pharmacists not on all wards- so not reaching all areas directly. Need to be seen to be there as part of the team."*

Some pharmacists felt somewhat vulnerable in a clinical environment by deficiencies associated with insufficient clinical training in the undergraduate course:

*"Pharmacist knowledge in disease states, treatment options and use of drugs is not as good as other member of team. Pharmacists are unfortunately too generalised in their knowledge to be able to keep pace with specialised treatments. They should excel in knowledge of drugs."*

*"Emphasis on practical application of information is very important. Cannot be a 'drug expert' by knowing theory alone. More contact needed with patients during training. Witnessing effect of drugs is a greater teacher than text book e.g. medical intern knows very little re drugs at start of year- at end have often developed knowledge exceeding that of pharmacist."*

Some pharmacists felt they were more accepted by nurses than doctors:

*"Provide a lot of assistance to nurses in products and information, but though doctors (all but two are GP's) listen to what we have to say, it seems to rarely*

*influence their prescribing habits. The two residents are more open to suggestions." (small country hospital pharmacist)*

*"Pharmacists significantly affect proper medication use in this hospital but knowledge/ skill is underutilised due to users still predominantly seeking pharmacists in a supply role (seen as responsible for drug acquisition and distribution)."*

Pharmacists were seen as a source of information by doctors:

*"Source of pharmaceutical information/ assistance with prescribing."*

*"Valuable source of information."*

*"Important patients understand drugs they take and possible complications, access to reliable medication service vital."*

Some doctors acknowledged the pharmacists' role in monitoring patient therapy but their clinical involvement was not uniformly embraced by doctors. Others saw the role of the pharmacist to be more one of supply:

*"Essential role in dispensing, monitoring charts and prescriptions."*

*"Often the only person to carefully check charts for drug interactions, dosages etc. It would be better, ideally, if the resident and ward pharmacist had more time to discuss medications."*

*"Not involved in clinical judgements."*

*"Pharmacists do good job handling and dispensing drugs but aren't essential-doctors and nurses could do job."*

Doctors frequently saw the pharmacist as having a low profile:

*"Pharmacist is a vital member of the health care team. Unfortunately because of staffing problems within the pharmacy, we have little contact between pharmacy and medical staff, and in effect they currently contribute very little to the team."*

*"Keeps very much to itself (the pharmacy). Very strict and defensive re interpreting medication guidelines."*

Pharmacists were valued by nurses for their knowledge of drugs:

*"Ward is without clinical pharmacist due to budget. Ward pharmacist important for informal staff education, patient education and organising and ordering of patient drugs. They are a very valuable source of information".*

Pharmacists were seen to contribute toward safe, accurate and effective drug administration and utilisation:

*"To ensure safe and correct drugs/ dosage/ route and frequency of drugs given to patient. Need pharmacist also to keep up to date with new medications, and general advice regarding all aspects of medicines."*

and as a source of drug information:

*"Important part of health care team- e.g. monitor medications and dosages, provide relevant information to doctors and nurses to add to and fill in gaps in doctors and nurses knowledge and memory, thereby providing a needed resource person."*

Nurses also saw the involvement of pharmacists in the wards as facilitating their role by allowing them more time to do other things:

*"Pharmacy impacts on nursing time and effort. Supports staff and needs. Enables efficient service".*

Some nurses felt pharmacists should be more active in educating patients about drugs, although some still saw this as their role:

*"They should be more active with patients and medication education."*

*"Pharmacist part of the health care team in providing accurate info and dispensing of drugs. Pharmacy department within hospital provides an excellent service and I am well aware they would like to extent their service to the wards as clinical ward pharmacists, but this could lead to encroachment on the nursing field, which already provides education on drugs to patients."*

Some pharmacists were seen as being difficult or obstructive:

*"Important, but must meet customer needs including staff. Must remember they are not doctors and that in practice medicine is not always black or white".*

However, on the other hand, some nurses encouraged pharmacists to develop a higher profile and to become more active and visible in their role:

*"Pharmacists need to be more involved and aware of needs of the area they are allocated to."*

Where the clinical role of the pharmacist had had a positive impact on the ward, their importance was clearly acknowledged.

*"Pharmacists attend unit meetings; monitor patients medications; give advice and education; always willing to assist with queries and are respected members of the healthcare team."*

#### 4.6 Discussion

The response rates achieved to the questionnaires sent to doctors and nurses were considered adequate given that the survey was a one hit, no-follow up study.<sup>34</sup> In fact, the response rates were comparable to many other surveys (Cukierman-Wilson, 1990, 1992; Clifford, Jessop and Lake, 1993; Ritchey and Raney, 1981; Grussing et al., 1984). The response from pharmacists compares well against the rates obtained in other published hospital pharmacy surveys, which range from 36% to 90% (Tenni and Hughes, 1996; Reeder et al., 1996; Santell, 1995, Cotter, Barber and McKee, 1994; Peterson, Freezer, Naismith, 1990; Larmour, 1984).

George et al. (1987) in a survey which evaluated staff and patient attitudes towards potential pharmacy services in a hospital with no previous pharmacy service achieved a response rate of 95%, but this high response may have been because the investigator personally approached staff and invited them to participate, and the site of the study was a small hospital. In other studies, Cavell, Bunn and Hodges (1987) reported a 72% response at a London hospital, Fine et al. (1982) achieved a response of 67.3% at one hospital in their study of nurses' acceptance of pharmacists' clinical activities, and Newton and Black (1994) report a response of 66% from nurses in their study of

<sup>34</sup> Apart from doctors at small country hospitals, the numbers of doctors at the large and small city hospitals and large country hospitals who participated in the survey was less than originally required for this research: 740 were originally sought, though 618 doctors responded. However, because the sample size was determined with a 90% power the number achieved still allowed for significant conclusions to be made. In part, the lower numbers of doctors was due to a shortage of small city and large country hospitals that fitted the selection criteria, as well as some hospitals declining to take part in this study or not giving approval for their doctors to participate.

satisfaction with the pharmacy service. However, these were all much smaller studies than the study reported in this thesis, and most involved a single hospital.

Numerous studies have determined service provision by surveying directors of pharmacies (some of these are: Tenni and Hughes, 1996; Peterson et al., 1990; Cotter, Barber and McKee, 1994; Reeder et al., 1996; Santell, 1995; Raehl, Bond, Pitterle, 1992, 1998; Bond, Raehl, Pitterle, 1994<sup>35</sup>). The senior management position of directors would suggest an awareness of service provision which could be actual rather than perceived.

This study, however, surveyed all pharmacists employed at the hospitals in the sample population. Therefore, it has determined awareness of services from pharmacists with a wide variety of backgrounds in practice experiences, professional qualifications, age, and seniority within pharmacy departments. This allows for a richer database and these results therefore provide a more statistically valid description of pharmacy services.

Still other studies have focused on attitudes, satisfaction, awareness and perceptions of doctors, nurses and pharmacists to clinical services, and more specifically particular services provided by hospital pharmacy departments (Grussing et al., 1984; Jones et al., 1984; Hatoum et al., 1986; Hatoum and Akhras, 1993; Lobas, Lepinski and Woller, 1991). The study reported in this thesis is different to many of these in that it also focuses on the service requirements of doctors, nurses and pharmacists, as well as their awareness of these services.

In order for pharmacy departments to provide comprehensive, clear and well-targeted services, all staff employed within the departments need to have a good understanding of the pharmacy's capabilities. However, the number of hospitals for which an indeterminate response was given in this study appears to reflect a lack of awareness, or indeed knowledge, by pharmacists of services provided by their departments, even though some of them had been working at their hospitals for several years (Table 4.11). It

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<sup>35</sup> For a more complete list see Chapter 2, section 2.6.



was interesting to find that, in some hospitals, half the pharmacists could not concur if a service existed.

Differing levels of awareness by pharmacists of services provided within their departments, or uncertainty regarding service availability, highlight what appears to be a fundamental problem: a breakdown in information dissemination within pharmacy departments. This problem existed in all types of hospitals, although some featured more predominantly, and was associated particularly with *research activities or opportunities, drug cost monitoring, informal drug education for hospital staff, and in-service, structured lectures for hospital staff.*

If staff are not aware that a service is actually offered or don't believe it is offered, then it probably won't be provided or promoted as effectively as it should be which may lead to inconsistencies in service delivery.

The fact that pharmacists differed in their awareness of services does not suggest that the results are incorrect, or invalid; they are the perceptions for each respondent, and the problem exists as to why there were differences. Possible explanations are: a lack of exposure to all services by some pharmacists; casual work hours resulting in pharmacists being limited to work in only certain areas within departments; specialisation resulting in pharmacists not being rotated throughout the various areas of their departments; failure to share knowledge and service planning amongst all staff; and pharmacists not regarding a particular "service" as a valid one, and therefore not being prepared to acknowledge or recognise its availability. An apparent "denial" of service could exist.<sup>36</sup>

Alternatively, the directors of pharmacy may have listed services "in the pipeline" but not fully implemented as actually being provided, and therefore caused variations in

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<sup>36</sup> For instance, if a pharmacist has a fixed view of their role, such as that they should only dispense prescriptions within the pharmacy department and not be involved on a clinical level, then they might perceive the clinical role to not be valid or as relevant as their "traditional" role or of equivalent value or worth. They might perceive the clinical role to be a fleeting phase or not of sufficient importance/ relevance to give it any status.

responses within departments. This raises some concern about studies of pharmaceutical services reported in the overseas literature which focus on information provided by directors of pharmacy regarding service provision. Are they perhaps being optimistic about which services they provide and enhancing their description of services offered?

If departments wish to take on quality management and practice measures which embrace staff empowerment, and involvement in decision making and growth of the organisation, then the issue of variable awareness of service delivery amongst pharmacists within pharmacy department needs to be addressed. A situation where some staff find themselves privy to information regarding their department's vision or direction and others are "left out in the cold" should not exist. If a clear and united view of pharmacy services or direction are not projected from the pharmacy departments, then the messages that the key customers of hospital pharmacies are receiving can only be confusing or misleading.

Since this study surveyed all the pharmacists within the pharmacy departments at the hospitals targeted, it can be assumed that responses included those of the directors of pharmacy services as well as other pharmacy staff, then disagreements within departments must be sorted out. Certainly, the directors of pharmacy services need to address this issue.

Whilst there were differences in awareness between doctors and nurses to many services provided at their hospitals, there were some similarities. For example, both were equally aware of the provision of *inpatient and outpatient dispensing, therapeutic drug monitoring, pharmacy publications and bulletins, and research activities and opportunities*. However, it was both interesting and alarming that there was also a large degree of uncertainty in responses, particularly as clinical services and some 'basic' services such as *non-sterile manufacturing, and purchasing and storing drugs* were included.<sup>37</sup>

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<sup>37</sup> As evidenced by the many "don't know" responses.

Fine et al. (1982) reported a minimal knowledge amongst nurses regarding clinical pharmacy services provided in a single hospital, and queried whether pharmacists had adequately made nurses aware of the services available, or whether the services were not being used because of lack of knowledge that they existed.

The uncertainty reported in this thesis, and by others, is disappointing, since it would be expected that many of the services affected probably arose in the first place with the full knowledge of doctors and nurses in the hospitals. However, if the pharmacy departments had actually decided on the mix of services provided without consultation, then it would have been expected that some effort should have been made to inform customers regarding these services, and it appears that this has not been successful.

At the time of the first survey reported in this thesis, hospitals were undergoing rationalisation of services, with hospital departments finding themselves under increasing pressure to justify the need for many services and staffing requirements to meet these. Comparisons were being made at the time by management consultants<sup>38</sup> of the various services provided between hospitals without taking into consideration the different demographic profiles of the hospitals, such as whether they were public or private, acute care facilities or organisations which treated only elective patients. Pharmacy departments found themselves without documentation or valid studies that identified their customers' awareness of services and their requirements. Therefore, ensuring that major pharmacy customers have a good awareness of services offered, are supportive of them, and appreciate the benefits they offer, adds strength to negotiations regarding retention of services under question by administrators or consultants employed to cut costs in the health system.

Significant numbers of doctors and nurses indicated they had regular contact<sup>39</sup> with the pharmacy at their hospitals, so this should have allowed them to establish a reasonable level of awareness of services. However, there were still a significant number who had

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<sup>38</sup> Booze Allen Consultants (1992). Consultants were employed by the government at this time to find ways to reduce costs.

<sup>39</sup> At least once a week.

very infrequent or no contact at all, so it was not surprising that some of them had little or no direct awareness or knowledge of many pharmacy services. For some services, though, substantially more respondents indicated uncertainty about service availability than can be accounted for by just a low level of direct contact with pharmacy departments.

Cavell, Bunn and Hodges (1987) in their survey of consultants' views on the developing role of the hospital pharmacist at a London hospital, highlight a greater acceptance of clinical services from consultants with a pharmacist attached to their team than those who did not. Similarly, Ritchey and Rainey (1981) noted that exposure to clinical pharmacists had a positive effect on the favourability of physicians toward clinical pharmacists and their services.

The lack of awareness of some services reported in this thesis is explainable in special cases. For example, doctors practising in areas removed from the clinical setting, such as radiology and pathology, where prescribing and using drugs is not a significant aspect of their practice, are less exposed to clinical pharmacists and pharmacy departments, and may not be as aware of overall service availability. Similarly, nurses working night-shift would not have the same opportunity to interact with the pharmacist as their day-time counterparts, and would therefore not be able to familiarise themselves with services available. Nonetheless, for a hospital organisation to work cohesively, pharmacy departments must endeavour to inform all their internal customers of their range of services and capabilities in order to achieve the maximum potential for the departments.<sup>40</sup>

The general poor awareness of clinical pharmacy services identified in this study is perhaps because some clinical activities are conducted in specialist areas where the pharmacist's participation may not be readily apparent to doctors and nurses from outside these units. Another possible explanation may be the low profile of pharmacists working in the ward environment, where many go about their duties with minimal interaction with

<sup>40</sup> This highlights the importance of each department or division within an organisation on the functioning or success of the whole establishment. See Senge, 1993.

other members of the health team. A fleeting visit to hospital wards simply to check medication charts with only minimal interaction occurring between pharmacists and doctors and nurses does not encourage a strong awareness of the pharmacist's role. Being visible and active does. Indeed, some doctors and nurses commented that if pharmacists wish to be a member of the healthcare team, then they have to be more visible and involved in the clinical environment.

Perhaps the poor awareness of the role pharmacists have in providing clinical services is attributable to entrenched views amongst some doctors and nurses to what they perceive to be the role of pharmacists. For example, Gussling et al. (1984) found differences in attitude to clinical pharmacists were demonstrated by physician status and age, and that no differences were shown by amount of exposure to clinical pharmacists.<sup>41</sup> However, Ritchey and Rainey (1981) found a physician's exposure to clinical pharmacists was positively associated with their being favourable toward the clinical role.

There was a significant hospital effect on the awareness pharmacists had of services they provide. Large city hospitals appeared to offer a wider range of services than small city or country hospitals, a situation which is to be expected because many are teaching hospitals or have specialist centres which would have access to the latest technology and treatment modes, and be better resourced or funded to provide a wider range of services to patients. The apparent greater availability of services from large hospital pharmacies compared to small hospitals reflects the wider resources and staffing available to offer the extra services.

There was a generally poor awareness of existing services by doctors and nurses across all the hospital sizes and locations and the hospital effect was significant.

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<sup>41</sup> A crosstabulation of awareness of existing services by doctors against their age (for the 1993/94 study) showed for many of the clinical services there was a significant influence of age on the responses. Younger doctors (20-29 years old) tended to be slightly more aware of services provided than expected statistically, whilst those doctors between 40 and 60 tended to be a little more uncertain. The ages of the younger doctors suggests there would be more resident medical officers amongst them and these doctors spend more time in the ward than the more senior doctors hence providing more opportunity for them to interact with clinical pharmacists.

Doctors from large city hospitals were more aware of existing services than those from small country hospitals, who in turn were more aware of existing services than doctors from large country and small city hospitals.<sup>42</sup> This difference probably reflects that more contact or exposure to services occurs in large teaching hospitals where there is a wider range of services and more staff to provide these services.<sup>43</sup> On the other hand, working in a smaller country hospital may also lend itself to more interaction occurring amongst health professionals, thus helping to develop better knowledge of each other's roles.<sup>44</sup>

However, the results have shown a significant lack of awareness beyond a few services and considerable uncertainty about whether some services are provided at all.

Many of the large city hospitals surveyed were teaching hospitals where there is a culture of training, teaching and learning. This may be associated with better awareness of what each healthcare service provider is able to offer by creating a forum where they can contribute their expertise or share knowledge. Differences in the range of activities offered in public teaching hospitals as compared to private hospitals could further influence perceptions.<sup>45</sup>

The slightly better awareness of existing services amongst nurses than doctors is probably because nurses tend to have more contact with pharmacists in the course of daily activities than do doctors.<sup>46</sup> However, the awareness by nurses of existing services tended to be slightly lower in small city hospitals than from all the other hospitals possibly

<sup>42</sup> When considering services which at least 60% of doctors indicated were provided (see Table 4.15). (It is reasonable that doctors would not have indicated an awareness of some services being provided because these services were apparently not being provided at a number of hospitals (see Table 4.11)).

<sup>43</sup> Pharmacists in large city hospitals previously indicated they had a greater level of *participation in ward rounds* than did their counterparts in other hospitals (Wilson and Chapman, 2000b; Table 4.7). Taking part in ward rounds provides pharmacists with more opportunities to interact with medical and nursing staff providing more opportunity for the medical and nursing staff to develop an understanding and knowledge of what pharmacists and pharmacy departments can offer.

<sup>44</sup> Working in a smaller organisation within a country community allows for more interaction amongst hospital personnel both professionally and in a social context which may also enable health care providers to develop a better understanding of each others roles.

<sup>45</sup> For instance, doctors who attend patients in private hospitals may be more focused on their individual patient's needs and their own particular medical specialty rather than general service availability. The more formal ward rounds or meetings that exist in public teaching hospitals are also not part of the general culture that exists within the private system.

<sup>46</sup> See where at least 60% of nurses indicated they thought the service was provided (Table 4.16).

because a slightly larger proportion of them came from private hospitals, and their average length of employment was lower than for their counterparts at the other hospitals.<sup>47</sup> The pharmacy services at some private hospitals may themselves not be so clinically driven which would also limit the exposure of the nursing staff to pharmacists and their services.

The results reported in this thesis show that it is difficult, and possibly erroneous, to simply compare awareness of existing pharmacy services between country and city, and large and small hospitals, and pharmacists should take this into account when benchmarking their services. If pharmacists wish to evaluate services they provide, they first need to establish the level of knowledge their customers have of these services before they can accurately make decisions regarding the value of these services. Service planning based purely on customer awareness and perceptions of existing services may be flawed because the high level of uncertainty reported in this study indicated a severe lack of awareness by customers of the real nature of hospital pharmacy services.<sup>48</sup>

The services pharmacists believed should be provided at their hospitals were more extensive than those they thought were provided at their hospitals, and showed greater support for providing more clinical services. This supports the views of many within the pharmacy profession that regard the clinical role of the pharmacist as important and a way of improving the therapeutic management of patients (Tenni and Hughes, 1996; Hatoum et al., 1986; Hepler and Strand, 1990; Alderman, and Linsley, 1997; Peterson, 2000; Calvert, 1999; The Society of Hospital Pharmacists of Australia, 1996b). This also recognises the changing face of hospital practice where a more patient focused service is being expected from healthcare providers (Vogel, 1993; Harper and Proust, 1995).

<sup>47</sup> These nurses may not all be employed as permanent staff, some might be from nurse 'banks' or be casual staff, and hence have less exposure to the pharmacy service.

<sup>48</sup> This lack of awareness by customers suggests that a deficit exists in their knowledge of what pharmacy services entail. See the "don't know" responses in Tables 4.15, and 4.16 for whether services such as *therapeutic drug monitoring* or *manufacturing* (for example) are provided by the hospital pharmacies.

Asking pharmacist respondents to indicate which services they believe should be provided has captured a more complete picture of what is required for a comprehensive pharmacy service. Pharmacists placed significance on their provision of education and information, and indeed clinical services, though there was still wide support for traditional services such as *inpatient dispensing, manufacturing, sterile or intravenous preparations, imprest, and purchasing and storing drugs*. The need for a sound pharmacy framework to support the many clinical and educative services now offered by pharmacy departments therefore seems to be essential.

Interestingly, when all doctors and nurses were asked to indicate whether a particular service should be provided, there was good support overall, and the level of uncertainty fell markedly. There were differences between doctors and nurses, with clinical services being supported more by nurses than doctors. This probably indicates that a shift in awareness is required before many clinical services become widely accepted by doctors.

Even though Tenni and Hughes (1996) contend that "clinical pharmacy is now a recognised part of pharmacy practice throughout the world" this role is not fully accepted outside the profession, as shown by the results from this study in Victoria. It appears that pharmacists reporting on the availability of clinical pharmacy services is not sufficient to claim acceptance of the services from the users: asking the users what their requirements and their awareness of hospital pharmacy services are is needed.

If the range of services provided by pharmacists are the result of service needs determined by doctors or nurses, then it is in the best interest of pharmacy departments to ensure that all doctors and nurses in the hospital have a good knowledge of their services because expanding the knowledge base improves perception (Muldary, 1983). Then, when planning is done, there is comprehensive knowledge of both what is available, or what is possible. This study shows a deficit in this area.

The influence of hospital size and location was considerably reduced when considering service requirements of pharmacists as distinct from their awareness of services provided



(Table 4.6). Most of the services that showed no significant hospital effect were clinical in nature<sup>49</sup>, which reflects consensus amongst pharmacists, no matter where they work, towards the need to provide clinical services.<sup>50</sup> An increased support for many services was observed when comparing what doctors and nurses believe should be provided against what they are aware of, and the uncertainty dropped significantly irrespective of the size or location of the hospitals.

Where there was substantial agreement between respondents that a particular service should be provided, it was considered indicative of significant consensus and that the service is fundamental.<sup>51</sup> The inclusion of *drug-cost monitoring* as a fundamental service reflects the need for this service at a time when hospital management is emphasising cost reduction or containment in an economic environment where they are faced with a shrinking health dollar.

The more extensive range of fundamental services required by pharmacists from large hospitals than small hospitals, probably reflects the capacity of larger hospitals to provide a greater range of services than are possible for small hospitals, although clinical services were included as fundamental services for pharmacists within each hospital size and location. The only differences in fundamental services for the large hospital groups are that *research activities and opportunities* are included in the list for large city hospitals, and *dispensing for hospital staff* in the list for large country hospitals.

There were more fundamental services for nurses than doctors but some were common to both groups.<sup>52</sup> The support by doctors and nurses for provision of *drug information services*, *patient education and information on drugs and medicines*, and *informal drug education for hospital staff* clearly show that pharmacists are seen by both groups as providers of information and as educators on drugs and medicines, a role which is not

<sup>49</sup> An exception was *intervention in/ monitoring patient drug therapy*.

<sup>50</sup> There were also non-clinical services that showed no significant hospital effect. These were: *inpatient dispensing*, *purchasing and storing drugs*, *drug-cost monitoring* and *pharmacy publications and bulletins*.

<sup>51</sup> At least 90% of respondents indicated the service should be provided.

<sup>52</sup> See Tables 4.14 (services which at least 90% of respondents supported), 4.21 and 4.22 (fundamental services common across each hospital size and location)

always readily assumed by pharmacists. With the pharmacy profession constantly seeking to have its role seen as indispensable in a healthcare environment facing challenges, the education and information services should not be underestimated. The differences in their service requirements may also indicate that doctors consider a smaller number of services to be basic to a pharmacy service and anything beyond as an added extra, whereas nurses want a more comprehensive range of services possibly because they have had more exposure to them already.

The more extensive list of fundamental services for each respondent type, which is evident for large city hospitals, may reflect the wider and more comprehensive range of services offered at these hospitals and the resources to support them.<sup>53</sup> Many have centres of expertise within them, such as heart/ lung transplant units and road trauma centres, and offer a broader range of medical and surgical specialties. They also have access to newer and more sophisticated equipment and technology to treat a wider spectrum of conditions. Larger hospital pharmacies tend to employ more staff and are, therefore, potentially in a better position to offer a wider range of services. Cotter et al. (1996a) noted in their paper, which considers factors influencing the provision of clinical pharmacy services in United Kingdom National Health Service hospitals, that there seems to be a minimum number of pharmacists required to provide anything other than a rudimentary service.

If the doctors and nurses surveyed in this study had been better informed about pharmacy services and had given their perceptions based on greater awareness, it could be postulated that the list of fundamental services for them would have been more extensive than was identified by this study. Cotter et al. (1996a) noted that "the views of customers are clearly important in the development of services. If a service is welcomed by other health care practitioners, there are few barriers to its development."

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<sup>53</sup> Because the larger hospitals appear to offer more services their customers would have potentially had more opportunity to be exposed to these. If their experiences of these services have been positive or they see a value in the services, then this may have strengthened their support for the services.

The large number of responses to measures of performance of the pharmacy services which offered no opinion or marked them as being not applicable have further identified the lack of knowledge and awareness of services provided by the various pharmacy departments, particularly for less traditional services.

This highlights the importance of allowing respondents to surveys to give these sorts of responses to questions otherwise they might give responses which are not true reflections of their perceptions, creating biased and inaccurate results. The numbers of no opinion and not applicable responses varied across the customer service measures showing that they were considered and selected responses for particular measures rather than *ad hoc*.

Certainly, some doctors or nurses working in areas removed from pharmacy services or during hours when the pharmacy departments are closed may not have sufficient knowledge of the services, but this does not mean that the pharmacy departments do not have a responsibility to inform them of what services they provide. The ratings that were given by doctors and nurses for the measures of customer service tended to be quite positive with the exceptions being *participation in ward rounds, in-service/ structured lectures for hospital staff, extent of pharmacy department involvement in research, and after hours service*, all of which had lower ratings.

In addition, nurses gave lower ratings to *adverse drug reaction monitoring, intervention in/ monitoring patient drug therapy, therapeutic drug monitoring service, discharge medication counselling of patients, patient information and education on drugs and medicines, pharmacy publications and bulletins, and informal drug education for hospital staff*.<sup>54</sup> These are mostly clinical services and it is of concern because these activities are essential to an effective clinical role for pharmacists.

The nurses tended to give slightly lower ratings than doctors, perhaps because they have more contact with or exposure to pharmacists and therefore have more opportunity to develop their perceptions and expectations of the pharmacists and the pharmacy services.

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<sup>54</sup> Mean ratings less than 7.

For instance the *timeliness of provision of medication* was rated lower by nurses, a situation which is not surprising given that nurses are often chasing up medication for patients who are being discharged. They may have rated *discharge medication counselling of patients* lower because they perceive this to be their role not that of pharmacists.

Where lower ratings were given by doctors and nurses this may be because they either expected more from the services, the service was not offered comprehensively enough, or they did not regard the pharmacy's performance as favourable.

Traditional measures of service such as *accuracy of dispensing, cooperation and friendliness of pharmacy staff, pharmaceutical knowledge of the pharmacist, and advice given on drug information and general queries*, were rated better by all groups than the clinical services, perhaps because these are perceived to be valid components of hospital pharmacy practice, whereas clinical activities are still not perceived in this way and resistance by some doctors and nurses exists to their provision.

The influences of hospital size and location on ratings of performance of the pharmacy services are important because the results have shown that the measures of customer service were rated differently amongst the hospitals. These ratings possibly reflect differences in service provision at the various hospitals. However, a few services were independent of hospital size, location and respondent type.<sup>55</sup>

Pharmacists influence perceptions of other people through their interactions with them. In some instances, ratings were given for measures of customer service based on the working relationship the respondent had with an individual pharmacist rather than the

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<sup>55</sup> The services listed in Table 4.23 but not included in Table 4.28 for each particular respondent type.

whole department.<sup>56</sup> This shows that individuals within the organisation can make a significant difference to the perceptions customers have of that organisation. Total quality management principles recognise the contribution each individual makes to the whole organisation and encourages the empowerment and acknowledgement of the input that that individual has on the whole organisation. If the input is positive and people within the organisation feel valued and that their opinion is important, then this affects the way they interact with customers and colleagues and their commitment to the organisation. White and Lee (1990) found that acknowledging staff needs impacts positively on patients.

The performance ratings from doctors, nurses and pharmacists have identified differences between respondent type and according to the hospital size and location.

Nurses from country hospitals gave slightly higher ratings for performance of the pharmacy service on many measures of service than did their city counterparts. Perhaps staff employed within country hospitals know each other better or interact more frequently because the locations of their hospitals are within smaller communities which foster more interaction.

The lower ratings from doctors in small city hospitals for many service measures may have been because some of the hospitals classified as small city in the first survey were private hospitals. The nature of the medical services provided within such hospitals where visiting consultants attend their patients at varying times, may preclude them having extensive contact with the pharmacy services other than by writing prescriptions or ensuring medication ordered is available within the hospitals. Such limited contact would not assist in giving a clear perception of the scope of pharmacy activities within the hospital.

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<sup>56</sup> In response to the rating of the importance of the pharmacist as a member of the health team (section 4.5.2) one nurse rated the importance as 3 out of 10 and wrote *"Feel that the pharmacist is a very important member of the team and should rate 10 (out of 10), but rated as per the pharmacist here"* (small country hospital). One doctor rated the importance of one pharmacist at the hospital as 6 out of 10 with a comment that the pharmacist was *"too officious"* and rated another at the hospital as 8 out of 10. (small country hospital)

The various comments made by pharmacists, nurses and doctors show that in order for pharmacists to be regarded as a member of the healthcare team within their hospitals, they need to be involved, proactive, and visible. Involvement in the clinical setting and taking part in ward rounds are significant ways in which the profile of the pharmacist can be raised and in which pharmacists can actively contribute to patient drug therapy and decisions regarding therapy.

Individuals working within a hospital are influenced by the organisation and the culture which exists, the services that the hospital provides, and the broader health care system. These factors contribute to the perceptions, beliefs and attitudes of personnel working within an organisation.

This study has shown that significant gaps in awareness exist from the perspective of doctors and nurses about pharmacy services provided in Victorian hospitals. Furthermore their experiences of hospital pharmacy services have not resulted in unconditional support for the provision of a vast number of services provided by hospital pharmacies, in particular the many clinical services. It would seem that hospital pharmacists need to urgently address this deficiency because it impacts upon their capacity to deliver comprehensive pharmacy services in a healthcare environment where there can often be a requirement to justify the provision of many of these services. This study has also shown that there is a significant association between hospital size and location, along with respondent type, on awareness of services, service requirements and the perceptions of pharmacy service performance, and these factors need to be taken into account when benchmarking hospital pharmacy services and performance.

A review of the literature indicates that this appears to be the first published study of its kind in the world. It reports on a comprehensive, comparative study of hospital pharmacy services that benchmarks hospital pharmacy performance from the perspective of key customers of hospital pharmacy services. The study provides a systematic evaluation of hospital pharmacy services, considering customer awareness and requirements, and perceptions of performance, in a state in Australia.

## CHAPTER 5

### THE 1999/ 2000 SURVEY

#### 5.0 Introduction

This chapter documents the results and associated discussion from the second survey conducted in 1999/ 2000. The first three sections follow the same sequence as in Chapter 4.<sup>1</sup> The fourth focuses on the perceptions of the overall service provided by the hospital pharmacies. The final section considers change and its effects on hospitals pharmacy services provided. The results from the patients are presented and discussed in Chapter 6.

#### 5.1 Response rates and respondent demographics

The response rate for the hospital pharmacies was 100%<sup>2</sup> but the rate for pharmacists as individuals was only 41.8%. Five questionnaires were returned unopened from three large city hospitals so the adjusted response rate was 42.4%.<sup>3</sup> The response rate from pharmacists was less than for the first survey (63.7%), however, this was still considered adequate because no follow up was undertaken and results were considered representative because responses were obtained from each hospital in the survey and included pharmacists of all ranks and experience<sup>4</sup>.

Of those who responded, 18.2% indicated that they had completed the first survey, 10.5% were unsure and 70.6% indicated they had not. A comparison of response rates for some recent surveys of hospital pharmacy services is shown in Table 5.1.

The numbers of pharmacists who responded from each hospital size and location are shown in Table 5.2

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<sup>1</sup> In the second survey only pharmacists were asked to identify the services they thought were provided by their hospital pharmacies.

<sup>2</sup> There was at least one response from every hospital pharmacy department surveyed.

<sup>3</sup> This was because staff had left these hospitals, or were on leave at the time of the survey, or the head of department had neglected to give the survey to their staff.

<sup>4</sup> All qualified pharmacists were surveyed in this study, not just directors of pharmacy services or pharmacy managers as was the case in all other studies cited in this thesis.

**Table 5.1 Comparison of response rates for surveys of hospital pharmacy services**

Author	Wilson, Tsui, Tong, Wilson, Chapman (2000a)	Wilson & Chapman (2000b)	Tenni & Hughes (1996)	Peterson et al (1990)	Cotter et al. (1994)	Reeder et al. (1997)
Country	Australia	Australia-Victoria	Australia	Australia	UK	USA
Year of Survey	1998	1994	1995	1988	1992	1996
Number of hospitals surveyed	296	39	309	118	463 <sup>b</sup>	1922
Response number	173	39	111	87	416	713
Response rate %	58.5	100 <sup>a</sup>	36	73.7	90 <sup>b</sup>	37.1

Author	Santell (1995)	Bond et al. (1994)	Crawford & Santell (1994)	Crawford & Myers (1993)	Schmuck et al. (1992)	Rachl et al. (1992)	Rachl et al. (1990)
Country	USA	USA	USA-Federal	USA	USA-Illinois	USA	USA-Great-Lakes
Year of Survey	1994	1992	1993	1992	1991	1989	1987
Number of hospitals surveyed	896	3756	326	889	95	2112	1087
Response number	393	1597	247	518	77	1174	681
Response rate %	44	43	76	58	81	56	63

<sup>a</sup> Responses were received from pharmacists from all 39 hospitals surveyed.

No follow up was undertaken in this study, whereas all other studies listed undertook follow up to improve response.

<sup>b</sup> Corrected response rate

**Table 5.2 Questionnaires sent and respondent numbers**

Survey group	Hospitals								Total	
	Large city sent	Large city completed	Large country sent	Large country completed	Small city sent	Small city completed	Small country sent	Small country completed	sent	responded
doctors	863	241	180	61	174	54	123	58	1340	414
nurses	604	294	165	102	78	56	149	94	996	546
pharmacists	224	87	47	17	38	16	33	23	342	143

The response rate for the doctors was 30.9 %. Seven surveys were returned unopened from six of the hospitals. The adjusted response rate was therefore 31.1%. In the case of the nurses, the response rate was 54.8%, however, four surveys were returned unopened, therefore the adjusted response rate was 55%. The overall adjusted response rate for the doctors and nurses was 41.3%. The response rates achieved to the questionnaires sent to doctors and nurses were considered adequate<sup>5</sup> given that the survey had no follow up and reflect the response rates that this second survey sought to achieve.<sup>6</sup> They were also comparable to those obtained in the first survey.

<sup>5</sup> See also Chapter 4, discussion (section 4.6).

<sup>6</sup> The study sought to achieve a response from 456 doctors and 487 nurses. (Section 3.5.2). The desired numbers of nurses was achieved, though only 414 doctors responded. However, because the study was designed to have a high power (0.99, with a significance of 0.05), the numbers of doctors was still adequate.



The majority of respondents were from large city hospitals (Table 5.2).

Males accounted for 26.6% of pharmacist who responded, females 73.4%. Their ages ranged from 20 to over 70 years, with most being under 50 years of age (87%).

Of the doctors who responded, 79.1% were male and 20.9% female and their ages ranged from 20 to over 70 years of age, with approximately 70% under 50 years old. The most common type of doctor was a consultant followed by residents and then registrars. Visiting medical officers, heads of department, medical administrators, professors and general practitioners were also represented.<sup>7</sup>

The ages of nurses who responded ranged from 20 to over 70 years, with approximately 80% being less than 50 years old and most were female (91.3%). The most common were registered nurses followed by associate charge nurses then charge nurses/ nursing officers, with other categories including nursing administration, nurse educators, head of department and professor.<sup>8</sup>

The average length of employment of pharmacists in this survey at their particular hospitals is shown in Table 5.3. The average time they had been practicing in hospital pharmacy was 12.4 years, (standard deviation 9 years, range 6 months to 40 years). Most were working full-time (67.1%), a decrease from the first survey where 76.6% of respondents were employed full-time. By contrast, the number of pharmacists working part-time increased between the surveys by almost 10%.

**Table 5.3 Length of employment of respondents at their hospitals**

Respondent type	Mean (years)	Standard deviation (years)	Range
Doctors <sup>a</sup>	9.1	8.44	3 weeks to 44 years
Nurses <sup>a</sup>	7.51	6.78	1 month to 40 years
Pharmacists	7.48	7.22	2 months to 28 years

<sup>a</sup> For doctors n=393 responses given, nurses n= 531 responses, and pharmacists n=141 responses.

<sup>7</sup> Most doctors indicated their frequency of contact with the hospital pharmacy was from one to more than five times a week. Some doctors classified their position as a combination of options listed e.g. consultant and head of department, professor and head of department.

<sup>8</sup> Most nurses indicated their frequency of contact with the hospital pharmacy was from one to more than five times a week.

The length of time the doctors and nurses had been employed at the various hospitals (Table 5.3) suggests sufficient opportunity for them to have developed an awareness of the pharmacy departments and the services they provide.

The average length of employment of doctors from large city and small country hospitals was slightly longer than their small city and large country hospital counterparts, whereas the length of employment of nurses and pharmacists at the country hospitals was slightly higher than their city counterparts (Table 5.4).

**Table 5.4 Length of employment of respondents by hospital size and location**

Respondent Type	Large city hospital			Large country hospital			Small city hospital			Small country hospital		
	mean years	std dev	n	mean years	std dev	n	mean years	std dev	n	mean years	std dev	n
Doctors	9.82	8.66	227	6.86	7.08	58	6.74	6.06	51	10.61	9.88	57
Nurses	7.10	6.07	285	7.72	7.20	99	6.92	6.70	54	8.92	8.18	93
Pharmacists	6.70	7.17	85	8.84	6.26	17	5.72	6.08	16	10.58	8.09	23

std dev = standard deviation (years)

n = number of respondents who responded to this question

Most doctors and nurses had regular contact with staff in the pharmacy department of their hospital (Table 5.5).

**Table 5.5 Frequency of contact by doctors and nurses with their hospital's pharmacy department<sup>a</sup>**

Frequency of contact	Doctors <sup>b</sup>	Nurses <sup>c</sup>
More than five times a week	37.3	64.6
One to five times a week	35.3	26.7
Less than once a week	14.7	4.6
Less than once a month	10.5	2.4
Other (yearly)	1.0	0.9
Never	1.2	0.7

<sup>a</sup> Contact of any sort (including written communications, prescriptions, telephone, and face to face).

<sup>b</sup> Valid % of 408 responses. <sup>c</sup> Valid % of 539 responses

## 5.2 Awareness of services and service requirements: pharmacists

The services pharmacists thought were provided by their hospital pharmacies and those which they believed should be provided are listed in Table 5.6.<sup>9</sup>

When pharmacists were asked to indicate whether a particular service should be provided

<sup>9</sup> Pharmacists were asked to indicate which of 28 services listed were provided and required.

Table 5.6 Service awareness and requirements for pharmacists <sup>a</sup>

Service	Does hospital provide the service?				Should hospital provide the service?			
	Yes	No	DK <sup>b</sup>	Yes	Yes	No	DK <sup>b</sup>	Yes
	Number of respondents			(%) <sup>c</sup>	Number of respondents			(%) <sup>c</sup>
Outpatient dispensing	125	18	0	87.4	124	15	1	88.6
Inpatient dispensing	142	1	0	99.3	137	2	0	98.6
Sterile manufacture: intravenous preparations	119	23	0	83.8	114	24	1	82
Sterile manufacture: cytotoxics	72	69	0	51.1	73	62	4	52.5
Drug information service	132	8	1	93.6	134	2	1	97.8
Participation in ward rounds	92	45	3	65.7	127	9	2	92
Review of medication charts/ order	143	0	0	100	138	1	0	99.3
Medication history interview	128	13	2	89.5	136	1	1	98.6
Adverse drug reaction monitoring/ management	138	3	1	97.2	138	1	0	99.3
Intervention in/ monitoring of patient drug therapy	142	1	0	99.3	138	1	0	99.3
Therapeutic drug monitoring (pharmacokinetic)	126	14	2	88.7	134	4	1	96.4
Imprest <sup>d</sup>	138	5	0	96.5	132	4	2	95.7
Manufacturing (non-sterile-e.g. creams, lotions, mixtures)	132	10	1	92.3	128	10	1	92.1
Dispensing for hospital staff	107	32	2	75.9	112	19	7	81.2
Pharmacy controls and performs drug purchasing	136	4	3	95.1	137	1	0	99.3
Pharmacy store (bulk storage, reserve stock)	129	13	1	90.2	129	7	2	93.5
Discharge medication counselling for patients	140	3	0	97.9	137	2	0	98.6
Patient information and education on drugs/ medicines	141	1	1	98.6	137	0	0	100
Pharmacy publications/ bulletins	96	41	4	68.1	125	9	3	91.2
Drug education for hospital staff-informal	136	5	2	95.1	138	0	0	100
In-service, structured lectures for hospital staff	108	30	5	75.5	132	6	1	95
Training of pharmacy trainees/ students	124	19	0	86.7	128	7	3	92.8
Seven day a week service	97	46	0	67.8	107	27	4	77.5
Research activities / opportunities	69	61	12	48.6	116	18	5	83.5
Clinical trial support	116	24	3	81.1	119	17	3	85.6
Drug cost monitoring	127	9	7	88.8	131	4	4	94.2
Drug usage evaluation	118	14	11	82.5	133	3	3	95.7
Hospital in the home	122	20	1	85.3	126	11	2	90.6

<sup>a</sup> n=143. <sup>b</sup> DK = don't know. <sup>c</sup> Valid % of respondents i.e. excludes missing values.

<sup>d</sup> Imprest-a ward stock of frequently used medications that are re-stocked by the pharmacy department on a regular basis.

as distinct from whether they thought it was already provided, in most cases more of them indicated the service should be provided. Most obvious increases were for

*participation in ward rounds, pharmacy publications/ bulletins, in-service/ structured lectures for hospital staff, and research activities/ opportunities.*<sup>10</sup>

Statistical analysis showed some hospital effects on pharmacists' responses (Table 5.7) and these effects are evident when examining Tables 5.8 and 5.9.<sup>11</sup>

**Table 5.7 Services with hospital size and location influence<sup>a,b</sup>**

Services pharmacists believe are provided	Services pharmacists believe should be provided
Outpatient dispensing	Sterile manufacture: intravenous preparations
Sterile manufacture: intravenous preparations	Sterile manufacture: cytotoxics
Sterile manufacture: cytotoxics	Participation in ward rounds
Participation in ward rounds	Review of medication charts/ order
Medication history interview	Medication history interview
Adverse drug reaction monitoring	Adverse drug reaction monitoring/management
	Intervention in/ monitoring patient drug therapy
Therapeutic drug monitoring (pharmacokinetic)	Therapeutic drug monitoring (pharmacokinetic)
Manufacturing (non-sterile)	
Pharmacy store (bulk storage, reserve stock)	Pharmacy publications/ bulletins
	Training of pharmacy trainees and students
Training of pharmacy trainees and students	Seven day a week service
Seven day a week service	Research activities/ opportunities
Research activities/ opportunities	Clinical trial support
Clinical trial support	Hospital in the home
Hospital in the home	

<sup>a</sup>  $p < 0.05$  (chi-square)

<sup>b</sup> No significant hospital effect was seen for those services listed in Table 5.6 and not included in Table 5.7.

The results show that from the perspective of pharmacists large city hospitals appeared to provide a wider range of services than large country and small hospitals, and the range of services offered varied by hospital size and location.<sup>12</sup>

Pharmacists from large city hospitals indicated a more extensive range of services should

<sup>10</sup> These services showed an increase in support for their provision from pharmacists of approximately 20% or more above the percentage of pharmacists who indicated they were already provided. Slight decreases were noted for *sterile manufacture: intravenous preparations*, *review of medication charts/ orders*, *inpatient* and *manufacturing (non-sterile)*.

<sup>11</sup> Chi-square.

<sup>12</sup> For instance, *outpatient dispensing* and *ward round participation* appeared to be far more available at large city hospitals compared with the other hospitals. This was possibly because large hospitals still offered some outpatient clinics, although some were privatised at the time of the study. The outpatient services which small country hospitals indicated they provided were not formal clinics but tended to be accident and emergency services. More pharmacists from large hospitals indicated that *sterile manufacture of intravenous preparations and cytotoxics* were provided from their pharmacy departments than from small hospitals. Some smaller hospitals indicated that their cytotoxic manufacturing was outsourced or purchased from larger facilities.

Table 5.8 Pharmacists' awareness of existing hospital pharmacy services <sup>b</sup>

Large city				Hospital											
				Large country				Small city				Small country			
Service <sup>a</sup>	%	%	%	Service <sup>a</sup>	%	%	%	Service <sup>a</sup>	%	%	%	Service <sup>a</sup>	%	%	%
	yes	no	DK		yes	no	DK		yes	no	DK		yes	no	DK
Inpatient dispensing	100			Imprest	100			ADR monitoring	100			drug information	100		
intervention/monitoring	100			Inpatient dispensing	100			drug information	100			imprest	100		
review med chart	100			Intervention/monitoring	100			imprest	100			patient info & education	100		
ADR monitoring	98.9	1.1		Medication counselling	100			inpatient dispensing	100			review med chart	100		
medication counselling	98.9	1.1		patient info & education	100			intervention/monitoring	100			inpatient dispensing	95.7	4.3	
patient info & education	98.9		1.1	review med chart	100			medication counselling	100			intervention/monitoring	95.7	4.3	
Manufacturing	96.6	3.4		ADR monitoring	94.1		5.9	purchasing	100			purchasing	95.7	4.3	
Training	96.6	3.4		Medn history interview	94.1	5.9		review med chart	100			staff drug education	95.7	4.3	
Medn history interview	95.4	2.3	2.3	clinical trial support	94.1	5.9		manufacturing	93.8		6.3	medication counselling	91.3	8.7	
outpatient dispensing	95.4	4.6		Purchasing	94.1	5.9		Medn history interview	93.8	6.3		ADR monitoring	90.9	9.1	
pharmacy store	95.4	3.4	1.1	staff drug education	94.1	5.9		patient info & education	93.8	6.3		pharmacy store	87	13	
staff drug education	95.4	2.3	2.3	TDM	94.1	5.9		pharmacy store	93.8	6.3		Hospital in the home	82.6	17.4	
clinical trial support	94.3	4.6	1.1	Manufacturing	88.2	11.8		staff drug education	93.8	6.3		drug cost monitoring	78.3	17.4	4.3
Imprest	94.3	5.7		drug cost monitoring	88.2	5.9	5.9	TDM	93.8	6.3		manufacturing	78.3	21.7	
Purchasing	94.3	2.3	3.4	Drug usage evaluation	88.2	5.9	5.9	training	87.5	12.5		lectures	73.9	21.7	4.3
sterile IV preparations	94.3	5.7		seven day service	88.2	11.8		drug cost monitoring	81.3	12.5	6.3	Drug usage evaluation	69.6	21.7	8.7
drug cost monitoring	93.1	2.3	4.6	Outpatient dispensing	82.4	17.6		outpatient dispensing	81.3	18.8		TDM	69.6	30.4	
Hospital in the home	93.1	5.7	1.1	sterile IV preparations	82.4	17.6		Drug usage evaluation	75	12.5	12.5	outpatient dispensing	65.2	34.8	
drug information	93	5.8	1.2	drug information	82.4	17.6		lectures	68.8	31.3		sterile IV preparations	65.2	34.8	
TDM	91.9	5.8	2.3	Hospital in the home	76.5	23.5		staff dispensing	68.8	31.3		staff dispensing	63.6	36.4	
Drug usage evaluation	86.2	6.9	6.9	staff dispensing	70.6	29.4		ward round participation	60	40		pharmacy bulletins	60.9	39.1	
seven day service	83.9	16.1		Sterile :Cytotoxics	70.6	29.4		Hospital in the home	56.3	43.8		training	60.9	39.1	
ward round participation	81.6	16.1	2.3	Training	70.6	29.4		sterile IV preparations	53.3	46.7		Medn history interview	60.9	39.1	
staff dispensing	81.4	16.3	2.3	Lectures	64.7	35.3		pharmacy bulletins	50	43.8	6.3	clinical trial support	47.8	47.8	4.3
Lectures	79.3	16.1	4.6	Pharmacy store	64.7	35.3		clinical trial support	43.8	50	6.3	ward round participation	33.3	61.9	4.8
pharmacy bulletins	76.5	21.2	2.4	Pharmacy bulletins	52.9	41.2	5.9	research	31.3	62.5	6.3	Sterile :Cytotoxics	26.1	73.9	
Sterile :Cytotoxics	60.5	39.5		Research	43.8	50	6.3	seven day service	31.3	68.8		research	21.7	69.6	8.7
Research	59.8	31	9.2	ward round participation	29.4	70.6		Sterile :Cytotoxics	13.3	86.7		seven day service	17.4	82.6	

<sup>a</sup> Tables are sorted by "yes" responses. Services are ranked from highest to lowest awareness.

<sup>b</sup> The table indicates the percentage of respondents that indicated "yes", "no" or "don't know" to services they thought were provided at their hospitals.

Abbreviations: Medn history interview = medication history interview; sterile IV preparations = sterile manufacture: intravenous preparations; Sterile: cytotoxics = sterile manufacture: cytotoxics.

Table 5.9 Services pharmacists believe should be provided at their hospitals

Hospital

Large city				Large country				Small city				Small country			
Service	% yes	% no	% DK	Service	% yes	% no	% DK	Service	% yes	% no	% DK	Service	% yes	% no	% DK
ADR monitoring	100			ADR monitoring	100			Drug usage evaluation	100			ADR monitoring	100		
inpatient dispensing	100			clinical trial support	100			medication counselling	100			drug information	100		
intervention/monitoring	100			drug information	100			patient info & education	100			imprest	100		
Medn history interview	100			imprest	100			purchasing	100			intervention/monitoring	100		
patient info & education	100			Inpatient dispensing	100			staff drug education	100			patient info & education	100		
Purchasing	100			Intervention/monitoring	100			ADR monitoring	93.3	6.7		purchasing	100		
Research	100			Medication counselling	100			drug information	93.3	6.7		review med chart	100		
review med. chart	100			Medn history interview	100			imprest	93.3	6.7		staff drug education	100		
staff drug education	100			patient info & education	100			inpatient dispensing	93.3	6.7		drug cost monitoring	95.7	4.3	
TDM	100			review med chart	100			intervention/monitoring	93.3	6.7		Drug usage evaluation	95.7	4.3	
Training	100			staff drug education	100			Medn history interview	93.3	6.7		Hospital in the home	95.7	4.3	
medication counselling	98.8	1.2		TDM	100			review med chart	93.3	6.7		inpatient dispensing	95.7	4.3	
drug information	97.6	1.2	1.2	drug cost monitoring	94.1	5.9		staff dispensing	93.3	6.7		lectures	95.7	4.3	
pharmacy bulletins	97.6	1.2	1.2	Drug usage evaluation	94.1	5.9		TDM	93.3	6.7		medication counselling	95.7	4.3	
pharmacy store	97.6	2.4		Lectures	94.1	5.9		drug cost monitoring	92.9		7.1	Medn history interview	95.5		4.5
ward round participation	97.6	2.4		Purchasing	94.1	5.9		pharmacy store	92.9	7.1		pharmacy store	91.3	4.3	4.3
Lectures	96.4	2.4	1.2	Manufacturing	88.2	11.8		training	92.9	7.1		pharmacy bulletins	87	13	
Drug usage evaluation	95.3	1.2	3.5	Hospital in the home	88.2	11.8		manufacturing	87.5	12.5		ward round participation	87	8.7	4.3
Hospital in the home	95.2	3.6	1.2	Outpatient dispensing	82.4	17.6		outpatient dispensing	87.5	12.5		manufacturing	87	13	
Manufacturing	95.2	3.6	1.2	sterile IV preparations	82.4	17.6		lectures	86.7	13.3		TDM	82.6	13	4.3
drug cost monitoring	94.1	2.4	3.5	seven day service	82.4	17.6		ward round participation	80	20		training	73.9	17.4	8.7
clinical trial support	94	4.8	1.2	Training	82.4	11.8	5.9	pharmacy bulletins	78.6	21.4		outpatient dispensing	73.9	26.1	
Imprest	94	3.6	2.4	ward round participation	81.3	12.5	6.3	Hospital in the home	60	33.3	6.7	sterile IV preparations	69.6	30.4	
outpatient dispensing	94	4.8	1.2	Pharmacy bulletins	76.5	11.8	11.8	sterile IV preparations	56.3	43.8		clinical trial support	65.2	34.8	
seven day service	91.7	6.0	2.4	Pharmacy store	76.5	17.6	5.9	clinical trial support	53.3	33.3	13.3	staff dispensing	65.2	21.7	13
Sterile IV preparations	90.4	8.4	1.2	Research	76.5	11.8	11.8	research	53.3	40	6.7	research	47.8	43.5	8.7
staff dispensing	85.5	10.8	3.6	staff dispensing	70.6	23.5	5.9	seven day service	42.9	57.1		seven day service	43.5	47.8	8.7
Sterile: cytotoxics	63.9	31.3	4.8	Sterile :Cytotoxics	64.7	35.3		Sterile :Cytotoxics	12.5	87.5		Sterile :Cytotoxics	30.4	69.6	

be provided than did their counterparts from the other hospitals. In general, pharmacists from each hospital size and location indicated more services should be provided than they thought were provided at the time of the second survey.

Examination of the responses from all pharmacists regarding services that should be provided identifies their service requirements and the degree of consensus amongst them for these services (Table 5.10).

**Table 5.10 Service requirements of pharmacists<sup>a</sup>**

90% or more of pharmacists <sup>b</sup>	80 to less than 90% of pharmacists	70 to less than 80% of pharmacists
Patient information & education on drugs/ medicines	Outpatient dispensing	Seven day a week service
Drug education for hospital staff-informal	Clinical trial support	
Review of medication charts/ order	Research activities/ opportunities	
Adverse drug reaction monitoring/ management	Sterile manufacture: intravenous preparations	
Intervention in/ monitoring patient drug therapy	Dispensing for hospital staff	
Pharmacy controls & performs drug purchasing		
Discharge medication counselling for patients		
Medication history interview		
Inpatient dispensing		
Drug information service		
Therapeutic drug monitoring (pharmacokinetic)		
Imprest		
Drug usage evaluation		
In-service/ structured lectures for hospital staff		
Drug cost monitoring		
Pharmacy store (bulk storage, reserve stock)		
Training of pharmacy trainees & students		
Manufacturing (e.g. Creams, lotions, mixtures)		
Participation in ward rounds		
Pharmacy publications/ bulletins		
Hospital in the home		

In addition to the above services only 52.5% of respondents thought that their hospitals should manufacture cytotoxics.

<sup>a</sup> Showing relative support for required services      <sup>b</sup> These are the fundamental services

### 5.2.1 Fundamental services

A list of fundamental services from the perspective of pharmacists was constructed. As with the first survey, a service was considered fundamental when at least 90% of pharmacists indicated that it should be provided (Table 5.10).<sup>13</sup>

The fundamental hospital pharmacy services for pharmacists was further subdivided according to the various hospital sizes and locations (Table 5.11) and there were differences. A wider range of services were fundamental for pharmacists from large city hospitals as compared with those from the other hospitals, although most clinical services were fundamental across all the hospital sizes and locations, except for *therapeutic drug monitoring, ward round participation and in-service, structured lectures for hospital staff*.

### 5.2.2 Pharmacy services provided by Victorian hospitals

Responses from pharmacists at each individual hospital were combined to present a hospital perspective of services provided (Table 5.12).<sup>14</sup> This was done to allow for comparison with other surveys of pharmacy services (Wilson et al., 2000a).

Differences were identified within some hospital pharmacies regarding the awareness pharmacists had of services provided by their departments, as observed by the "indeterminate" responses. This was also the case in the first survey (see section 4.2.2, Table 4.11).<sup>15</sup>

<sup>13</sup> Collectively as a professional group the only services which were not fundamental were *outpatient dispensing, clinical trial support, research activities/ opportunities, sterile manufacture: intravenous preparations, dispensing for hospital staff, and seven day a week service*.

<sup>14</sup> A cross tabulation of responses to services pharmacists indicated were provided at their hospitals was performed controlling for each hospital in the survey population.

<sup>15</sup> Where variations in responses existed within a hospital, the majority of responses, or seniority and length of employment of the respondents were used in deciding if the service was actually provided (as described in Chapter 4).



Table 5.11 Fundamental hospital pharmacy services for pharmacists <sup>a</sup>

All hospitals			
Adverse drug reaction monitoring/ management Drug information service Inpatient dispensing Intervention in/ monitoring patient drug therapy Review of medication charts/ order Medication history interview Patient information and education on drugs/ medicines Drug education for hospital staff- informal Pharmacy controls and performs drug purchasing Discharge medication counselling for patients Drug usage evaluation Drug cost monitoring Imprest			
Fundamental services specific to location			
Large city	Large country	Small city	Small country
Therapeutic drug monitoring (pharmacokinetic)	Therapeutic drug monitoring (pharmacokinetic)	Therapeutic drug monitoring (pharmacokinetic)	
Pharmacy store (bulk storage, reserve stock)		Pharmacy store (bulk storage, reserve stock)	Pharmacy store (bulk storage, reserve stock)
Training of pharmacy trainees & students		Training of pharmacy trainees & students	
In-service, structured lectures for hospital staff	In-service, structured lectures for hospital staff		In-service, structured lectures for hospital staff
Clinical trial support	Clinical trial support		
Pharmacy publications/ bulletins			
Ward round participation			
Hospital in the home			Hospital in the home
Manufacturing			
Outpatient dispensing			
Seven day a week service			
Sterile manufacture: intravenous preparations			
Research activities/ opportunities			
Staff dispensing			

<sup>a</sup> At least 90% of pharmacists indicated the service should be provided.

Table 5.12 Pharmacy services<sup>a</sup> provided by Victorian hospitals<sup>b</sup>

Service	Number of hospitals			
	Yes	No	Indeterminate <sup>c</sup>	Don't know <sup>d</sup>
Review of medication charts/ order	36 (100%)			
Patient information and education of drugs/ medicines	36 (100%)			
Inpatient dispensing	35 (97.2%)	1 (2.8%)		
Drug information service	35 (97.2%)		1 (2.8%)	
Intervention in/ monitoring of patient drug therapy	35 (97.2%)	1 (2.8%)		
Imprest	35 (97.2%)	1 (2.8%)		
Pharmacy purchasing	35 (97.2%)		1 (2.8%)	
Adverse drug reaction monitoring/ management	34 (94.4%)	1 (2.8%)		1 (2.8%) <sup>d</sup>
Drug education for hospital staff (informal)	34 (94.4%)	2 (5.6%)		
Discharge medication counselling for patients	33 (91.7%)	1 (2.8%)	2 (5.6%)	
Manufacturing	32 (88.9%)	4 (11.1%)		
Pharmacy store	32 (88.9%)	3 (8.3%)	1 (2.8%)	
Drug cost monitoring	32 (88.9%)	1 (2.8%)	3 (8.3%)	
Sterile manufacture: Intravenous preparations	25 (69.4%) <sup>e</sup>	10 (27.7%) <sup>e</sup>		
Therapeutic drug monitoring	29 (80.6%)	6 (16.7%)	1 (2.8%)	
Outpatient dispensing	28 (77.8%)	6 (16.7%)	2 (5.6%)	
Drug usage evaluation	28 (77.8%)	5 (13.9%)	3 (8.3%)	
Training of pharmacy trainees and students	27 (75%)	8 (22.2%)	1 (2.8%)	
Hospital in the home	27 (75%)	8 (22.2%)	1 (2.8%)	
Medication history interview	26 (72.2%)	7 (19.4%)	3 (8.3%)	
Dispensing for hospital staff	25 (69.4%)	9 (25%)	2 (5.6%)	
Clinical trial support	24 (66.7%)	11 (30.6%)	1 (2.8%)	
In-service, structured lectures for hospital staff	23 (63.9%)	10 (27.8%)	3 (8.3%)	
Pharmacy publications/ bulletins	21 (58.3%)	12 (33.3%)	3 (8.3%)	
Sterile manufacture: Cytotoxics	15 (41.6%) <sup>e</sup>	20 (55.6%) <sup>e</sup>		
Participation in ward rounds	18 (50%)	15 (41.7%)	2 (5.6%)	1 (2.8%) <sup>d</sup>
Seven day a week service	18 (50%)	17 (47.2%)	1 (2.8%)	
Research activities/ opportunities	13 (36.1%)	20 (55.6%)	3 (8.3%)	

<sup>a</sup> Services as perceived by pharmacists.<sup>b</sup> Total n=36. The percentage of hospitals are shown in brackets.<sup>c</sup> Where the individual pharmacists within a hospital did not know whether a service is provided and the responses did not allow for the researcher to clearly establish whether the service is available, the result is recorded as "indeterminate".<sup>d</sup> The "don't know" response for a particular hospital reflects the actual response given by the pharmacist to the question of whether a service is provided at their hospital.<sup>e</sup> One hospital did not give a response at all for sterile manufacture: IV preparations and cytotoxics but the % response is of 36 hospitals.

### 5.3 Service requirements: doctors and nurses

The services doctors and nurses believed should be provided at their hospitals are listed in Table 5.13. Where significant differences *did not* exist between doctors and nurses these are shown in Table 5.14.

Table 5.13 Service requirements for doctors and nurses

Service	Doctor's responses % <sup>a</sup>			Nurse's responses % <sup>b</sup>		
	Services should provide			Services should provide		
	Yes	No	DK	Yes	No	DK
Outpatient dispensing	81.8	11.5	6.6	84.8	9.3	5.9
Inpatient dispensing	98	0.7	1.2	98	0.7	1.3
Sterile manufacture: Intravenous preparations	77.8	7.9	14.3	82.8	10.0	7.2
Sterile manufacture: Cytotoxics	62.6	12.6	24.9	77.4	8.0	14.6
Drug information service	92.9	4.9	2.2	97.8	1.1	1.1
Participation in ward rounds	51.7	35.3	13	72.6	19.6	7.9
Review of medication charts	89.7	6.2	4.2	96.9	1.5	1.7
Medication history interview	64.6	22.5	12.9	78.1	13.8	8.0
Adverse drug reaction monitoring/management	93.6	3.2	3.2	93.2	3.7	3.1
Intervention in/ monitoring of patient drug therapy	77.2	14.7	8.1	88.5	6.3	5.2
Therapeutic drug monitoring (pharmacokinetic)	77.6	13.2	9.2	85.6	6.5	7.8
Imprest	77.7	2.0	20.3	97	1.1	1.8
Manufacturing (e.g. creams, lotions, mixtures)	41.9	24.4	33.7	58.1	22.8	19.1
Dispensing for hospital staff	62.8	23.9	13.3	79	13.9	7.1
Pharmacy controls and performs drug purchasing	77.6	3.0	19.4	84.6	3.5	11.9
Pharmacy store (bulk storage, reserve stock)	78.1	1.0	20.9	90.7	2.6	6.7
Discharge medication counselling for patients	90.1	5.7	4.2	93.9	3.7	2.4
Patient information and education on drugs/ medicines	94.8	2.2	3.0	97.4	1.5	1.1
Pharmacy publications/ bulletins	81.8	7.1	11.1	90.2	4.3	5.5
Drug education for hospital staff (informal)	89.9	4.4	5.7	98.7	0.5	0.7
In-service, structured lectures for hospital staff	65.5	17.6	16.9	95.2	2.6	2.2
Seven day a week service	83.5	10.6	5.9	86.9	7.7	2.4
Research activities/ opportunities	72.7	7.9	9.5	76.9	6.1	17.0
Clinical trial support	86.9	3.2	9.9	82.5	3.5	14.0
Drug cost monitoring	90.7	2.5	6.9	88.0	3.1	8.8
Drug usage evaluation	92.1	2.2	5.7	91.2	2.2	6.6
Hospital in the home	81.3	4.9	13.8	81.8	6.2	11.9

<sup>a</sup> The 'valid percent' is shown. In most cases the non responses for doctors (n= 414) ranged from 1.4 to 4.6%, however for *participation in ward rounds* the missing values accounted for 35%.

<sup>b</sup> The 'valid percent' is shown. The non responses for nurses (n=546) ranged from 0.2 to 2%, however for *participation in ward rounds* the missing values accounted for 32.6% of nurses.

Table 5.14 Services with *no statistically significant* difference in responses between doctors and nurses<sup>a, b</sup>

Services respondents believe should be provided	
Outpatient dispensing	Research activities/ opportunities
Inpatient dispensing	Clinical trial support
Adverse drug reaction monitoring/ management	Drug cost monitoring
Discharge medication counselling for patients	Drug usage evaluation
Patient information and education on drugs/ medicines	Hospital in the home.

<sup>a</sup>  $p < 0.05$  (Chi-square) for significance

<sup>b</sup> For those services listed in Table 5.13 and not included in Table 5.14 there was a *statistically significant* difference between doctors and nurses.

There were differences between doctors and nurses in their responses to service requirements (Tables 5.13 and 5.14) with nurses tending to be more supportive than doctors for the provision of many pharmacy services,<sup>16</sup> particularly clinical services (Tables 5.13 and 5.14). The exceptions were *adverse drug reaction monitoring*, *discharge medication counselling of patients*, and *patient information and education on drugs and medicine*, where the support for these services was similar between doctors and nurses.<sup>17</sup>

The level of agreement amongst doctors as one group and nurses as another about services they think should be provided can be seen in Table 5.15. Services which at least 90% of doctors and nurses indicated should be provided were designated as fundamental (see Table 5.15).

### 5.3.1 Hospital size and location influences on service requirements

Services that doctors and nurses believe should be provided at their hospitals are shown in Tables 5.16 and 5.17.

*Non-sterile manufacturing* was the least supported service in the opinion of doctors from large hospitals, whilst *sterile manufacture: cytotoxics* was the least supported by doctors from small city hospitals, and *dispensing for hospital staff* for small country hospital doctors.

<sup>16</sup> Where statistically significant differences were identified.

<sup>17</sup> Doctors were much less supportive of *medication history interview* being undertaken by pharmacists than were nurses (Table 5.13), and both were significantly less supportive of this service than were pharmacists themselves (Table 5.6). This clinical service was included in the second survey only.

Table 5.15 Service requirements of doctors and nurses <sup>a</sup>

Doctors	Nurses
At least 90% of doctors <sup>b</sup>	At least 90% of nurses <sup>b</sup>
Inpatient dispensing	Inpatient dispensing
Drug information service	Drug information service
Review of medication charts	Review of medication charts
Adverse drug reaction monitoring/ management	Adverse drug reaction monitoring/ management
Discharge medication counselling for patients	Discharge medication counselling for patients
Patient information and education on drugs/ medicines	Patient information and education on drugs/ medicines
Drug education for hospital staff-informal	Drug education for hospital staff-informal
Drug usage evaluation	Drug usage evaluation
Drug cost monitoring	Imprest
	Pharmacy store (bulk storage, reserve stock)
	Pharmacy publications/ bulletins
	In-service, structured lectures for hospital staff
80 to less than 90% of doctors	80 to less than 90% of nurses
Outpatient dispensing	Outpatient dispensing
Seven day a week service	Seven day a week service
Clinical trial support	Clinical trial support
Hospital in the home	Hospital in the home
Pharmacy publications/ bulletins	Sterile manufacture: intravenous preparations
	Intervention in/ monitoring patient drug therapy
	Therapeutic drug monitoring (pharmacokinetic)
	Pharmacy controls and performs drug purchasing
	Drug cost monitoring
70 to less than 80% doctors	70 to less than 80% nurses
Sterile manufacture: intravenous preparations	Sterile manufacture: Cytotoxics
Intervention in/ monitoring patient drug therapy	Participation in ward rounds
Therapeutic drug monitoring (pharmacokinetic)	Medication history interview
Pharmacy controls and performs drug purchasing	Dispensing for hospital staff
Research activities/ opportunities	Research activities/ opportunities
Imprest	
Pharmacy store (bulk storage, reserve stock)	
60 to less than 70% doctors	60 to less than 70% nurses
In-service, structured lectures for hospital staff	No services
Medication history interview	
Dispensing for hospital staff	
Sterile manufacture: Cytotoxics	

Of the remaining services not listed, 51.7% of doctors indicated pharmacists should *participate in ward rounds*, and 41.9% of doctors and 58.1% of nurses indicated they should provide a *manufacturing service (creams, lotions and mixtures)*.

<sup>a</sup> Showing relative support of required services.

<sup>b</sup> Fundamental services

Table 5.16 Services doctors believe should be provided at their hospitals <sup>b</sup>

Hospital															
Large city				Large country				Small city				Small country			
Service <sup>a</sup>	%	%	%	Service <sup>a</sup>	%	%	%	Service <sup>a</sup>	%	%	%	Service <sup>a</sup>	%	%	%
	yes	no	DK		yes	no	DK		yes	no	DK		yes	no	DK
Inpatient dispensing	98.7	0.4	0.9	Inpatient dispensing	96.7	0	3.3	inpatient dispensing	98.1	1.9	0	patient info& education	98.2	0	1.8
patient info& education	96.6	1.7	1.7	drug cost monitoring	91.7	0	8.3	ADR monitoring	94.4	0	5.6	inpatient dispensing	96.6	1.7	1.7
Drug usage evaluation	96.2	1.3	2.6	Clinical trial support	91.7	1.7	6.7	patient info& education	94.3	1.9	3.8	review med.chart	96.6	1.7	1.7
drug information	95.8	2.5	1.7	staff drug education	90	3.3	6.7	review med.chart	94.3	7.4	1.9	Drug usage evaluation	96.4	0	3.6
ADR monitoring	95.3	1.7	3	Patient info& education	85	6.7	8.3	drug information	88.5	9.3	1.9	ADR monitoring	94.8	3.4	1.7
drug cost monitoring	92.8	2.5	4.7	Drug usage evaluation	85	6.7	8.3	medication counselling	88.5	5.8	5.8	drug cost monitoring	94.8	1.7	3.4
staff drug education	91.9	3.4	4.7	drug information	85	8.3	6.7	seven day service	83	9.4	7.5	drug information	93.1	6.9	0
Medication counselling	91.9	4.2	3.8	ADR monitoring	85	11.7	3.3	imprest	82.4	0	17.6	medication counselling	91.4	6.9	1.7
clinical trial support	91.1	1.3	7.7	Review med.chart	85	10	5	staff drug education	81.5	5.6	13	Hospital in the home	91.4	6.9	1.7
review med.chart	88.9	6.0	5.1	seven day service	85	10	5	intervention/monitoring	78.8	13.5	7.7	staff drug education	89.7	8.6	1.7
seven day service	88.5	5.5	6	Medication counselling	83.3	10	6.7	Drug usage evaluation	77.8	3.7	18.5	pharmacy store	86	0	14
Outpatient dispensing	87.2	6.4	6.4	Hospital in the home	83.3	6.7	10	TDM	77.4	11.3	11.3	purchasing	85.7	1.8	12.5
Pharmacy bulletins	86.8	4.3	9	Pharmacy store	83.3	1.7	15	drug cost monitoring	75.9	5.6	18.5	clinical trial support	82.5	5.3	12.3
Research	83.4	3.4	13.2	Outpatient dispensing	78.3	18.3	3.3	purchasing	75.9	1.9	22.2	intervention/monitoring	80.7	12.3	7
sterile IV preparations	82.1	3.8	14	Pharmacy bulletins	78.3	10	11.7	outpatient dispensing	74.1	14.8	11.1	imprest	80	0	20
Hospital in the home	82.1	2.6	15.4	Sterile IV preparations	78.3	6.7	15	Medn history interview	73.6	17	9.4	pharmacy bulletins	79.3	12.1	8.6
TDM	81.8	9.5	8.7	Research	76.7	6.7	16.7	pharmacy store	72.2	1.9	25.9	outpatient dispensing	70.7	22.4	6.9
Imprest	78.3	2.1	19.6	Purchasing	75	5	20	clinical trial support	68.5	11.1	20.4	sterile IV preparations	69	20.7	10.3
Intervention/monitoring	78	14.1	7.9	Sterile: cytotoxics	73.3	8.3	18.3	sterile IV preparations	67.9	13.2	18.9	TDM	67.2	24.1	8.6
Purchasing	76.7	3	20.3	TDM	71.2	18.6	10.2	pharmacy bulletins	66.7	11.1	22.2	lectures	67.2	25.9	6.9
Pharmacy store	76.2	0.9	23	Lectures	70	11.7	18.3	Hospital in the home	64.8	11.1	24.1	Medn history interview	63.2	29.8	7
staff dispensing	69.1	17.8	13.1	Intervention/monitoring	69.5	20.3	10.2	staff dispensing	61.1	25.9	13	seven day service	62.1	32.8	5.2
Sterile: cytotoxics	68.9	4.3	26.8	Imprest	69	5.2	25.9	lectures	54.7	15.1	30.2	research	54.4	14	31.6
Lectures	66.4	17.7	15.9	staff dispensing	61	23.7	15.3	ward round participation	48.6	37.1	14.3	ward round participation	52.6	34.2	13.2
Medn history interview	63.9	21.1	15	Medn history interview	61	25.4	13.6	manufacturing	44.4	22.2	33.3	Sterile: cytotoxics	50.9	33.3	15.8
ward round participation	51.3	35.3	13.5	ward round participation	55	35	10	research	40.7	22.2	37	manufacturing	45.6	33.3	21.1
Manufacturing	41.7	21.3	37	Manufacturing	36.7	30	33.3	Sterile: cytotoxics	35.2	31.5	33.3	staff dispensing	40.4	47.4	12.3

<sup>a</sup> Tables are sorted by "yes" responses. Services are ranked from those most respondents believe should be provided to those they least believe should be provided.

<sup>b</sup> The table indicates the percentage of respondents that indicated "yes", "no" or "don't know" to services they believe should be provided at their hospitals.

Table 5.17 Services nurses believe should be provided at their hospitals

Hospital															
Large city				Large country				Small city				Small country			
	%	%	%		%	%	%		%	%	%		%	%	%
Service	yes	no	DK	Service	yes	no	DK	Service	yes	no	DK	Service	yes	no	DK
patient info & education	98.6	1	0.3	Inpatient dispensing	99	0	1	staff drug education	100	0	0	staff drug education	98.9	0	1.1
staff drug education	98.6	0.7	0.7	Review med. chart	99	1	0	lectures	100	0	0	review med chart	97.9	0	2.1
Inpatient dispensing	97.6	0.7	1.7	drug information	99	1	0	inpatient dispensing	98.2	1.8	0	inpatient dispensing	97.8	1.1	1.1
drug information	97.6	0.7	1.7	staff drug education	98	1	1	imprest	98.2	0	1.8	drug information	97.8	1.1	1.1
Imprest	97.3	1.7	1	Lectures	97.1	2	1	ADR monitoring	98.2	0	1.8	imprest	96.8	0	3.2
seven day service	97.3	1.7	1	Patient info & education	97	2	1	medication counselling	98.2	1.8	0	patient info & education	94.4	2.2	3.3
review med .chart	95.9	2	2	Medication counselling	96.1	2.9	1	patient info & education	96.4	1.8	1.8	ADR monitoring	93.5	1.1	5.4
Lectures	94.5	2.7	2.7	Imprest	96.1	1	2.9	drug information	96.4	3.6	0	lectures	92.6	4.3	3.2
ADR monitoring	93.2	3.8	3.1	seven day service	93.1	5.9	7.7	review med .chart	96.4	1.8	1.8	medication counselling	92.5	3.2	4.3
Medication counselling	92.8	4.5	2.7	Drug usage evaluation	92.2	2	5.9	intervention/monitoring	96.4	1.3	1.8	pharmacy store	92.3	2.2	5.5
Drug usage evaluation	91.5	2.4	6.1	Pharmacy store	91.2	2	6.9	pharmacy bulletins	91.1	1.8	7.1	Drug usage evaluation	90.3	2.2	7.5
Outpatient dispensing	91.1	3.4	5.5	drug cost monitoring	91.2	2.9	5.9	TDM	90.6	3.8	5.7	pharmacy bulletins	90	4.4	5.6
Pharmacy store	90.7	2.4	6.9	ADR monitoring	90.2	7.8	2	Drug usage evaluation	89.3	1.8	8.9	purchasing	88	3.3	8.7
Pharmacy bulletins	90.4	4.8	4.8	Intervention/monitoring	90.2	5.9	3.9	drug cost monitoring	87.5	5.4	7.1	intervention/monitoring	87.2	6.4	6.4
sterile IV preparations	88.1	5.1	6.8	Pharmacy bulletins	89.2	3.9	6.9	pharmacy store	87.3	5.5	7.3	drug cost monitoring	87.1	2.2	10.8
drug cost monitoring	87.3	3.1	9.6	Sterile: cytotoxics	89.2	2.9	7.8	staff dispensing	85.5	10.9	3.6	Hospital in the home	86	5.4	8.6
Intervention/monitoring	86.9	7.2	5.9	Purchasing	89	2	9	purchasing	83.6	1.8	14.5	TDM	81.3	6.6	12.1
TDM	85.9	6.2	7.9	Clinical trial support	87.3	2	10.8	Medn history interview	83.3	9.3	7.4	Medn history interview	72.8	16.3	10.9
clinical trial support	85.3	1.4	13.3	TDM	86.3	8.8	4.9	seven day service	82.1	17.9	0	staff dispensing	71.1	18.9	10
Hospital in the home	83.7	5.1	11.2	Medn history interview	84	11	5	outpatient dispensing	81.8	14.5	3.6	clinical trial support	69.9	12.9	17.2
staff dispensing	82.7	10.2	7.1	Sterile IV preparations	83.3	11.8	4.9	clinical trial support	79.6	1.9	18.5	sterile IV preparations	69.9	19.4	10.8
Purchasing	82.2	4.5	13.4	Outpatient dispensing	83.2	10.9	5.9	sterile IV preparations	75.9	16.7	7.4	outpatient dispensing	68.1	23.1	8.8
Research	80.1	4.8	15.1	Hospital in the home	82.4	5.9	11.8	ward round participation	75.6	19.5	4.9	seven day service	67.7	22.6	9.7
Sterile: cytotoxics	79.5	4.5	16.1	ward round participation	79.7	13.5	6.8	research	72.7	3.6	23.6	Sterile: cytotoxics	67.4	18.5	14.1
Medn history interview	76.8	14.9	8.3	Research	79.4	6.9	13.7	Hospital in the home	64.3	14.3	21.4	research	65.9	11	23.1
ward round participation	73	18.9	8.2	staff dispensing	72	22	6	manufacturing	61.8	27.3	10.9	ward round participation	59.6	29.8	10.5
Manufacturing	62.2	17.7	20.1	Manufacturing	52	32.4	15.7	Sterile: cytotoxics	61.1	18.5	20.4	manufacturing	50	25.6	24.4

In the case of nurses, *non-sterile manufacturing* was the least supported pharmacy service at all hospitals except small city hospitals where nurses' responses indicated *sterile manufacture: cytotoxics* to be the least supported.<sup>18</sup>

Hospital size and location influenced the service requirements of doctors and nurses (Table 5.18) with the effect being greater on the requirements of doctors than nurses.<sup>19</sup>

Doctors from large city and small country hospitals indicated a wider range of pharmacy services should be provided than their counterparts from the other hospitals, whilst nurses from large hospitals supported the provision of more services than their small hospital colleagues.

**Table 5.18. Statistically significant hospital effect on service requirements of doctors and nurses <sup>a</sup>**

Doctors	Nurses
Outpatient dispensing	Outpatient dispensing
Sterile manufacture: intravenous preparations	Sterile manufacture: intravenous preparations
Sterile manufacture: Cytotoxics	Sterile manufacture: Cytotoxics
Drug information service	Manufacturing
Adverse drug reaction monitoring	Dispensing for hospital staff
Dispensing for hospital staff	Seven day a seek service
Patient information and education on drugs/ medicines	Clinical trial support
Pharmacy publications/ bulletins	Hospital in the home
In-service, structured lectures for hospital staff	
Seven day a seek service	
Research activities/ opportunities	
Clinical trial support	
Drug cost monitoring	
Drug usage evaluation	
Hospital in the home	

<sup>a</sup>  $p < 0.05$ , chi-square test

Examination of tables 5.16 and 5.17 allows a list of fundamental hospital pharmacy services for doctors and for nurses to be determined, taking into account hospital size and location (Tables 5.19 and 5.20).<sup>20</sup>

<sup>18</sup> The provision of services such as *sterile manufacture* which require the infrastructure, resources and personnel to provide such a service were supported more by doctors and nurses from large hospitals than those from small hospitals (Tables 5.16 and 5.17). *Outpatient dispensing* was supported more by doctors from large hospital than those from small hospitals possibly reflecting the status quo where outpatient clinics were still being conducted at many larger hospitals but accident and emergency services being the only form of outpatient services at smaller hospitals. Nurses from large city hospitals supported *outpatient dispensing* more than their counterparts elsewhere.

<sup>19</sup> As seen by the larger number of services included for doctors that showed a significant hospital effect in Table 5.18.

<sup>20</sup> Where at least 90% of respondents indicated a service should be provided.



Table 5.19. Fundamental hospital pharmacy services for *doctors*<sup>a</sup>

All hospitals			
Inpatient dispensing			
Large city	Large country	Small city	Small country
Patient information and education on drugs/ medicines		Patient information and education on drugs/ medicines	Patient information and education on drugs/ medicines
Adverse drug reaction monitoring/ management		Adverse drug reaction monitoring/ management	Adverse drug reaction monitoring/ management
Drug cost monitoring	Drug cost monitoring		Drug cost monitoring
Drug education for hospital staff-informal	Drug education for hospital staff-informal		Drug education for hospital staff-informal
Discharge medication counselling for patients			Discharge medication counselling for patients
Drug information service			Drug information service
Drug usage evaluation			Drug usage evaluation
Clinical trial support	Clinical trial support	Review of medication charts	Review of medication charts
			Hospital in the home

<sup>a</sup> At least 90% of doctors from each hospital size and location indicated that the service should be provided.

Table 5.20 Fundamental hospital pharmacy services for *nurses*<sup>a</sup>

All hospitals			
	Inpatient dispensing		
	Drug education for hospital staff-informal		
	Patient information and education on drugs/ medicines		
	Drug information service		
	Imprest		
	Review of medication charts		
	In-service, structured lectures for hospital staff		
	Adverse drug reaction monitoring		
	Discharge medication counselling for patients		
large city	large country	small city	small country
Drug usage evaluation	Drug usage evaluation		Drug usage evaluation
Pharmacy store (bulk storage, reserve stock)	Pharmacy store (bulk storage, reserve stock)		Pharmacy store (bulk storage, reserve stock)
Pharmacy publications/ bulletins		Pharmacy publications/ bulletins	Pharmacy publications/ bulletins
	Intervention in/ monitoring patient drug therapy	Intervention in/ monitoring patient drug therapy	
Seven day a week service	Seven day a week service	Therapeutic drug monitoring (pharmacokinetic)	
Outpatient dispensing	Drug cost monitoring		

<sup>a</sup> At least 90% of nurses from each hospital size and location indicated that the service should be provided.

Hospital size and location impacted on fundamental service requirements, with doctors from large city and small country hospitals supporting a wider range of services than did large country and small city hospital doctors.<sup>21</sup> The only difference between the large city and small country hospital doctors in their fundamental requirements were that doctors in large city hospitals endorsed *clinical trial support* and doctors in small country hospitals supported *review of medication charts* and *hospital in the home*.

*Patient information and education on drugs and medicines* and *adverse drug reaction monitoring* were fundamental service requirements for doctors from all hospitals except large country hospitals. The only clinical service or educative service supported by large country hospital doctors was *informal drug education for hospital staff*.

A few more services were fundamental for nurses from large hospitals than those working in small hospitals.

#### 5.4 Performance ratings

Doctors, nurses and pharmacists were asked to rate how effective the performance of the pharmacy service at their hospital was on measures of customer service (Table 5.21). A few additional measures were included to reflect new services and to clarify terminology (see Methodology, section 3.5.3).

Doctors and nurses rated 34 measures of service, whilst pharmacists rated 36 measures. The additional services which pharmacists were required to rate were: *continuing education for staff pharmacists*, and *education and training of non-pharmacist pharmacy staff*.

The re-survey itself became part of the validation process of the questionnaires as discussed in chapter 7.

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<sup>21</sup> Fundamental hospital pharmacy services for doctors from small country hospitals were slightly more extensive than for large city hospital doctors.

Table 5.21 Measures of customer service

Measures of customer service on which respondents had to rate the effectiveness of performance of the pharmacy service	
Cooperation of pharmacy staff to users of the service	Discharge dispensing
Friendliness of pharmacy staff to users of the service	Timeliness of provision of medication
Medical knowledge of the pharmacist	Availability of stock
Pharmaceutical knowledge of the pharmacist	Sterile manufacture-intravenous preparations
Drug information service provided	Sterile manufacture-cytotoxics
Advice given on drug information queries	Discharge medication counselling of patients
Timeliness of response to drug information queries	Patient information & education on drugs/ medicines
Advice given on general queries	Pharmacy bulletins/ publications
Timeliness of response to general queries	Drug education for hospital staff-informal
Participation in ward rounds	In-service, structured lectures for hospital staff
Review of medication charts/ order <sup>b</sup>	Extent of pharmacy department involvement in research
Medication history interview	Reliability of service
Adverse drug reaction monitoring/ management	Communication with users of the service
Intervention in/ monitoring patient drug therapy	After hours service
Therapeutic drug monitoring service (pharmacokinetic)	Overall service provided to the users of the service
Understanding and knowing the needs of the users	Presentation of medicines
Efficiency of the pharmacy service	Continuing education for staff pharmacists <sup>a</sup>
Accuracy of dispensing	Education and training of non-pharmacist pharmacy staff <sup>a</sup>

<sup>a</sup> These measures were only rated by pharmacists.

<sup>b</sup> *Review of medication charts* was the term used in the doctors and nurses survey in 1999/2000 as compared with *review of medication charts/ order* on the pharmacists survey (which links in with the ICD-10AM codes of clinical activities).

#### 5.4.1 Results

The ratings of effectiveness of the performance of the pharmacy services at the various hospitals are shown in Table 5.22.<sup>22</sup> Frequency diagrams which illustrate the range of ratings given by doctors, nurses and pharmacists for each measure are included in Appendix 4 (Figures A4.1 to A4.34).

The measure *pharmacy publications and bulletins* was inadvertently included twice to be rated in the questionnaire for doctors and nurses.<sup>23</sup> The mean and standard deviation for both entries are given. It is interesting to note that the ratings by doctors and nurses were not always the same for the two separate listings!<sup>24</sup> The rating for the first instance when this measure was listed is used for subsequent comparisons and analysis in this study.

<sup>22</sup> Measures of service are listed as they appear on the questionnaires.

<sup>23</sup> This was done unintentionally, however it was a fortuitous mistake because the ratings given by doctors and nurses were different for each entry. In some cases they noted that the measure had been entered twice, indicating that they were actually reading each question and not indiscriminately giving ratings, some then gave the rating again whilst others left the box to be rated empty.

<sup>24</sup> This raises some interesting issues regarding what their responses really mean, how people respond in questionnaires, and the placement of questions within a questionnaire.

Table 5.22 Performance ratings on measures of pharmacy services

Measure of service	Doctors			Nurses			Pharmacists		
	mean	Std dev <sup>d</sup>	n <sup>a</sup>	mean	Std dev <sup>d</sup>	n <sup>b</sup>	mean	Std dev <sup>d</sup>	n <sup>c</sup>
Cooperation of pharmacy staff to users of the service	8.41	1.49	362	8.18	1.79	521	8.36	1.04	138
Friendliness of pharmacy staff to users of the service	8.55	1.42	369	8.37	1.73	528	8.46	1.11	142
Medical knowledge of the pharmacist	7.81	1.60	295	8.39	1.55	471	7.27	1.09	139
Pharmaceutical knowledge of the pharmacist	8.64	1.23	326	8.92	1.26	502	8.15	1.01	142
Drug information service provided	7.84	1.91	308	7.64	2.20	492	7.54	1.85	134
Advice given on drug information queries	8.21	1.60	327	8.33	1.83	520	8.25	1.30	138
Timeliness of response to drug information queries	8.38	1.56	315	7.83	2.09	513	7.94	1.33	134
Advice given on general queries	8.21	1.40	311	8.15	1.82	518	8.25	1.07	140
Timeliness of response to general queries	8.25	1.51	298	7.86	1.94	509	8.22	1.17	139
Participation in ward rounds	4.67	3.56	135	4.71	3.79	290	5.75	2.64	97
Review of medication charts	7.38	2.33	212	7.04	2.86	432	7.94	1.53	135
Medication history interview	6.21	2.88	140	5.68	3.48	344	7.17	1.71	127
Adverse drug reaction monitoring/ management	6.76	2.46	196	6.25	3.06	376	6.93	1.67	135
Intervention in/ monitoring patient drug therapy	7.03	2.34	205	6.63	2.92	380	7.62	1.30	136
Therapeutic drug monitoring service (pharmacokinetic)	6.83	2.71	173	6.61	3.02	310	7.30	1.75	125
Understanding and knowing the needs of the users	7.17	2.01	250	6.98	2.45	445	7.64	1.17	139
Efficiency of the pharmacy service	7.71	1.67	336	7.00	2.32	522	7.52	1.35	142
Accuracy of dispensing	8.81	1.17	321	8.62	1.59	515	8.67	0.96	141
Discharge dispensing	8.18	1.79	294	7.49	2.32	474	8.22	1.22	137
Timeliness of provision of medication	7.72	1.81	300	6.63	2.48	505	7.58	1.35	141
Presentation of medicines	8.18	1.59	234	8.20	1.86	492	8.43	1.19	142
Availability of stock	7.66	1.65	270	7.38	2.14	515	8.10	1.23	143
Sterile manufacture-intravenous preparations	8.31	1.62	120	8.12	2.17	314	8.28	1.57	112
Sterile manufacture-cytotoxics	8.46	1.82	81	8.33	2.35	166	8.54	1.77	71
Discharge medication counselling of patients	7.02	2.33	187	6.58	2.99	410	7.81	1.50	136
Patient information & education on drugs/ medicines	6.93	2.13	193	6.52	2.99	439	7.54	1.47	138
Pharmacy bulletins/ publications	6.43	2.43	208	5.26	3.04	353	6.43	2.31	94
Drug education for hospital staff-informal	5.64	2.86	190	5.12	3.04	450	7.15	1.70	131
In-service, structured lectures for hospital staff	3.37	2.74	126	3.62	2.97	415	6.68	2.08	108
Extent of pharmacy department involvement in research	4.91	3.05	102	4.45	3.36	130	4.96	2.70	91
Pharmacy bulletins/ publications <sup>c</sup>	6.11	2.80	184	4.74	3.20	302			
Reliability of service	8.28	1.37	335	7.49	2.09	506	8.22	1.30	141
Communication with users of the service	7.66	1.94	320	7.33	2.13	488	7.72	1.42	142
After hours service	5.13	2.80	254	4.33	3.00	427	7.91	1.72	122
Overall service provided to the users of the service	7.84	1.40	345	7.42	1.92	499	7.91	0.99	142
Continuing education for staff pharmacists							6.77	2.08	134
Education and training of non-pharmacist pharmacy staff							6.50	1.90	128

<sup>a</sup> Number of doctors who responded to the question of 414 (total doctor respondents).<sup>b</sup> Number of nurses who responded to the question out of 546<sup>c</sup> Number of pharmacists who responded out of 143<sup>d</sup> Standard deviation<sup>e</sup> Second inclusion of this measure in the questionnaires

Statistically significant differences (t-test) in ratings between doctors and nurses existed except for the customer service measures shown in Table 5.23. ANOVA<sup>25</sup> was used to test for statistical differences in ratings between doctors, nurses and pharmacists and gave F values with significance <0.05 for all measures except those shown in Table 5.23.<sup>26</sup>

<sup>25</sup> Analysis of variance<sup>26</sup> An F value >20, p<0.000 was calculated for *medical knowledge of the pharmacist; pharmaceutical knowledge of the pharmacist; timeliness of provision of medication; drug education for hospital staff-informal; in-service, structured lectures for hospital staff; reliability of service; and after hours service*, showing highly significant differences for these measures as noted by either smaller standard deviations or wider rating gaps between respondents.

**Table 5.23 Customer service measures which showed no statistical differences in ratings<sup>a</sup>**

Between doctors and nurses	Between doctors, nurses and pharmacists
Friendliness of pharmacy staff to users of the service	Friendliness of pharmacy staff to users of the service
Drug information service provided	Drug information service provided
Advice given on drug information queries	Advice given on drug information queries
Advice given on general queries	Advice given on general queries
Therapeutic drug monitoring service	Therapeutic drug monitoring service
Accuracy of dispensing	Accuracy of dispensing
Presentation of medicines	Presentation of medicines
Sterile manufacture: intravenous preparations and cytotoxics	Sterile manufacture: intravenous preparations and cytotoxics
Extent of pharmacy involvement in research	Extent of pharmacy involvement in research
Ward round participation	Cooperation of pharmacy staff to users of the service
Review of medication charts	
Intervention in/ monitoring patient drug therapy	
Medication history interview	
Discharge medication counselling	
Patient information and education on drugs/ medicines	
In-service/ structured lectures for hospital staff	
Availability of stock	
Understanding and knowing the needs of the users	

<sup>a</sup>For all other measures listed in Table 5.22 and not included in Table 5.23 there were statistically significant differences in ratings between the respondent groups.

The services which were rated lowest by doctors and nurses were *participation in ward rounds, in-service/ structured lectures for hospital staff, and extent of pharmacy department involvement in research*, all of which had a mean less than 5. In addition, the mean rating for *after hours service and pharmacy publications and bulletins* was under 5 for nurses. The only service for which pharmacists gave a mean rating below 5 was *the extent of pharmacy department involvement in research*.

The ratings for *adverse drug reaction monitoring or management, intervention in or monitoring patient drug therapy, timeliness of response to general queries, timeliness of provision of medication, reliability of the service, communication with users, after hours service, availability of stock, patient information and education on drugs and medicines, discharge medication counselling and the overall service provided to the users of the service* were higher for doctors and pharmacists than for nurses. The pharmacists' ratings of their *medical and pharmaceutical knowledge* were lower than from the doctors and nurses.

Doctors gave a higher rating for *timeliness of response to drug information queries*, and *efficiency of the pharmacy service* than did nurses and pharmacists.

Pharmacists gave themselves a higher rating for their *participation in ward rounds*, *review of medication charts*, *medication history interview*, and *understanding and knowledge of the needs of the users of the service*, and *after hours service* than did doctors and nurses.

Doctors and pharmacists gave a similar rating to *pharmacy bulletins and publications* though nurses gave a lower rating. The ratings for this measure from both doctors and nurses were lower when this measure was repeated later in the same question on their questionnaire.<sup>27</sup>

Pharmacists gave a higher rating for the *informal drug education* they provide to hospital staff than did doctors and particularly nurses. Doctors and nurses gave lower ratings for *in-service/ structured lectures for hospital staff* than did pharmacists. This service also did not enjoy particularly good support from doctors when they were asked about their service requirements (Table 5.13) with 17.6% who responded to this question indicating this service should not be provided and another 16.9% not knowing if it should be provided.

#### **5.4.2 The "no opinion" and "not applicable responses**

The second survey once again identified large numbers of "no opinion" and "not applicable" responses from doctors and nurses to a significant number of the customer service measures they were asked to rate (Figures 5.1 to 5.4).

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<sup>27</sup> Perhaps the poorer ratings obtained for measures of customer service included prior to this second inclusion within the questionnaire caused this to happen, or maybe thinking more about this service led them to give a lower rating.

Figure 5.1 Frequency of "no opinion" responses given by doctors to performance of the pharmacy on measures of service (n= 414)

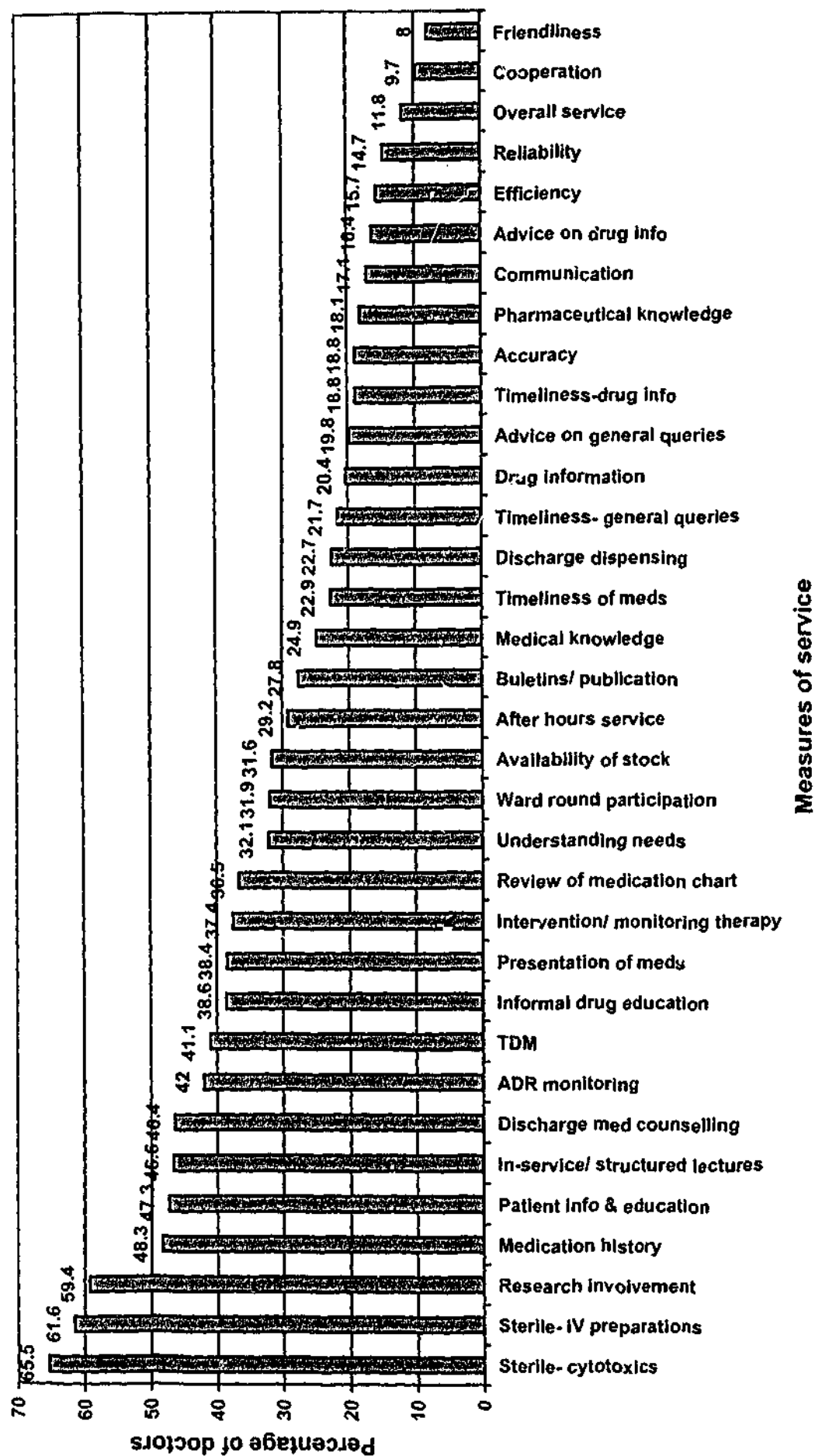


Figure 5.2 Frequency of "not applicable" responses given by doctors to performance of the pharmacy on measures of service (n=414)

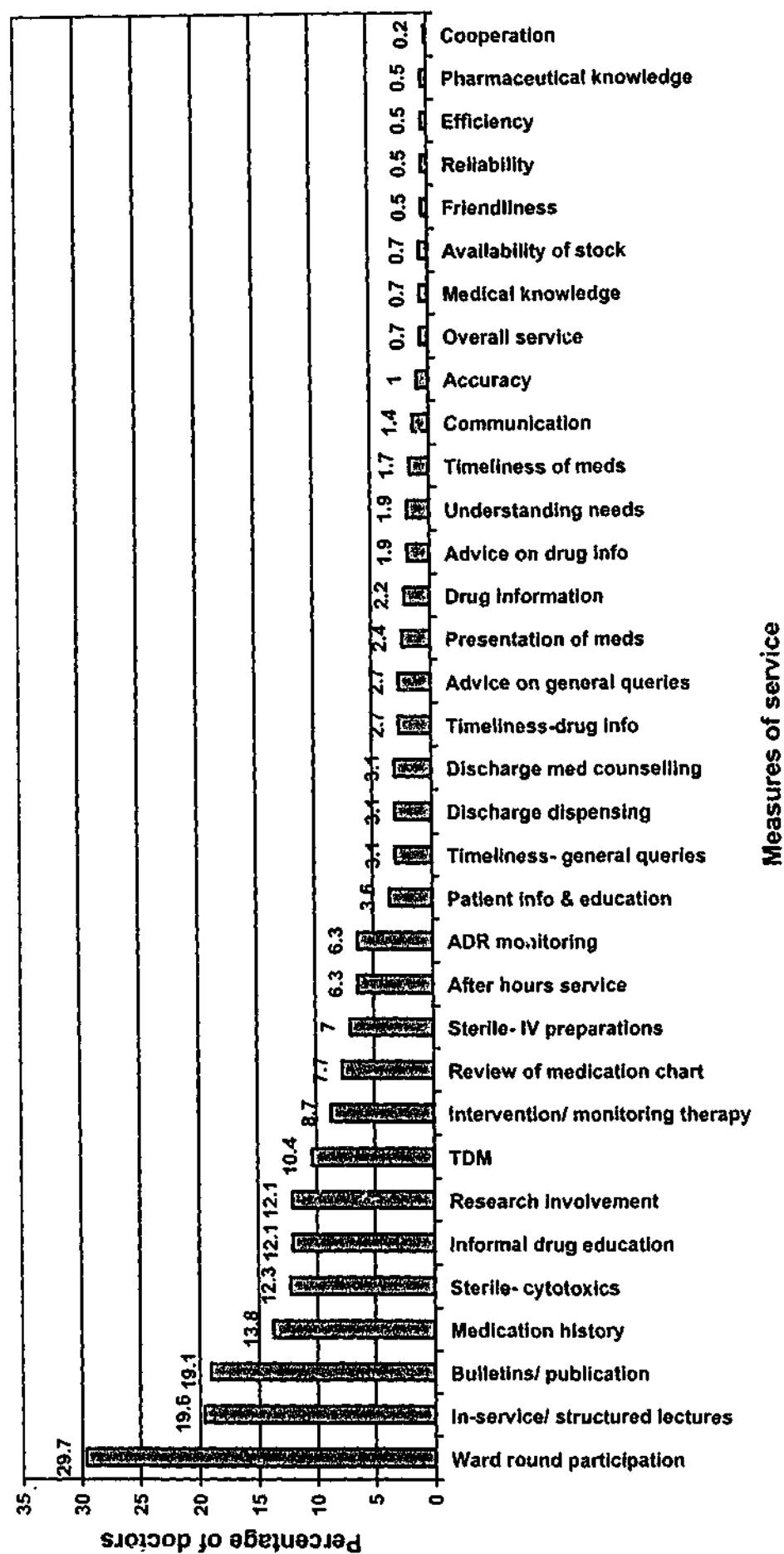




Figure 5.3 Frequency of "no opinion" responses given by nurses to performance of the pharmacy on measures of service (n=546)

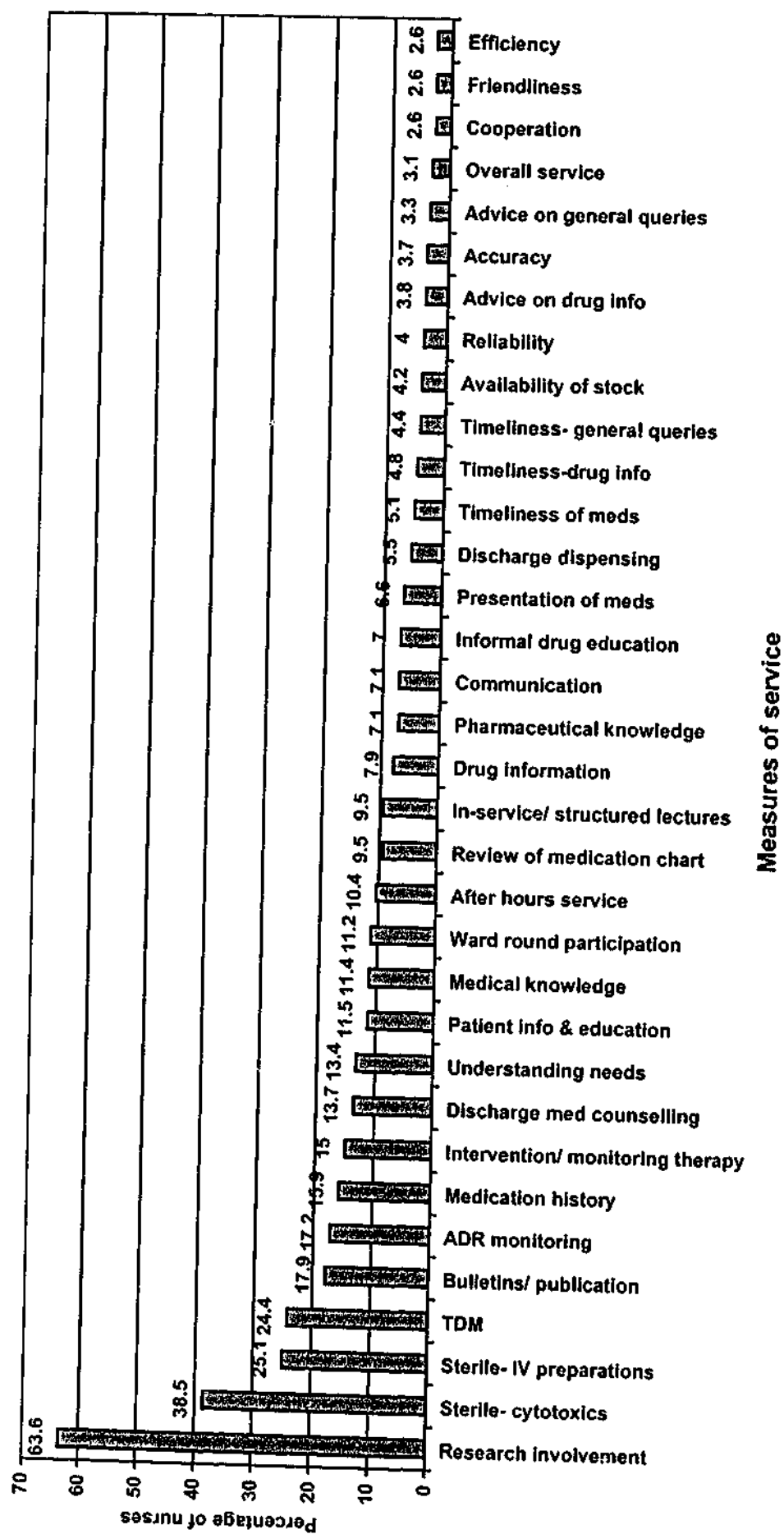
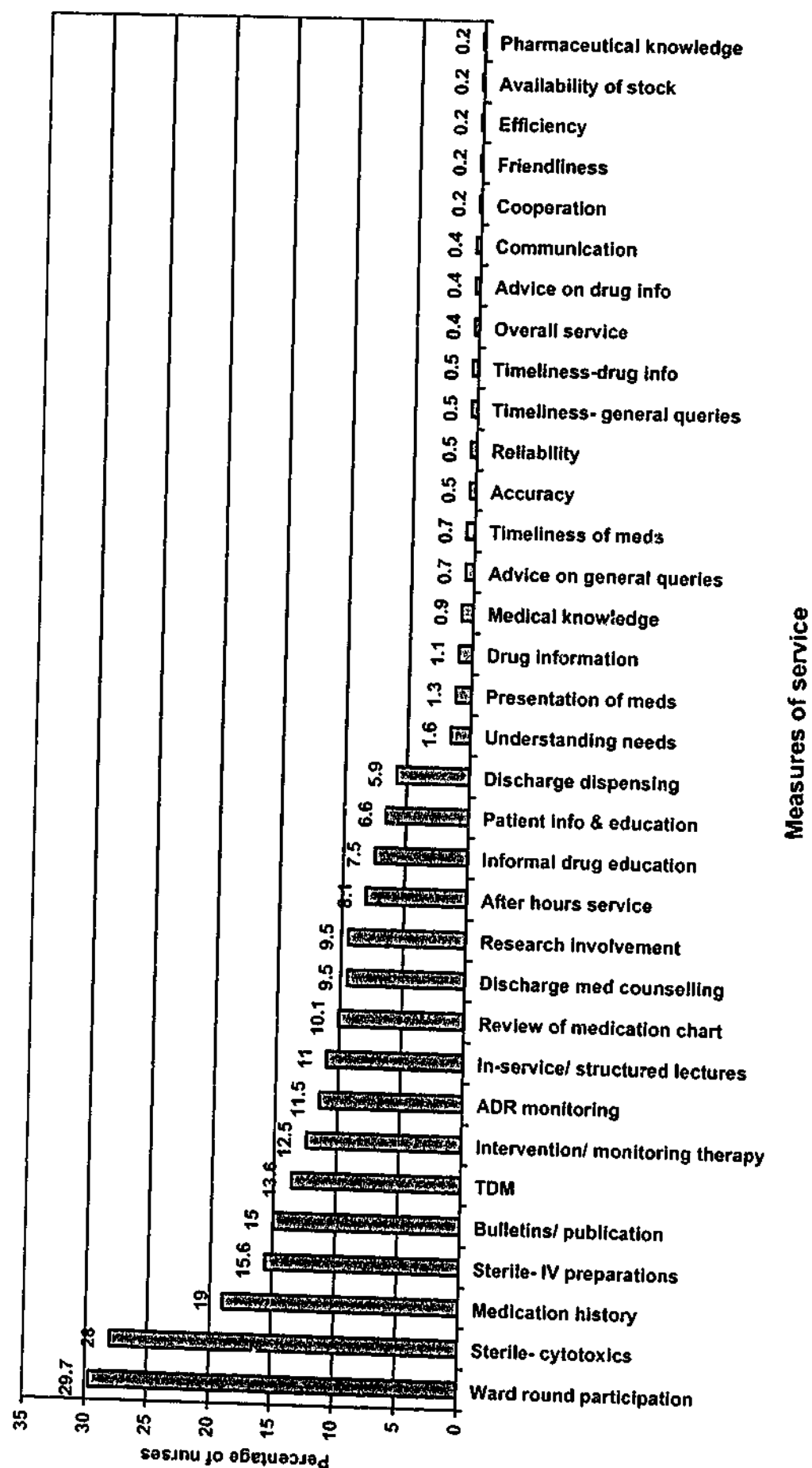


Figure 5.4 Frequency of "not applicable" responses given by nurses to performance of the pharmacy on measures of service (n=546)



The "no opinion" responses from doctors ranged from 65.5% to 8% (Figure 5.1) and from 63.6% to 2.6% (Figure 5.3) for nurses.

The "not applicable"<sup>28</sup> responses from doctors ranged from 29.7% to 0.2% (Figure 5.2).<sup>29</sup> For nurses the "not applicable" responses ranged from 29.7% to 0.2% (Figure 5.4).

The measures which were most often associated with these responses tend to be those which are more clinical in nature,<sup>30</sup> although *sterile manufacture of intravenous preparations and cytotoxics, pharmacy publications and bulletins, and extent of pharmacy department involvement in research* also had large "no opinion" and "not applicable" responses from doctors and nurses.

The analysis of the second survey's performance ratings has therefore had to take into account the fact that for some measures, a significant number of doctors and nurses failed to give a rating. Factor analysis and regressions analysis were therefore not used in the analysis.<sup>31</sup>

#### 5.4.3 Hospital size and location influences

The performance ratings obtained for pharmacy services were determined for each hospital size and location (Tables 5.24, 5.25 and 5.26) and statistically significant differences were detected (Table 5.27).

<sup>28</sup> Unfortunately a limitation in interpreting this term is that it is not clear if doctors meant that the service was not available at the hospital; whether they felt the service should not be available at the hospital; or whether the provision of these services in the hospital they were practicing in was unnecessary or irrelevant.

<sup>29</sup> Just because doctors indicated that a customer service measure was "not applicable" does not necessarily imply that the service was not provided at the hospitals (Table 5.12). Where larger number of doctors indicated "not applicable" for a measure this often tended to be associated with measures of services they were least supportive of when asked for their service requirements (Table 5.13).

<sup>30</sup> This was also found in the first survey (Chapter 4, section 4.4.2).

<sup>31</sup> This was also the case in 1993/94, see Chapter 4, section 4.4.2.

Table 5.24 Performance ratings by doctors across the hospital sizes and locations

Doctors	Large city hospitals			Large country hospitals			Small city hospitals			Small country hospitals		
Measure of service	Mean	Std. dev. <sup>a</sup>	n <sup>b</sup>	mean	Std. dev. <sup>a</sup>	n <sup>b</sup>	mean	Std. dev. <sup>a</sup>	n <sup>b</sup>	Mean	Std. dev. <sup>a</sup>	n <sup>b</sup>
Cooperation of pharmacy staff to users of the service	8.46	1.52	210	8.23	1.67	53	8.28	1.20	46	8.51	1.44	53
Friendliness of pharmacy staff to users of the service	8.52	1.45	213	8.37	1.56	56	8.77	1.15	47	8.68	1.38	53
Medical knowledge of the pharmacist	7.82	1.56	170	7.84	1.91	45	7.69	1.51	36	7.84	1.52	44
Pharmaceutical knowledge of the pharmacist	8.65	1.26	196	8.63	1.18	48	8.66	1.19	35	8.62	1.21	47
Drug information service provided	7.93	1.97	190	7.58	2.06	43	7.39	1.94	33	8.02	1.39	42
Advice given on drug information queries	8.28	1.61	195	7.96	1.91	48	7.76	1.66	33	8.45	1.08	51
Timeliness of response to drug information queries	8.39	1.61	191	8.29	1.56	45	7.97	1.66	32	8.68	1.24	47
Advice given on general queries	8.20	1.41	190	8.16	1.45	45	7.94	1.53	31	8.49	1.22	45
Timeliness of response to general queries	8.26	1.50	178	8.22	1.84	46	7.93	1.46	30	8.48	1.21	44
Participation in ward rounds	4.78	3.50	89	3.79	3.81	19	3.50	3.41	10	5.76	3.58	17
Review of medication charts	7.43	2.39	120	7.14	2.63	35	7.57	1.99	28	7.28	2.07	29
Medication history interview	6.23	2.97	84	6.09	2.83	23	6.53	2.20	15	6.00	3.18	18
Adverse drug reaction monitoring/management	6.71	2.41	133	6.43	2.81	30	6.62	2.32	24	7.38	2.40	29
Intervention in/ monitoring patient drug therapy	6.74	2.38	121	7.24	2.31	33	7.44	2.18	25	7.69	2.29	26
Therapeutic drug monitoring service (pharmacokinetic)	6.74	2.70	107	6.89	2.85	28	7.20	2.48	15	6.91	2.89	23
Understanding and knowing the needs of the users	7.12	2.10	144	7.05	2.46	37	7.36	1.64	28	7.29	1.49	41
Efficiency of the pharmacy service	7.58	1.79	197	7.77	1.60	47	7.98	1.57	43	7.98	1.27	49
Accuracy of dispensing	8.77	1.25	181	8.86	1.17	49	8.84	1.09	43	8.90	0.95	48
Discharge dispensing	8.17	1.78	169	8.24	1.65	45	8.49	1.33	37	7.88	2.27	43
Timeliness of provision of medication	7.61	1.84	170	7.70	2.12	46	8.03	1.40	37	7.89	1.68	47
Presentation of medicines	8.24	1.52	133	8.27	1.95	37	8.00	1.31	29	8.03	1.69	35
Availability of stock	7.63	1.68	161	7.85	1.65	39	7.41	1.80	29	7.78	1.41	41
Sterile manufacture-intravenous preparations	8.46	1.41	71	8.50	1.43	20	7.00	3.21	8	8.10	1.48	21
Sterile manufacture-cytotoxics	8.70	1.37	47	8.19	2.14	16	5.33	5.03	3	8.60	1.40	15
Discharge medication counselling of patients	6.91	2.30	109	6.71	2.64	28	7.25	2.17	24	7.58	2.27	26
Patient information & education on drugs/medicines	6.80	2.01	112	6.43	2.64	28	7.41	1.94	22	7.52	2.06	31
Pharmacy bulletins/ publications	6.91	2.28	139	5.67	2.26	30	4.60	2.77	15	5.75	2.42	24
Drug education for hospital staff-informal	5.56	3.00	117	5.33	3.15	27	5.61	2.00	18	6.25	2.50	28
In-service, structured lectures for hospital staff	3.40	2.88	78	3.23	2.37	22	3.00	2.72	11	3.73	2.74	15
Extent of pharmacy department involvement in research	5.63	2.70	63	4.10	3.01	20	3.13	3.72	8	3.55	3.59	11
Pharmacy bulletins/ publications <sup>c</sup>	6.69	2.58	124	4.90	2.78	29	3.69	2.81	13	5.83	2.85	18
Reliability of service	8.22	1.35	190	8.44	1.39	52	8.25	1.33	44	8.37	1.47	49
Communication with users of the service	7.66	1.85	183	7.55	2.29	49	7.44	2.26	41	8.00	1.52	47
After hours service	5.13	2.75	147	5.35	2.76	46	4.85	2.59	26	5.06	3.26	35
Overall service provided to the users of the service	7.78	1.37	195	7.73	1.78	55	7.86	1.19	43	8.20	1.18	52

<sup>a</sup> Std dev= standard deviation<sup>b</sup> n= number of respondents<sup>c</sup> Second inclusion of this measure in the questionnaires

Table 5.25 Performance ratings by nurses across the hospital sizes and locations

Nurses	Large city hospitals			Large country hospitals			Small city hospitals			Small country hospitals		
	Mean	Std dev	n	mean	Std dev	n	mean	Std. dev	n	Mean	Std. dev	n
Cooperation of pharmacy staff to users of the service	8.04	1.79	275	7.86	1.59	101	7.98	2.23	54	9.08	1.42	91
Friendliness of pharmacy staff to users of the service	8.20	1.73	279	7.94	1.64	101	8.49	2.01	55	9.28	1.31	93
Medical knowledge of the pharmacist	8.32	1.55	249	8.32	1.56	90	8.40	1.38	48	8.64	1.64	84
Pharmaceutical knowledge of the pharmacist	8.76	1.33	264	9.05	1.08	94	8.91	1.04	53	9.26	1.27	91
Drug information service provided	7.62	2.14	264	7.63	1.92	91	7.14	2.72	52	8.05	2.27	85
Advice given on drug information queries	8.17	1.87	280	8.52	1.49	97	8.30	2.15	53	8.63	1.81	90
Timeliness of response to drug information queries	7.83	2.07	275	7.34	2.02	96	7.65	2.44	52	8.46	1.84	90
Advice given on general queries	8.01	1.85	276	7.96	1.71	101	8.20	2.00	51	8.76	1.60	90
Timeliness of response to general queries	7.73	1.93	273	7.58	1.95	97	7.84	2.10	49	8.56	1.73	90
Participation in ward rounds	4.44	3.83	154	4.16	3.55	57	6.13	3.29	32	5.32	4.06	47
Review of medication charts	6.95	2.94	229	6.44	2.85	75	7.15	2.89	48	7.80	2.49	80
Medication history interview	5.55	3.55	172	5.58	3.06	67	5.91	3.59	44	6.00	3.66	61
Adverse drug reaction monitoring/management	6.06	3.13	188	5.96	2.97	76	6.41	2.97	42	6.97	2.97	70
Intervention in/ monitoring patient drug therapy	6.58	3.06	192	6.28	2.66	75	6.56	2.71	48	7.23	2.89	65
Therapeutic drug monitoring service (pharmacokinetic)	6.55	3.04	156	6.22	2.78	64	6.57	3.09	35	7.29	3.18	55
Understanding and knowing the needs of the users	6.86	2.42	228	6.51	2.48	90	7.04	2.68	46	7.79	2.23	81
Efficiency of the pharmacy service	6.72	2.37	273	6.48	2.12	101	7.43	2.45	54	8.14	1.86	94
Accuracy of dispensing	8.46	1.71	266	8.75	1.24	100	8.42	1.79	55	9.06	1.36	94
Discharge dispensing	7.11	2.45	255	7.39	2.29	95	7.85	2.05	54	8.71	1.56	70
Timeliness of provision of medication	6.24	2.63	266	6.27	2.12	97	7.04	2.48	54	7.94	1.83	88
Presentation of medicines	8.02	1.91	254	8.00	1.92	94	8.20	2.04	54	8.90	1.32	90
Availability of stock	7.16	2.25	272	7.30	2.02	99	7.40	2.22	53	8.09	1.69	91
Sterile manufacture-intravenous preparations	8.00	2.24	175	8.27	1.92	64	7.55	2.74	29	8.74	1.69	46
Sterile manufacture-cytotoxics	8.37	2.22	93	7.88	2.79	33	7.78	2.44	9	8.84	2.18	31
Discharge medication counselling of patients	6.24	3.09	211	6.32	2.81	81	6.60	3.11	48	7.87	2.47	70
Patient information & education on drugs/medicines	6.17	3.06	223	6.41	2.81	88	6.70	3.18	50	7.55	2.67	78
Pharmacy bulletins/ publications	5.87	2.84	197	3.61	2.88	62	4.50	3.38	36	5.40	2.94	58
Drug education for hospital staff-informal	5.23	2.88	236	4.01	3.05	80	4.54	3.27	48	6.17	2.99	86
In-service, structured lectures for hospital staff	3.76	2.89	221	2.53	2.57	74	3.15	3.13	46	4.60	3.11	74
Extent of pharmacy department involvement in research	4.75	3.23	68	3.55	3.24	20	3.74	3.41	19	4.91	3.79	23
Pharmacy bulletins/ publications <sup>a</sup>	5.41	3.01	166	3.14	3.14	49	3.47	3.11	34	4.94	3.22	53
Reliability of service	7.20	2.11	266	7.18	2.04	96	7.83	2.06	54	8.48	1.73	90
Communication with users of the service	7.04	2.21	253	6.98	1.83	93	7.43	2.39	53	8.47	1.56	89
After hours service	3.89	3.00	231	4.22	2.38	87	4.76	3.29	46	5.81	3.07	63
Overall service provided to the users of the service	7.17	1.86	261	7.21	1.61	97	7.42	2.48	52	8.35	1.77	89

<sup>a</sup> Second inclusion of this measure in the questionnaires

Table 5.26 Performance ratings by *pharmacists* across the hospital sizes and locations

Pharmacists	Large city hospitals			Large country hospitals			Small city hospitals			Small country hospitals		
Measure of service	Mean	Std dev	n	mean	Std dev	n	mean	Std. dev	n	Mean	Std. dev	n
Cooperation of pharmacy staff to users of the service	8.16	1.09	83	8.65	1.00	17	8.53	0.74	15	8.74	0.92	23
Friendliness of pharmacy staff to users of the service	8.27	1.17	86	8.71	1.05	17	8.75	1.00	16	8.78	0.85	23
Medical knowledge of the pharmacist	7.24	1.09	84	7.50	0.89	16	7.38	1.15	16	7.13	1.22	23
Pharmaceutical knowledge of the pharmacist	8.02	1.02	87	8.56	0.73	16	8.34	0.94	16	8.22	1.13	23
Drug information service provided	7.63	2.03	82	7.47	1.41	15	7.73	1.33	15	7.14	1.73	22
Advice given on drug information queries	8.34	1.32	82	8.53	1.01	17	8.19	1.05	16	7.78	1.51	23
Timeliness of response to drug information queries	7.94	1.36	79	7.94	1.18	16	8.19	1.05	16	7.78	1.54	23
Advice given on general queries	8.19	0.98	84	8.47	1.18	17	8.31	1.20	16	8.26	1.25	23
Timeliness of response to general queries	8.15	1.12	84	8.44	1.26	16	8.44	1.09	16	8.13	1.36	23
Participation in ward rounds	5.27	2.47	73	5.50	2.81	6	7.40	3.03	10	8.25	1.39	8
Review of medication charts	8.05	1.41	80	7.47	1.77	17	8.13	1.50	16	7.77	1.80	22
Medication history interview	7.39	1.67	79	6.88	1.86	16	6.88	1.82	16	6.63	1.59	16
Adverse drug reaction monitoring/management	7.11	1.68	82	6.50	1.37	16	7.13	1.96	16	6.43	1.54	21
Intervention in/ monitoring patient drug therapy	7.71	1.29	82	7.35	1.27	17	7.94	1.53	16	7.24	1.18	21
Therapeutic drug monitoring service (pharmacokinetic)	7.41	1.81	76	6.81	1.52	16	7.19	2.23	16	7.35	1.11	17
Understanding and knowing the needs of the users	7.55	1.19	85	7.94	1.12	16	7.88	1.36	16	7.64	0.95	22
Efficiency of the pharmacy service	7.17	1.30	86	8.18	1.33	17	8.13	1.15	16	7.96	1.26	23
Accuracy of dispensing	8.44	1.02	87	8.94	0.75	17	9.03	0.78	16	9.14	0.65	21
Discharge dispensing	8.05	1.35	85	8.00	0.71	17	8.94	0.93	16	8.58	0.90	19
Timeliness of provision of medication	7.29	1.49	86	7.76	1.09	17	8.31	0.79	16	8.05	0.90	22
Presentation of medicines	8.33	1.19	86	8.35	1.41	17	8.94	1.06	16	8.52	1.08	23
Availability of stock	7.98	1.30	87	8.35	1.06	17	8.19	1.28	16	8.30	1.02	23
Sterile manufacture-intravenous preparations	8.16	1.69	77	8.67	0.98	15	8.50	1.60	8	8.42	1.31	12
Sterile manufacture-cytotoxics	8.70	1.61	50	8.33	0.98	12	6.33	5.51	3	8.67	1.03	6
Discharge medication counselling of patients	7.84	1.53	83	7.35	1.06	17	7.53	1.55	15	8.24	1.58	21
Patient information & education on drugs/medicines	7.57	1.52	83	7.65	1.17	17	7.27	1.49	15	7.57	1.53	23
Pharmacy bulletins/ publications	6.45	2.37	66	6.00	2.54	10	6.60	1.52	5	6.54	2.30	13
Drug education for hospital staff-informal	6.88	1.83	80	7.50	1.26	16	7.00	1.66	14	8.00	1.14	21
In-service, structured lectures for hospital staff	6.60	2.22	67	6.42	1.51	12	6.18	2.27	11	7.44	1.65	18
Extent of pharmacy department involvement in research	4.93	2.69	67	4.78	2.49	9	6.00	4.00	6	4.67	2.24	9
Reliability of service	7.85	1.37	86	9.13	0.81	16	8.81	0.66	16	8.52	1.16	23
Communication with users of the service	7.39	1.52	87	8.13	0.96	16	8.50	0.82	16	8.17	1.30	23
After hours service	7.67	1.82	81	8.63	1.41	16	8.55	0.82	11	8.00	1.75	14
Overall service provided to the users of the service	7.70	1.03	86	8.12	0.60	17	8.56	0.81	16	8.09	1.00	23
Continuing education for staff pharmacists	7.03	2.12	83	6.76	1.30	17	5.93	2.34	14	6.30	2.15	20
Education and training of non-pharmacist pharmacy staff	6.54	1.92	80	6.82	1.19	17	6.13	2.95	15	6.31	1.14	16

Table 5.27 Significant hospital influence upon ratings <sup>a</sup>

Doctors	Nurses	Pharmacists
	Cooperation of pharmacy staff to users of the service	Cooperation of pharmacy staff to users of the service
	Friendliness of pharmacy staff to users of the service	
	Pharmaceutical knowledge of the pharmacists	
	Timeliness of response to drug information queries	
	Advice given on general queries	
	Timeliness of response to general queries	
		Participation in ward rounds
	Review of medication charts	
	Understanding and knowing the needs of the users	
	Efficiency of the pharmacy service	Efficiency of the pharmacy service
	Accuracy of dispensing	Accuracy of dispensing
	Discharge dispensing	Discharge dispensing
	Timeliness of provision of medication	Timeliness of provision of medication
	Presentation of medicines	
	Availability of stock	
Sterile manufacture: cytotoxics		
	Discharge medication counselling of patients	
	Patient information and education on drugs and medicines	
Pharmacy bulletins/ publications	Pharmacy bulletins/ publications	
	Drug education for hospital staff-informal	Drug education for hospital staff-informal
	In-service, structured lectures for hospital staff	
Extent of pharmacy department involvement in research		
	Reliability of the service	Reliability of the service
	Communication with users of the service	Communication with users of the service
	After hours service	
	Overall service provided to the users of the service	Overall service provided to the users of the service

<sup>a</sup> ANOVA, where F value significance was <0.05.

Interestingly, doctors' ratings for most measures of customer service were not influenced by hospital size and location, the only exceptions being: *sterile manufacture: cytotoxics*; *pharmacy publications and bulletins*; and *extent of pharmacy department involvement in research* (Table 5.27). *Sterile manufacture: cytotoxics* and *pharmacy publications and bulletins* were rated lower by doctors from small city hospitals than by their counterparts from other hospitals, and the rating for the *extent of pharmacy department involvement in research* was lower for doctors from small hospitals than large hospitals (Table 5.24).

This contrasts with the nurses where ratings for twenty-four measures of service were influenced by hospital size and location (Table 5.27). Examination of Tables 5.25 and 5.27 shows that for many of the services where hospital size and locations influenced the ratings obtained from nurses for measures of customer service, the small country hospital nurses gave a higher rating. Their rating for the *overall service provided to the users of the service* was higher than by nurses from the other hospital sizes and locations, indeed large hospital pharmacies were rated lower for this measure than small hospital pharmacies.<sup>32</sup>

The most noticeable difference between ratings by pharmacists from different hospitals were the lower ratings from those from large city hospitals for most measures shown (Table 5.25 and 5.27) apart from *discharge dispensing* which was rated lower by pharmacists from large hospitals than those in small hospitals.

Even though for some measures there appeared to be some differences in ratings by doctors, nurses and pharmacists between the hospital sizes and locations (Tables 5.24, 5.25 and 5.26), these were not statistically significant.

### 5.5 Perceived importance of the pharmacist as a member of the healthcare team

Doctors, nurses and pharmacists were asked to rate the importance of the pharmacist as a member of the healthcare team in their hospitals.<sup>33</sup>

#### 5.5.1 Rating of importance

The rating<sup>34</sup> of importance of the pharmacist as a member of the healthcare team was

<sup>32</sup> For some measure of service, nurses from small hospitals gave better mean ratings than those from large hospitals e.g. *efficiency of the pharmacy service, timeliness of provision of medication, discharge dispensing, review of medication charts*, though small country hospitals still had better ratings than small city hospitals. *Pharmacy publication and bulletins* were rated lower by large country hospital nurses, than their counterparts elsewhere. Large city and small country hospital nurses rated *informal drug education* higher than their counterparts in small city and large country hospitals, with small country hospital nurses rating this measure the highest and large country hospital nurses rating this lowest. The *after hours service* was rated worst by nurses from large city hospitals.

<sup>33</sup> They were asked to give a score between 0 and 10, where 0 = not at all important (i.e. lowest rating) and 10 = very important (i.e. highest rating). Each respondent was also asked to give reasons for their score.

<sup>34</sup> Mean rating.



slightly higher by doctors and nurses than by pharmacists (Table 5.28), a difference which was statistically significant, as was the difference in the ratings made by doctors and nurses.<sup>35</sup>

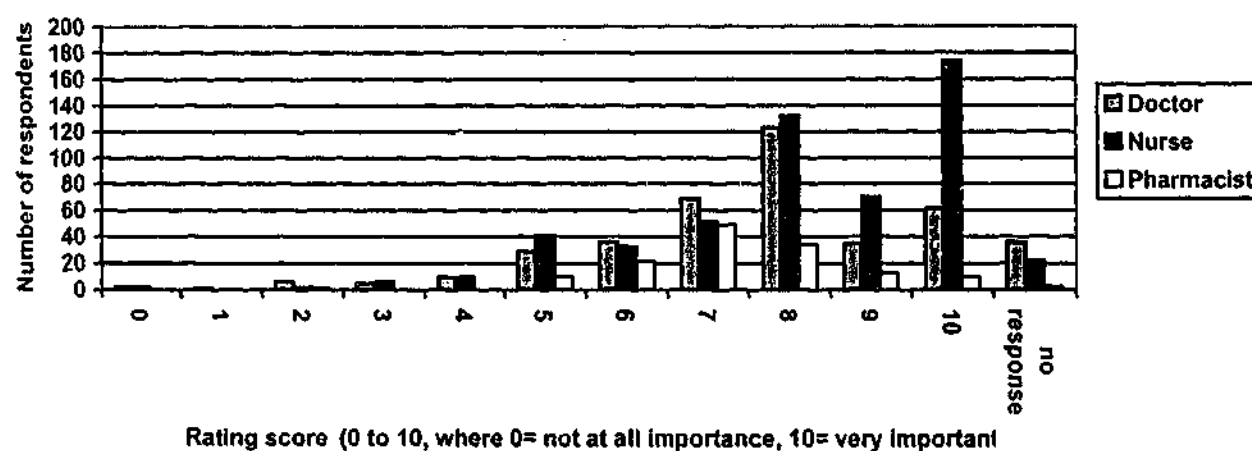
**Table 5.28 Rating of the importance of the pharmacist as a member of the healthcare team**

	Doctors <sup>a</sup>	Nurses <sup>b</sup>	Pharmacists <sup>c</sup>
Mean	7.49	8.15	7.29
Standard deviation	1.89	1.87	1.34
No response given	36	23	3

<sup>a</sup> n=414 for doctors. <sup>b</sup> n=546 for nurses. <sup>c</sup> n=143 for pharmacists

The range of ratings given by doctors, nurses and pharmacists is shown in Figure 5.5.

**Figure 5.5 Rating of the importance of the pharmacist as a member of the healthcare team in the hospital**



When the rating of the importance of the pharmacist as a member of the healthcare team was further broken up by hospital size and location (Table 5.29) there was no statistically significant difference between the hospital groups for doctors.<sup>36</sup>

Nurses from small country hospitals gave a higher rating of the importance of the pharmacist as a member of the healthcare team than those from other hospitals.<sup>37</sup>

<sup>35</sup> A comparison of the means for doctors, nurses and pharmacists, (ANOVA), showed  $F=20.88$ , with a significance = 0.000 confirming significant difference. A statistically significant difference was also noted between doctors and nurses for their mean ratings (ANOVA,  $F=27.48$ , significance = 0.000)

<sup>36</sup> ANOVA.

<sup>37</sup> ANOVA showed some statistically significant difference existed ( $F=2.61$ , significance = 0.051).

**Table 5.29 Ratings of the importance of the pharmacist as a member of the healthcare team by hospital**

Hospital size and location	Doctors			Nurses			Pharmacists		
	Mean	Std. Dev.	n <sup>a</sup>	Mean	Std. Dev.	n <sup>b</sup>	Mean	Std. Dev.	n <sup>c</sup>
Large city	7.58	1.85	223	8.12	1.90	281	6.98	1.39	84
Small city	7.25	2.10	48	8.00	1.98	54	8.06	1.06	16
Large country	7.34	2.06	53	7.91	1.91	101	7.65	1.17	17
Small country	7.45	1.66	54	8.63	1.56	87	7.65	1.15	23

<sup>a</sup> number of 378 doctors who responded to this question

<sup>b</sup> number of 523 nurses who responded to this question

<sup>c</sup> number of 140 pharmacists who responded to this question

Pharmacists from large city hospitals rated their importance lower than did their counterparts from the other hospitals, with those from small city hospitals rating themselves highest (Table 5.29). This was statistically significant.<sup>38</sup>

### 5.5.2 Reasons for ratings of importance

Some reasons given by doctors, nurses and pharmacists for their ratings of the importance of the pharmacist as a member of the health team are detailed in Appendix 4 (Tables A4.1 to A4.3), and a selection is included here:<sup>39</sup>

Higher ratings given by pharmacists of their importance as a member of the healthcare team at their hospitals tended to be associated with them having a significant clinical role or at least a high clinical involvement:

*"The pharmacy department are constantly intervening in the medical treatment of patients; to optimise therapy, minimise side-effects and enhance patient compliance. The doctors, nurses and patient appreciate the work done by the department." (8)*

Pharmacists regarded their education role to be a positive influence on their importance:

*"We are the source of nearly all drug information to nursing staff and doctors and play a vital role in patients, nursing and doctor education." (country hospital). (8)*

Lower ratings by pharmacists tended to reflect lack of clinical involvement by the pharmacy departments, and pharmacists being seen to have more of a supply role.

<sup>38</sup> ANOVA,  $F=4.57$ , significance = 0.004.

<sup>39</sup> The rating given is included in brackets after each comment.

Conversely, improvement in rating of their importance was seen to be associated with more clinical involvement and participation in ward rounds and meetings, hence more visibility and contact with other health professionals:

*"In our specialist areas the score is 10. But as our service to the other areas is not as intense- the score falls. If we could service such areas to the fullest then again the score would be higher." (7)*

*"Other health teams see the pharmacy as more of a "supplier" of medication and our daily task does involve a lot of supply to wards and not as much clinical involvement." (5 to 6)*

*"Pharmacists tend to feel part of the team, however, due to staff shortages there has been limited time spent on the wards in recent times. Felt more involved when fully staffed, we were more involved as a member of the health team. Lack of pharmacist involvement in ward rounds as private hospital and consultants do ward rounds at different times." (7)*

*"In our specialist areas the score is 10. But as our service to the other areas is not as intense- the score falls. If we could service such areas to the fullest then again the score would be higher." (7)*

Pharmacists saw lack of time and staffing shortages as obstacles to the development of a greater acceptance of them as a member of the healthcare team:

*"Could be seen as more important if we had more time to do the things we're trained to do. At the moment our day is full with supply and simple chart checks and simple interventions." (7)*

Doctors acknowledged the importance of the pharmacist as a member of the healthcare team in relation to their monitoring role, being a source of drug information, and their dispensing activities:

*"Critical in overseeing therapeutic regimes especially when junior medical staff make unsupervised decisions." (8)*

*"Medication is an important aspect of patient care and pharmacists play a very important role in terms of drug monitoring/ dispensing/ counselling of drug information and drug information service." (10)*

Certainly, many doctors highlighted the value of having a pharmacist as a back-up or monitor of prescribing so as to ensure safe, accurate, effective and appropriate prescribing:

*"Pharmacists have a key role in ensuring drugs used safely because of complexity of patients' illnesses and multi specialist involvement and high likelihood of adverse medication events." (8)*

A number of doctors alluded to the complexity of newer drugs and the potential for drug interactions or adverse effects occurring with drug therapy:

*"Adverse drug reactions are a major problem for patients and doctors particularly with numbers of newer agents and polypharmacy seen in hospitalised patients." (8)*

*"Very important due to high role of use of medications and potential side effects, interactions etc." (8)*

Doctors seemed to show a greater willingness for pharmacists to monitor drug therapy in the second survey, a shift from their earlier perceptions of this role in the first survey, although some tempered this support with their belief that they should have the overriding say in therapy decisions:

*"Need to be more involved in interacting with medical staff and reviewing medication chart and also educating patients appropriately prior to discharge. Medication compliance and poor understanding is a major issue." (3)*

*"Important in monitoring and guiding medication use especially on medical wards, but ultimate decision should rest with medical team." (7)*

The importance of the pharmacist from the nurses perspective was associated with their role in providing drug information, monitoring drug therapy and it's appropriateness, and ensuring timely, adequate supply of medication to the wards:

*"Pharmacist is a vital member of the health team as it is her/ his job to ensure adequate/ accurate supply of appropriate medications to assist the recovery of patients. He/ she should advise both patients and staff and medico's regarding appropriate dispensing and administration of drugs." (10)*

*"We rely on the pharmacist for prompt information regarding medications, providing stock, discharge dispensing." (10)*

Providing patient and staff education about drugs was also seen by nurses to be a contributory factor to the importance of the pharmacist:

*"The more dependent we become on drugs and the more specialised they become, the more we need experts in the field to educate staff and make sure they are used safely." (8)*

Nurses felt that pharmacists need to be seen to be actively involved in the ward to be part of the team:

*"They are only there 48 hours/ 168 hr week = 0.28. Nurses are pharmacists the rest of the time. They don't contribute to pre-admission procedures. They have failed to take the educational opportunity expected of other (e.g. nursing) departments. They have no in-service for other departments. Not computer linked in hospital for ordering. Pharmacy records are not on a database. That's why the pharmacist has to do this work. They have intransigent interpretation of legislation that has potential for adverse outcomes for others. They bend the rules to suit themselves. None of the drug cupboards are locked (except S8) because they won't allow extra keys to be cut." (3)*

*"Does not participate in ward rounds or during Team meetings. Do not communicate with the team very well." (2)*

*"No ward-based service- no patient interaction." (3)*

*"Very rare personal appearances by pharmacy on the wards, most communication is through the telephone these days and queries are no longer necessarily handled in what I consider to be a timely period of time. Poor visibility is not helping perception of the service." (5)*

Perceptions by nurses about individual pharmacists were also raised as a reason for the rating not being a fixed value:

*"Quite a variable according to the pharmacist. Depends on the pharmacist". (7)*

*"Some pharmacists in department- committed team players, focussed on delivery of patient care, but perceive a significant group tend to display negative attitude that places their routine and work habits above patient care resulting in inflexibility and antagonism. Also see resource problem that probably exacerbates such negative attitudes and limits capacity of pharmacists to be involved in 'value adding' beyond basic services." (6)*

There was also an acknowledgement by nurses of the stresses pharmacists are being placed under in order to meet the demands being placed on them:

*"Pharmacists are a vital link between doctors and nurses and patients. They provide an invaluable service but like everyone they are stressed with their load to cope with the enormous demand on their time. They are always friendly and willing to help and most efficient when time allows."* (10)

A more colourful anecdote was used to describe the importance of the pharmacist in highlighting how each member can complement the team and ultimately the organisation providing the service:

*"Like a ship's captain- without a good pharmacist the hospital sinks."* (10)

### **5.6 Perceptions of the overall service provided by the pharmacy departments**

Doctors, nurses and pharmacists were given the opportunity to rate the overall service provided by the hospital pharmacy department in two separate questions in the second survey. First they were asked to rate how effective the performance of the pharmacy department at their hospital was on a number of measures of customer service that included the measure *overall service provided to the users of the service*.<sup>40</sup> Secondly, they were asked how they would rate the *overall service provided by the hospital's pharmacy*. This was added to the second survey to focus respondents' attention to the overall perception they have of their pharmacy service, so that a considered answer would be obtained. Respondents were able to rate the service on a score between 0 and 10, where 0 corresponded to a very poor service, and 10 to excellent. This option did not allow for them to express that they had no opinion or that the question was not applicable at their hospital.<sup>41</sup>

#### **5.6.1 Rating of the overall service provided by the hospital pharmacies**

The rating of the *overall service provided by the hospital's pharmacy* was slightly higher by doctors and pharmacists than by nurses and this was statistically significant (Table

<sup>40</sup> They were given the options of giving a score between 0 and 10, where 0 was very poor performance and 10 excellent performance on that measure, or of indicating whether the service was "not applicable" at the hospital or they had "no opinion". This was the same as for the first survey.

<sup>41</sup> As was the case with the rating of *overall service provided to the users of the service* included in the 34 measures of performance evaluated.

5.30).<sup>42</sup> There was also a significant difference between the rating by doctors and nurses.<sup>43</sup>

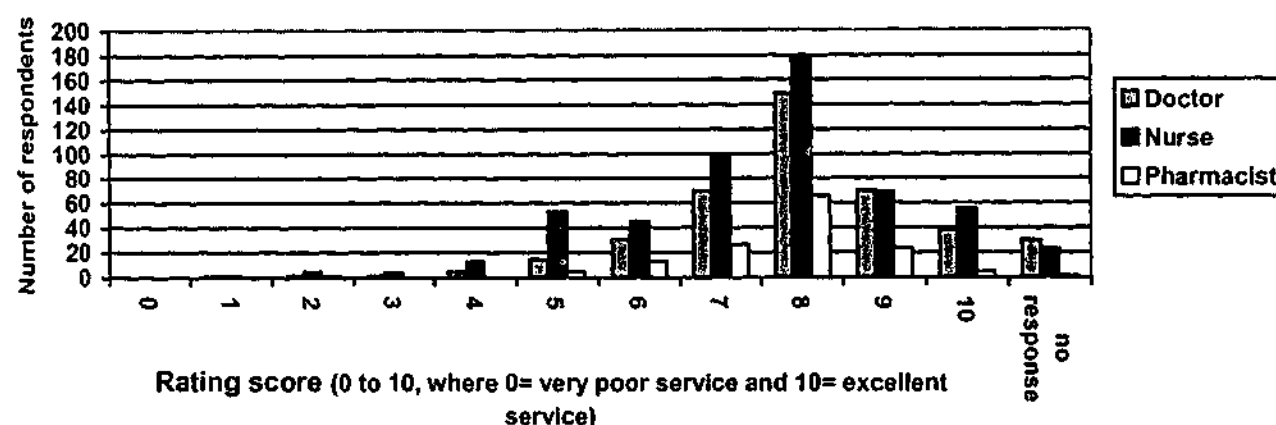
**Table 5.30 Rating of the overall service provided by the hospital's pharmacy**

	Doctors <sup>a</sup>	Nurses <sup>b</sup>	Pharmacists <sup>c</sup>
Mean	7.79	7.47	7.71
Standard deviation	1.44	1.66	1.17
No response	30	23	2

<sup>a</sup>n=414 for doctors. <sup>b</sup>n=546 for nurses. <sup>c</sup>n=143 for pharmacists.

The range of ratings given by doctors, nurses and pharmacists are shown in Figure 5.6.

**Figure 5.6 Rating of the overall service provided by the hospital's pharmacy**



The ratings were further broken up by hospital size and location (Table 5.31).

**Table 5.31 Rating of the overall service provided by the hospital's pharmacy by hospitals<sup>a</sup>**

Hospital size and location	Doctors			Nurses			Pharmacists		
	Mean	Std Dev.	n	Mean	Std Dev.	n	Mean	Std Dev.	n
Large city	7.72	1.48	224	7.23	1.72	278	7.49	1.30	87
Small city	7.58	1.50	48	7.80	1.66	54	8.07	0.70	15
Large country	7.96	1.39	57	7.31	1.40	101	7.97	0.67	17
Small country	8.10	1.23	55	8.19	1.52	90	8.09	1.06	22

<sup>a</sup> A comparison of the means between respondent type and hospital size and location shows a statistically significant difference existed between respondent types and across the hospitals. ANOVA table significance of  $F(9.312) = 0.000$  between groups and within groups (overall rating by hospital size and location).

<sup>42</sup> ANOVA,  $F=5.18$ , significance = 0.006. The standard deviation for pharmacists was also narrower, indicating less variation in responses.

<sup>43</sup> The independent samples t-test comparing the means, significance (2-tailed) = 0.002

Interestingly, doctors, nurses and pharmacists from small country hospitals gave slightly higher ratings than did their counterparts from large hospitals and small city hospitals, and nurses and pharmacists from small hospitals gave higher ratings than did their counterparts from large hospitals.

There was no statistically significant difference in the ratings by doctors across the various hospital sizes and locations, however the ratings by nurses from each hospital size and location showed statistically significant differences.<sup>44</sup>

Pharmacists from large city hospitals gave a slightly lower mean rating for the *overall service provided by their hospital's pharmacy* than their counterparts from the other hospitals and this was consistent with the lower rating they gave for the effectiveness of the performance of the pharmacy department on the customer service measure *overall service provided to the users of the service* (Table 5.26).<sup>45</sup>

### 5.6.2 Reasons for the ratings

Some comments made by doctors, nurses and pharmacists about the reason for their ratings are included in Appendix 4 (Tables A4.4 to A4.6). A selection is included in this commentary, together with the scores given.<sup>46</sup>

On the whole pharmacists seemed to believe they were providing the best service they could under times of reduced funding, budget restrictions, and severe staff shortages and reductions:

*"They work together as a team and this shows through in their work. They take a professional approach to pharmacy and pharmacy practice. Meal breaks are often missed and they regularly stay back to finish off work (unpaid)." (8)*

*"The service provided is excellent given the limited resources. Staff. Great team of VERY dedicated staff. Clinical input could be increased in staff numbers were increased." (9)*

<sup>44</sup> ANOVA,  $F=8.87$ , significance  $p=0.000$ .

<sup>45</sup> ANOVA showed some difference existed between ratings ( $F = 2.58$ , significance = 0.050).

<sup>46</sup> Rating out of 10. (The rating is included after each comment).



A supportive, innovative pharmacy management was seen by pharmacists to positively impact on the pharmacy services:

*"Enthusiastic pharmacists. Good liaison with medical and nursing staff. Progressive management." (8)*

Pharmacists saw shortages of staff and poor funding as negatively impacting on the pharmacy services, the workplace environment and staff morale. Some pharmacists felt frustrated, had a lack of support by management, and were disempowered:

*"Insufficient staff causes stress to existing staff endeavouring to deliver service of a high standard. Stressed staff has lead to increased absenteeism and even heavier workload on remaining staff members." (6)*

*"Pharmacists grossly overworked. To do job expected a lot of unpaid overtime put in by all. No support from hierarchy for lack of manpower. So in general it would be fair to say that we do the very best we can in an extremely stressed environment, where an extremely poor in-service education system is provided." (5)*

*"Any service can be improved. Some services we should offer but manpower doesn't allow. Restricting consumer's ability to 'do their own thing' does not create a popular service. Demand has been so great and resources so limited the staff have sometimes started to attack each other." (7)*

*"Shortage of pharmacists means clinical work not always done and pressure on dispensing discharge medication. Sometimes work more reactive than proactive. Poor pharmacy design leads to inefficient workflow practices." (8)*

*"We provide a comprehensive service and in general have competent skilled personnel. The problem is not enough staff to do the job comprehensively." (7)*

Pharmacy department financial concerns were sometimes seen by pharmacists to overshadow patient concerns:

*"Feedback from nurses who have come from other facilities- some say we are good, others say they have worked at better places. Attitude of senior medical staff towards pharmacy staff- not very positive. Emphasis on patients care is less than the emphasis placed on financial aspects of the pharmacy service. Restrictions to a lot of medications. Availability to patients leads to missed doses of medications- leads to a negative attitude towards the pharmacy department." (6)*

Being accepted as a member of the healthcare team added to a positive perception of the overall service:

*"Small rural hospital where we are considered part of the overall team approach. Used as a resource by all departments including Visiting Medical Officers". (9)*

Other pharmacists saw their departments as being active, involved and effective:

*"Medical, nursing and pharmacy staff, and more importantly our patient population provide positive feedback on the service. Medication is provided in a timely manner, with good education. The pharmacy department is actively involved in clinical and practice based research." (8)*

*"Very good service, long hours- advantage to hospital, many pharmacists. We are continually doing customer service." (9)*

On the whole doctors tended to regard the overall service provided by the hospital's pharmacy favorably:

*"It is a good, friendly, efficient service which has maintained standards while the hospital has grown." (9)*

*"Whenever I have contact with the pharmacy whether for information or for supply, the response is rapid, to the point and useful. I cannot recall an unsatisfactory response." (10)*

*"Patient requirements met well, accurately and on time." (8)*

Hours of service and restrictions upon quantity of medication that can be dispensed were seen as negatives by the doctors:

*"Loses points for: apparent lack of medication chart reviews/ patient histories; limited dispensable stock; limited time frame for discharge medication prescriptions (i.e. only able to (dispense) discharge medications for limited number of days)" (7)*

*"Good service whilst pharmacist available during weekdays. Non-existent service most weekends and public holidays- we often have to anticipate discharge medications 3 days before discharge." (6)*

*"Excellent service by clinical ward pharmacists and drug info service. However, after hours service/ 7 day service is lacking for a tertiary hospital, which ideally give 7 day service." (8)*

Some doctors offered suggestions for improving services or highlighted areas that were lacking in the service provided:

*"Service is adequate, but not much pro-active work is done- mostly reactive. Potential to improve education and awareness of drug problems in the elderly is not acted upon. Greater involvement in ward would be an advantage."* (7)

*"They review all the medical charts and provide comments. Involvement in ward rounds lacking. Need more pharmacy staff."* (6)

Interestingly, despite the reluctance identified by doctors to generally support the participation by pharmacists in ward rounds and providing some clinical activities (Table 5.13), a number of doctors commented on the lack of ward presence by pharmacists and ward round involvement. Doctors were aware of the difficulties pharmacy departments were experiencing, and they acknowledged the effort being made by the departments to maintain services under such circumstances:

*"Provide high quality and extensive service with limited manpower and suffering the adverse effects of economic rationalism."* (8)

*"Trying hard; a skeleton of what the service was 10 years prior."* (6)

*"I believe it provides a good service within budgetary constraints. Drug info and drug info pharmacist -fantastic."* (8)

Doctors frequently saw pharmacists as accessible, reliable and helpful: willing to provide assistance:

*"Accessible, amenable, cooperative, sensible."* (9)

*"Prompt and accurate advice. Willing to assist with queries."* (9)

*"Patient requirements met well, accurately and on time."* (8)

Nurses tended to regard the pharmacy service reasonably favorably, although not quite as highly as the doctors did. Nurses were more concerned about issues affecting timeliness, especially those related to discharge dispensing, stock availability, and the hours of service provided. They frequently commented on the fact that hospitals were open 24 hours a day, and not having an accessible pharmacy service for the same amount of time was a distinct disadvantage and limitation with pharmacy services. Some of their ratings

for the overall service provided by the hospital's pharmacy reflected this negative perception:

*"Imprest on ward often understocked. Stock items we don't regularly use and don't stock things we need frequently. Service very slow especially re: discharge scripts. Understaffed. Service very slow. Give differing answers when phone."* (5)

*"Hours of operation on weekend very, very poor; nursing / medical staff require a 9-5pm service Saturday/ Sunday. All elective patients are admitted Sunday afternoon and hence miss more than 12 hours ordered medications secondary to closing of pharmacy at 1200pm."* (6)

Nurses also acknowledged the difficulties being faced by many pharmacy departments:

*"I hesitate to put a score here, because I feel it is cruel to blame the pharmacy department who really try to do the best they can with limited funds/ resources."* (5)

*"Little in-service education. Staff seem very overworked and can spare little time for other things- some staff seem unhappy every day and morale low!! Discharge medications and complete process seem to be less streamlined than they could be."* (6)

Nurses expressed concern about inflexibility surrounding imprest and providing wards with stock they required, sometimes due to inadequate stocking, and at other times because this was seen as a way of cost- cutting:

*"The head pharmacist is not very approachable compared with the previous one. Only looks at department's cost for drugs, does not look at the whole picture of the hospital, or patients. e.g. Refuses to supply drugs that are slightly more expensive but needed only once per day instead of 3-4 times daily. Therefore less nursing time, less needles/ syringes etc. = more cost effective."* (5)

Nurses acknowledged that some activities undertaken by pharmacists positively impacted on their own role and patient care and they offered some suggestions for improving services:

*"It is obvious that the staff do their very best. They appear well informed and are always happy to inform and advise. Also they readily clarify medication issues with medical staff relieving the nursing staff of this tiresome duty"* (9)

*"Accessible, cooperative, knowledgeable staff. Provide prompt response to queries. Able to identify problems with polypharmacy or drug interactions and advocate on behalf of patients."* (9)

*"They're usually very helpful and responsive, but I feel they need more communication with inpatients and need to come to the wards and review their medication charts and talk to patients regarding the knowledge of the drugs they are taking." (7)*

Some nurses were very supportive of the pharmacy service provided and the pharmacists' contribution:

*"Very good staff. Do a very good job with the amount of work they have to do. Very vigilant in regards to drugs written up. Assist in telling patients all the effects of medications. Give lectures when asked. Good resource person." (10)*

Communication and interaction between pharmacists and doctors and nurses were also associated with both favourable and unfavourable ratings for the overall service provided:

*"Good info exchange. Very accessible. Always willing to help. Good communication skills." (10)*

*"Some pharmacy staff are fantastic. Some, only a couple, can be rude and actually question everything that we request- making them very unhelpful and wasteful of time." (5)*

This once again shows that each individual and how they relate with others influences the overall perception that customers develop of a department or organisation.

### 5.7 Change

Change and its effects on hospitals and pharmacy services has not traditionally been measured or monitored. Ongoing discussion has been held amongst health care professionals about the effects of economic change, rationalisation of services, funding variations - be they cutbacks or re-channeling, downsizing, cost-shifting, and restructuring of services, hospitals, and health care organisations (Ryan, 1996; Walsh, 1996; Shane, 1997; Baum, 1998; Wilson, 2002a). However, little has been done to actually document or record these perceptions or beliefs about change.

The second survey of hospital pharmacy services endeavoured to ascertain what changes have occurred in the way hospital pharmacy services operate in Victoria by asking

doctors, nurses and pharmacists to consider whether the pharmacy service at their hospital had improved, stayed the same or was worse than six years ago. If they had only been at the hospital less than six years, they were asked to respond for the period since they started working at the hospital. The respondents were also asked to comment why they had chosen their particular responses.

In addition to this question, a separate one asked them to list the main factors which have changed the way the pharmacy services operate at their hospital, and to indicate the effect of each of these factors on the services. They were allowed four options: the service had improved; or stayed the same; or was worse; or they did not know.

### 5.7.1 Perceptions of change and the impact on pharmacy services

The perceptions of whether the pharmacy services at their hospital had changed are shown in Table 5.32.

**Table 5.32 Perceptions of change on pharmacy services at the hospitals**

Overall effect of change on the pharmacy service	Doctors <sup>a</sup>	Nurses <sup>b</sup>	Pharmacists <sup>c</sup>
Improved	29.5	33.5	54.5
Stayed the same	39.6	34.8	25.2
Worse	14.3	19.4	16.1
No response	16.7	12.3	4.2

<sup>a</sup> Percentage of 414 doctors. <sup>b</sup> Percentage of 546 nurses. <sup>c</sup> Percentage of 143 pharmacists

More pharmacists than doctors and nurses indicated the service had improved whilst a larger percentage of doctors and nurses compared with pharmacists indicated that the service at their hospitals had remained the same (Table 5.32).<sup>47</sup> A significant percentage of doctors, nurses and pharmacists indicated that the service was worse.

There were some differences between responses from doctors and nurses<sup>48</sup> but the main differences appear to be between the pharmacists and the doctors and nurses.

<sup>47</sup> Chi-square,  $p=0.000$ .

<sup>48</sup> Chi square,  $p=0.053$ .

### 5.7.2 Hospital size and location influences

Tables 5.33, 5.34 and 5.35 are crosstabulations which show the relationship between the hospital size and location and the responses from pharmacists, doctors and nurses respectively, about whether services had changed.

Table 5.33 Pharmacists' perceptions of change by hospital size and location<sup>a,b</sup>

Table 3.33 Pharmacists' perceptions of change by hospital size and location						
Pharmacists' perception	Hospitals					
Service status		Large city	Small city	Large country	Small country	Total
Improved	Count <sup>c</sup>	38	13	12	15	78
	within improved	48.7%	16.7%	15.4%	19.2%	100%
	within hospital size	46.3%	86.7%	70.6%	65.2%	56.9%
	% of Total	27.7	9.5	8.8	10.9	56.9
Stayed the same	Count	25	2	3	6	36
	within service same	69.4%	5.6%	8.3%	16.7%	100%
	within hospital size	30.5%	13.3%	17.6%	26.1%	26.3%
	% of Total	18.2	1.5	2.2	4.4	26.3
Worse	Count	19	0	2	2	23
	within service worse	82.6%	0%	8.7%	8.7%	100%
	within hospital size	23.2%	0%	11.8%	8.7%	16.8%
	% of Total	13.9	0	1.5	1.5	16.8
Total	Count	82	15	17	23	137
	within service	59.9%	10.9%	12.4%	16.8%	100%
	within hospital size	100%	100%	100%	100%	100%
	% of Total	59.9	10.9	12.4	16.8	100

<sup>a</sup> Pharmacy service improved, stayed the same or worse.

<sup>b</sup> Chi square,  $p=0.053$     <sup>c</sup> Count= number of responses

Fewer pharmacists from large city hospitals indicated that their services had improved compared with their counterparts from the other hospitals (improved, within hospital size in Table 5.33). In contrast a larger proportion of pharmacists from small city hospitals indicated their services had improved.

Responses from doctors about the effect of change over the past few years were significantly influenced by hospital size and location Table 5.34. The dominant effect seems to be that more doctors felt that services stayed the same across the hospitals, particularly so for doctors from large country hospitals (stayed the same, within hospital size in Table 5.34). However, a larger proportion of doctors indicated the service at large city hospitals was worse than did doctors at the other hospital sizes and locations and more doctors from small hospitals, particularly small country hospitals, indicated the services were improved compared with doctors from large hospitals.

Table 5.34 Doctors' perceptions of change by hospital size and location <sup>a,b</sup>

Doctors' perception	Hospitals					
Service status		Large city	Small city	Large country	Small country	Total
Improved	Count	64	18	17	23	122
	within improved	52.5%	14.8%	13.9%	18.9%	100%
	within hospital size	32%	40%	34%	46%	35.4%
	% of Total	18.6	5.2	4.9	6.7	35.4%
Stayed the same	Count	89	22	30	23	164
	within service same	54.3%	13.4%	18.3%	14%	100%
	within hospital size	44.5%	48.9%	60%	46%	47.5%
	% of Total	25.8	6.4	8.7	6.7	47.5%
Worse	Count	47	5	3	4	59
	within service worse	79.7%	8.5%	5.1%	6.8%	100%
	within hospital size	23.5%	11.1%	6%	8%	17.1%
	% of Total	13.6	1.4	0.9	1.2	17.1%
Total	Count	200	45	50	50	345
	within service	58%	13%	14.5%	14.5%	100%
	within hospital size	100%	100%	100%	100%	100%
	% of Total	58	13	13	14.5	100%

<sup>a</sup> Service improved, stayed the same or worse<sup>b</sup> Chi square,  $p=0.012$ 

Hospital size and location also influenced nurses perceptions (Table 5.35).

Table 5.35 Nurses' perceptions of change by hospital size and location <sup>a,b</sup>

Nurses' perception	Hospitals					
Service status		Large city	Small city	Large country	Small country	Total
Improved	Count	76	22	34	51	183
	within improved	41.5%	12%	18.6%	27.9%	100%
	within hospital size	29.6%	46.8%	38.2%	59.3%	38.2%
	% of Total	15.9	4.6	7.1	10.6	38.2%
Stayed the same	Count	107	19	40	24	190
	within service same	56.3%	10%	21.1%	12.6%	100%
	within hospital size	41.6%	40.4%	44.9%	27.9%	39.7%
	% of Total	22.3	4	8.4	5	39.7%
Worse	Count	74	6	15	11	106
	within service worse	69.8%	5.7%	14.2%	10.4%	100%
	within hospital size	28.8%	12.8%	16.9%	12.8%	22.1%
	% of Total	15.4	1.3	3.1	2.3	22.1%
Total	Count	257	47	89	86	479
	within service	53.7%	9.8%	18.6%	18%	100%
	within hospital size	100%	100%	100%	100%	100%
	% of Total	53.7	9.8	18.6	17.9	100%

<sup>a</sup> Service improved, stayed the same or worse.<sup>b</sup> chi-square,  $p=0.000$ 

More nurses from small hospitals and in particular small country hospitals, indicated improvement in the pharmacy service than did nurses from the other hospitals (improved,



within hospital size, Table 5.35). A larger proportion of nurses from large city hospitals indicated the service was worse than their counterparts from the other hospital sizes and locations.

### **5.7.3 Reasons for perceptions about change.**

Some comments made by doctors, nurses and pharmacists about why they thought the hospital pharmacy service had changed are detailed in Appendix 4 (Tables A4.7 to A4.15) and a selection is included below.

#### **5.7.3.1 Pharmacists' perceptions**

Improvements in pharmacy services from the perspective of pharmacists were frequently associated with a "tightening up" of service to achieve greater efficiency, improved work practices, better stock inventory and distribution systems, and more hours of service, coupled with a strong focus on services delivery and good management:

*"Increased efficiency; more efficient use of time and resources; more services."*

*"A much tighter and efficient service- accomplish more with less resources."*

*"Dynamic, pro-active, strong focus on service delivery, great director of pharmacy."*

Expansion of clinical focus was seen by pharmacists to positively contribute towards service improvement:

*"Increased clinical focus; introduction / expansion of clinical services."*

*"More clinical service, more ward pharmacists, more ward involvement, more counselling, medication lists."*

*"Clinical rather than supply focus."*

A greater customer focus and the development of a culture of customer service was also seen by pharmacists to improve services:

*"Increased customer service; increased customer focus; emphasis on customer service."*

Amalgamation of hospitals from the perspective of some pharmacists was seen to result in a more efficient use of resources and a sharing of ideas. Staff training, more staff, greater teamwork, and use of technicians were seen to contribute towards service improvement:

*"More staff training, QA, dedication, enthusiasm despite budget cuts and increase in unpaid overtime."*

*"Technician support - freeing pharmacists for clinical work."*

Communication with customers and being regarded as a member of the healthcare team were also considered by pharmacists to be factors which improved services:

*"Becoming more part of the health management team."*

Reasons why pharmacists thought the pharmacy service was worse tended to be heavily influenced by staffing levels:

*"Lack of staff; inability to attract suitably qualified staff; inability to recruit staff."*

*"Greater demand on services coupled with reduced staff to service demand."*

*"Staff shortage, increased workload, inability to meet requirements."*

*"Stress; Low morale."*

*"Lack of funding; funding cuts; budget cuts."*

From the various comments it was obvious that staffing issues were a major issue regarding the status of services at the time of this second survey:

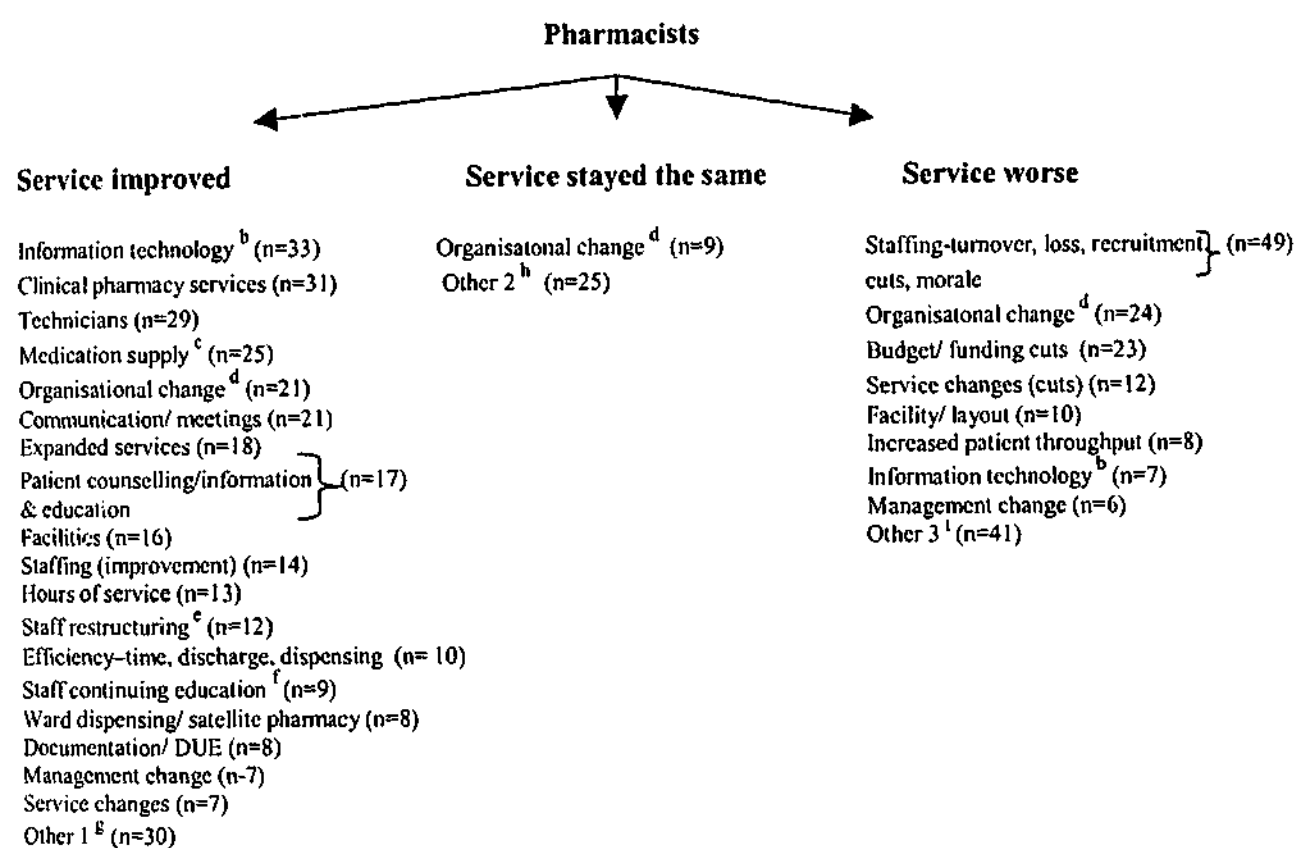
*"Some services improved e.g. clinical participation, but now significantly increased level of stress on staff - increased rate of turnover of staff so continually training new staff."*

*"Improvements e.g. counselling, communication, patient information, balanced out by lack of staff, increased workload - making timely maintenance of service a challenge."*

*"Service as good as ever but staff increasingly stressed - wonder how long it can go on!"*

Classification of individual factors identified by pharmacists to have changed the way pharmacy services operate at their hospitals and their effect on services, are shown in Figure 5.7.<sup>49</sup>

Figure 5.7 Change factors identified by pharmacists <sup>a</sup>



<sup>a</sup> n= frequency of listing of factor/ category

<sup>b</sup> information technology includes computerisation.

<sup>c</sup> medication supply includes inventory management

<sup>d</sup> organisational change includes: amalgamation, restructuring, networking, privatisation, accreditation.

<sup>e</sup> Staff restructuring includes new career structures, roles and positions

<sup>f</sup> Staff continuing education is of pharmacy staff

<sup>g</sup> Other 1 includes: drug information (n=5); outsourcing (n=5); customer focus/ service (n=4); funding/ costing issues (n=4); new hospital service (n=2); paperless processes (n=2); contact (n=2); drugs (n=2); teamwork (n=2); hospital staff in-services (n=2).

<sup>h</sup> Other 2 includes: staffing (n=5); budget (n=4); technicians (n=3); information technology/ computerisation (n=2); patient throughput (n=2); hours of service (n=1); pharmacy students (n=1); accreditation (n=1); ward dispensing (n=1); facilities (n=1); less outpatient scripts (n=1); management change (n=1); advice (n=1); new hospital service (n=1).

<sup>i</sup> Other 3 includes: time (n=5); new hospital service (n=5); workload (n=5); outsourcing (n=4); hours of service (n=4); government/ economic policies (n=4); pay (n=2); uncertainty (n=3); supply cuts (n=2); less pharmacy staff continuing education (n=2); PBS/ health insurance related (n=2); doctor and nurse shortages (n=2); pharmacy students (n=1).

It is interesting to note that some factors were seen by various pharmacists to contribute negatively, positively or neutrally towards the way the pharmacy service operates at their hospitals. This shows that there is not always consensus about what ultimately

<sup>49</sup> Based on responses to Question 6 in the pharmacists' questionnaire and Question 7 in the doctors' and nurses' questionnaires, (see Appendix 3).

contributes towards a good pharmacy service and shows how different perceptions can exist within a profession.

### 5.7.3.2 Doctors' perceptions

The reasons why doctors thought the pharmacy service at their hospitals had improved were associated with greater efficiency, more clinical involvement, more responsiveness to user needs, information and patient education:

*"Pharmacist plays a more active role with each medical unit- suggestions of medications, often detect interactions/ allergies etc. Play very important role in patient education. Very proactive these days in phoning/ chasing residents re authority/ discharge medications etc."*

*"More monitoring, More patient education. Better adverse reaction monitoring."*

Interestingly, the monitoring role of pharmacists was seen as a positive contribution towards service improvement by some doctors, a finding which was similar to that noted earlier (section 5.5.2), where some doctors considered monitoring drug therapy to enhance their perception of the importance of the pharmacists as a member of the health team.

The hours of service, and the focus of the pharmacy service also influenced the positive perception of change in services:

*"Has developed more of a community focus- previously had a very narrow concept of the pharmacy's role."*

*"Seven day service, 8am – midnight. Availability"*

*"More in tune with the needs of patient and clinicians. Education issues need further attention but they do remarkably well with the resources available."*

*"More staff, more information, more background knowledge of clinical situation."*

*"Better communication and understanding, better dispensing practice, friendly staff."*

*"Good to excellent discharge medication list for patients."*

These comments highlight the importance of communication with customers, and how individual work practice changes, such as the provision of medication lists to patients, can add to a favourable view despite the fact that some pharmacy departments were seen to be struggling due to changes in the healthcare sector.

Reasons given for the pharmacy service being worse tended to be associated with reductions in pharmacy staff:

*"Too few staff. Unhappy staff. Inability to dispense for outpatients (hospital policy)."*

*"Despite the superb efforts of pharmacy staff- reduced budget, reduced staffing increased changes-worse effect."*

Some doctors noted the difficulty departments faced in being able to maintain services:

*"Budget is too tight."*

*"Deteriorating relationship with resident staff- not hostile, just removed- fewer clinical meeting where they interact and develop rapport."*

*"Management induced budget restrictions: cost reduction, reduction in ward pharmacist presence, reduction in after hours service."*

Doctors mentioned the negative impact on services of cost shifting by governments:

*"(Much worse) Funding has been squeezed by the split responsibility between Federal and State Governments."*

*"Cost cutting, cost shifting to Commonwealth, reduced hours, charging patients."*

Hours of service were also a factor that negatively impacted on perceptions of change:

*"Less staff numbers on reduced working hours, poor after hours service- due to reduced funding."*

Some doctors thought pharmacy services had remained the same:

*"Despite the lack of financial, physical and human resources, I think the pharmacy department here has done well in striving to provide the same service given the harsh circumstances."*

*"Overall about the same though good and bad parts of the mix are different. Should have seen improvement so it is less good. Many issues seem to be beyond*

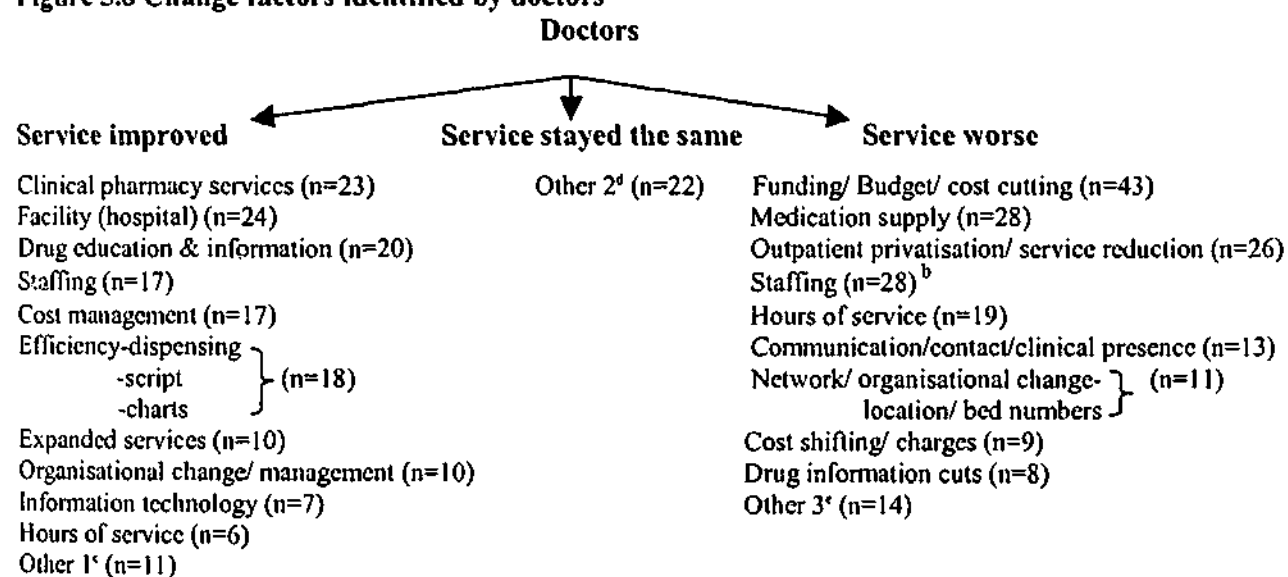
*pharmacists control- inadequate drug budgets, expensive new drugs, tight staffing. Some issues addressable by improving pharmacist interaction skills."*

Others indicated that their exposure to pharmacy services was too short to give an opinion. In some instances they indicated positives had been balanced out by negatives resulting in a perception of services remaining the same:

*"Drug information and assistance to patients have improved the service to 'customers'. However, reduction in ward pharmacists and overall service have worsened the service."*

Classification of individual factors identified by doctors as having changed the way the pharmacy service operates at their hospitals and the effect on services, are shown in Figure 5.8.

Figure 5.8 Change factors identified by doctors <sup>a</sup>



<sup>a</sup>n= frequency of listing of factor

<sup>b</sup>Staffing includes: staffing (n=22); staff morale (n=4); individual pharmacists (n=2)

<sup>c</sup>Other 1 includes: Communication (n=3); New hospital service (n=2); Research (n=2); Professionalisation/ sophistication (n=2); The patient (n=1); Patients go elsewhere (n=1).

<sup>d</sup>Other 2 includes: Budget/ funding (n=4); Medication supply (n=2); Staffing (n=3); Ownership changes (n=2); Hours of service (n=2); Organisational change (n=5); New facility (n=2); No obvious change (n=2).

<sup>e</sup>Other 3 includes: Paperwork, PBS documentation, script changes (n=3); Management change (n=2); Service changes (n=3); Workload (n=2); Discharge summaries (n=2); Flexibility (n=1); Research (n=1).

### 5.7.3.3 Nurses' perceptions

The perception of improvement given by nurses was associated with greater clinical involvement by the pharmacy:

*"Introduction of clinical ward pharmacist. Education."*

*"Introduction of clinical pharmacy has been the most beneficial improvement. Initially, nursing staff were hesitant to have ward pharmacist (fearing usurping of another nursing duty). However, we were amazed at how helpful such a service is."*

The comment above shows how initial reluctance towards clinical services may result in positive outcomes.<sup>50</sup> This shows that sometimes departments need to educate their customers or perhaps even market the benefits of a new or proposed service so that support can be gained from an informed perspective rather than a professional bias.

Better communication, more patient education including discharge medication lists were further reasons given by nurses for services being seen to improve:

*"More communication and more presence in the wards"*

*"Involvement of the pharmacy staff in the actual hospital. As a whole is much greater, providing education, source of info on drugs and effects, and recommendations re best drug to use on various patients thus increasing involvement with patients overall care regime."*

The ability for pharmacy departments to be flexible, adapt to change and expand services was also regarded positively:

*"Even though there is earlier discharge and more throughput of patients, the pharmacy has been very supportive and adaptable."*

Availability of stock and imprest, and efficient, timely discharge dispensing were further reasons for services to be seen to have improved:

*"Increased ward stock levels and restocking procedures (imprest) have improved availability to drugs and lessened waiting time for patients."*

*"Better communication. Streamlined dispensing process."*

Staff reductions and shortages, reduced hours of service, and problems with medication supply were seen by nurses to adversely affect all aspects of pharmacy services:

*"Less staff, shorter opening hours. Pharmacists often cover more than one ward. Consequently we continually run (out) of non-imprest drugs for patients."*

<sup>50</sup> This illustrates an issue identified by Juran (1988) where he discussed the need to be alert to the real needs behind the stated needs of customers.

*"We always seem to have problems on our ward- 1. Discharge medications take too long to dispense. 2. Stock is not always available when needed. 3. Drug trolleys are taken to stock at inappropriate times i.e. medication rounds. 4. Weekend service is very limited- No ward rounds at all."*

*"Less hours are available to obtain service which is disgusting in a major hospital. We receive many out of hours calls to dispense particular drugs to other wards."*

*"Decreased numbers of pharmacists has led to decrease in patient services, both inpatient and outpatient".*

*"Pharmacists are over worked and rarely can provide on time, accurate pharmacy services as they did in the past."*

Cut back in services such as clinical services were also cited as a cause for concern because reduced clinical involvement resulted in less monitoring, patient education and access to information by hospital staff and patients:

*"Reduced funds has seen a drop in service. Pharmacists are unable to become part of a team environment due to time constraints. Very difficult to get 'face-face' contact. Supply of non-imprest and discharge medications slow. Virtually no drug education to staff or patients from hospital pharmacists".*

*"Less staff working. No pharmacists ever come up to the ward to explain to patient about discharge drug."*

Nurses also expressed concern over small discharge quantities being dispensed to patients forcing them to see their own local doctors within days and ultimately resulting in cost-shifting of pharmaceuticals:

*"Patients on discharge get 2 days supply of pills and then have to see close doctor. It is often impossible to get an appointment with own doctor in this time span so run out of pills. Patient too sick to make a visit."*

*"Budget cutbacks, reduced pharmacists, reduced service, difficulty in obtaining medications, less pharmacists to check drugs/ imprest, reduced discharge medications- so need LMO- over servicing, drain on Medicare."*

Reasons given by nurses regarding why pharmacy services appeared to have stayed the same over the ensuing years were associated with no observable differences being seen,



improvements being balanced out by negatives, or nurses not feeling that they had been employed at the hospitals long enough to make a judgement:

*"Our pharmacist has been with the hospital many years and has always provided excellent service."*

*"Hours open have improved but efficiency has decreased due to poor staffing levels."*

One nurse provided a sympathetic view of change by acknowledging that pharmacy services may have been affected adversely in the hospital, but staff were ultimately doing their best:

*"We had a good service, the road is rocky, it takes a little longer but the staff try really hard and that's what it's all about at the end of the day."*

Classification of individual factors identified by nurses to have changed the way pharmacy services operate at their hospitals and their effects on services are shown in Figure 5.9.

## 5.8 Discussion

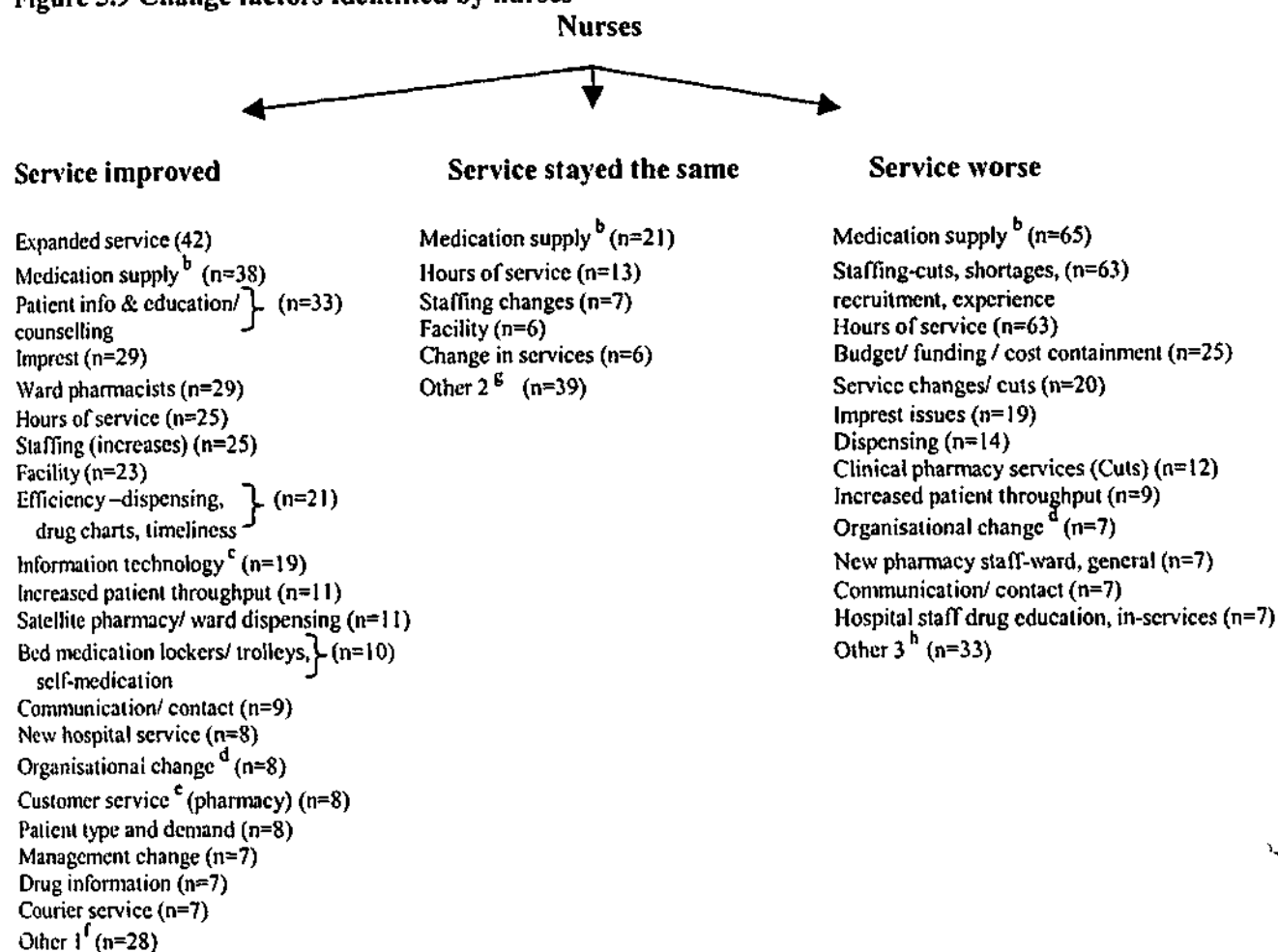
The response rate from pharmacists was less than for the first survey, a disappointing result considering that this study concerned pharmacy services and provided pharmacists with an opportunity to express opinions regarding those services. Nonetheless, the response rate was well within the range reported in other hospital pharmacy surveys, and there was at least one response from every hospital pharmacy department surveyed.

Many pharmacists responding to this survey identified shortages of staff and time as prevalent within the hospitals, so perhaps the lower response rates from pharmacists reflects the lack of time they had to complete surveys.

The results show there was an increase in the number of part-time pharmacists employed at the hospitals surveyed between the first and second surveys <sup>51</sup> probably reflecting the changing face of the workforce where job-sharing and part-time employment has become

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<sup>51</sup> Almost a 10% increase, and a corresponding decrease in full-time pharmacists.

Figure 5.9 Change factors identified by nurses <sup>a</sup>

<sup>a</sup> n = frequency of listing of factor/ category

<sup>b</sup> Medication supply includes inventory management and barcoding as an improvement in services; and includes inventory management only in services staying the same or being worse.

<sup>c</sup> information technology includes computerisation.

<sup>d</sup> organisational change includes: amalgamation, restructuring, networking, privatisation, downsizing, accreditation.

<sup>e</sup> Customer service includes friendliness, communication, staff presentation

<sup>f</sup> Other 1 includes: hospital staff drug education, in-services (n=5); cost monitoring (n=4); vacuum tube (n=4); pharmacy/ hospital committees (n=3); documentation (n=3); outsourcing (n=2); new hospital (n=2); knowledge (n=2); new drugs (n=2); busier (n=1).

<sup>g</sup> Other 2 includes: patient information, education & counselling (n=5); imprest (n=4); staff (hospital) education (n=4); increased demand (n=4); organisational change (n=3); management change (n=2); budget, cutbacks (n=2); more services (n=2); patient type (n=2); costing (n=2); drug information (n=2); time shortage (n=2); medication complexity (n=1); quality improvement (n=1); reliability (n=1); customer service (n=1); no drug trolley (n=1).

<sup>h</sup> Other 3 includes: staff rostering/availability (n=5); reliability (n=3); new hospital (n=3); outsourcing (n=3); patient education, counselling, knowledge (n=3); patient type (n=3); costing/ cost shifting (n=3); increased demand, time (n=3); accuracy (n=1); drug information (n=1); management change (n=1); facility (n=1); multiple medication (n=1); drug charts (n=1); increase in weekend discharges (n=1).

more available. These changes have possibly occurred to meet staffing needs, to accommodate women who have returned to the workforce after having children, or to accommodate pharmacists who are combining hospital and community pharmacy practice.

Variations in awareness of services which were identified as existing between pharmacists within some pharmacy departments in the first survey still existed in the second survey.<sup>52</sup>

A significant hospital effect existed in the awareness pharmacists had of the traditional and clinical services they provide. The greater awareness of a wider range of services being offered by large city hospitals compared to small city or country hospitals may reflect the higher staff numbers and greater resources available to them which makes the provision of a wider range of services possible.<sup>53</sup>

When pharmacists were asked to consider which services they thought their departments should provide a few more services were influenced by hospital size and location in the second survey compared with the first. This may be explained by the impact of significant changes that occurred within the healthcare sector between the two surveys.

In an ideal healthcare environment where unlimited finance and resources are available, it would be expected that the provision of comprehensive pharmacy services would not be as vulnerable or sensitive to hospital size and location influences. This is because extra services could be funded by employing more staff, by offering higher wages in times of pharmacist shortages, or by funding the infrastructure needed to support services.

However, this has not been the situation for many hospital pharmacy departments over the six-year time frame of this study. Staff cuts and subsequent shortages of qualified pharmacists have meant that many pharmacy directors and senior pharmacy managers have had to consider what they can realistically provide in the way of services. In fact, when comparing the influence of hospital size and location on the service requirements of

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<sup>52</sup> Explanations may include for example: failure to inform staff of services provided and departmental capabilities, lack of exposure by pharmacists to all services, casual and part-time employment resulting in some pharmacists being limited to work in select areas only, departmental heads pre-empting services that were in the process of being introduced or not fully implemented which are not commonly known by all staff.

<sup>53</sup> As discussed in Chapter 4, numbers of staff were a factor found by Cotter, Barber and Chalmers (1996) to influence the provision of anything other than a rudimentary service in UK National Health Service hospitals.

pharmacists in the second survey with those in the first, there were more clinical pharmacy services included in the list of services influenced by hospital size and location in the second.<sup>54</sup> This is not to say that there was no support for these services amongst all pharmacists because many of the clinical services are included as fundamental services for pharmacists (Table 5.10).<sup>55</sup> However, variations exist in the extent of agreement for the services being provided according to hospital size and location (Table 5.9 and Table 5.11).

That nurses were more supportive of clinical services than doctors may reflect a greater exposure of nurses to clinical pharmacists. However, there was some improvement in support by doctors for clinical pharmacy services in the second survey although there is still room for improvement (Table 5.15).

Interestingly, when doctors were asked to indicate whether pharmacists should *intervene in or monitor patient drug therapy* in the second survey, a number of them crossed out "intervening", but underlined "monitoring" where this phrase was printed on the questionnaire, showing support for pharmacists keeping a watchful eye on drug therapy and safe prescribing but some resistance to what could be considered "interference" with their role and decision making. However, some doctors commented in the second survey that they welcomed the vigilance of pharmacists and their reviewing of medication charts because of the complexity of drug therapy and the possibility of drug interactions that can be unintentionally missed.

Hospital pharmacists need to be aware that their clinical role is still not as widely accepted as they would believe. They need to actively promote and market this role within their hospitals, develop a high visible presence in the wards, and provide feedback to the clinical units they work in so that unit heads are aware of contributions they make towards patient care and better management of drug therapy. Even though *participation*

<sup>54</sup> In the first survey *intervention in or monitoring patient drug therapy* was the only clinical service that showed a hospital influence on pharmacists' service requirements.

<sup>55</sup> As mentioned earlier, it was decided that a service was considered fundamental when at least 90% of respondents indicated that it should be provided, showing a clear consensus exists between the particular practitioner population (doctor, nurse or pharmacist).

*in ward rounds* is still not regarded as a fundamental pharmacy service for doctors and nurses, this role is an ideal way for pharmacists to contribute to the healthcare team. Perhaps the negative perception towards this role can be changed if pharmacists attend these rounds and ward meetings and are seen to contribute and make a difference.

A perception does not have to be accepted as final, it can be changed.

Nurses were more supportive about the provision of services associated with stock management such as imprest and drug purchasing (Table 5.15) than were doctors, probably reflecting the more immediate issues that nurses have to deal with regarding drug and medication availability in the wards.

The influence of hospital size and location is apparent when considering fundamental services for doctors and nurses. In the case of doctors, the only fundamental hospital pharmacy service common across each demographic was *inpatient dispensing*. In the first survey, a wider range of services were fundamental for doctors across all the hospitals, but, the economic rationalist environment at the time of the second survey may have been such that their expectations have changed to accommodate a leaner service.

It was somewhat surprising that *drug information services* were only considered a fundamental service for doctors from large city and small country hospitals, whereas in the first survey this was considered equally important across all hospitals. Perhaps some hospital pharmacies have rationalised this service in the past few years or downgraded it resulting in doctors seeking information from other sources.

Clinical services featured more extensively as fundamental hospital pharmacy services for nurses across all the hospital sizes and locations than for doctors. The greater opportunity for interaction between nurses and pharmacists in the wards possibly has allowed nurses to gain a better understanding of the clinical nature of pharmacy practice resulting in greater support from them for these services.

The reluctance by some doctors and nurses to give a rating of the effectiveness of the performance of the pharmacy service on a number of measures of customer service, choosing instead to indicate no opinion, is disconcerting because it shows that doctors in particular, and nurses to a lesser extent either don't care about these services because they don't directly impact on them, or they don't perceive these services to be relevant or important to their needs.

It is interesting to note that measures of customer service which doctors and nurses chose to rate were those associated with customer service factors such as accuracy, reliability, timeliness, friendliness and cooperation of pharmacy staff, efficiency, communication, pharmaceutical knowledge, and overall service, traditional measures against which the quality of service can be evaluated.<sup>56</sup> Doctors and nurses are relatively comfortable in rating these customer service measures, but once it comes to a broader range of service measures, such as those which are related to clinical services, their reluctance to give a rating is clearly apparent as shown by the significant numbers who did not do so.

Many of the measures that rated lower in this survey were associated with an educative role for pharmacists, which is a disappointing observation given that this role was regarded as fundamental by both doctors and nurses when they were asked about their service requirements (Table 5.15). This suggests a clear need for improvement in performance of these services.

The lower ratings for many of the clinical measures also raises concern because if pharmacists believe their clinical role to be fundamental then the ratings achieved suggest these services are not being offered at a high enough standard for their customers to appreciate them and agree with them or they don't consider these to be part of the pharmacists' role.

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<sup>56</sup> The customer service measures with the lowest no opinion or not applicable responses from doctors and nurses.

Hospital size and location influences on ratings of performance of the pharmacy services were once again important. Most noticeable were the higher ratings for many of the measures of service by small country hospital nurses compared with those from the other hospitals. This is interesting because these hospitals work with much smaller staffing levels in their pharmacy departments, and have experienced similar hardships, cost containment, restructuring and budgetary constraints as the other hospitals, yet they appear to be doing a better job from the nurses' perspective. Perhaps this is because they have always had to do more with less, and are therefore better able to deal with a healthcare environment experiencing difficulties.

Hospital size and location influenced ratings by doctors for only three measures of customer service (Table 5.26). Perhaps doctors are able to divorce themselves from the hospital environment and location when rating customer service, yet take these into account when considering service requirements.

Pharmacists from large city hospitals gave lower ratings for their performance on measures of service where significant hospital influences were identified (Table 5.27). These measures also tended to be rated lower by nurses from large city hospitals compared to those from small country hospitals.

The changes that occurred in the health care sector in the 1990s impacted on all hospitals. Severe cutbacks in funding occurred within the hospital sector coupled with major restructuring. The results here show that, from the perspective of nurses, small country hospital pharmacy departments have been better able to maintain the level of their services than have large city pharmacy departments, who do not appear to be meeting the expectations of their nursing colleagues. Large hospitals in general were rated poorer for their overall service than were small ones.

Many of the consequences of change and subsequent difficulties in attracting pharmacists back into the hospital sector, have impacted on the ability of large hospitals to maintain their services. For example, provision of comprehensive clinical services requires a

minimum number of staff and sufficient funding and infrastructure to perform these activities. Where staffing levels have fallen to critical levels, pharmacy departments have had to determine what services they are able to maintain.

A concern expressed by some directors of pharmacy services about participating in this survey was that because hospitals were doing it so "tough", pharmacy departments were going to be viewed negatively and criticised for not performing to expectations or some preconceived standard. Many pharmacy departments had to pull back services, or reorganised themselves so as to provide services which they believed mattered. In many cases pharmacists had to do more with less. Certainly ratings of the performance of the pharmacy services, and overall service rating from the 1999/2000 survey showed that for some measures of customer service or quality, hospital pharmacies were not performing well.

However, it is reassuring that doctors and nurses were not oblivious to problems that pharmacy departments have had to confront. Their comments regarding the *overall pharmacy services provided by the hospital's pharmacy* were often encouraging because they show that they were aware and sympathetic about many of the difficulties that the pharmacists were facing and acknowledged that they were often doing their best. Perhaps this is because they too have been faced with these issues themselves, as has the whole healthcare sector.

The ratings and comments made by doctors, nurses and pharmacists about the *importance of the pharmacist as a member of the healthcare team* show that pharmacists are seen as having an important role in monitoring drug therapy and educating patients and hospital staff about drugs. The supply, availability, dispensing and distribution of medication underpin any of the clinical activities provided. If the medication requirements are met then the clinical activities are able to add value to patient care by ensuring that therapy is safe, appropriate and targeted, and that information and education is available to complement treatment.



Comments made by doctors regarding the *importance of the pharmacist* show their clinical role is gaining more support. This should be encouraging for pharmacists. However, these comments are in contrast to the situation where many clinical services were not rated highly and did not gain widespread support for their provision from doctors when their opinions on service requirements were sought.

The impact of change on hospital pharmacy services over the six-year time frame of this research study was measured and identified. Although the original objectives in applying economic rationalist theories to the healthcare sector may have been to reduce costs and improve the efficiency and quality of services, this does not seem to have been the overall outcome. Hospital pharmacy departments have been severely challenged by the many changes that have occurred within the healthcare sector. Some have been able to improve their services through innovation, leadership, improving their efficiency, tailoring their services to target the areas of greatest need, and by developing greater teamwork.<sup>57</sup> Some have even offered newer services, but others have been struggling to maintain services because of reduced funding, lack of staff, severe cost containment and organisational change. This thesis has documented the changes that have occurred from the perspective of pharmacists and their major customers. Doctors, nurses and pharmacists have all acknowledged the difficulties they face in this environment of change. The consequences of change are not isolated to pharmacy services, they are applicable to all members of the healthcare sector.

When the various customers indicated that services were deteriorating, staffing was given as the most frequent explanation for this perception. Staffing issues were seen to have impacted on time, morale, stress, service provision, workload, clinical activities, expansion of services, and effectiveness of pharmacy services. In fact the capabilities of the department to provide a comprehensive range of services is directly related to the manpower available. Some hospitals have been able to meet the demands despite staffing

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<sup>57</sup> As seen by comments from doctors, nurses and pharmacists

problems but others have suffered because of them. Budgetary constraints and funding issues have created added pressures for pharmacy departments to deal with.

Cutbacks in services<sup>58</sup>, especially those of a clinical nature or related to education or patient focused care, were seen as having negative effects on services. The withdrawal of clinical pharmacy services was frequently seen as a negative with the establishment of these services on the other hand being regarded very positively. Despite the difficulties that many hospitals cited in maintaining services, and in continuing to provide innovative services and focussing on the clinical role of pharmacists, there was a general awareness amongst all respondents that in many cases pharmacists were trying their best and generally committed towards their professional role.

In summary, fundamental service requirements have varied so that at the time of the second survey the requirements reflect the shifting demands and issues that face hospital pharmacy practice.<sup>59</sup> Service requirements have tended to reflect what may be realistically possible by pharmacy departments from the perspective of their customers rather than what would be required in a less economically constrained and accountable environment.

The second survey has once again shown the complexities associated with determining customer's perceptions of services and service requirements, and has raised concern about simply asking customers about their requirements without factoring in practice variations which are caused by hospital size and location, economic considerations, organisational individuality and professional individuality. In other words, the impact of individual pharmacists on the perception forming process.

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<sup>58</sup> Made by pharmacy management or as a hospital directive. These cutbacks were sometimes undertaken to allow the pharmacy departments to keep operating within their budgets or as a response to funding and staffing cuts, and shortages in pharmacists.

<sup>59</sup> Statistical differences between the first and second surveys are covered in detail in Chapter 9.

This second survey has provided a benchmark of hospital pharmacy performance measurement on numerous elements of customer service by major customers of hospital pharmacy departments. Results have shown that respondent type and hospital size and location do influence perceptions and evaluation of services. Directors of pharmacy services and pharmacy managers can compare their own pharmacy's performance against the range of measures evaluated here if they wish to benchmark their services.

## CHAPTER 6

### THE PATIENTS

#### 6.0 Introduction

With hospital services in Australia becoming increasingly more patient focused and because of continuing discussion within the health sector regarding the needs of patients, (Hepler and Strand, 1990; Enright and Flagstad, 1991; Vogel, 1993; Harper and Proust, 1995) it was felt appropriate to survey patients regarding pharmacy services. They were surveyed in 1993/94 and again in 1999/2000.

#### 6.1 Methods

##### 6.1.1 Questionnaire Development

A review of numerous articles dealing with surveys of patients was conducted to determine if an appropriate questionnaire was already available (Ludy, et al., 1977; Ware et al., 1978; Somani et al., 1982; Pascoe, 1983; Ware and Davies, 1983a; Ware et al., 1983b; Roberts and Tugwell, 1987; Fincham and Wertheimer, 1987; Ware and Hays, 1988; MacKeigan and Larson, 1989; Rubin et al., 1990c; Meterko et al., 1990; Westbrook, 1993). Many of the questionnaires previously used examined the views that patients had of doctors, nurses and hospitals, but not pharmacists but there were two.<sup>1</sup> However, neither allowed patients to record their views, so the questionnaires developed in 1990 for a small project at the Alfred Hospital in Melbourne (Cukierman-Wilson, 1990) were used as the basis of the questionnaires used in both surveys.

##### 6.1.1.1 Patient questionnaires 1993/94

Both inpatients and outpatients were asked to indicate what they thought the pharmacists do in the hospital using a list of seventeen possible activities by ticking one of three

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<sup>1</sup> MacKeigan and Larson (1989), and Fincham and Wertheimer (1987) incorporated pharmacy-related questions in the design of their instruments.

options: "yes", "no" or "don't know".<sup>2</sup> The measures of service which patients were required to rate were expanded from the list developed in the Alfred study.<sup>3</sup>

Inpatients were asked to rate the performance of clinical pharmacists<sup>4</sup> on a number of measures of customer service by giving a number between 0 and 10, where 0 was very poor (lowest rating) and 10 excellent (highest rating). Where patients did not know they were asked to tick a box to that effect. The customer service measures used were: *helpfulness of the pharmacist; friendliness of the pharmacist; advice given about how to take drugs/ medicines; overall information provided by the pharmacist; and understanding the needs of the patient.*

The questionnaire also sought to determine *whether inpatients were aware of a pharmacist visiting their ward; whether they knew what the pharmacist does in the ward; if they had met the pharmacist; and suggestions how the pharmacy's service to them in the ward could be improved.* Inpatients were asked several further questions: *whether they were taking any medicines whilst in hospital; who gave them the medicines; who explained to them how to use the medicines; how well they understood the instructions; and how the explanation about their medicines could be improved.*

When inpatients were asked to rate *how well they understood the instructions on using their medicines* they were asked to give a number between 0 and 10, where 0 was no understanding and 10 was perfectly clear explanation.

Outpatients were also asked to rate the pharmacy's performance using a rating scale of 0 to 10, where 0 was very poor (worst rating) and 10 excellent (best rating). The customer

<sup>2</sup> A few activities listed were included to test whether the respondents were actually thinking about the questions being asked, rather than just ticking boxes indiscriminately, e.g. perform operations.

<sup>3</sup> In the Alfred study inpatients were asked to rate the ward pharmacist's performance on *helpfulness of the pharmacist; friendliness of the pharmacist; and provision of information by the pharmacist.* Outpatients were asked to rate the pharmacy's performance on *time taken for prescription to be filled; advice received on medication; friendliness of staff; waiting room facilities; and presentation of medicines i.e. information on labels and appearance of label.*

<sup>4</sup> The terms *clinical pharmacist, ward pharmacist* or *clinical ward pharmacist* are all used to describe the pharmacist who provides clinical pharmacy services in the hospital. The term *ward pharmacist* was used in the inpatient questionnaire however, *clinical pharmacist* is used in this thesis for consistency.

service measures they were asked to rate were: *time taken for prescription to be filled; advice received on medication; friendliness of staff; overall information provided by the pharmacist; understanding the needs of the patient; waiting room facilities; and presentation of the medicines.*

In addition they were asked questions about their use of the hospital pharmacy: *when they last used the hospital pharmacy; what they required on that occasion; how long they waited for their prescription and where they waited; why they use the hospital pharmacy; and suggestions for improving the service to them.*

#### 6.1.1.2 Patient questionnaires 1999/2000

The questionnaires used in the second survey were identical to those used in the first, except that the question *whether they knew what pharmacists do in their hospitals*<sup>5</sup> was removed because responses in the first survey indicated a relatively satisfactory general knowledge. In addition, inpatients were asked to rate the performance of clinical pharmacists on an expanded list of measures of service<sup>6</sup>, and *what services or information they want from the pharmacy at the hospital*. Outpatients were asked to rate the pharmacy's performance on an expanded list of measures and to rate how important these pharmacy services were to them,<sup>7</sup> and they were asked *what services or information they want from the pharmacy at their hospital*.

Questionnaires from both surveys are included in Appendix 1 (first survey) and Appendix 3 (second survey).

The questionnaires were designed to be easy to complete and of reasonable length so as

<sup>5</sup> From the list of 17 possible activities.

<sup>6</sup> The additional measures were: *cooperation of the pharmacist; advice given about your medication; the availability of the pharmacist to answer your questions.*

<sup>7</sup> The expanded list of measures outpatients were required to rate the pharmacy's performance on, and the importance of these measures to them, were: *advice given on medication; cooperation of staff; the time the pharmacy department is open for service to the public; the care taken by the pharmacy to dispense your prescription*. When rating the importance of the pharmacy services, outpatients was asked to use a scale of 0 to 10, where 0 was not at all important and 10 was very important.

to encourage completion. Some open-ended questions were included to ascertain patient requirements and suggestions. This approach differs from most surveys reported in the literature (MacKeigan and Larson, 1989; Larson and MacKeigan, 1994; Fincham and Wertheimer, 1987; Larson, 1998; Erstad et al., 1994) which present patients with statements regarding a pre-determined list of services with which they had to agree or disagree, a method which may be a reflection of what the service provider considers to be important rather than the patient (see Schommer and Kucukarslan, 1997), particularly if patients are not given the opportunity to comment freely about a service or their care.

### 6.1.2 Distribution of questionnaires<sup>8</sup>

All questionnaires were issued with reply-paid, mail-back envelopes enclosed, and each one contained a letter from the Dean of the Victorian College of Pharmacy explaining the purpose of the study and requesting their support. The confidentiality of the questionnaires and voluntary nature of the study were emphasised.

The questionnaires were distributed to inpatients with the assistance of the nursing or quality assurance managers at the hospitals. Before being issued the distributor was asked to endorse on the front cover whether or not the ward had a clinical pharmacy service.<sup>9</sup> This was done because inpatients were asked if they *knew whether pharmacists regularly visit their wards, and whether they had met the pharmacist*, and therefore allowed an assessment of whether it was reasonable to expect the inpatient to have met the clinical pharmacist. Patients across all wards in the hospitals were included, with the exception of those in intensive care, in isolation, and in psychiatric wards. Completed questionnaires were posted back by patients, their relatives, or with the assistance of staff in the hospitals.<sup>10</sup> At all times patients had the right to refuse to take part in the surveys.

Questionnaires for outpatients were either distributed by each hospital's nursing or

<sup>8</sup> In the first and second surveys.

<sup>9</sup> The term *clinical ward pharmacy service* was used on the questionnaire but is referred to as *clinical pharmacy service* in this thesis.

<sup>10</sup> Some staff e.g. nurses collected completed questionnaires in their wards and posted them back to the university in the reply-paid envelopes enclosed with each questionnaire thereby increasing the response rate.

quality managers<sup>11</sup>, or from the pharmacy department itself where every fifth patient attending the pharmacy was asked if they wished to complete a questionnaire. The questionnaires were distributed over a one to two week period so as to obtain a good representation of patients from the various clinics or services provided by the hospitals.

In the first survey, questionnaires for outpatients were distributed to ten of the hospitals in the survey sample (see Chapter 3). Two of the hospitals were large country hospitals, the remaining ones were large city hospitals. No questionnaires were sent to small city and small country hospitals because these hospitals indicated that they had no formal outpatient services available, other than accident and emergency.

Outpatient questionnaires were distributed to eleven of the hospitals in the second survey. These hospitals were predominantly large city hospitals that had outpatient clinics and departments, and two large country hospitals. The remaining hospitals indicated that they did not have formal outpatient services.

There was no follow up of any of the participant groups because anonymity and confidentiality made it impossible.

## 6.2 Patient surveys 1993/94

The response rates achieved from the first survey of inpatients and outpatients are shown in Table 6.1.

**Table 6.1 Inpatient and outpatient response rates (1993/94)**

Survey group	Surveys sent	Surveys completed	Response (%)
Inpatients	662	389	58.7
Outpatients	541	183	33.8

No outpatient questionnaires were received back from large country hospitals.

### 6.2.1 Patient Demographics

More females than males responded to the survey (Table 6.2)

<sup>11</sup> From outside the pharmacy departments or clinics.



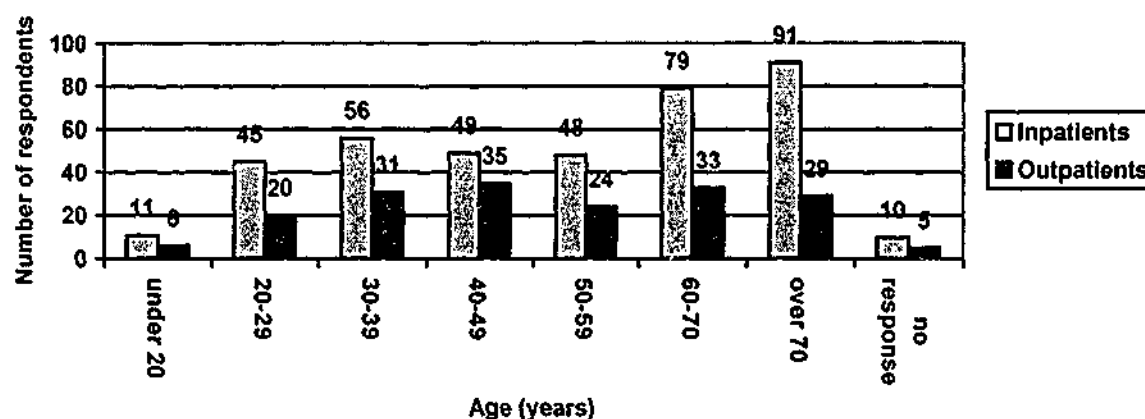
Table 6.2 Respondents' sex (1993/94)

Sex	Outpatients (%) <sup>a</sup>	Inpatients (%) <sup>b</sup>
Male	29.4	44.4
Female	70.6	55.6

<sup>a</sup> Percentage of 177 respondents to this question. <sup>b</sup> The percentage of 378 respondents to this question

Over half the inpatients (56%), and 47% of outpatients were over 50 years of age (Figure 6.1).

Figure 6.1 Age of patients who responded (1993/94)



English was the first language for 91.8%<sup>12</sup> of inpatients and 83.6%<sup>13</sup> of outpatients. Most of the others could speak English, indicating that respondents should have been able to understand the questionnaires.<sup>14</sup>

All outpatients who responded came from large city hospitals and most patients came from a range of suburbs across Melbourne, although a few also came from country areas but were patients at the city hospitals.

### 6.2.2 Patients' views

Both inpatients and outpatients were asked *what they think pharmacists do in hospitals* (Table 6.3). From the responses it can be seen that most patients (93.4% of outpatients and 91.8% of inpatients) were aware of the dispensing role of pharmacists, and they were

<sup>12</sup> Of 357 inpatient respondents

<sup>13</sup> Of 153 outpatient respondents

<sup>14</sup> There is likely to be self-selection language bias. The questionnaires were printed in English only.

Table 6.3 What patients think pharmacists do in hospitals (1993/94)

Pharmacist activities listed	Outpatients (%) <sup>b</sup>				Inpatients (%) <sup>c</sup>			
	Yes <sup>a</sup>	No <sup>a</sup>	Don't know <sup>a</sup>	No response	Yes <sup>a</sup>	No <sup>a</sup>	Don't know <sup>a</sup>	No response
Dispense medicines	93.4	0.5	3.8	2.2	91.8	2.1	3.6	2.3
Sell toys and cosmetics	5.5	86.3	2.2	6.0	6.4	73.5	12.3	7.7
Charge for drugs medicines	73.8	16.9	2.7	6.5	32.9	33.4	25.7	7.7
Perform operations	4.9	83.6	5.5	6.0	6.9	82.8	3.9	6.4
Manufacture drugs/ medicines	24	53.0	17.5	5.5	19.0	54.0	20.3	6.5
Administer drugs/ medicines to patients	33.3	54.1	8.2	4.4	28.3	57.1	7.2	7.5
Provide information on drugs/ medicines to patients	87.4	2.7	5.5	4.4	62.0	18.5	13.6	5.9
Make up sterile drug solutions e.g. IV feeding solutions	44.3	18.0	31.1	6.5	48.3	13.6	29.6	8.5
Attend patients in wards	25.7	55.2	14.8	4.4	24.9	57.1	11.6	6.4
Make the beds	3.8	85.8	3.3	7.1	5.4	86.4	1.0	7.2
Advise doctors & nurses on medication/ drugs	39.9	31.1	24.0	4.9	48.8	22.9	21.9	6.5
Buy drugs/ medicines for the hospital	52.5	18.0	23.0	6.6	56.0	11.3	25.2	7.5
Give educational lectures on drugs/ medicines	36.6	16.9	41.0	5.4	34.2	15.7	42.4	7.8
Sell bandages & dressings	25.1	47.0	20.8	7.1	23.1	45.5	23.1	8.3
Check prescriptions for safety	89.6	2.7	5.5	2.2	77.1	4.9	12.6	5.5
Advise patients on drug / medicine use	91.8	2.2	2.7	3.3	60.7	16.7	17.2	5.4
Report adverse reactions to drugs/ medicines	59.0	9.3	26.2	5.4	54.2	10.3	29.0	6.5

<sup>a</sup> Various options were listed and patients were given the opportunity to indicate "yes", "no" or "don't know" against the options given. <sup>b</sup> n=183 outpatients. <sup>c</sup> n=389 inpatients

generally aware that pharmacists check prescriptions for safety (89.6% of outpatients and 77.1% of inpatients).

Generally, outpatients were more aware of the services offered by pharmacists, especially the provision of information and advice on drugs and medicines to patients, and that they charge for medicines.<sup>15</sup>

Interestingly there was a high combined "no" and "don't know" response from both groups of patients with regard to the manufacture of medicines, and less than half the patients were aware that pharmacists advise doctors and nurses on medications. Only about a quarter knew that pharmacists attend patients in wards, but most were aware that pharmacists don't perform operations, sell toys and cosmetics or make the beds in the hospital.

### 6.2.3 Inpatient survey (1993/94)

There were 389 inpatient questionnaires returned and of these 48% were from large city hospitals, 10% from small city hospitals, 18% from large country hospitals and 24% from small country hospitals.

Most inpatients had been in hospital for four or more days at the time of the survey (Table 6.4), so should have had the opportunity to meet clinical pharmacists, although only 54.5% of inpatients were in wards where a clinical pharmacy service was provided, 4.9% were in wards with no such service and a further 2.3% were in wards with a limited clinical pharmacy service.<sup>16</sup> It was not possible to determine whether a clinical pharmacy service was provided for a further 38.3% of inpatient questionnaires.

#### 6.2.3.1 Awareness of the clinical pharmacist

Forty-four percent of inpatients were aware that *pharmacists regularly visited their wards*, 49.6% were not, and 6.4% gave no response.

<sup>15</sup> Outpatients often have to pay for their prescriptions before receiving their medication or on receipt, whereas inpatients are not yet charged in the Public system, only in Private hospitals.

<sup>16</sup> According to the endorsements made on questionnaires by survey distributors.

Table 6.4 Length of stay of inpatients in hospital (1993/94)

Length of stay in hospital	Number <sup>b</sup>	Percentage
One day	17	4.4
Two to three days	62	15.9
Four to seven days	138	35.5
More than seven days <sup>a</sup>	156	40.1
No response given	16	4.1

<sup>a</sup> Of those patients who indicated they had been in hospital more than seven days, the number of days they indicated they had been in the ward ranged from 8 days to 330 days, the mean was 21.7 days with a standard deviation of 33.7 days. (The median was 13 and the mode 10).

<sup>b</sup> n=389.

A crosstabulation of whether inpatients knew that a *pharmacist regularly visits the ward* by whether there was a *clinical pharmacy service provided*<sup>17</sup> to the ward was performed (Table 6.5). Where the distributor of the surveys did not endorse on the questionnaire whether a clinical pharmacy service was provided in the ward this was coded as "no response" and included in the crosstabulation.

Table 6.5 Crosstabulation of inpatients' awareness of the pharmacist by status of service (1993/94)<sup>b,c</sup>

Did the patient know whether a pharmacist regularly visits the ward?	Statistics from the crosstabulation	Does the ward have a clinical pharmacy service? <sup>a</sup>				
		Yes	No	Limited	No response	Total
YES	Count	105	3	1	62	171
	Within regularly visits	61.4%	1.8%	0.6%	36.3%	100%
	Within ward pharmacy provided	52.5%	18.8%	11.1%	44.6%	47%
	% of Total	28.8	0.8	0.3	17	47%
NO	Count	95	13	8	77	193
	Within regularly visits	49.2%	6.7%	4.1%	39.9%	100%
	Within ward pharmacy provided	47.5%	81.3%	88.9%	55.4%	53%
	% of Total	26.1	3.63	2.2	21.2	53%
Total	Count	200	16	9	139	364
	Within regularly visits	54.9%	4.4%	2.5%	38.2%	100%
	Within ward pharmacy provided	100%	100%	100%	100%	100%
	% of Total	54.9	4.4	2.5	38.2	100%

<sup>a</sup> Response as endorsed on the questionnaire by the distributor of the survey.

<sup>b</sup> Chi square significance  $p = 0.006$

<sup>c</sup> Status of service is whether a clinical pharmacy service was provided to the ward.

<sup>17</sup> The provision of a clinical pharmacy service to the ward as indicated by the distributor of the inpatient surveys on the front cover of the inpatient questionnaire.

More than a quarter of inpatients (26.1%) indicated they did not know that a *pharmacist regularly visits the ward* even though there was such a service provided (Table 6.5). This represents approximately 48% of those inpatients who were in a ward with a clinical service, a finding which was statistically significant.

Both inpatients and outpatients were asked some open-ended questions in the surveys,<sup>18</sup> and these resulted in a number of written comments where themes or patterns emerged which were reduced to a few which are described by single phrases in a number of figures within this chapter.<sup>19</sup>

Inpatients who indicated that they *knew that a pharmacist regularly visits the ward* were asked to list *what they think the pharmacist does in the ward*. A summary of their responses is shown in Figure 6.2. Table A5.1 in Appendix 5 provides a sample of their responses to this question, with a few included in the text here.

The responses given by inpatients show that some were particularly well informed about the activities of pharmacists whereas others had no idea whatsoever. For example:

*"Checks and supplies medication for each patient, explains any possible adverse reaction a particular drug may have as well as the advantages to the patient."*

*"Dispenses medications, checks doses, routes, compatibility's, check drug levels, check patient medication history."*

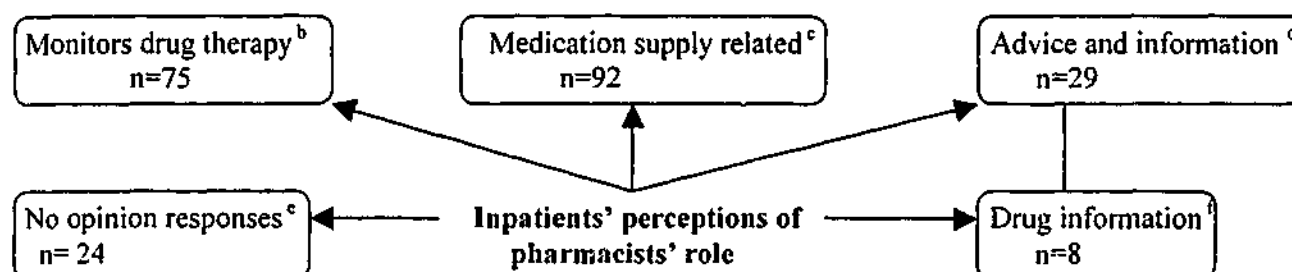
*"Check charts for safety."*

*"Advises / informs patients on what their medicine is/ should do for them plus any side effects they may have."*

<sup>18</sup> Such as *how would you suggest the pharmacy's service to you in the ward could be improved, or what services or information patients want from the hospital pharmacy?*

<sup>19</sup> A qualitative factor analysis. See Miles and Huberman, 1994.

Figure 6.2 What inpatients think the pharmacist does in the ward (1993/94)<sup>a</sup>



<sup>a</sup> Frequency of comments (n), some patients listed more than one activity that pharmacists do in the ward.

<sup>b</sup> Made up of: Checks patient's medication and charts n=66; Collects information from patients history/file n=2; Oversees drug treatment n=3; Help patients and check their needs n=4.

<sup>c</sup> Made up of: Supplies, dispenses, orders & organises drugs n=58; Checks drug stocks & supplies n=25; Delivers medication n=9.

<sup>d</sup> Made up of: Gives advice on drugs/ explains medication & asks patients about what they're on n=29.

<sup>e</sup> Made up of: Nothing n=5; Don't know n=14; Don't visit & never seen on ward n=5.

<sup>f</sup> Made up of: Gives advice to doctors/ nurses/ hospital on drugs n=8.

When asked if they had *met the pharmacist working in their ward*, 36.8% of inpatients indicated they had, 18.3% indicated they hadn't, and 45% gave no response.

A crosstabulation of whether the inpatient had *met the pharmacist working in their ward* by whether there was a *clinical pharmacy service provided* to the ward<sup>20</sup> (Table 6.6), showed that a significant number of inpatients (18.7%) indicated they had not met the pharmacist even though they were in a ward with a clinical pharmacy service.

### 6.2.3.2 Performance ratings

Less than half of all inpatients gave a rating for the performance of the clinical pharmacist on various measures of customer service. In addition, between 6 to 15% indicated "don't know" and approximately 2% ticked the ratings boxes rather than giving a score (Table 6.7).

The average ratings were above 8 but the standard deviations were quite wide (approximately 2.9) for all measures apart from *helpfulness* and *friendliness of the pharmacist*, indicating a broad spread of responses on the remaining measures.

Table 6.6 Crosstabulation of inpatient met the pharmacist by status of service (1993/94)<sup>a,c</sup>

Had patient met the pharmacist working in the ward?	Statistics from the crosstabulation	Does the ward have a clinical pharmacy service?				
		Yes	No	Limited	No response <sup>b</sup>	Total
YES	Count	86	2	0	55	143
	Within met	60.1%	1.4%	0%	38.5%	100%
	Within ward pharmacy service provided	68.3%	25%	0%	69.6%	66.8%
	% of Total	40.2	0.9	0	25.7	66.8%
NO	Count	40	6	1	24	71
	Within met	56.3%	8.5%	1.4%	33.8%	100%
	Within ward pharmacy service provided	31.7%	75%	100%	30.4%	33.2%
	% of Total	18.7	2.8	0.5	11.2	33.2%
Total	Count	126	8	1	79	214
	Within regularly visits	58.9%	3.7%	0.5%	36.9%	100%
	Within ward pharmacy service provided	100%	100%	100%	100%	100%
	% of Total	58.9	3.7	0.5	36.9	100%

<sup>a</sup> Chi-square significance  $p=0.033$ .<sup>b</sup> When distributors of inpatient surveys did not endorse whether a clinical pharmacy service was provided to the ward, this was coded as "no response", and included in the crosstabulation.<sup>c</sup> Status of service is whether a clinical pharmacy service was provided to the ward.Table 6.7 Inpatients' ratings of the clinical pharmacist's performance (1993/94)<sup>a</sup>

Performance measure	Rating <sup>b</sup>	Standard deviation	Respondents <sup>c</sup>
Helpfulness of the pharmacist	8.66	1.88	119
Friendliness of the pharmacist	8.97	1.59	135
Advice given about how to take drugs / medicines	8.20	2.94	101
Overall information provided by the pharmacist	8.02	2.90	102
Understanding the needs of the patient	8.07	2.91	98

<sup>a</sup> Only inpatients who had indicated that they knew a *pharmacist regularly visits the ward*, or had *met the pharmacist working in their ward* were asked to give a rating.<sup>b</sup> Mean <sup>c</sup> Number of respondents out of 389 returns.

All inpatients were asked *when they last spoke with a pharmacist in the hospital*. One hundred and ninety-one inpatients (49.1%) had never spoken to a pharmacist at their hospital, 20.1% had spoken to the pharmacist on the day of the survey, 10.8% had spoken "yesterday", 3.9 % had spoken with the pharmacist within a week, 5.4% within a period of more than a week to one year ago, 0.8% had last spoken more than a year ago, and 0.5% last time they were in hospital.

<sup>20</sup> As indicated by the survey distributor.

Inpatients who had indicated that they had spoken with a pharmacist in the hospital, either on that day or on a previous occasion, were asked to write down *what they had asked the pharmacist with respect to their health needs, treatment and medicine*. Their responses are summarised in Figure 6.3, with a few sample responses included within the text here and the remainder in Table A5.2 in Appendix 5. Most discussion related to patients' medication or treatment:

*"Side effects of drugs being taken."*

*"Regarding allergy to penicillin and codeine to ensure none were in medication being given."*

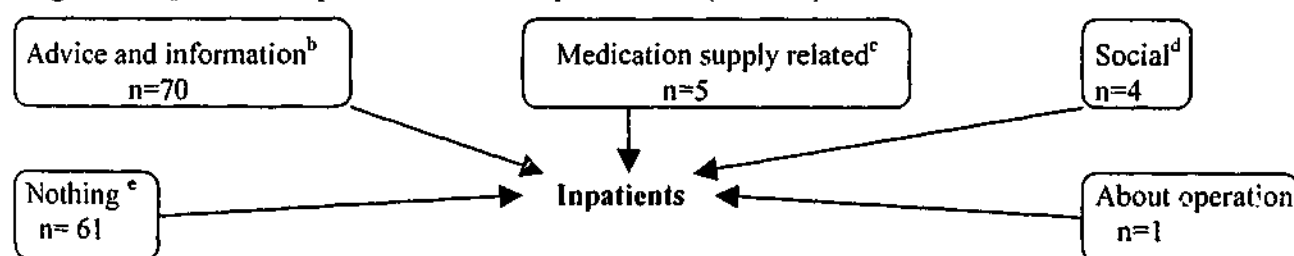
*"Explanation of treatment / drugs."*

Some patients pointed out they would ask the doctor or nurse about their health needs, treatment of medication, not the pharmacist:

*"Didn't ask the pharmacist, would normally ask the doctors re this information."*

In some instances the questions were associated with pharmacists initiating discussion about medication being taken or that patients had been on.

Figure 6.3 Questions inpatients asked the pharmacist (1993/94)<sup>a</sup>



<sup>a</sup>Frequency of comments (n). Inpatients sometimes mentioned that more than one issue was discussed. From the data it is not always clear if the patient asked the question or the pharmacist.

<sup>b</sup>Made up of: Advice/ information/ about medication treatment, what tablets are for? Pharmacist asked question/ gave explanation & advice, just listened n=70.

<sup>c</sup>Made up of: Drug/ product availability n= 3; Asked for medication to be administered (in ward) n=2.

<sup>d</sup>Made up of: Social, pharmacist introduced themselves n=4.

<sup>e</sup>Made up of: Nothing/ didn't ask anything/ no information needed, not applicable n=59; Pharmacist didn't speak/ didn't know why there n=2.



### 6.2.3.3 Service improvement

Suggestions made by inpatients as to *how the pharmacy's service to them in the ward could be improved* are summarised in Figure 6.4, a sample of their responses is provided in Appendix 5 (Table A5.3), and a few included in the text below.

Inpatients wanted more information about their medication:

*"Side-effects, effects, action, reactions, what drugs do -even common ones.*

*"Maybe rather than just going around checking chart they could ask the patient if there is anything they would like to know about their medicines."*

*"Explain possible side effects. What is the medication actually doing for the body."*

They wanted the pharmacists to identify themselves and to inform them of the services they provide:

*"Increase availability, increase interaction, introduce themselves and service (pharmacist)."*

*"Introduce themselves to you and explain what they do and how they can help you."*

*"Information leaflets/ brochures, pamphlets- for patients/ relatives."*

They wanted more communication between them and the pharmacist:

*"Should improve communication with patient and more explanation about drugs administered."*

*"Possibly information leaflets on medicines explaining reasons for use and possible effects i.e. nausea, shakes."*

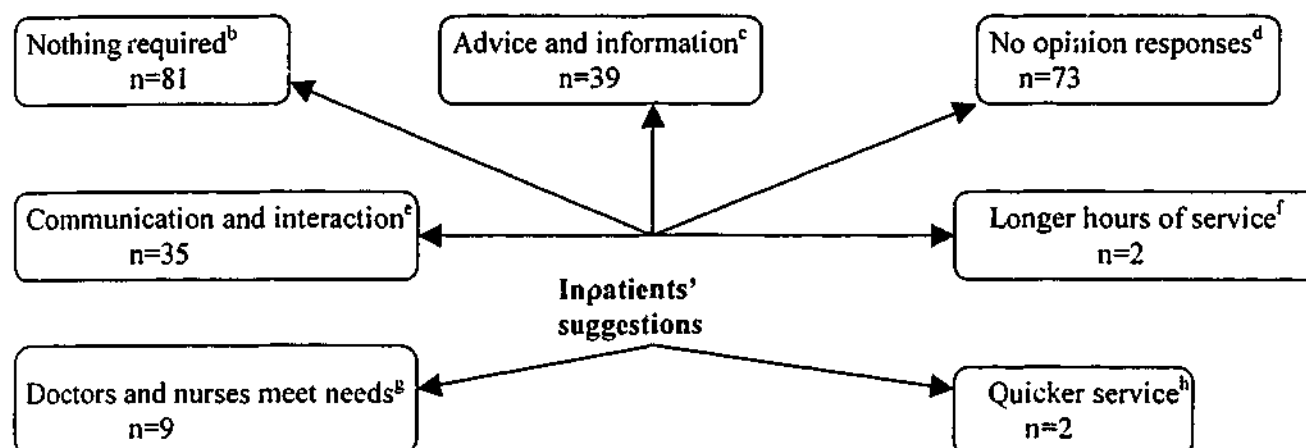
Inpatients wanted the pharmacist to be more available and visible in the wards:

*"By visible presence in ward, e.g. anaesthetist and theatre staff visit patients before operation. In some cases a pharmacist visit would benefit."*

Many also commented that the service was good:

*"OK. Excellent, Happy."*

Figure 6.4 Inpatients' suggestions for improvement in the pharmacy's service (1993/94)<sup>a</sup>



<sup>a</sup> Frequency of comments (n), some patients listed more than one suggestion.

<sup>b</sup> This suggestion was made up of *no improvement required* n=67; *nothing to add/ not necessary* n=14.

<sup>c</sup> This suggestion comprised: *advice/ information on drugs and medicines, explain about drugs administered* n=20; *information about services and contact details* n=9; *information leaflets and literature on medication and ask patients if they have questions* n=10.

<sup>d</sup> This suggestions consisted of: *don't know* n=38; *no opinion/ suggestions/ none* n=24; *don't see pharmacist/ no experience with pharmacy/ don't know pharmacist's role* n=11.

<sup>e</sup> This suggestion consisted of: *communication between all/ improve communication/ more contact, interaction and talk more with patient/ answer patient and nurses questions/ more time with patient* n=12; *more readily available/ more visits and visibility in wards/ visit if requested* n=12; *introduce and identify themselves/ get to know them better/ friendly chat* n=11.

<sup>f</sup> *Open Saturday/ 24 hour service* n=2.

<sup>g</sup> Suggestion made up of: *service doctor directed and OK/ doctors and nurses advise re medication and ensure pharmacy needs are met/ nurses well informed* n=9.

<sup>h</sup> *Speed up service/ discharge dispensing* n=2.

#### 6.2.3.4 Medication usage

Most inpatients (84.6%) were *taking medicines while in hospital* whilst a further 11.1% were not, and 4.4% gave no response. When asked *who gives them their medicines in the hospital*, 10% indicated themselves, 9.8% the doctor, 81.2% the nurse and 4.9% the pharmacist.<sup>21</sup>

When asked *who explained to them how to use their medicines*, 59.1% of inpatients indicated the nurse, 39.6% the doctor, 13.9% the pharmacist and a further 8.2% indicated nobody had done so.<sup>22</sup> Some additional options given by inpatients were family and

<sup>21</sup> Inpatients were able to tick more than one option.

<sup>22</sup> Patients were able to tick as many options as appropriate, namely: nobody, doctor, pharmacist, nurse, or an other (which they were required to specify).

friends, pharmacist for home drugs and on discharge, the patient's own GP, local doctor, information leaflets, optician.

When patients were asked to rate *how well they understand the instructions on using their medicines*, 51.9% of respondents gave a rating of 10. The mean rating of *how well the inpatients understood the instructions on how to use their medicines* was 9.20, with a standard deviation of 1.62, indicating that most patients felt they had a good understanding of the instructions about how to use their medication

Suggestions made by inpatients regarding *how they think the explanation about their medicines could be improved* are summarised in Figure 6.5, and a sample of their comments is shown in Table A5.4 in Appendix 5. Their suggestions show that patients want more information about their medication, in plain language:

*"Explain why and what side effects are related to the drugs given and what the drugs are supposed to achieve."*

*"Information provided to me re nature of the medicines I'm taking and means of administration-comprehensive and to my satisfaction."*

*"A complete explanation of use and reason for having to use all medicine or tablet."*

*"To be explained to patients in more layman terms."*

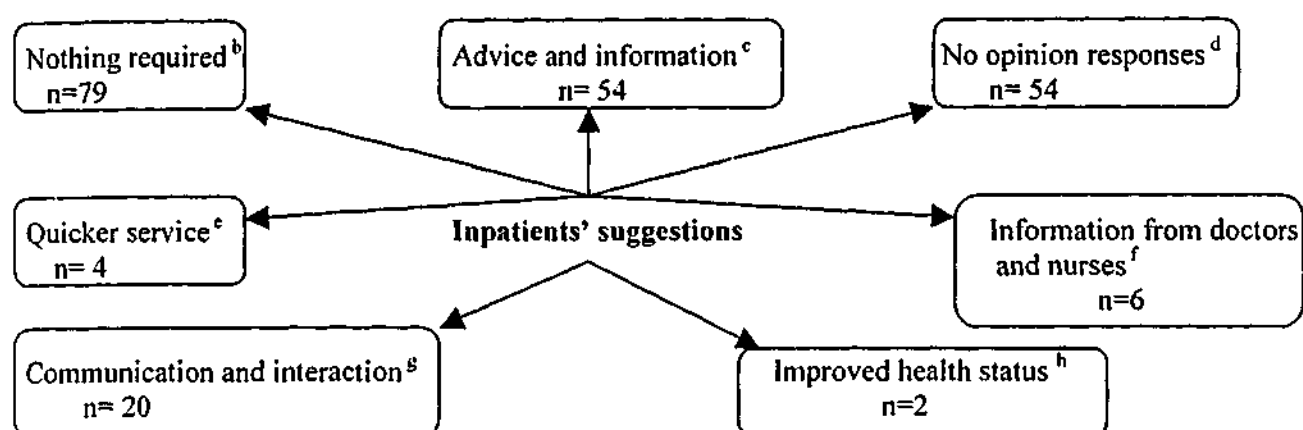
Some inpatients suggested more communication with themselves:

*"Probably by soliciting some questions from patients i.e. 'do you want to know the side effects of your drugs?'."*

Some inpatients considered the provision of information to be the role of their doctor or the nurse:

*"Explanation by doctors and nurses in layman's terms; if I have any queries I just ask the doctor or nursing staff."*

Figure 6.5 Inpatients' suggestions for improving the explanation about their medicines (1993/94)<sup>a</sup>



<sup>a</sup> n= frequency of suggestions. Inpatients sometimes gave more than one suggestion.

<sup>b</sup> Made up of: Good, adequate explanation given, no problems, improvement not required n=79.

<sup>c</sup> Made up of: More information, advice, explanation & instructions re medication, side-effects, effects etc. n=36; literature/ additional information on medication n=15; make it hospital policy that pharmacist is available to explain to patient if needed n=1; instructions in larger print n=2.

<sup>d</sup> Made up of: No comment n=18; don't know, no idea n=27; not applicable n=9.

<sup>e</sup> Made up of: Give medication when needed, quicker and on time n=3; reduce workload n=1.

<sup>f</sup> Made up of: More information from nurses & doctors, talk to local doctor n=6.

<sup>g</sup> Made up of: Clear explanation n=7; personal contact with pharmacists n=4; ask patients more questions & if they want information n=2; Check patient fully understands instructions n=2; Patients need to ask questions n=5.

<sup>h</sup> Made up of: Improvement in patient's health status n=2.

#### 6.2.4 Outpatient survey (1993/94)

On the day that outpatients received their questionnaire, 57.4% indicated they had attended an outpatient clinic, 6% attended casualty/ emergency department, 9.3% attended private consulting rooms, and 2.7% a day procedure. A further 10.9% indicated they only came to visit the pharmacy for medication.

Some patients indicated they attended other areas of the hospital that included ante-natal clinics, dental clinics, pathology (for blood tests), x-ray, renal clinic, oncology ward (presumably for day therapy) and physiotherapy.

Approximately 16.4% had been coming to the hospital for less than 6 months, 10.9% from 6 months to one year, 13.1% for more than 1 to 2 years and 53.6 % for more than 2 years (range 2 to 39 years<sup>23</sup>).

<sup>23</sup> Mean of 11.8 years and standard deviation of 8.57 years.

Their responses to *when they last used the pharmacy in the hospital* that they were attending are shown in Table 6.8. More than half had a recent or current experience with the pharmacy that should have helped their recollection of that experience in answering this questionnaire.

**Table 6.8 When outpatients last used the pharmacy department (1993/1994)**

When outpatient last used the pharmacy at the hospital	Number <sup>b</sup>	Percentage
Never before today	35	19.1
Within the last month	82	44.8
Between 2 to 6 months ago	42	23
Between 7 to 12 months ago	5	2.7
Over 12 months ago	13	7.1
No response given	6	3.2

<sup>b</sup>n=183

Outpatients were asked *what they required on the occasion* that they last used the pharmacy.<sup>24</sup> Their responses are shown in Table 6.9.

**Table 6.9 Outpatient's requirements from the pharmacy on their last/ current visit (1993/1994)<sup>a</sup>**

Outpatient's requirements <sup>b</sup>	Number <sup>d</sup>	Percentage
To obtain a prescription	142	77.6
Drug/ medicine information	3	1.6
Advice on medication	1	0.5
Medical information	2	1.1
A prescription & drug/ medicine information & advice <sup>c</sup>	4	2.2
Not applicable <sup>c</sup>	3	1.6
A prescription & advice on medication <sup>c</sup>	3	1.6
A prescription & drug/ medicine information <sup>c</sup>	4	2.2
A prescription & drug/ medicine information & advice on medication & medical information <sup>c</sup>	2	1.1
No response	19	10.4

<sup>a</sup> Outpatients were able to tick more than one option. <sup>b</sup> Other requirements identified by outpatients included drug interaction and allergies, methadone, to pick up drugs, involved in lipid study and to have their blood pressure checked. <sup>c</sup> These responses were in addition to those offered on the questionnaire, and were made by outpatients. <sup>d</sup> n=183

Most patients waited for their prescriptions in the pharmacy waiting room (76%). A further 5.5% waited in a corridor and another 5.5% in the kiosk within the hospital. Only 6% of them did not wait and picked up their prescriptions at a later time.

#### 6.2.4.1 Prescription waiting time

The responses from outpatients regarding *how long, from the time they arrived at the*

<sup>24</sup> Either on the day they received their questionnaire, or previously.

pharmacy, they waited until they received their prescription are shown in Table 6.10.

**Table 6.10 Time taken for outpatient prescriptions to be dispensed (1993/94)**

Time taken for prescription to be dispensed	Number <sup>a</sup>	Percentage
Less than 5 minutes	12	6.6
5 to 10 minutes	51	27.9
11 minutes to 20 minutes	42	23.0
21 minutes to 30 minutes	24	13.1
31 minutes to 45 minutes	17	9.3
46 minutes to 1 hour	9	4.9
More than 1 hour, up to 1 hour 30 minutes	3	1.6
More than 1 hour 30 minutes, up to 2 hours	2	1.1
More than 2 hours	1	0.5
Not applicable	1	0.5
No response	21	11.5

<sup>a</sup>n=183

Of the 162 patients who gave a response indicating how long they waited for their prescriptions, approximately 80% received their prescription within 30 minutes.

#### 6.2.4.2 Performance ratings

Ratings given by outpatients of the pharmacy's performance on a number of customer service measures are shown in Table 6.11.

**Table 6.11 Ratings given by outpatients of the pharmacy's performance (1993/94)**

Performance measure	Mean rating	Standard deviation	Number <sup>c</sup>	Don't know/ not applicable or ticked box <sup>a</sup>
Time taken for prescription to be filled	6.92	2.61	151	10
Advice received on medication	8.56	2.30	144	13
Friendliness of staff	8.99	1.71	164	7
Overall information provided by the pharmacist.	8.63	2.21	150	10
Understanding the needs of the patient	8.26	2.58	133	27 <sup>b</sup>
Waiting room facilities	6.91	2.67	154	11
Presentation of medicines (information on labels and appearance of labels).	9.06	1.49	153	9

<sup>a</sup>Number of respondents who indicated either "don't know", "not applicable" or ticked the box instead of giving a rating. The "don't know" response accounts for between 0.5 to 11.5% of responses.

<sup>b</sup>Twenty-one outpatients indicated that they "don't know", representing 11.5% of the respondents.

<sup>c</sup>n=183.

The pharmacies surveyed performed well for measures such as *friendliness of staff* and *presentation of medicines* (Table 6.11). However for the customer service measures of *advice received on medication*, *overall information provided*, and *understanding the needs of the patient*, the standard deviations were greater indicating more variation in the responses.

The *time taken for prescriptions to be filled and presentation of medicines* rated lowest despite approximately 80% of respondents indicating they received their prescriptions within 30 minutes (Table 6.10).

A crosstabulation of the rating by outpatients of the pharmacy's performance on *time taken for prescription to be filled and how long, from the time they arrived at the pharmacy, they waited until they received their prescription* indicated a statistically significant relationship between these measures (chi-square,  $p=0.000$ ). It shows that the rating decreased as the *time they waited* increased.

Where outpatients indicated *how many times in the past month they had telephoned the pharmacy department for information on medications*, 96% indicated that they never rang, 3.4% indicated once and 0.57% indicated they telephoned twice.

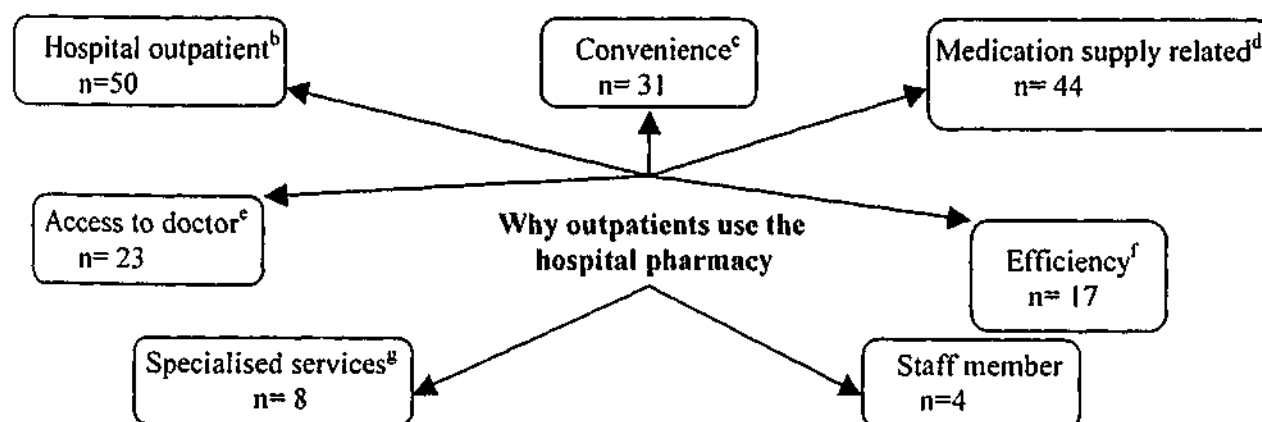
#### 6.2.4.3 Reasons for using the hospital pharmacy

The reasons outpatients gave *why they use the hospital pharmacy* are summarised in Figure 6.6, and a sample of responses is provided in Appendix 5 (Table A5.5). Frequent reasons given by outpatients for their use of the pharmacy were:

*"Certain medications can't be obtained through the local GP."*

*"Handy to see doctor in the hospital and then have script filled in same place."*

Figure 6.6 Reasons why outpatients use the hospital pharmacy (1993/94)<sup>a</sup>



<sup>a</sup> n= frequency of responses, some outpatients gave more than one reason.

<sup>b</sup> Reason made up of: *Patient is a hospital outpatient/ hospital appointment* n=37; *Sent by doctor/ hospital instruction* n=13.

<sup>c</sup> Made up of: *Convenience* n=31; *common sense/ practical thing to do* n=3.

<sup>d</sup> Made up of: To obtain medication prescriptions (dispensed)  $n=31$ ; medication availability, only available from the hospital  $n=13$ .

<sup>e</sup> Consists of: Doctor is in the hospital  $n=13$ ; Doctor/ specialist wrote prescription  $n=10$ .

<sup>f</sup> Consists of: It's good/ better service/ good advice  $n=4$ ; cost/ cheaper at hospital  $n=11$ ; quick  $n=1$ ; believe in public hospitals  $n=1$ .

<sup>g</sup> Consists of: Transplant patient  $n=3$ ; Methadone patient  $n=2$ ; patient in a trial/ study  $n=2$ ; Emergency patient  $n=1$ .

#### 6.2.4.4 Service improvement

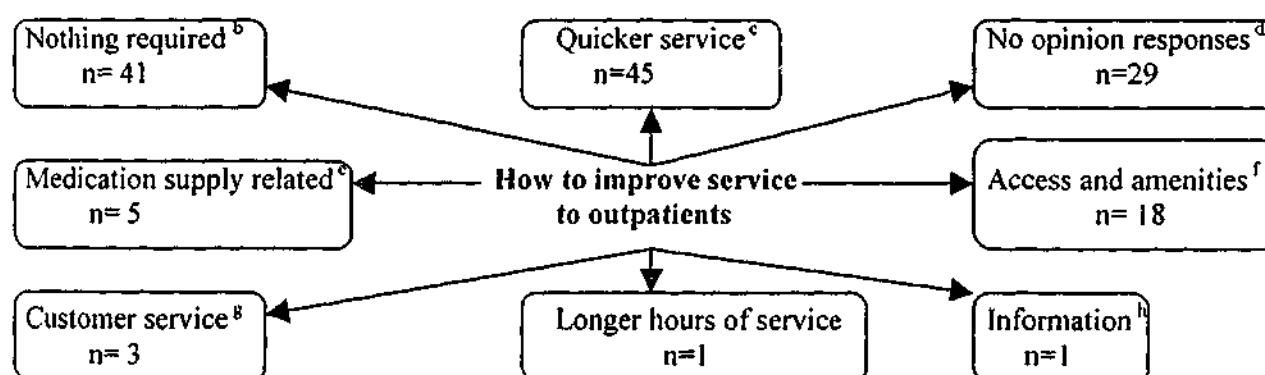
Suggestions made by outpatients as to how their hospital's pharmacy service to them could be improved are summarised in Figure 6.7, and a selection is listed in Appendix 5 (Table A5.6). Waiting times for prescriptions was an area of improvement frequently mentioned by outpatients and many noted that staffing appeared to be inadequate:

*"Employ more staff to reduce waiting time from 30-45 minutes to 15 minutes."*

Some patients noted their preference to have all medication dispensed at the hospital, rather than just those which, for instance, are not available on the Pharmaceutical Benefits Scheme (PBS) or restricted to hospitals:

*"Allow hospital pharmacy to dispense all drugs required by patients."*

Figure 6.7 Outpatients' suggestions for improving the pharmacy service to them (1993/94)<sup>a</sup>



<sup>a</sup>  $n$  = frequency of suggestions, some patients offered more than one suggestion.

<sup>b</sup> Made up of: perfectly happy/ satisfied, service is adequate / excellent  $n=41$ .

<sup>c</sup> Made up of: reduce waiting time/ quicker service  $n=30$ ; more staff  $n=15$ .

<sup>d</sup> Made up of: don't know  $n=7$ ; no suggestions/ none  $n=18$ ; not applicable  $n=4$ .

<sup>e</sup> Made up of: supply all outpatient drugs required  $n=3$ ; more free medication  $n=1$ ; mail in prescriptions and collect  $n=1$ .

<sup>f</sup> Made up of: new, better facility/ better waiting and working and serving area  $n=12$ ; television/ music/ reading papers/ plants water/ coffee or tea maker  $n=4$ ; more personal / private area  $n=2$ .

<sup>g</sup> Made up of: more friendliness/ smile  $n=3$ .

<sup>h</sup> Made up of: information brochure/ pamphlets on pharmaceutical topics  $n=1$ .



### 6.3 Patient surveys 1999/2000

The response rates achieved for the second survey of inpatients and outpatients are shown in Table 6.12.<sup>25</sup>

**Table 6.12 Inpatient and outpatient response rates (1999/2000)**

Survey group	Surveys sent	Surveys completed	Response (%)
Inpatients	392	220	56.1
Outpatients <sup>a</sup>	246	96	39.0

<sup>a</sup>Adjusted response rate (see footnote number 25)

There was no follow up of patients because their participation was completely voluntary, confidential and anonymous.

#### 6.3.1 Patient demographics

More females than males responded to the questionnaires (Table 6.13).

**Table 6.13 Respondents' sex (1999/2000)**

Sex	Inpatients (%) <sup>a</sup>	Outpatients (%) <sup>b</sup>
Male	40.7	39.4
Female	59.3	60.6

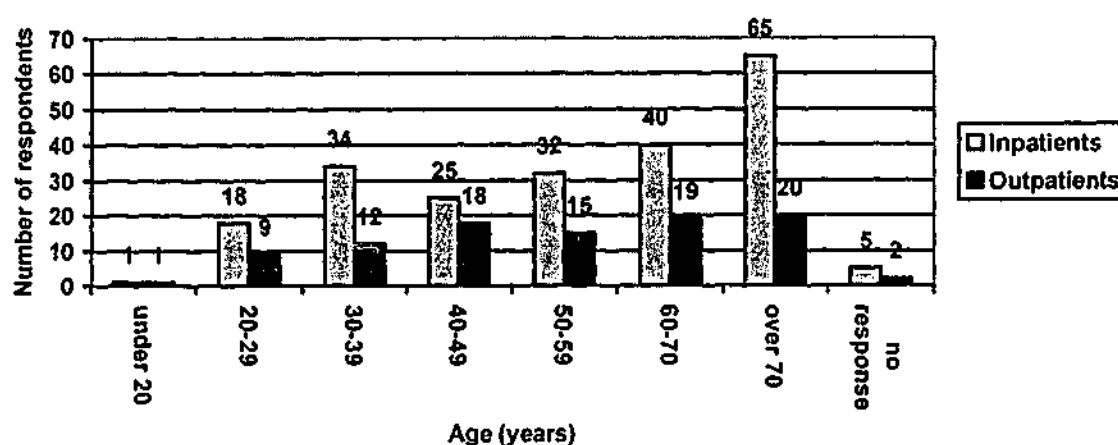
<sup>a</sup> Of 214 responses to this question

<sup>b</sup> Of 94 responses to this question.

About 64% of inpatients who gave their age were 50 years and older (Figure 6.8), a slightly older population than in the first survey. Most outpatients were over 40 years of age, with more than half being over 50.

<sup>25</sup> Three hundred and thirty-five outpatient questionnaires were distributed to the hospitals, however, not all were issued to outpatients. Thirty-five were returned from two large city hospitals and twenty-four from one of the large country hospitals. Another large city hospital pharmacy threw their questionnaires out because they weren't sure if they should issue them to their non-English speaking patients and the quality manager who had asked the pharmacy department to issue these surveys from the outpatient pharmacy department forgot to clarify this with the researcher! In total, eighty-nine questionnaires can be accounted for as not having been issued to patients, therefore the adjusted sample was 246 surveys being randomly distributed within the hospitals. No completed surveys were received from one of the large city hospitals which raises the question of whether any were handed out by the pharmacy as at least one questionnaire was returned from each remaining hospital. The pharmacy department in question claims all surveys were issued, however this can't be substantiated, but the 24 surveys sent to this hospital are included as having been distributed to patients.

Figure 6.8 Ages of patients who responded (1999/2000)



Most inpatients spoke English, although non-English speaking patients were included as they often have relatives or friends who can help translate if necessary. English was the most commonly spoken language by outpatients.<sup>26</sup>

Inpatients came from locations throughout Victoria. Of the 220 respondents, 54.1% came from large city hospitals, 8.6% from small city hospitals, 16.8% from large country hospitals and 20.5% from small country hospitals. The responses received from the hospitals were proportional to the numbers sent out, with a response rate from on average between 52% and 58%, although a higher response rate from inpatients from small city hospitals (73.1%) was achieved.

Outpatients generally came from a diverse range of suburbs across Melbourne, with a few from areas around the country hospitals that were surveyed. Approximately 83% of outpatients attended large city hospitals and 17% large country hospitals.

### 6.3.2 Inpatient Survey (1999/2000)

The desired number of inpatient respondents that this survey sought to obtain when the sample size was determined was achieved.<sup>27</sup>

<sup>26</sup> Other languages spoken by outpatients included Greek, Italian, Croatian, Macedonian, Spanish, Tamil, Dutch, Maltese, Cebuano and Taloyog.

<sup>27</sup> See Methodology.

Only 4.7 % of inpatients had been in hospital for one day, 22.7% for two to three days, 34.1% for four to seven days, and a further 38.4% for more than seven days (range 8 to 70 days).<sup>28</sup> Therefore, most inpatients should have been in the ward long enough to have noticed, if not met, the pharmacist if indeed a clinical pharmacy service was provided.

### 6.3.2.1 Awareness of the clinical pharmacist

Of the 220 inpatient questionnaires returned, 62.7% were endorsed<sup>29</sup> that the patient was in a ward with a clinical pharmacy service, in 9.5% there was no clinical pharmacy service, in 3.6% a limited service, and for 24.1% there was no indication.

However, only 60.9% of patients *knew pharmacists regularly visit their wards* and 3.6%, gave no response. A crosstabulation of whether the inpatients *knew that a pharmacist regularly visits* their ward by whether there was a *clinical pharmacy service* was performed (Table 6.14) and this indicated that a significant number of inpatients (18.9%) did not *know whether a pharmacist regularly visit the ward* despite being in wards where the service was provided.

Over half the inpatients (53.6%) indicated they had *met the pharmacist working in their ward*, 19.5% had not, and 26.8% gave no response. The crosstabulation of whether the inpatient had *met the pharmacist* by whether a *clinical pharmacy service was provided*, showed that there was no significant relationship (Table 6.15) even though a number of inpatients who indicated they hadn't *met the pharmacist working in their ward* were in fact in wards where a service was provided.

Inpatients who had answered whether they *knew a pharmacist regularly visits their ward* and/ or had indicated whether they had *met the pharmacist working in their ward* were asked *what they think the pharmacist does in the ward*. A summary of their responses is shown in Figure 6.9 and a sample of their comments is included in Appendix 5 (Table A5.7).

<sup>28</sup> Of 211 respondents to this question.

<sup>29</sup> By the distributor of the questionnaires.

**Table 6.14 Crosstabulation of inpatients' awareness of the pharmacist by status of service (1999/2000)<sup>a,c,d</sup>**

Did the patient know whether a pharmacist regularly visits the ward?	Statistics from the crosstabulation	Does the ward have a clinical pharmacy service?				
		Yes	No	Limited	No response <sup>b</sup>	Total
YES	Count	93	6	1	34	134
	Within regularly visits	69.4%	4.5%	0.7%	25.4%	100%
	Within ward pharmacy provided	69.9%	30%	12.5%	66.7%	63.2%
	% of Total	43.9	2.8	0.5	16	63.2%
NO	Count	40	14	7	17	78
	Within regularly visits	51.3%	17.9%	9%	21.8%	100%
	Within ward pharmacy provided	30.1%	70%	87.5%	33.3%	36.8%
	% of Total	18.9	6.6	3.3	8	36.8%
Total	Count	133	20	8	51	212
	Within regularly visits	62.7%	9.4%	3.8%	24.1%	100%
	Within ward pharmacy provided	100%	100%	100%	100%	100%
	% of Total	62.7	9.4	3.8	24.1	100%

<sup>a</sup> The provision of a clinical pharmacy service on the ward as indicated by the distributor of inpatient questionnaires.

<sup>b</sup> When distributors of inpatient surveys did not endorse whether a clinical pharmacy service was provided in the ward, this was coded as "no response", and included in the crosstabulation.

<sup>c</sup> Chi-square significance  $p=0.000$

<sup>d</sup> Status of service is whether a clinical pharmacy service was provided to the ward.

**Table 6.15 Crosstabulation of inpatient met the pharmacist by status of service (1999/2000)<sup>b,c</sup>**

Had patient met the pharmacist working in the ward?	Statistics from the crosstabulation	Does the ward have a clinical pharmacy service?				Total
		Yes	No	Limited	No response <sup>a</sup>	
YES	Count	80	5	1	32	118
	Within met pharmacist	67.8%	4.2%	0.8%	27.1%	100%
	Within ward pharmacy service provided	74.8%	50%	33.3%	78%	73.3%
	% of Total	49.7	3.1	0.6	19.9	73.3%
NO	Count	27	5	2	9	43
	Within met pharmacist	62.8%	11.6%	4.7%	20.9%	100%
	Within ward pharmacy service provided	25.2%	50%	66.7%	22%	26.7%
	% of Total	16.8	3.1	1.2	5.6	26.7%
Total	Count	107	10	3	41	161
	Within met pharmacist	66.5%	6.2%	1.9%	25.5%	100%
	Within ward pharmacy service provided	100%	100%	100%	100%	100%
	% of Total	66.5	6.2	1.9	25.5	100%

<sup>a</sup> Where the distributor of surveys did not endorse whether a clinical pharmacy service was provided in the ward on the inpatient questionnaire, this was coded as "no response", and included in the crosstabulation.

<sup>b</sup> Chi-square,  $p=0.121$

<sup>c</sup> Status of service is whether a clinical pharmacy service was provided to the ward

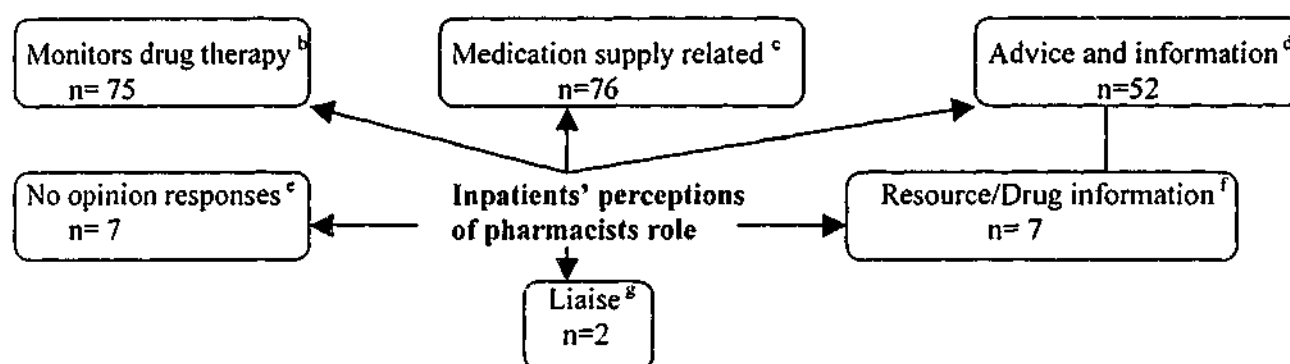
Many of the comments from inpatients show that they were aware that pharmacists check medication charts, provide information, and supply medication to the patients:

*"Checks patient's drug charts daily so the correct drugs are administered."*

*"Checks drug sheets, supplies medications, explain use of drugs if necessary, answers questions if any"*

*"Supply drugs prescribed by the doctor to each patient in the ward. Liaise between patients, doctors and nursing staff regarding each patient's medication. Educate patient and/ or explain the use of any prescribed medication, answer patient queries re medication."*

Figure 6.9 What inpatients think the pharmacist does in the ward (1999/2000)<sup>a</sup>



<sup>a</sup> Frequency of comments (n) is shown for each category. In some cases the inpatient identified more than one activity that the pharmacist performs.

<sup>b</sup> Made up of: Checks medication, charts & patient's medication n= 75.

<sup>c</sup> Made up of: Supplies/ dispenses medication n=62; checks stock n=14.

<sup>d</sup> Made up of: Explains medication, gives advice & information (educate) n= 42; answer (patients) questions n=9, help and efficient and knowledgeable n=1.

<sup>e</sup> Made up of: No idea/ don't know n=6; never seen in ward n=1.

<sup>f</sup> Made up of: Resource person, gives doctor advice, answer staff queries n=7.

<sup>g</sup> Liaise between doctor, nurse, patient n=2.

### 6.3.2.2 Performance ratings

The ratings given by inpatients of the performance of clinical pharmacists on measures of customer service are shown in Table 6.16. Most ratings were above 8<sup>30</sup>, the exception being the availability of the pharmacist to answer inpatient's questions.

<sup>30</sup> Maximum rating possible=10.

**Table 6.16 Inpatients' ratings of the clinical pharmacist's performance (1999/2000) <sup>a</sup>**

Performance measure	Mean rating <sup>b</sup>	Standard deviation	Number <sup>c</sup>
Helpfulness of the pharmacist	8.64	2.03	114
Friendliness of the pharmacist	8.95	1.87	121
Cooperation of the pharmacist	8.74	2.14	107
Advice given about how to take drugs/ medicines	8.43	2.67	90
Advice given about your medication	8.46	2.62	93
Overall information provided by the pharmacist to the patient	8.15	2.81	99
Understanding the needs of the patient (the inpatient's needs)	8.37	2.58	96
The availability of the pharmacist to answer inpatient's questions	7.86	2.77	93

<sup>a</sup> Only inpatients who had indicated that they *knew a pharmacist regularly visits their ward, or had met the pharmacist working in their ward* were asked to give a rating.

<sup>b</sup> The range of ratings for all measures was from 0 to 10.

<sup>c</sup> The number of respondents were out of 220 returns. Where a rating was not given inpatients could tick a box marked "don't know". The "don't know" responses accounted for between 3.6% to 15% of the 220 questionnaires returned. Some patients (1.4% - 2.3%) also ticked the ratings box rather than gave a rating even though the rating boxes were clearly marked for the patient to give a number between 0 and 10. Between 40 and 43% of respondents gave no response at all.

All inpatients were asked *when they last spoke with a pharmacist at their hospitals*.

Seventy-nine (35.9%) had never spoken to a pharmacist at their hospital, 23.2% had spoken to the pharmacist on the day they completed the questionnaire, and 15.5% indicated that they had spoken with the pharmacist "yesterday". A further 12.3% had spoken with the pharmacist within a week, 6.4% had spoken within a period from more than a week ago to 12 months ago, and the remainder gave no response.

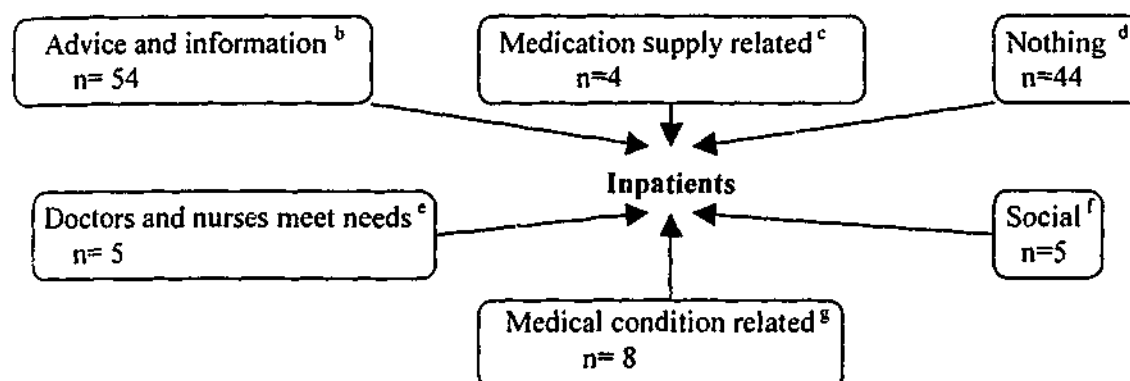
Inpatients who indicated they had spoken to a pharmacist at the hospitals were asked *what they asked the hospital pharmacists related to their health needs, treatment and medicine*. A summary of their comments is shown in Figure 6.10 and a sample listed in Appendix 5 (Table A5.8).

Inpatients mostly asked the hospital pharmacists about the medications they were taking or which had been prescribed for them:

*"What the medicine was, what effect it had, why I have to have it?"*

Some inpatients indicated that the doctor and nurse informed them when needed:

*"Have had no need to question the pharmacist- as doctor or nurse have conveyed any information."*

Figure 6.10 Questions inpatients asked the pharmacist (1999/2000)<sup>a</sup>

<sup>a</sup> n= common questions asked by the inpatient and the frequency of their documentation. Some patients listed more than one question. Comments made by patients were not always clear as to whether the patient had asked the question or the pharmacist.

<sup>b</sup> Advice and information made up of: *Explanation about medication, treatment, effect of drugs. Pharmacist asked questions & gave information* n=54.

<sup>c</sup> Made up of: *Availability of medication/ drugs* n=4.

<sup>d</sup> Made up of: *Nothing* n=32; *not required* n=7; *not applicable* n=5.

<sup>e</sup> Made up of: *Doctors and nurses assess needs/ explain* n=5.

<sup>f</sup> Made up of: *General discussion/ introduced themselves/ social* n=5.

<sup>g</sup> Medical conditions discussed were: rash, pain, nausea, sinus problem, eye condition, allergy, blood pressure, drug in pregnancy, n=8.

### 6.3.2.3 Service and information requirements

Suggestions made by inpatients about *what services or information they want from the pharmacy at their hospitals* are summarised in Figure 6.11 and a selection listed in Appendix 5 (Table A5.9). Inpatients wanted information about the medications they are taking:

*"I would like to have explained to me what the medication is and does for me and what reactions if any I could experience."*

*"Education on drugs, supply drugs, advice on side-effects, alternatives to mainstream medications."*

*"Just to be able to check out tablets and make sure we have all the information right. As we get older we tend to forget so have to double check."*

*"Advice on when and how to take prescribed medications. What to watch for in health side effects of medications. Care of medications. Fully review all medications being taken in case of substance and affects conflicting."*

Availability of drugs and the supply of medication were also frequently listed requirements:

*"When patient is running low on a medication, order and send it up to the ward before it actually runs out, so that when it is due to be taken, you don't have to wait (sometimes for hours) for the pharmacist to bring it up, putting your treatment behind schedule."*

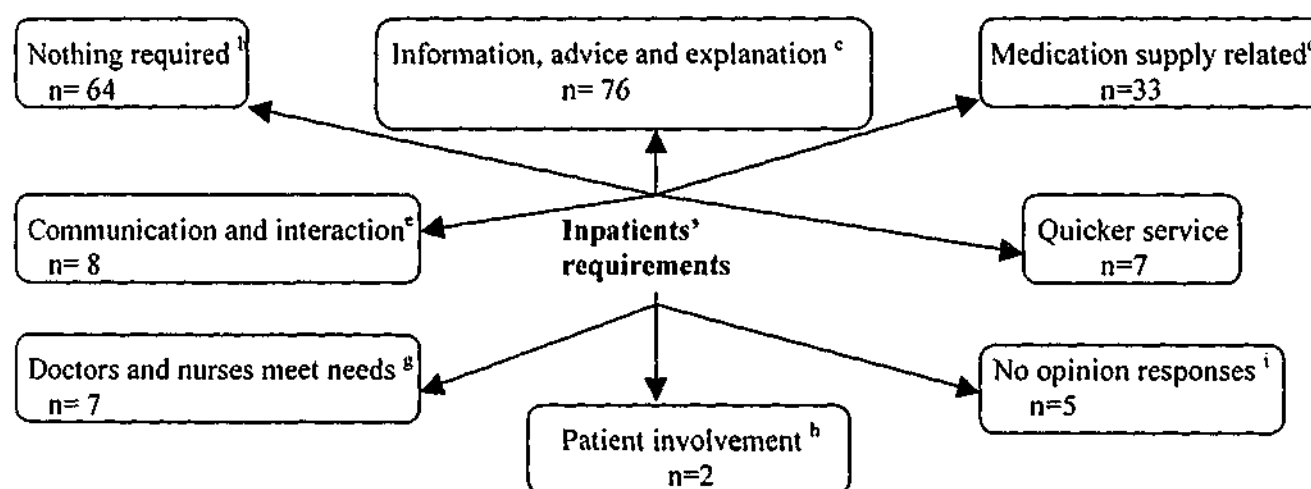
They wanted the information in plain language:

*"Explanation on medication- different names for same medication and explanation of what medication is for in laymen's terms."*

Some inpatients requested that pharmacists introduce themselves and inform them of the services they provide:

*"For the pharmacist to introduce him or herself and explain what is his/ her job and what he/ she can offer to the patient. Perhaps print a brochure on the pharmacy at this hospital."*

Figure 6.11 Services and information that inpatients want from the hospital pharmacy (1999/2000)<sup>a</sup>



<sup>a</sup> n= frequency of suggestion made by inpatients. Some inpatients gave more than one suggestion.

<sup>b</sup> Suggestion made up of: nothing/ not required n=38; adequate as is, maintain the status quo n=26.

<sup>c</sup> Suggestion made up of: information, education and explanation about drugs and medication n=63; introduce themselves and services, information and brochure about pharmacy, phone number, availability, what happens in ward n=8; written information n=3; take home information n=2.

<sup>d</sup> Suggestion made up of: supply medication, dispense as needed, medications available, correct drugs n=31; cheaper drugs n=2.

<sup>e</sup> Suggestion consists of: personal contact, regular visits, access n=3; clear explanation, in lay terms n=3; answer patient questions and check their knowledge n=2.

<sup>f</sup> Better discharge service, discharge and supply waiting time n=4; total service n=3.

<sup>g</sup> Nurses and doctors provide information.

<sup>h</sup> Patient involvement in drug treatment decisions/ choices.

<sup>i</sup> Don't know=2; not applicable n=3.



### 6.3.2.4 Service improvement

The suggestions or thoughts of inpatients about *how the pharmacy's service to them in the ward could be improved* are summarised in Figure 6.12 and a sample listed in Appendix 5 (Table A5.10). Their suggestions for improvement included more timely supply of medication:

*"If patient could be supplied a list of their medications and what they're for on say a piece of paper to help not only the patient but their families and time table. That all medication be ready immediately on discharge to avoid patient aggravation and potential adding to patient condition and subsequent readmission."*

*"Quicker supply of medication to patient on arrival. Patients such as myself, can get distressed if home medication is not given when required."*

More explanation regarding their medication was seen as a way to improve service:

*"To explain to patients clearly and make sure that they understand what is being told to them."*

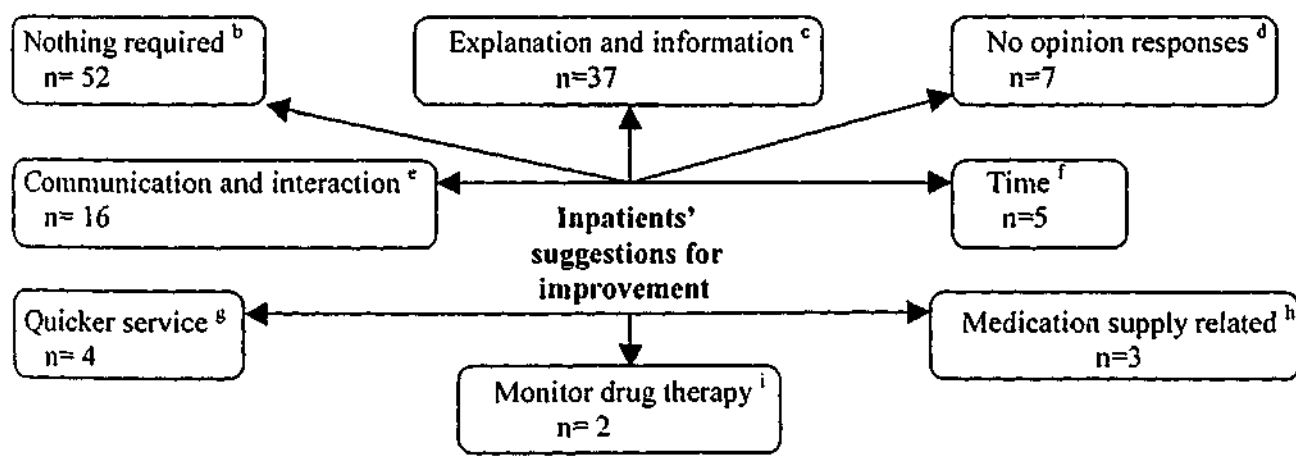
*"To reinforce information about your medications. Reassurance that none of your existing medications will interact with current medications commenced while hospitalised."*

Some inpatients suggested improvement by the pharmacist developing a higher profile and informing the patients of the various services they provide:

*"For him or her to go and introduce themselves and help people understand what their medication is, especially people of other languages and countries."*

*"Make patients more aware of the services/ benefits of the pharmacy."*

Figure 6.12 Inpatients' suggestions for pharmacy service improvement (1999/2000)<sup>a</sup>



<sup>a</sup> n= frequency of suggestion. Some inpatients made more than one suggestion.

<sup>b</sup> This suggestion consisted of: *satisfied, service good* n=52.

<sup>c</sup> Suggestion made up of: *explanation and more information, ask patients about their medication* n=24; *introduce themselves and services available, other services* n=11; *medication lists/ leaflets* n=2.

<sup>d</sup> Suggestion made up of: *never met pharmacist or received service* n=4; *not applicable* n=3.

<sup>e</sup> Suggestion made up of: *regular visits, availability of the pharmacist* n=12; *simpler language* n=1; *better communication between doctor and pharmacist* n=1; *customer service training* n=1; *sensitivity* n=1.

<sup>f</sup> *More time (busy)* n=3; *extra staff* n=2.

<sup>g</sup> *Quicker service and supply, speed up discharge medication* n=4.

<sup>h</sup> *Better supply of stock.*

<sup>i</sup> *Review medication charts/ tablets.*

### 6.3.2.5 Medication usage

Most inpatients were taking medicines while in hospital (87.7%). A further 5.5% indicated they weren't, while 6.8% gave no response.

When asked *who gives them their medicines in the hospital*, patients were able to tick more than one option: 10% indicated themselves, 2.7% indicated the doctor, 89.5% the nurse, another 2.7% the pharmacist. A further 1% gave a number of different options which included their parent and the midwife.

When asked *who explained to them how to use the medicines*, 5.9% of inpatients indicated nobody, 31.8% indicated the doctor, 34.1% the pharmacist and 67.3% the nurse.<sup>31</sup> A few patients (4%) also listed their own GP, asthma educator, diabetes educator, local pharmacist, the original prescriber of their medication as well as themselves, either by asking many questions or self-learning via brochures or leaflets.

On the whole, inpatients appeared to be happy with their *understanding of the instructions on using their medicines*, as seen by the mean rating given of 9.17 with a standard deviation of 1.57. In fact, a rating of 10 was given by 55.5% of inpatients, which corresponded to a perfectly clear explanation having been given about their medicines.

Suggestions made by inpatients regarding *how they thought the explanation about their medicines could be improved* are summarised in Figure 6.13 and some of their comments

<sup>31</sup> Inpatients could tick more than one option for who explained their medication to them.

are shown in Appendix 5 (Table A5.11). They were either quite satisfied with the explanation they had received regarding their medicines or wanted further information.

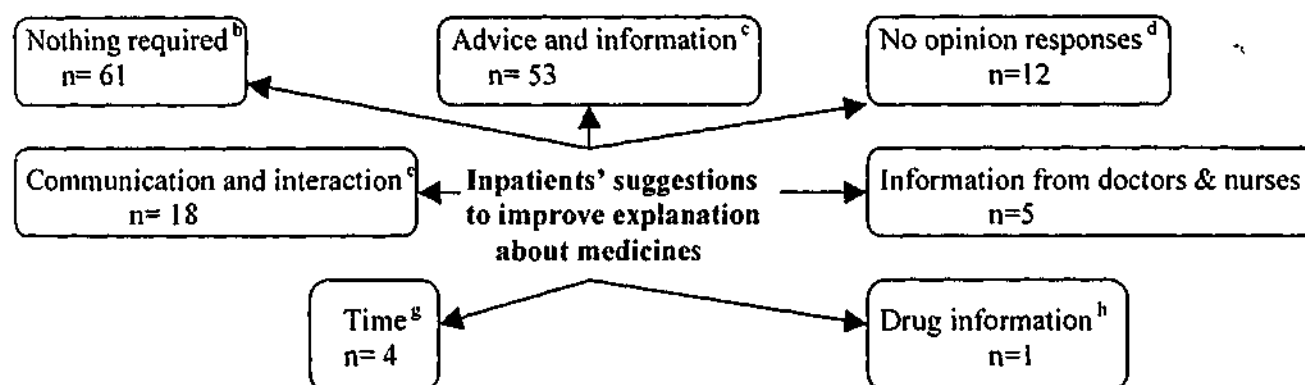
*"I think the pharmacists should come to see you and explain as best they can, (which should be their best if they are experienced pharmacists), so that you know what it is? What it does?, and how long you need to take it? And of course the effects."*

Some inpatients suggested written information to complement verbal instructions and that information be clear and easy to understand:

*"Short printed pamphlets could be given along with the medicine with all the relevant information."*

*"I do not easily read and write, therefore instruction and explanations should be clear and simple- more pictures,- different shaped bottles (or coloured) to identify different tablets,- clear verbal explanation."*

Figure 6.13 Inpatients' suggestions for improving the explanation about their medicines (1999/2000)<sup>a</sup>



<sup>a</sup> n= frequency of suggestion, some patients made more than one suggestion.

<sup>b</sup> Made up of: Satisfied, no need n=61.

<sup>c</sup> Made up of: More information, more detailed explanation, explain about drugs & medicines: effects, side-effects, interactions etc. n=31; written information, literature, printouts, pamphlets about medication, information leaflets n=17; more information on label n=2; large print on label n=2; delivered by pharmacist n=1.

<sup>d</sup> Made up of: don't know, not sure n=8; not applicable n=4.

<sup>e</sup> Made up of: personal explanation, consultation, direct contact n=5; clear, laymen's terms n=8; patients need to ask questions n=2; explain when patient not medicated i.e. when patient not under the influence of narcotic analgesics, sedation etc. check patient understands n=2; pharmacist asks questions n=1.

<sup>f</sup> Made up of: ask doctor, or nurse n=5.

<sup>g</sup> Made up of: time n=3; more pharmacists n=1.

<sup>h</sup> Made up of: make information available to doctor, and nurse n=1.

### 6.3.3 Outpatient survey (1999/2000)

On the day that the outpatients received their surveys, 53.1% indicated they had attended an outpatient clinic, 4.2% the casualty/ emergency department, 8.3% attended private consulting rooms and 3.1% day procedures. Another 17.7% indicated they only came to the hospital to visit the pharmacy and to pick up their medications. The remaining outpatients identified various reasons for being at the hospital, such as to visit the physiotherapist, anti-natal clinic, oncology clinic, pain management clinic or a variety of clinics on the one day.

Most outpatients indicated they had *used the pharmacy at the hospital* within the last 6 months (Table 6.17).

**Table 6.17 When outpatients last used the pharmacy department (1999/2000)**

When outpatient last used the pharmacy at the hospital	Number	Percentage
Never before today	19	19.8
Within the last month	50	52.1
Between two to six months ago	17	17.7
Between seven to twelve months ago	2	2.1
Over twelve months ago	7	7.3
No response given	1	1
Total	96	100

When asked *what they required on that occasion*, most (86.5%) indicated they obtained a prescription from the pharmacy; 3.1% required medicine information from the pharmacy; 1% needed advice on medication, and 2.1% required medical information.<sup>32</sup>

Of those outpatients who indicated *how many times in the past month they had telephoned the pharmacy department for information on medications*, most had never phoned the pharmacy department (84.4%), 5.2% had phoned once, 1% had phoned twice, 9.4% gave no response. A further 1% specified that they had telephoned the department approximately three to four times to check the availability of drugs.

Most patients *waited for their prescriptions* in a pharmacy waiting room (46.9%), 13.5%

<sup>32</sup> Patients could tick more than one option therefore total does not add up to 100%. Not all patients ticked an option, but 11 of the patients who had never used the pharmacy before that day indicated they obtained a prescription from the pharmacy on the day they received their questionnaire.

did not wait, 8.3% waited in a corridor, 7.3% at a kiosk, 2.1% specified they had phoned the pharmacy department for their prescriptions and only collected them on that day, and a few had other appointments at the hospital which they met whilst their prescriptions were prepared.

### 6.3.3.1 Prescription waiting time

Responses from outpatients regarding *how long they waited from the time they arrived at the pharmacy until they received their prescription*, are shown in Table 6.18.

**Table 6.18 Time taken for outpatient prescriptions to be dispensed (1999/2000)**

Time taken for prescription to be dispensed	Number <sup>a</sup>	Percentage
Less than 5 minutes	13	13.5
5 to 10 minutes	20	20.8
11 minutes to 20 minutes	16	16.7
21 minutes to 30 minutes	12	12.5
31 minutes to 45 minutes	6	6.3
46 minutes to 1 hour	8	8.3
More than 1 hour, up to 1 hours 30 minutes	4	4.2
More than 1 hour 30 minutes, up to 2 hours	1	1
More than 2 hours	0	0
Not applicable	2	2.1
No response	14	14.6

<sup>a</sup>n=96.

With the exclusion of outpatients who indicated "not applicable" or gave no response (Table 6.18), more than half the remaining outpatients received their prescription within 20 minutes, and approximately three-quarters received them within 30 minutes.

### 6.3.3.2 Important services and performance measures

Ratings given by outpatients of how *important* a number of listed pharmacy services were to them are shown in Table 6.19<sup>33</sup>, and their ratings of the pharmacy's *performance* on these same measures of customer service are shown in Table 6.20.

The waiting room facilities were not regarded as particularly important to outpatients (Table 6.19) compared with the other aspects of pharmacy services. *Cooperation of the pharmacy staff* was regarded as most important.

<sup>33</sup> Outpatients were only required to rate the importance of services in the second survey.

**Table 6.19 Ratings given by outpatients of the importance of various measures of pharmacy service (1999/2000)<sup>a</sup>**

Pharmacy service	Importance rating – mean	Standard deviation	Number <sup>b</sup>
Time taken for prescription to be filled	8.07	2.38	82
Advice given on medication	8.80	2.03	82
Friendliness of staff	8.53	1.90	83
Cooperation of staff	9.0	1.41	83
Overall information provided by the pharmacist	8.57	2.19	83
Understanding the needs of the patient (your needs)	8.75	2.13	81
Waiting room facilities	6.12	2.69	77
Presentation of the medicines i.e. information on labels and appearance of labels	8.70	2.03	80
The time the pharmacy department is open for service to the public	7.96	2.46	80
The care taken by the pharmacy to dispense your prescription	8.93	1.86	81

<sup>a</sup> Other pharmacy services listed by outpatients as being important to them included: prompt service, quicker service; time taken to lodge prescriptions; patient records held at pharmacy with 100% accuracy; leaving prescriptions at the pharmacy and phoning ahead to arrange collection/ ordering of infrequently used expensive drugs; twenty-four hour service; hearing impairment is a factor when name is called- should use speakers or at least consider patient may not hear name called; information leaflets on particular problems; should be open at some time on weekends.

<sup>b</sup> n=96.

**Table 6.20 Ratings given by outpatients of the pharmacy's performance (1999/2000)<sup>a</sup>**

Measure of performance	Mean rating	Standard deviation	Number <sup>b</sup>	Don't know/ not applicable <sup>c</sup>
Time taken for prescription to be filled	6.82	3.03	79	5
Advice given on medication	8.78	2.10	72	9
Friendliness of staff	8.70	1.84	77	4
Cooperation of staff	8.67	1.98	78	4
Overall information provided by the pharmacist	8.51	2.31	74	7
Understanding the needs of the patient (your needs)	8.21	2.29	71	9
Waiting room facilities	6.42	2.75	72	7
Presentation of the medicines i.e. information on labels and appearance of labels	8.71	1.71	75	5
The time the pharmacy department is open for service to the public	7.90	2.21	62	18
The care taken by the pharmacy to dispense your prescription	8.93	1.57	76	4

<sup>a</sup> mean rating. <sup>b</sup> n=96.

<sup>c</sup> Number of respondents who indicated either "don't know" or "not applicable" instead of giving a rating. The "don't know" responses accounted for between 2 to 16% of responses from outpatients.

The performance ratings show that, on the whole, pharmacists seem to be performing well at providing information and advice, are cooperative and sensitive to the outpatient's needs and are seen to exercise care in their dispensing role. *Time taken for prescriptions to be filled* and *waiting room facilities* rated worst.

The reasons why outpatients use the hospital pharmacy are summarised in Figure 6.14 and some comments made are included in the text here. A sample of reasons given is

listed in Appendix 5 (Table A5.12). There were several reasons given for using the hospital pharmacy:

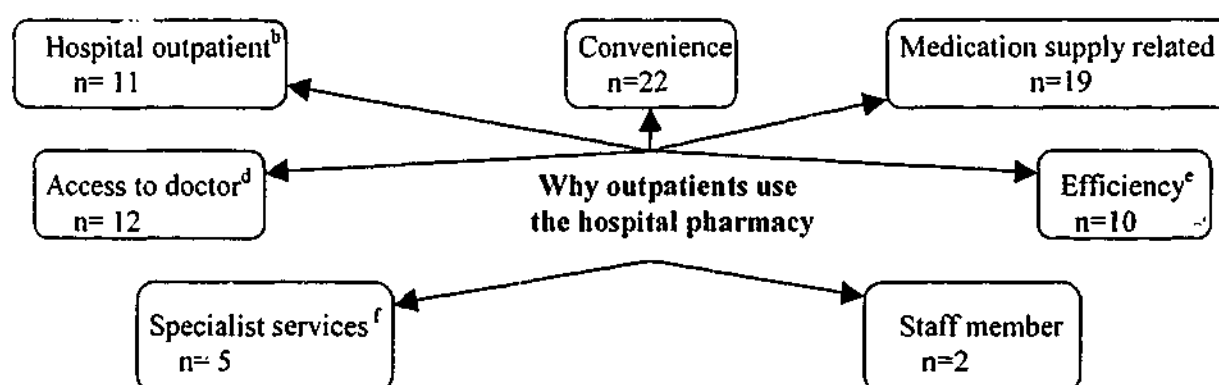
*"It is quick, friendly, always seek to help and very handy- after seeing doctor it is easy to call in and have script made up before leaving hospital- better than having to call in at some shopping centre. Always has stock." (Private hospital)*

*"I need the hospital pharmacy for I am a Renal Transplant patient and can only get Neoral and others from hospital pharmacy. Not available at outside pharmacies."*

*"My child's medication is more affordable at this pharmacy. Also their professionalism is second to none."*

Some patients identified significant cost savings by obtaining their medication from the hospital.

Figure 6.14 Reasons why outpatients use the hospital pharmacy (1999/2000)<sup>a</sup>



<sup>a</sup> n= frequency of reason given, some outpatients gave more than one reason.

<sup>b</sup> Reason made up of: Patient is an outpatient at the hospital n=11; patient was at the hospital for treatment/ consultation n=6.

<sup>c</sup> Made up of: Stock availability-medication only available from the hospital n= 19.

<sup>d</sup> Made up of: Specialist / doctor is in the hospital n=3; Doctor at hospital prescribed medication/ hospital outpatient prescription / told patient to n=9.

<sup>e</sup> Made up of: Cost/ cheaper at hospital n=8; trust/ professionalism n=2.

<sup>f</sup> Consists of: Transplant patient n=3; patient in a drug Trial n=1; was in casualty n=1.

### 6.3.3.3 Outpatient requirements

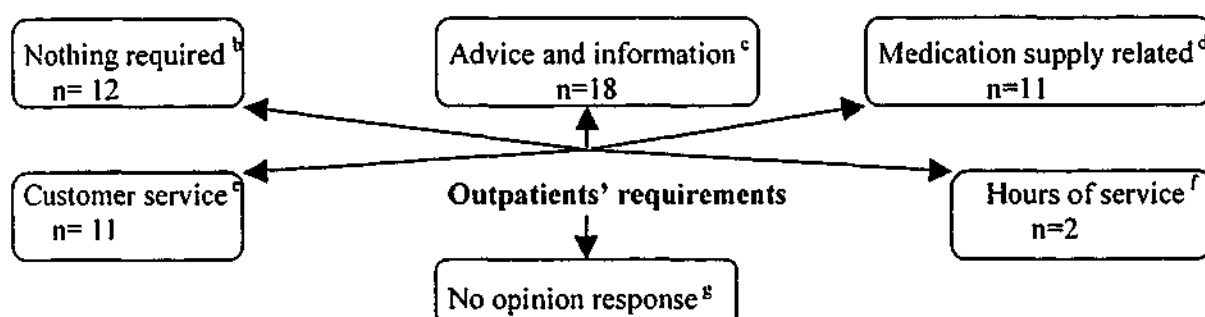
The services or information that outpatients indicated they want from their hospital pharmacy are summarised in Figure 6.15 and a sample of their requirements listed in Table A5.13 in Appendix 5. Outpatients wanted information, timely dispensing of scripts and friendly staff:

*"Provision of medication. Drug information. "User friendly" hours of opening. Staff friendliness."*

*"Am happy with everything except the time factor. Dropping in a prescription takes TOO long."*

*"Want them to fill scripts like a normal pharmacy. Patients who are weak terminal diseases need to organise visits to GP's to get a secondary script for medication that the specialist has prescribed."*

**Figure 6.15 Outpatients' requirements (1999/2000)<sup>a</sup>**



<sup>a</sup> n= the frequency of responses listing service requirements, patients sometimes gave more than one requirement

<sup>b</sup> Made up of: service good as is, satisfied n=12.

<sup>c</sup> Made up of: advice/ information about medication/ drugs n=16; information on tablet box n=1; written information n=1.

<sup>d</sup> Made up of: dispense prescriptions, supply medication, & medication available n=10; cheaper rate n=1.

<sup>e</sup> Made up of: prompt, timely, accurate dispensing/ service n=4; friendly staff n=3; good hours n=2; attention (better service) n=1; professional standard of service n=1.

<sup>f</sup> Made up of: good hours n=2.

<sup>g</sup> Made up of: nothing n=9.

#### 6.3.3.4 Service improvement

Suggestions made by outpatients on *how their hospital pharmacy's service to them could be improved* are summarised in Figure 6.16 and a sample listed in Appendix 5 (Table A5.14). Reduced waiting time for prescriptions was frequently mentioned as a way of improving pharmacy services:

*"To make filling of prescription faster. This time varies dramatically (which is understandable but frustrating) and perhaps a board to indicate when a prescription is ready if you miss your call to collect."*

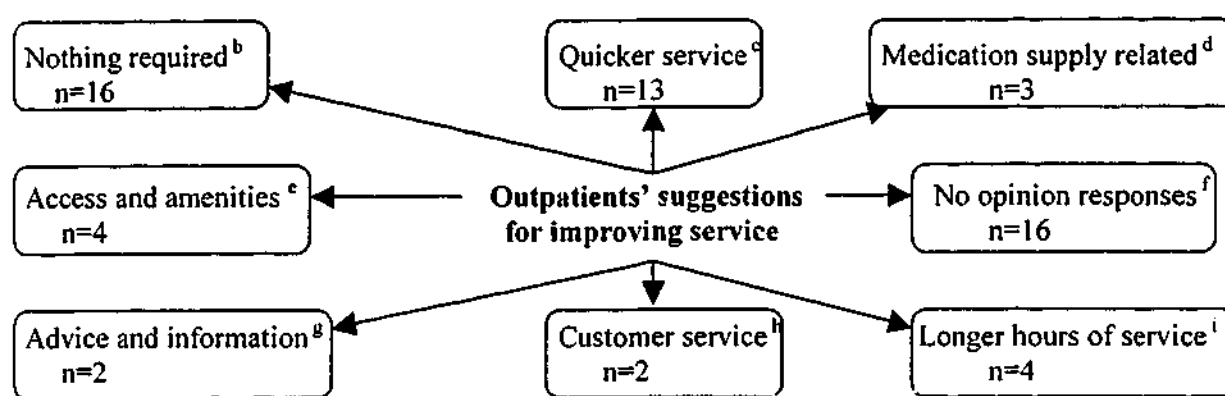
*"Advice on medication, waiting time on medication."*

Access to the hospital in terms of parking and opening hours was also raised as an area for improvement:



*"Parking is dreadful, carpark is always full etc. Access from car park is hard."*

Figure 6.16 Outpatients' suggestions for improving the pharmacy service to them (1999/2000)<sup>a</sup>



<sup>a</sup> n= frequency of the various suggestions for improvement (some patients gave more than one suggestion).

<sup>b</sup> Made up of: *service adequate, not necessary, happy* n=16.

<sup>c</sup> Made up of: *faster dispensing of scripts, quicker service, shorter waiting time* n=11; *inform patient of waiting time* n=1; *more staff* n=1.

<sup>d</sup> Made up of: *stock/ medication available* n=3.

<sup>e</sup> Made up of: *better access/ parking/ seating* n=4.

<sup>f</sup> Made up of: *don't know* n=6; *nothing* n=4; *not applicable* n=4; *no comment* n=2.

<sup>g</sup> Made up of: *advice/ information on medication* n=2.

<sup>h</sup> Made up of: *better customer service/ friendliness* n=2.

<sup>i</sup> Made up of: *longer hours* n=4.

## 6.4 Discussion

A larger number of inpatients responded to both surveys than did outpatients, mostly because some hospitals had quality assurance officers, heads of departments, or staff within the wards who collected completed questionnaires from inpatients and mailed them back to the university, whereas outpatients were not such a "captive" survey group.<sup>34</sup> In a few hospitals the pharmacy departments organised a box outside the pharmacy department where completed outpatient questionnaires could be placed to be subsequently returned to the university via the mail, although this did not appear to significantly improve response numbers.<sup>35</sup>

In the second survey the response rate for outpatient questionnaires was adjusted because some were thrown out (see footnote number 25, section 6.3), and in addition to this, no questionnaires were received back from one of the large city hospitals suggesting none

<sup>34</sup> All questionnaires came with a reply-paid, mail-back envelope enclosed.

<sup>35</sup> This was done by some hospitals in the 1993/94 survey.

were actually distributed in the hospital despite an agreement to do so. However, the comments and responses made by the smaller group were generally consistent between them, so enabling observations and conclusions to be made regarding outpatient pharmacy services in the second survey.

From the responses of both the inpatients and outpatients in the first survey (Table 6.3), it can be seen that patients are aware that pharmacists dispense medication but knowledge of services beyond this function tended to be poorer. The patients generally knew that pharmacists check prescriptions for safety, and outpatients more so than inpatients were more cognisant that pharmacists provide information on medication.

The poorer knowledge about other services, especially clinical services, probably reflects a lower "visibility" of pharmacists to patients. Outpatients sitting in a waiting area for their prescriptions may be more likely to observe activities performed by the pharmacist than a patient in a bed watching various hospital personnel entering and leaving their room, especially if the hospital personnel don't identify themselves.

The results show that some patients don't know a pharmacist visits their ward or that they have not met a pharmacist on the ward, even if one actually works there! Perhaps some patients are confused or too unwell to realise that various personnel attend them in hospitals.

These findings should be of concern for clinical pharmacists because they are in a position where they can promote pharmacy services to their patients and other hospital staff. Only by engaging the patient and informing them of their role in the hospital and in the wards will they help patients develop a greater knowledge of the breadth of pharmacy services and assist patients to take advantage of the services that are available.

The awareness that inpatients had of what pharmacists do in the wards appears to be somewhat better in the second survey (Figure 6.9) than in the first (Figure 6.2) as evidenced by the frequency with which inpatients mentioned particular activities such as:

*monitoring drug therapy, and giving information, advice and explanation about medication.* There is still considerable room for improvement because even though some inpatients had a good understanding of the role of the pharmacist (Figure 6.9) this was not so for all patients.

It is worth noting that in the first survey almost half the inpatients had never spoken with a pharmacist at their hospital despite about 55% of them being in wards serviced by clinical pharmacists, and virtually all were in wards in which pharmacists reviewed medication charts<sup>36</sup>. By the second survey the situation had improved, with only 36% of inpatients indicating they had never spoken with a pharmacist at their hospital.

This presumably indicates that a significant number of patients are still not having the opportunity of speaking with a pharmacist in Victorian hospitals. Some hospitals indicated that severe staffing restrictions and cost cutting over the past few years, had resulted in cut backs to clinical services or restricted the provision of these to specialised service wards. As a result, some wards were no longer offered clinical pharmacy services.

A disappointing proportion of inpatients did not give a rating of the performance of the clinical pharmacists in either survey, and in many cases less than 50% of inpatients gave a rating. One reason for this was that at least 20% of inpatients may not have been aware of the pharmacists and were therefore not in a position to give ratings. Another reason appears to be reluctance to give an opinion or make comments regarding services, perhaps because inpatients are concerned about their comments having a negative effect upon their stay, or care. Alternatively, some inpatients may have been too unwell to focus on this question. This lack of provision of performance ratings needs to be seriously considered by healthcare service providers and governments, because if patients are hesitant about evaluating services, then this calls into question the value of patient satisfaction surveys. Their opinions are important and their requirements need to be determined, but the emphasis placed upon their evaluation of services should also take into account the perspectives and input of the healthcare service providers themselves.

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<sup>36</sup> See Table 4.11, Chapter 4.

Where inpatients gave ratings for the performance of the clinical pharmacists these were generally quite favourable in both surveys. The customer service measure that rated lowest in the second survey was *the availability of the pharmacist to answer inpatients questions*<sup>37</sup> (Table 6.16) which may indicate that patients want more access to a pharmacist and time to discuss their needs and concerns about their medication and treatment.

The second survey of inpatients differed from the first in that it asked patients *what services or information they want from the hospital pharmacy*. The most frequent requirement related to the provision of information about their medications, followed by requirements related to medication supply. Improvement in pharmacy services between the surveys, from the perspective of inpatients, was predominantly associated with the provision of more information, advice, and explanation about their medication. It would appear that patients no longer want to be ignorant of their medication and its effects, they want to be empowered with knowledge. Interestingly, a significant number of patients also indicated satisfaction with the status quo which suggests that their requirements were being well met by their pharmacy services, an encouraging finding for pharmacists.

Inpatients also saw communication and visibility by the pharmacists in the ward environment as an important factor associated with improving services in both surveys. By doing so, pharmacists are in a position to better educate patients about the services they offer, which in turn means that patients are then also in a better position to offer suggestions for improvement. It was interesting to find that many patients had no idea what a pharmacist could offer them, although in the second survey less expressed uncertainty about this.

Over the past few years, outpatient services have been diminishing in many public hospitals, with many attempting to reduce the amount of outpatient dispensing and medication they provide (Tsui, 2002).<sup>38</sup> The quantity of medication dispensed to

<sup>37</sup> A new customer service measure included in the 1999/2000 survey of inpatients.

<sup>38</sup> Also personal knowledge as a practicing hospital pharmacist during this period of time.

inpatients on discharge was also reduced, done in part as a cost saving measure because public hospital drug costs are funded by the state government, and if outpatients could be encouraged to obtain their medication from private community pharmacies the cost would be shifted to the Federal Government (Tsui, 2002). Dispensing non-Pharmaceutical Benefits Scheme (PBS) drugs to outpatients, as well as high cost drugs, became the norm for outpatient pharmacy departments during the time of this research. Some outpatient clinics were also privatised in the hospitals which ultimately saw doctors writing PBS prescriptions for patients to have dispensed outside the hospitals or referring patients back to their general practitioners for ongoing management. Smaller quantities of medication on discharge meant that patients were required to visit their doctors for ongoing supplies shortly after they returned home, also shifting the costs for their medication to the Federal Government.

In the second survey, some doctors and nurses identified both the dispensing of reduced amounts of medication on discharge, as well as cuts to outpatient dispensing as factors which had resulted in pharmacy services being perceived as worse.<sup>39</sup> Patients on the other hand, tended to be more concerned that the medication ordered by their doctors was available and promptly supplied, and their service requirements were more centred on the information and education they received about their medication. Perhaps they have come to accept the supply restrictions that have existed in public hospitals for a number of years now.

Most inpatients were on medication whilst in the hospital. However, in the first survey it was found that most obtained explanations about their medication from nursing staff or doctors and there appeared to be a high level of satisfaction with this arrangement because over half were perfectly clear in their *understanding of the instructions on using their medication*, but despite this many wanted more. It is very interesting that at the time of the first survey pharmacists were not the major source of explanation about medication (see Section 6.2.3.4) even though pharmacists from many of the hospitals in the study indicated they provide *discharge medication counselling for patients*, and *patient*

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<sup>39</sup> See Chapter 5.

*information and education on drugs and medicines* (see Chapter 4, Table 4.11). This seems to indicate that pharmacists have not assumed a major role in medication counselling, even though they considered themselves to be in a position to do so.<sup>40</sup>

In the second survey, most inpatients were taking medication and appeared to be happy with their *understanding of the instructions on using their medication*, with over half giving a rating of 10.<sup>41</sup> Interestingly, the percentage of inpatients that indicated the pharmacist explained to them how to use their medication rose from that in the first survey, 34.1% compared with 13.9%. This finding is encouraging but nurses were still the most common group to explain medication to patients. Doctors were also major players in the second survey, although there was a slight reduction in this role from the first survey.<sup>42</sup>

It is disappointing to note that some patients had no explanation given to them about their medication in either study, which shows that systems were not in place to counsel all patients regarding their medication. This seems to highlight the need for pharmacists not to take for granted that, because a patient has been on medication for a while, or new therapy is initiated, they have been informed about their medication.

Even though many inpatients were satisfied with the explanation they received about their medication, numerous suggestions by inpatients for improvement were associated with them wanting even more information, and to be informed, both verbally and with written information to supplement this. Pharmacists need to be aware of this requirement.

A major concern for outpatients was waiting times for prescriptions. Given that most outpatients attend the hospital pharmacy for a prescription it is understandable that the waiting time is an issue for them. Their awareness that pharmacy departments have

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<sup>40</sup> *Discharge medication counselling of patients and patient information and education on drugs and medicines* were fundamental pharmacy services for both pharmacists and nurses as a group, and *patient information and education on drugs and medicines* was a fundamental hospital pharmacy service for doctors (see Chapter 4).

<sup>41</sup> Mean rating 9.17, with a standard deviation of 1.57.

<sup>42</sup> *Patient information and education on drugs/ medicines and discharge medication counselling* were fundamental services for all three respondent groups in 1999/2000 (see Chapter 5).

"busy" times or in some cases were short staffed, led them to suggest some improvement in this area such as employing or rostering more staff to meet the demand on services. Pharmacy departments need to consider this because long waiting times for prescriptions do not result in satisfied customers.<sup>43</sup>

This view was supported by the lower ratings for the *time taken for prescriptions to be filled* given by outpatients where they had also indicated long *waiting times until they received their prescriptions*.

Prescription waiting times were slightly longer in the second survey compared with the first, probably reflecting the acute shortages of pharmacists experienced by many hospitals at the time of the second survey.<sup>44</sup> In both surveys, outpatients rated the pharmacy's performance on *time taken for prescriptions to be filled* as being low, although this was slightly worse in the second survey. This is an area of ongoing concern for hospital pharmacists.

The pharmacy services that outpatients identified as being important to them in the second survey reflect all the dimensions of quality identified by Parasuraman et al. (1985, 1988, 1991a, 1991b).<sup>45</sup> *Cooperation of staff, the care taken to dispense prescriptions, advice given on medication, understanding the patient's needs, presentation of medicines, and friendliness*, all had an importance rating above 8.5. The *time taken for prescriptions to be filled* also rated highly in importance, although not as high as perhaps expected given that the pharmacy's performance on this measure was low, and outpatients identified reducing waiting times as a way to improve service.

The measures or services which outpatients were asked to rate in terms of their importance as well as the additional ones listed by patients<sup>46</sup> also fall within the quality

<sup>43</sup> Albrecht and Zemke (1985), noted that customers are not concerned with the minutiae of problems or difficulties faced by organisations in providing services, they are only concerned with their own needs.

<sup>44</sup> See Chapter 5.

<sup>45</sup> This question was only included in the second survey.

<sup>46</sup> See Table 6.19.

model developed by Grönroos-Gummerson (Grönroos, 1990), and Garvin's eight dimensions of quality (Garvin, 1987), and further supports the importance that customers place upon these measures as seen by the relatively high ratings in this study.

Satisfaction surveys were conducted by the Department of Human Services in Victoria (DHSV) in 1994 (Ramis corporation, 1994) and 1997 (Quint and Ferguson, 1997), but patients' perceptions, satisfaction, or requirements of hospital pharmacy services were not addressed. This study has addressed this.

The first and second surveys of inpatients and outpatients of Victorian hospital pharmacies have identified many of their requirements. The surveys provided a snapshot of patients' perceptions of pharmacy services and pharmacists during a period of great change in the health sector in Victoria.

This research provides some understanding of the perceptions and requirements of the primary customers of healthcare providers: the patients.



## CHAPTER 7

### SURVEY VALIDATION

#### 7.0 Introduction

This chapter focuses on the questionnaires (survey instruments) originally developed for the first survey and then modified and used again in the second survey.<sup>1</sup> As described previously, four separate questionnaires were developed and all sought to determine customer requirements and the performance of the pharmacy departments. In the case of the questionnaires for doctors, nurses and pharmacists most of the services covered by the ICD-10AM codes<sup>2</sup> of clinical activity were included in the second survey so that results could be linked to this coding system if required.<sup>3</sup>

#### 7.1 The survey instruments and validation

The development of the questionnaires used in the first and second surveys and their reliability and validity were discussed in the chapter on Methodology (Chapter 3).

Validity and reliability are important elements of the research because one of the objectives was to develop questionnaires that could be applied repeatedly to measure customer service in hospital pharmacies. The size of both surveys meant that large databases were created. Therefore, the surveys provide a benchmark of customer service in hospital pharmacies in Victoria.

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<sup>1</sup> The terms questionnaires and survey instruments are used interchangeably here. The term survey instrument is often found in texts on psychometric testing and validation of surveys. It refers to the questions or questionnaire used to collect the data (Smith, 1997b).

<sup>2</sup> ICD10-AM is an Australian modification (from the Nation Centre of Classification in Health) of the "International Statistical Classification of Diseases and Health related Problems (ICD)" where ICD-10 is a clinical classification of morbidity and mortality. The Australian version contains additional classifications for medical procedures and allied health interventions. ICD-10-AM contains pharmacy specific activity codes which provide a framework for (clinical) activity documentation (McLennan and Dooley, 2000).

<sup>3</sup> A number of the services included in the first survey are also able to be linked in with this coding system, even though it was not available at the time of the first survey.

### 7.1.1 Validity of the questionnaires for doctors, nurses and pharmacists

The objectives in designing the questionnaires were to provide information on customer requirements, and to be a valid instrument to measure customer service in hospital pharmacies.

#### 7.1.1.1 Face and content validity

The questionnaires had "face validity" in that they appeared to measure what they were intended to measure. Each respondent was asked about services they believed their hospital pharmacies should provide from a list of services that were commonly provided at major teaching hospitals in Australia. The questionnaires also asked them to rate the performance of the services using measures of customer service that cover a wide range of pharmacist activities, and which also fall under the various dimensions of service quality as identified by Parasuraman et al. (1985, 1988 and 1991a, 1991b) and Garvin (1987). By doing so, the questionnaires also addressed "content-related" validity because the services listed are representative of hospital pharmacy services and respondents were able to include additional services they felt should be provided.<sup>4</sup>

The customer service measures developed encompassed those defined from a logistics perspective (Coyle, Bardi, Langley, 1996), customer service research (La Londe and Zinser, 1976), the earlier work by Cukiernan-Wilson (1990) and from the service quality literature, in particular the work of Parasuraman et al., (1985, 1988, 1991a, 1991b) and Garvin (1987).<sup>5</sup>

The questionnaires considered the scope of pharmacy services and dimensions of customer service as they apply to hospital pharmacy practice. The pilot study conducted in 1993, before the finalisation of the questionnaires, assisted in the refinement of them.

<sup>4</sup> The list of services were developed from earlier work by Cukiernan-Wilson (1990, 1992), consultation with a leading market researcher in Australia with extensive experience in questionnaire development and discussion with leading hospital pharmacy practitioners and university academics (Chant, 1993; Hargreaves, 1993; Tong, 1993; Lyall, 1993; Stewart, 1993; Brien, 1993; Wilson, 1993; Chapman, 1993), and personal knowledge developed by having worked at four large teaching hospitals in Melbourne over an accumulated period totaling about 11 years.

<sup>5</sup> In the logistics literature, *measures* of customer service are referred to as *elements* of customer service.

### 7.1.1.2 Criterion-related validity

Criterion-related validity was not applicable to this study because the measures of customer service being evaluated were not being used to predict customer service. Criterion related validity is concerned with predictive validity.<sup>6</sup>

### 7.1.1.3 Construct validity

The concept or main construct that this research has sought to evaluate is customer service.<sup>7</sup> Because there was no clear definition of what this meant in hospital pharmacy practice at the time of the first survey, variables and theoretical constructs (traits or characteristics) were taken from customer service literature in management and marketing and adapted to equivalent pharmacy processes. Service quality and total quality management literature was also reviewed in order to develop relevant pharmacy specific measures of customer service.<sup>8</sup>

Many of the constructs and variables (Figure 7.1) are common across economic and social sectors such as health, business, and marketing, to name a few.

The fundamental measure in both the first and second surveys was *overall service provided to the users of the service*. This measure was included to measure the overall satisfaction with the hospital pharmacy service, and can be considered to be the "gold standard" variable.

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<sup>6</sup> See Chapter 3. Factor analysis and regression analysis which are useful tools in determining the dimensions within data as well as for identifying predictors of certain responses, could not be effectively applied to the database because there were significantly large numbers of "no opinion" and "not applicable" responses to ratings of performance of the pharmacy services on measures of customer service in both surveys.

<sup>7</sup> A construct is a way of construing what has been observed. A theory is built out of constructs, each one a category invented to describe apparently similar events, objects, situations, or persons (Cronbach, 1990). A construct is an unobservable concept that is inferred from behaviour.

For more on construct validity see Carmines and Zeller, 1979.

<sup>8</sup> See Chapter 3. In addition to the determinants of service quality from Parasuraman et al. (1985) and Garvin (1987), some of the constructs or variables used in the surveys were also included in the literature on patient satisfaction (Ware et al. 1978, 1983b; Pascoe, 1983; Meterko et al. (1991); MacKeigan and Larson, 1989; Fincham and Wertheimer, 1987) and included explanation, technical competence, accessibility, stock availability, and communication.

Figure 7.1 The customer service construct and related sub-constructs/ variables<sup>a</sup>

Concept or main construct being evaluated	Constructs/ variables used to measure the main construct
Customer service	Empathy/ courtesy: cooperation and friendliness
	Knowledge/ competence
	Information
	Clinical services
	Technical skills
	Timeliness/ responsiveness
	Education
	Reliability
	Communication
	Conformance
	Understanding /knowing the user
	Availability/ access
	Efficiency
	Practice specific measures

<sup>a</sup> Incorporated within the survey instruments to measure customer service.

Cross correlations (Pearson correlation coefficient) were conducted on the measures of customer service from the first database for doctors, nurses and pharmacists separately and repeated on the second database for each respondent. This is the method by which construct validity is tested (see Chapter 3). Correlation coefficients above 0.7 were considered to show high correlation between variables or measures.<sup>9</sup> Measures of customer service that correlated highly with each other for doctors, nurses and pharmacists in the first survey are shown in Table 7.1, and in Table 7.2 for the second survey.

The Pearson correlation coefficients obtained from both databases showed that significant correlations existed between many variables, (between most in the first survey).<sup>10</sup> This is because the databases from both surveys contained large numbers of cases (responses)

<sup>9</sup> Correlations of 0.685 to 0.7 were rounded up to 0.7 and included as representing "high correlations" between variables (measures of customer service).

<sup>10</sup> Correlation is significant at the 0.01 and 0.05 level (2-tailed).

making relationships more sensitive. However, correlations of 0.7 and over were regarded as most relevant and were considered to show stronger linear relationships between variables. Therefore the correlations shown in Tables 7.1 and 7.2 reflect stronger relationships and were the most relevant.

For example, in the first survey *cooperation of the pharmacy staff* correlated highly with *friendliness of the pharmacy staff* for doctors, nurses and pharmacists. In addition it also correlated highly with *communication* and the *overall service provided by the pharmacy department* for both doctors and pharmacists, and *understanding and knowing the needs of customers* for doctors only. In other words these measures correlated highly with the construct of empathy or courtesy.

*Intervention in or monitoring patient drug therapy* correlated highly with *review of medication charts, adverse drug reaction monitoring and therapeutic drug monitoring service (pharmacokinetic)* for doctors, nurses and pharmacists in the first survey. This shows that these measures correlate highly with this clinical construct associated with drug therapy monitoring.

In the second survey, *cooperation of pharmacy staff to users of the service* correlated highly with *friendliness of pharmacy staff* for doctors, nurses and pharmacists and also the *overall service provided to the users* for doctors only. *Intervention in or monitoring patient drug therapy* only correlated highly with *review of medication charts, medication history interview, adverse drug reaction monitoring, and therapeutic drug monitoring* for doctors and nurses. There were no high correlations for pharmacists on this variable. This does, however, show that the variables which correlated highly for doctors and nurses on *intervention and monitoring drug therapy* have remained strong measures of this construct over the six years.

Table 7.1 Customer service measures that correlate highly in the first survey\*

Measures of customer service 1993/94	Doctors	Nurses	Pharmacists
Cooperation of pharmacy staff to users of the service	Friendliness of pharmacy staff to users of the service (0.870) Understanding and knowing the needs of the users (0.692) Communication with users of the service (0.711) Overall service provided to the users of the service (0.735)	Friendliness of pharmacy staff to users of the service (0.823)	Friendliness of pharmacy staff to users of the service (0.831)  Communication with users of the service (0.694) Overall service provided to the users of the service (0.688)
Friendliness of pharmacy staff to users of the service	Cooperation of pharmacy staff to users of the service (0.870) Understanding and knowing the needs of the users (0.737) Communication with users of the service (0.701) Overall service provided to the users of the service (0.726)	Cooperation of pharmacy staff to users of the service (0.823)	Cooperation of pharmacy staff to users of the service (0.831)  Communication with users of the service (0.704) Overall service provided to the users of the service (0.688)
Medical knowledge of the pharmacist			Pharmaceutical knowledge of the pharmacist (0.734)
Pharmaceutical knowledge of the pharmacist			Medical knowledge of the pharmacist (0.734)
Drug information service provided	Advice given on drug information queries (0.734)	Advice given on drug information queries (0.722)	Advice given on drug information queries (0.792)
Advice given on drug information queries	Timeliness of response to drug information queries (0.720) Advice given on general queries (0.757)	Drug information service provided (0.722) Timeliness of response to drug information queries (0.699) Advice given on general queries (0.714)	Drug information service provided (0.792)
Timeliness of response to drug information queries	Advice given on drug information queries (0.720) Advice given on general queries (0.812) Timeliness of response to general	Advice given on drug information queries (0.699) Advice given on general queries (0.730) Timeliness of response to general	

Measures of customer service 1993/94	Doctors	Nurses	Pharmacists
	queries (0.856)	queries (0.786)	
Advice given on general queries	Advice given on drug information queries (0.757) Timeliness of response to drug information queries (0.812) Timeliness of response to general queries (0.832) Overall service provided to the users of the service (0.705)	Advice given on drug information queries (0.714) Timeliness of response to drug information queries (0.730) Timeliness of response to general queries (0.829)	Timeliness of response to general queries (0.770)
Timeliness of response to general queries	Timeliness of response to drug information queries (0.856) Advice given on general queries (0.832)	Timeliness of response to drug information queries (0.786) Advice given on general queries (0.829)	Advice given on general queries (0.770)
Participation in ward rounds			
Review of medication charts	Adverse drug reaction monitoring/management (0.717) Intervention in/ monitoring patient drug therapy (0.754)	Adverse drug reaction monitoring (0.743) Intervention in/ monitoring patient drug therapy (0.760)	Intervention in/ monitoring patient drug therapy (0.703)
Adverse drug reaction monitoring	Review of medication charts (0.717) Intervention in/ monitoring patient drug therapy (0.718)	Review of medication charts (0.743) Intervention in/ monitoring patient drug therapy (0.853) Therapeutic drug monitoring service (pharmacokinetic) (0.803)	Intervention in/ monitoring patient drug therapy (0.752)
Intervention in/ monitoring patient drug therapy	Review of medication charts (0.754) Adverse drug reaction monitoring (0.718) Therapeutic drug monitoring service (pharmacokinetic) (0.799)	Review of medication charts (0.760) Adverse drug reaction monitoring (0.853) Therapeutic drug monitoring service (pharmacokinetic) (0.880)	Review of medication charts (0.703) Adverse drug reaction monitoring (0.752) Therapeutic drug monitoring service (pharmacokinetic) (0.696)
Therapeutic drug monitoring service (pharmacokinetic)	Intervention in/ monitoring patient drug therapy (0.799)	Adverse drug reaction monitoring (0.803) Intervention in/ monitoring patient drug therapy (0.880) Understanding and knowing the needs of the users (0.687)	Intervention in/ monitoring patient drug therapy (0.696)

Measures of customer service 1993/94	Doctors	Nurses	Pharmacists
Understanding and knowing the needs of the users	Cooperation of pharmacy staff to users of the service (0.692) Friendliness of pharmacy staff to users of the service (0.737) Efficiency of the pharmacy service (0.696) Communication with users of the service (0.702) Overall service provided to the users of the service (0.756)	Therapeutic drug monitoring service (pharmacokinetic) (0.687)	Communication with users of the service (0.707)
Efficiency of the pharmacy service	Understanding and knowing the needs of the users (0.696)	Reliability of service (0.723) Overall service provided to the users of the service (0.690)	
Accuracy of dispensing			
Discharge dispensing			
Timeliness of provision of medication			
Availability of stock			
Sterile manufacture-intravenous preparations			
Discharge medication counselling of patients	Patient information & education on drugs/ medicines (0.863)	Patient information & education on drugs/ medicines (0.862)	Patient information & education on drugs/ medicines (0.821)
Patient information & education on drugs/ medicines	Discharge medication counselling of patients (0.863)	Discharge medication counselling of patients (0.862)	Discharge medication counselling of patients (0.821)
Pharmacy bulletins/ publications	Extent of pharmacy department involvement in research (0.692)	Extent of pharmacy department involvement in research (0.733)	
Drug education for hospital staff- informal		In-service, structured lectures for hospital staff (0.723)	In-service, structured lectures for hospital staff (0.718)
In-service, structured lectures for hospital staff		Drug education for hospital staff- informal (0.723) Extent of pharmacy department involvement in research (0.723)	Drug education for hospital staff- informal (0.718)
Extent of pharmacy department involvement in research	Pharmacy bulletins/ publications (0.692)	Pharmacy bulletins/ publications (0.733)	
Reliability of service		Efficiency of the pharmacy service	



Measures of customer service 1993/94	Doctors	Nurses	Pharmacists
	Communication with users of the service (0.741) Overall service provided to the users of the service (0.710)	(0.723) Communication with users of the service (0.710) Overall service provided to the users of the service (0.733)	
Communication with users of the service	Cooperation of pharmacy staff to users of the service (0.711) Friendliness of pharmacy staff to users of the service (0.701) Understanding and knowing the needs of the users (0.702) Reliability of service (0.741) Overall service provided to the users of the service (0.789)	Reliability of service (0.710) Overall service provided to the users of the service (0.728)	Cooperation of pharmacy staff to users of the service (0.694) Friendliness of pharmacy staff to users of the service (0.704) Understanding and knowing the needs of the users (0.707) Overall service provided to the users of the service (0.747)
After hours service			
Overall service provided to the users of the service	Cooperation of pharmacy staff to users of the service (0.735) Friendliness of pharmacy staff to users of the service (0.726) Advice given on general queries (0.705) Understanding and knowing the needs of the users (0.756) Reliability of service (0.710) Communication with users of the service (0.789)	Efficiency of the pharmacy service (0.690) Reliability of service (0.733) Communication with users of the service (0.728)	Cooperation of pharmacy staff to users of the service (0.688) Friendliness of pharmacy staff to users of the service (0.688) Communication with users of the service (0.747)
Presentation of medicines <sup>b</sup>			
Continuing education for staff pharmacists <sup>b</sup>			
Education and training of non-pharmacist pharmacy staff <sup>b</sup>			

<sup>a</sup> Correlations of 0.7 and above were considered to be high correlations. Correlations of 0.685 to 0.7 were also included because they are close to 0.7.

Correlation is significant at the 0.01 level (2-tailed)

<sup>b</sup> These measures were only included in the pharmacist's questionnaire

Table 7.2 Customer service measures that correlate highly in the second survey\*

Measures of customer service 1999/2000	Doctors	Nurses	Pharmacists
Cooperation of pharmacy staff to users of the service	Friendliness of pharmacy staff to users of the service (0.842) Overall service provided to the users of the service (0.693)	Friendliness of pharmacy staff to users of the service (0.799)	Friendliness of pharmacy staff to users of the service (0.708)
Friendliness of pharmacy staff to users of the service	Cooperation of pharmacy staff to users of the service (0.842)	Cooperation of pharmacy staff to users of the service (0.799)	Cooperation of pharmacy staff to users of the service (0.708)
Medical knowledge of the pharmacist		Pharmaceutical knowledge of the pharmacist (0.742)	
Pharmaceutical knowledge of the pharmacist		Medical knowledge of the pharmacist (0.742)	
Drug information service provided	Advice given on drug information queries (0.745)	Advice given on drug information queries (0.742)	Advice given on drug information queries (0.744)
Advice given on drug information queries	Drug information service provided (0.745) Timeliness of response to drug information queries (0.721) Advice given on general queries (0.717)	Drug information service provided (0.742)  Advice given on general queries (0.720)	Drug information service provided (0.744)
Timeliness of response to drug information queries	Advice given on drug information queries (0.721) Advice given on general queries (0.715) Timeliness of response to general queries (0.779)	Advice given on general queries (0.766) Timeliness of response to general queries (0.766)	
Advice given on general queries	Advice given on drug information queries (0.717) Timeliness of response to drug information queries (0.715) Timeliness of response to general queries (0.840)	Advice given on drug information queries (0.720) Timeliness of response to drug information queries (0.766) Timeliness of response to general queries (0.844)	Timeliness of response to general queries (0.827)
Timeliness of response to general queries	Timeliness of response to drug information queries (0.779) Advice given on general queries	Timeliness of response to drug information queries (0.766) Advice given on general queries	Advice given on general queries

Measures of customer service 1999/2000	Doctors	Nurses	Pharmacists
	(0.840)	(0.844)	(0.827)
Participation in ward rounds			
Review of medication charts	Medication history interview (0.833)  Intervention in/ monitoring patient drug therapy (0.698)	Medication history interview (0.763) Adverse drug reaction monitoring (0.747) Intervention in/ monitoring patient drug therapy (0.787) Therapeutic drug monitoring service (pharmacokinetic) (0.738)	
Medication history interview	Review of medication charts (0.833) Adverse drug reaction monitoring (0.734) Intervention in/ monitoring patient drug therapy (0.699)	Review of medication charts (0.763) Adverse drug reaction monitoring (0.807) Intervention in/ monitoring patient drug therapy (0.769) Therapeutic drug monitoring service (pharmacokinetic) (0.721)	
Adverse drug reaction monitoring	Medication history interview (0.734) Intervention in/ monitoring patient drug therapy (0.827) Therapeutic drug monitoring service (pharmacokinetic) (0.693)	Review of medication charts (0.747) Medication history interview (0.807) Intervention in/ monitoring patient drug therapy (0.884) Therapeutic drug monitoring service (pharmacokinetic) (0.839)	
Intervention in/ monitoring patient drug therapy	Review of medication charts (0.698) Medication history interview (0.699) Adverse drug reaction monitoring (0.827) Therapeutic drug monitoring service (pharmacokinetic) (0.701)	Review of medication charts (0.787) Medication history interview (0.769) Adverse drug reaction monitoring (0.884) Therapeutic drug monitoring service (pharmacokinetic) (0.904)	
Therapeutic drug monitoring service (pharmacokinetic)	Adverse drug reaction monitoring (0.693) Intervention in/ monitoring patient drug therapy (0.701)	Review of medication charts (0.738) Medication history interview (0.721) Adverse drug reaction monitoring (0.839) Intervention in/ monitoring patient drug therapy (0.904)	

Measures of customer service 1999/2000	Doctors	Nurses	Pharmacists
Understanding and knowing the needs of the users	Overall service provided to the users of the service (0.688)	Efficiency of the pharmacy service (0.697)	
Efficiency of the pharmacy service	Understanding and knowing the needs of the users (0.696)	Understanding and knowing the needs of the users (0.697) Timeliness of provision of medication (0.764) Reliability of service (0.738) Communication with users of the service (0.695) Overall service provided to the users of the service (0.725) Overall service provided by pharmacy overall rating (0.716)	
Accuracy of dispensing			
Discharge dispensing			
Timeliness of provision of medication		Efficiency of the pharmacy service (0.764) Reliability of service (0.710) Communication with users of the service (0.685) Overall service provided by pharmacy overall rating (0.689)	
Availability of stock			
Sterile manufacture-intravenous preparations	Sterile manufacture:cytotoxics (0.904)	Sterile manufacture: cytotoxics (0.742)	Sterile manufacture: cytotoxics (0.847)
Sterile manufacture: cytotoxics	Sterile manufacture-intravenous preparations (0.904)	Sterile manufacture-intravenous preparations (0.742)	Sterile manufacture-intravenous preparations (0.847)
Discharge medication counselling of patients	Patient information & education on drugs/ medicines (0.937)	Patient information & education on drugs/ medicines (0.888)	Patient information & education on drugs/ medicines (0.777)
Patient information & education on drugs/ medicines	Discharge medication counselling of patients (0.937)	Discharge medication counselling of patients (0.888)	Discharge medication counselling of patients (0.777)
Pharmacy bulletins/ publications	Extent of pharmacy department	Drug education for hospital staff- informal (0.690) Extent of pharmacy department	

Measures of customer service 1999/2000	Doctors	Nurses	Pharmacists
	involvement in research (0.692)	involvement in research (0.735)	
Drug education for hospital staff- informal	In-service, structured lectures for hospital staff (0.740)	Pharmacy bulletins/ publications (0.690) In-service, structured lectures for hospital staff (0.760) Extent of pharmacy department involvement in research (0.756)	In-service, structured lectures for hospital staff (0.726)
In-service, structured lectures for hospital staff	Drug education for hospital staff- informal (0.740) Extent of pharmacy department involvement in research (0.717)	Drug education for hospital staff- informal (0.760) Extent of pharmacy department involvement in research (0.805)	Drug education for hospital staff- informal (0.726)
Extent of pharmacy department involvement in research	In-service, structured lectures for hospital staff (0.717)	Pharmacy bulletins/ publications (0.735) Drug education for hospital staff- informal (0.756) In-service, structured lectures for hospital staff (0.805)	
Reliability of service	Overall service provided to the users of the service (0.690)	Efficiency of the pharmacy service (0.738) Timeliness of provision of medication (0.710) Communication with users of the service (0.814) Overall service provided to the users of the service (0.781) Overall service provided by pharmacy overall rating (0.738)	Overall service provided to the users of the service (0.707)
Communication with users of the service	Overall service provided to the users	Efficiency of the pharmacy service (0.695) Timeliness of provision of medication (0.685) Reliability of service (0.814) Overall service provided to the users	Overall service provided to the users

Measures of customer service 1999/2000	Doctors	Nurses	Pharmacists
	of the service (0.724)	of the service (0.745) Overall service provided by pharmacy overall rating (0.720)	of the service (0.710)
After hours service			
Overall service provided to the users of the service	Cooperation of pharmacy staff to users of the service (0.693) Understanding and knowing the needs of the users (0.688) Reliability of service (0.690) Communication with users of the service (0.724) Overall service provided by pharmacy overall rating (0.798)	Efficiency of the pharmacy service (0.725)  Reliability of service (0.781) Communication with users of the service (0.745) Overall service provided by pharmacy overall rating (0.785)	Reliability of service (0.707) Communication with users of the service (0.710) Overall service provided by pharmacy overall rating (0.798)
Overall service provided by pharmacy overall rating		Efficiency of the pharmacy service (0.716) Timeliness of provision of medication (0.689) Reliability of service (0.738) Communication with users of the service (0.720) Overall service provided to the users of the service (0.785)	Overall service provided to the users of the service (0.798)
Presentation of medicines			
Continuing education for staff pharmacists <sup>b</sup>			
Education and training of non- pharmacist pharmacy staff <sup>b</sup>			

<sup>a</sup> Correlations of 0.7 and above were considered to be high correlations. Correlations of 0.685 to 0.7 were also included because they are close to 0.7 and were rounded up to 0.7.

Correlation is significant at the 0.01 level (2-tailed)

<sup>b</sup> These measures were only included in the pharmacist's questionnaire

The variables which correlate most highly with each other show that for some constructs there are a number of variables which can describe them or measure them, and overlap also occurs between constructs. For example the variables *advice* and *timeliness of advice given on drug information queries* and *advice* and *timeliness of advice given on general queries* overlap with each other, and in some cases with *drug information service*, but all relate to advice, information and time as constructs.

Another example are the constructs of courtesy (Parasuraman, Zeithaml, and Berry 1985), or serviceability (Garvin, 1987), which are measured by the variables *friendliness of the pharmacy staff* and *cooperation of the pharmacy staff to users of the service*, which both correlate highly with each other.

These examples show that construct validity has been 'built' into the questionnaires. The survey instruments developed measure constructs such as time, courtesy, education, information or advice, reliability, dependability, communication, and tangibles (the clinical activities performed by pharmacists) which have been used to ultimately measure the main construct: customer service.

In designing the questionnaires for doctors, nurses and pharmacists, the aim was to include questions that addressed the wide range of services provided by hospital pharmacy departments, and to evaluate the performance of the pharmacy service on measures of customer service which covered all aspects of hospital pharmacy practice.

The pharmacy services from which respondents were asked to identify their requirements were compiled so as to represent services previously identified by doctors and nurses as pharmacy services (Cukierman-Wilson, 1990). These included clinical services as well as traditional hospital pharmacy services associated with dispensing, supply, manufacture, and distribution (materials management).<sup>11</sup>

<sup>11</sup> In terms of customer service and quality measures, the study sought to gain perceptions regarding drug education provision, drug information provision, reliability, accuracy, efficiency, clinical activities, drug and therapeutic monitoring activities, counselling and communication, courtesy, medication/ drug availability, timeliness, responsiveness, aspects of dispensing, access, research, knowledge, credibility, and

The two surveys were designed so as to be statistically significant by targeting large sample sizes. The first survey was designed to have a power of 0.90 and a significance level of 0.05. The second was designed to have a power of 0.99 for a significance of 0.05 and to be sensitive enough to detect a variation of one point in ratings of performance. This was achieved.

The overall results in the study have shown the questionnaires to be consistent and sensitive to change over time because results were not significantly different between surveys, and the models of service developed have changed only subtly with the same services remaining within the models (see Chapter 8). This consistency seen between surveys further confirms the validation of the survey instruments.

#### 7.1.1.3.1 The major elements of the customer service construct

Of most interest are the variables that correlated highly with *overall service provided to the users of the service* for each respondent type over the two surveys. The measures that correlated highly (correlations  $\geq 0.7$ ) with this variable are the major elements of the customer service construct in hospital pharmacy practice.<sup>12</sup> For doctors, these were *cooperation of pharmacy staff to users of the service, understanding and knowing the needs of users, reliability of the service, and communication with the users of the service* in both surveys. *Friendliness of pharmacy staff to users of the service, advice given on general queries* also correlated highly in the first survey.

In the case of nurses *efficiency of the pharmacy service, reliability of the pharmacy service, and communication with the users of the service* correlated highly with the *overall service provided to the users of the service* in both surveys.

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understanding and knowledge of the customer. These were either the constructs or measures developed to evaluate customer service.

<sup>12</sup> Even though *overall service provided by the pharmacy* which was included as a separate question to be rated in the second survey correlated highly with the *overall service provided to the users of the service* and is included in Table 7.2, this is only included for interest because the latter measure is the "gold standard" variable which measures the overall satisfaction with the hospital pharmacy service in both surveys.



For pharmacists, *cooperation and friendliness of pharmacy staff to users of the service* and *communication with users of the service* correlated highly in the first survey and *reliability of the service* and *communication with users of the service* correlated highly in the second.

Interestingly, *reliability of the service* and *communication with users of the service* were measures which were common to each respondent group in the second survey.<sup>13</sup> In the context of customer service, reliability can mean a number of things. It can mean being dependable, timely in provision of services, consistent, accurate, that services are performed correctly the first time, and that a department is able to perform the level of service that it says it can, all of which are total quality management concepts. *Reliability of service* was identified by Parasuraman et al. (1991b) as the most important dimension in meeting customer expectations, and is largely concerned with service outcome. The measures which correlated highly with it in the first survey were *communication with users of the service* and *overall service provided to the users of the service* for both doctors and nurses, as well as *efficiency of the pharmacy service* for nurses only.<sup>14</sup> In the second survey, the measures which correlated highly with it were *overall service provided to the users of the service* for doctors, nurses and pharmacists, and also *efficiency of the pharmacy service*, *timeliness of provision of medication*, and *communication with users of the service* for nurses.

The variables which correlated most highly with *overall service provided to the users of the service* are those which pharmacy departments need to evaluate when they want to measure their customer service. These variables account for satisfaction with customer service, and have shown what is important to customers in both surveys.

When this research was first commenced in 1993, there was a paucity of information about what constituted customer service in hospital pharmacy practice. However, by

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<sup>13</sup> Correlated highly with the *overall service provided to the users of the service*.

<sup>14</sup> For pharmacists, no customer service measures correlated highly with *reliability of the service* in the first survey.

considering constructs used in the quality and customer service literature, measures were developed to cover the various dimensions of practice. By measuring the effectiveness of performance of the services on these measures, those which most account for customer service satisfaction<sup>15</sup> have been condensed to a few variables. Because the needs of doctors, nurses and pharmacists are somewhat different, the variables that can be used to measure customer service have to be adapted to the respondent group being surveyed.

Clinical service measures did not correlate highly with customer service satisfaction in these surveys.<sup>16</sup> Nevertheless, including some clinical service measures on a questionnaire designed to be administered to doctors and nurses is still of value to hospital pharmacy departments because this provides valuable feedback about how these services are perceived. Any changes in perceptions can be measured if these clinical measures were to correlate higher (or lower) with the overall service satisfaction measure on subsequent administration. Results from this research have shown that at the time of the second survey, clinical services were not related to how doctors and nurses perceive customer service. Clinical services continue to employ a significant number of pharmacists, and their time, so feedback is important for pharmacists.

On the other hand doctors and nurses are more concerned with pharmacy departments being able to meet their requirements in a reliable manner, performing their services in a timely fashion, being dependable and consistent, whilst at the same time communicating well with them. If they are dealing with unfriendly, uncooperative, aggressive and confrontational staff, this colours their perception of the pharmacy services in a negative fashion:

*"More cooperation and understanding to other staff members (non-pharmacy). More explanation and less confrontation to nursing staff." (Nurse, large country hospital)*

*"Some pharmacists in department-committed team players, focussed on delivery of patient care, but perceive a significant group who tend to display negative*

<sup>15</sup> The overall service provided to the users of the service.

<sup>16</sup> With the overall service provided to the users of the service.

*attitude that places their routine and work habits above patient care resulting in inflexibility and antagonism." (Doctor, large country hospital)*

Even in times where service difficulties are being experienced, if the pharmacy departments can effectively communicate with their customers this counteracts many deficiencies being experienced because it builds on goodwill and shows customers that they are trying.

#### **7.1.1.3.2 Structure of the questionnaires for doctors, nurses and pharmacists: measures of customer service**

Both surveys identified large numbers of "no opinion" responses and to a slightly lesser extent "not applicable" responses from doctors in particular, and to a lesser extent from nurses, to performance ratings of the pharmacy service on measures of customer service.<sup>17</sup> This raises the question about whether respondents were indeed able to answer the questionnaire. Was it too long? Did many respondents choose not to give an answer? Which questions did they have difficulty answering?

The measures of customer service on which doctors, nurses and pharmacists were asked to rate the effectiveness of performance of the pharmacy services in both surveys, and the type of responses they gave, are detailed in Tables 7.3 to 7.8.

Included in the second survey was a separate question asking doctors, nurses and pharmacists to rate the *overall service provided by the hospital's pharmacy*. Their responses are included in Tables 7.6 to 7.8.<sup>18</sup>

<sup>17</sup> See Chapter 4, section 4.4.2, Figures 4.1 to 4.4, and Chapter 5, section 5.4.2, Figures 5.3 to 5.6.

<sup>18</sup> This question was positioned following the questions about changes that had occurred to pharmacy services over the period since the earlier survey and their impact upon services (see copies of questionnaires in Appendix 3). Because the ratings for this measure were not the same as those obtained for the measure *overall service provided to users of the service* which was included amongst the other customer service measures, this shows the effect of positioning questions within a survey instrument. Positioned separately, the mean rating for the *overall service provided by the pharmacy departments* was marginally lower for doctors and pharmacists. This shows that by considering questions about changes in pharmacy services over the past few years, this may have ultimately influenced the ratings given by doctors, nurses and pharmacists to the question dealing with the *overall service provided by their hospital pharmacy*. This highlights how important the positioning of a question is when designing a survey instrument, because the sequencing of questions can ultimately influence the responses given.

An examination of Tables 7.3 to 7.8 shows that there is no evidence that the length of the questionnaires or the time taken to complete them influenced their completion. This is based on the fact that the individual measures of customer service which respondents rated the performance of the pharmacy service on are listed in the tables in the same order in which they appear in the questionnaires, and very few respondents chose not to give any response at all ("system missing" responses) compared to actual questionnaire response numbers.<sup>19</sup> Responses given to the last few measures of customer service were comparable with those obtained for earlier measures.

The pharmacists in this study acted as a contrast against which responses from doctors and nurses could be measured and compared. On the whole, most pharmacists chose to give a rating to each question and were able to complete their questionnaires, indicating they understood the questions and were able to respond (Table 7.5 and 7.8). Over 90% of pharmacists gave a rating for the performance of the pharmacy service rather than choosing any other option for 28 out of 33 measures in the first survey, and for 28 out of 36 measures of customer service in the second survey.

More nurses than doctors chose to rate the measures of customer service in both surveys (Tables 7.3, 7.4 and Tables 7.6, 7.8) suggesting that the measures they were required to rate were more meaningful to nurses than doctors, possibly because nurses have more interaction with pharmacists in their daily routine than do doctors. Some doctors may also have been practicing in areas removed from the clinical setting or have been attending patients in private hospitals where their exposure to pharmacy services may be limited to their area of specialty.<sup>20</sup>

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<sup>19</sup> The total response numbers for each respondent type are headed as "Total" in the tables.

<sup>20</sup> Other reasons for differences in exposure by doctors and nurses to pharmacy services were explored in the discussion in Chapter 4.

Table 7.3. Types of responses from doctors to measures of customer service (1993/94)

Measure of customer service	Score <sup>b</sup> given	Score given	Not applicable	No opinion	System missing <sup>a</sup>	Total
	Number	%	Number of doctors			
Cooperation of pharmacy staff to users of the service	539	87	2	57	20	618
Friendliness of pharmacy staff to users of the service	534	86	2	62	20	618
Medical knowledge of the pharmacist	407	66	10	179	22	618
Pharmaceutical knowledge of the pharmacist	451	73	3	138	26	618
Drug information service provided	463	75	13	119	23	618
Advice given on drug information queries	494	80	11	90	23	618
Timeliness of response to drug information queries		77	10	110	23	618
Advice given on general queries	472	76	13	110	23	618
Timeliness of response to general queries	447	72	13	129	29	618
Participation in ward rounds	177	29	182	213	46	618
Review of medication charts	304	49	61	220	33	618
Adverse drug reaction monitoring	270	44	57	254	37	618
Intervention in/ monitoring patient drug therapy	261	42	75	234	48	618
Therapeutic drug monitoring service (pharmacokinetic)	221	36	95	262	40	618
Understanding and knowing the needs of the users	383	62	12	190	33	618
Efficiency of the pharmacy service	488	79	4	99	27	618
Accuracy of dispensing	467	76	4	122	25	618
Discharge dispensing	415	67	14	163	26	618
Timeliness of provision of medication	450	73	6	137	25	618
Availability of stock	441	71	3	149	25	618
Sterile preparations/ intravenous preparations	349	56	24	217	28	618
Discharge medication counselling of patients	224	36	54	304	36	618
Patient information & education on drugs/ medicines	234	38	45	305	34	618
Pharmacy bulletins/ publications	359	58	71	161	27	618
Drug education for hospital staff-informal	303	49	40	247	28	618
In-service, structured lectures for hospital staff	134	22	144	309	31	618
Extent of pharmacy department involvement in research	139	22	76	371	32	618
Reliability of service	497	80	5	85	31	618
Communication with users of the service	456	74	5	124	33	618
After hours service	370	60	24	193	31	618
Overall service provided to the users of the service	510	83	4	71	33	618

<sup>a</sup> No response was given in the questionnaire for the particular measure.

<sup>b</sup> Score given as a "rating" between 0 and 10.

Table 7.4 Types of responses from nurses to measures of customer service (1993/94)

Measure of customer service	Score given	Score given	Not applicable	No opinion	System missing	Total
	number	%	Number of nurses			
Cooperation of pharmacy staff to users of the service	1097	95	4	25	34	1160
Friendliness of pharmacy staff to users of the service	1110	96	5	24	21	1160
Medical knowledge of the pharmacist	892	77	17	216	35	1160
Pharmaceutical knowledge of the pharmacist	1009	87	7	118	26	1160
Drug information service provided	1019	88	23	87	31	1160
Advice given on drug information queries	1085	94	12	40	23	1160
Timeliness of response to drug information queries	1047	90	18	71	24	1160
Advice given on general queries	1056	91	21	59	24	1160
Timeliness of response to general queries	1031	89	21	75	33	1160
Participation in ward rounds	498	43	389	188	85	1160
Review of medication charts	791	68	177	158	34	1160
Adverse drug reaction monitoring	629	54	178	313	40	1160
Intervention in/ monitoring patient drug therapy	689	59	149	259	63	1160
Therapeutic drug monitoring service (pharmacokinetic)	545	47	158	400	57	1160
Understanding and knowing the needs of the users	894	77	29	189	48	1160
Efficiency of the pharmacy service	1086	94	7	35	32	1160
Accuracy of dispensing	1068	92	11	52	29	1160
Discharge dispensing	902	78	81	146	31	1160
Timeliness of provision of medication	1036	89	18	75	31	1160
Availability of stock	1077	93	9	45	29	1160
Sterile preparations/ intravenous preparations	910	78	71	141	38	1160
Discharge medication counselling of patients	745	64	138	238	39	1160
Patient information & education on drugs/ medicines	789	68	101	228	42	1160
Pharmacy bulletins/ publications	825	71	109	190	36	1160
Drug education for hospital staff-informal	965	83	64	93	38	1160
In-service, structured lectures for hospital staff	784	68	182	157	37	1160
Extent of pharmacy department involvement in research	225	19	163	721	51	1160
Reliability of service	1073	93	12	42	33	1160
Communication with users of the service	1004	87	19	100	37	1160
After hours service	897	77	85	142	36	1160
Overall service provided to the users of the service	1059	91	10	53	38	1160

Table 7.5 Types of responses from pharmacists to measures of customer service (1993/94)

Measure of customer service	Score given	Score given	Not applicable	No opinion	System missing	Total
	number	%	Number of pharmacists			
Cooperation of pharmacy staff to users of the service	211	100	0	0	0	211
Friendliness of pharmacy staff to users of the service	211	100	0	0	0	211
Medical knowledge of the pharmacist	206	98	0	4	1	211
Pharmaceutical knowledge of the pharmacist	208	99	0	2	1	211
Drug information service provided	206	98	2	3	0	211
Advice given on drug information queries	204	97	1	6	0	211
Timeliness of response to drug information queries	200	95	1	10	0	211
Advice given on general queries	208	99	0	3	0	211
Timeliness of response to general queries	204	97	0	7	0	211
Participation in ward rounds	154	73	45	11	1	211
Review of medication charts	196	93	8	7	0	211
Adverse drug reaction monitoring	191	91	11	7	2	211
Intervention in/ monitoring patient drug therapy	199	94	5	7	0	211
Therapeutic drug monitoring service (pharmacokinetic)	177	84	26	8	0	211
Understanding and knowing the needs of the users	200	95	0	8	3	211
Efficiency of the pharmacy service	208	99	0	1	2	211
Accuracy of dispensing	211	100	0	0	0	211
Discharge dispensing	202	96	8	1	0	211
Timeliness of provision of medication	210	100	1	0	0	211
Presentation of medicines	210	100	1	0	0	211
Availability of stock	209	99	0	1	1	211
Sterile preparations/ intravenous preparations	191	91	17	3	0	211
Discharge medication counselling of patients	203	96	8	0	0	211
Patient information & education on drugs/ medicines	201	95	7	2	1	211
Continuing education for staff pharmacists	203	96	7	1	0	211
Education and training of non-pharmacist pharmacy staff	185	88	15	11	0	211
Drug education for hospital staff-informal	193	91	6	12	0	211
In-service, structured lectures for hospital staff	177	84	16	16	2	211
Extent of pharmacy department involvement in research	145	69	51	14	1	211
Reliability of service	210	100	0	1	0	211
Communication with users of the service	206	98	0	5	0	211
After hours service	198	94	8	5	0	211
Overall service provided to the users of the service	210	100	0	1	0	211

Table 7.6 Types of responses from doctors to measures of customer service (1999/2000)

Measure of customer service	Score <sup>b</sup> given	Score given	Not applicable	No opinion	System missing	Total
	number	%	Number of doctors			
Cooperation of pharmacy staff to users of the service	362	87	1	40	11	414
Friendliness of pharmacy staff to users of the service	369	89	2	33	10	414
Medical knowledge of the pharmacist	295	71	3	103	13	414
Pharmaceutical knowledge of the pharmacist	326	79	2	75	11	414
Drug information service provided	308	74	9	85	12	414
Advice given on drug information queries	327	79	8	68	11	414
Timeliness of response to drug information queries	315	76	11	78	10	414
Advice given on general queries	311	75	11	82	10	414
Timeliness of response to general queries	298	72	13	90	13	414
Participation in ward rounds	135	33	123	132	24	414
Review of medication charts	212	51	32	151	19	414
Medication history interview	140	34	57	200	17	414
Adverse drug reaction monitoring	196	47	26	174	18	414
Intervention in/ monitoring patient drug therapy	205	50	36	155	18	414
Therapeutic drug monitoring service (pharmacokinetic)	173	42	43	170	28	414
Understanding and knowing the needs of the users	250	60	8	133	23	414
Efficiency of the pharmacy service	336	81	2	65	11	414
Accuracy of dispensing	321	78	4	78	11	414
Discharge dispensing	294	71	13	94	13	414
Timeliness of provision of medication	300	72	7	95	12	414
Presentation of medicines	234	57	10	159	11	414
Availability of stock	270	65	3	131	10	414
Sterile manufacture: intravenous preparations	120	29	29	255	10	414
Sterile manufacture: cytotoxics	81	20	51	271	11	414
Discharge medication counselling of patients	187	45	25	192	10	414
Patient information & education on drugs/ medicines	193	47	15	196	10	414
Pharmacy bulletins/ publications	208	50	79	115	12	414
Drug education for hospital staff-informal	190	46	50	160	14	414
In-service, structured lectures for hospital staff	126	30	81	193	14	414
Extent of pharmacy department involvement in research	102	25	50	246	196	414
Reliability of service	335	81	2	61	16	414
Communication with users of the service	320	77	6	71	17	414
After hours service	254	61	26	121	13	414
Overall service provided to the users of the service	345	83	3	49	17	414
Overall rating of overall service provided by the hospital's pharmacy <sup>a</sup>	384	93	0	0	30	414

<sup>a</sup>This measure was only included in the second survey as a separate question for doctors, nurses and pharmacists for interest.

<sup>b</sup>Score given as a "rating" between 0 and 10.



Table 7.7 Types of responses from nurses to measures of customer service (1999/2000)

Measure of customer service	Score given	Score given	Not applicable	No opinion	System missing	Total
	number	%	Number of nurses			
Cooperation of pharmacy staff to users of the service	521	95	1	14	10	546
Friendliness of pharmacy staff to users of the service	528	97	1	14	3	546
Medical knowledge of the pharmacist	471	86	5	62	8	546
Pharmaceutical knowledge of the pharmacist	502	92	1	39	4	546
Drug information service provided	492	90	6	43	5	546
Advice given on drug information queries	520	95	2	21	3	546
Timeliness of response to drug information queries	513	94	3	26	4	546
Advice given on general queries	518	95	4	18	6	546
Timeliness of response to general queries	509	93	3	24	10	546
Participation in ward rounds	290	53	162	61	33	546
Review of medication charts	432	79	55	52	7	546
Medication history interview	344	63	104	87	11	546
Adverse drug reaction monitoring	376	69	63	94	13	546
Intervention in/ monitoring patient drug therapy	380	70	68	82	16	546
Therapeutic drug monitoring service (pharmacokinetic)	310	57	74	133	29	546
Understanding and knowing the needs of the users	445	82	9	73	19	546
Efficiency of the pharmacy service	522	96	1	14	9	546
Accuracy of dispensing	515	94	3	20	8	546
Discharge dispensing	474	87	32	30	10	546
Timeliness of provision of medication	505	92	4	28	9	546
Presentation of medicines	492	90	7	36	11	546
Availability of stock	515	94	1	23	7	546
Sterile manufacture: intravenous preparations	314	58	85	137	10	546
Sterile manufacture: cytotoxics	166	30	153	210	17	546
Discharge medication counselling of patients	410	75	52	75	9	546
Patient information & education on drugs/ medicines	439	80	36	63	8	546
Pharmacy bulletins/ publications	353	65	82	98	13	546
Drug education for hospital staff-informal	450	82	41	38	17	546
In-service, structured lectures for hospital staff	415	76	60	52	19	546
Extent of pharmacy department involvement in research	130	24	52	347	17	546
Reliability of service	506	93	3	22	15	546
Communication with users of the service	488	89	2	39	17	546
After hours service	427	78	44	57	18	546
Overall service provided to the users of the service	499	91	2	17	28	546
Overall rating of overall service provided by the hospital's pharmacy	523	96	0	0	23	546

Table 7.8 Types of responses from pharmacists to measures of customer service (1999/2000)

Measure of customer service	Score given	Score given	Not applicable	No opinion	System missing	Total
	number	%	Number of pharmacists			
Cooperation of pharmacy staff to users of the service	138	97	0	2	3	143
Friendliness of pharmacy staff to users of the service	142	99	0	0	1	143
Medical knowledge of the pharmacist	139	97	0	4	0	143
Pharmaceutical knowledge of the pharmacist	142	99	0	1	0	143
Drug information service provided	134	94	5	4	0	143
Advice given on drug information queries	138	97	1	4	0	143
Timeliness of response to drug information queries	134	94	1	6	2	143
Advice given on general queries	140	98	0	3	0	143
Timeliness of response to general queries	139	97	0	3	1	143
Participation in ward rounds	97	68	35	8	3	143
Review of medication charts	135	94	0	8	0	143
Medication history interview	127	89	7	9	0	143
Adverse drug reaction monitoring	135	94	1	7	0	143
Intervention in/ monitoring patient drug therapy	136	95	1	6	0	143
Therapeutic drug monitoring service (pharmacokinetic)	125	87	9	9	0	143
Understanding and knowing the needs of the users	139	97	0	4	0	143
Efficiency of the pharmacy service	142	99	0	1	0	143
Accuracy of dispensing	141	99	1	1	0	143
Discharge dispensing	137	96	4	0	2	143
Timeliness of provision of medication	141	99	1	1	0	143
Presentation of medicines	142	99	0	1	0	143
Availability of stock	143	100	0	0	0	143
Sterile manufacture: intravenous preparations	112	78	22	8	1	143
Sterile manufacture: cytotoxics	71	50	62	8	2	143
Discharge medication counselling of patients	136	95	3	4	0	143
Patient information & education on drugs/ medicines	138	97	0	5	0	143
Pharmacy bulletins/ publications	94	66	39	10	0	143
Drug education for hospital staff-informal	131	92	4	8	0	143
In-service, structured lectures for hospital staff	108	76	22	13	0	143
Continuing education for staff pharmacists	134	94	4	5	0	143
Education and training of non-pharmacist pharmacy staff	128	90	9	6	0	143
Extent of pharmacy department involvement in research	91	64	40	11	1	143
Reliability of service	141	99	2	0	0	143
Communication with users of the service	142	99	1	0	0	143
After hours service	122	85	15	6	0	143
Overall service provided to the users of the service	142	99	0	1	0	143
Overall rating of overall service provided by the hospital's pharmacy	141	99	0	0	2	143

The measures of customer service which 75% or more of doctors and nurses rated are those measures which are considered "important" for inclusion in customer service survey instruments in the future should a shorter questionnaire be desired. They include those constructs that correlated highest with the "customer service gold standard variable", namely *overall service provided to the users of the pharmacy service*.

The most uncertainty noted for doctors and nurses in both studies when asked to give ratings was seen with clinical services, sterile manufacture, education and information activities, and the extent of pharmacy department involvement in research.<sup>21</sup> Even though many of these measures were not highly correlated with the *overall service provided to users of the service*, they should be included in future survey instruments to allow pharmacy departments to track trends or changes in perceptions or acceptance of services across the board.

However, at the time of the second survey, some of these measures were not related to the concept of customer service from the perspective of doctors, and to a lesser extent nurses. This is a serious problem for pharmacists and is discussed in the final chapter.

The pattern of responses obtained from doctors, nurses and pharmacists to the questionnaires over the six-year time frame show that there was a stability of responses over the two separate survey periods.

#### **7.1.2 Reliability of questionnaires for doctors, nurses and pharmacists**

The reliability of the questionnaires was tested in two ways. Firstly, by conducting the second survey which found the results to be repeatable, and reproducible<sup>22</sup>, and secondly, Cronbach's Alpha was applied to the performance ratings for measures of customer service in both surveys. Cronbach's Alpha is a commonly used reliability coefficient which is based on the internal consistency of a test.

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<sup>21</sup> As noted by the number of "no opinion" responses.

<sup>22</sup> Any ambiguities found in the first survey were corrected for the second survey. For example, *pharmacy store* was changed to *pharmacy store (bulk storage, reserve stock)* and *pharmacy purchasing* was changed to *pharmacy controls and performs drug purchasing* to further clarify these services.

Anastasi (1988) notes that the most obvious method for finding the reliability of test scores is by repeating the identical test on a second occasion. She discusses how to obtain a reliability coefficient by correlating the scores obtained from administering the instrument to the same person on two separate occasions. This was not done precisely in this study because targeting all the same individuals again six years later was not feasible. However, there was some small amount of repeat testing because 4.3% of doctors, 2.9% of nurses, and 18.2% of pharmacists who responded to the second survey indicated they had completed the first one.

Cronbach's alpha should be computed for any multiple-item scale (Carmines and Zeller, 1979). Alpha ranges in value from 0 to 1, and reliabilities should not be below 0.80 for widely used scales (Carmines and Zeller, 1979). Some of the better standardised instruments have reliability coefficients above 0.90 (Nunnally, 1972).

The Cronbach's alpha was calculated for the ratings obtained from doctors, nurses and pharmacists for the performance of the pharmacy service in both surveys (Table 7.9). It was conducted on the ratings scale only and excluded the "not applicable" and "no opinion" responses because the coding of these did not have a numerical meaning and could not be added to the rating for a particular measure.<sup>23</sup>

Table 7.9 Cronbach's alpha for both surveys

Study year	Doctors		Nurses		Pharmacists	
	Alpha	Standardised item alpha <sup>a</sup>	Alpha	Standardised item alpha <sup>a</sup>	Alpha	Standardised item alpha <sup>a</sup>
1993/1994	0.9607 <sup>b</sup>	0.9672	0.9647 <sup>b</sup>	0.9680	0.9492 <sup>c</sup>	0.9544
1999/2000	0.9569 <sup>d</sup>	0.9624	0.9681 <sup>d</sup>	0.9719	0.932 <sup>e</sup>	0.9434

<sup>a</sup> The standardised item alpha is the alpha that would be obtained if all the items were standardised to have a variance of 1. If variances of items differ widely the alpha and standardised alpha can be quite different.

<sup>b</sup> Reliability coefficient for 31 measures of customer service.

<sup>c</sup> Reliability coefficient for 33 measures of customer service.

<sup>d</sup> Reliability coefficient for 34 measures of customer service.

<sup>e</sup> Reliability coefficient for 36 measures of customer service.

A limitation of this was that, because significant numbers of doctors and nurses chose not to rate some customer service measures, choosing instead the two other options, these

<sup>23</sup> The rating was out of a maximum score of 10 for each measure.

cases were excluded from the calculation of the Cronbach's alpha. This resulted in the responses from as few as 27 doctors, 88 nurses and 97 pharmacists in the first survey, and 20 doctors, 40 nurses and 37 pharmacists in the second being included in the calculation of the reliability coefficient.<sup>24</sup>

All the alpha values obtained were high (above 0.93) and show that the items in the questionnaires are highly reliable (Table 7.9).<sup>25</sup>

The alpha was also calculated if each individual customer service measure was to be deleted from the scale, and caused little change in the value, indicating that the removal of a measure did not substantially improve the reliability of the questionnaire.<sup>26</sup>

The value of Cronbach's alpha depends on both the length of the test and the correlation of the items on the test. Increasing numbers of items (variables) increases the value of the reliability coefficient.

The reliability coefficients obtained in the first survey were high but because the number of respondents included in the analysis of this coefficient was not large (in contrast to the actual number of each respondent group in the database) the decision was made in the second survey to not reduce the number of customer service measures included in the questionnaires.<sup>27</sup>

As a check to see whether the alpha coefficient would be influenced by more cases being included in the analysis, the "no opinion" responses given by doctors, nurses and

<sup>24</sup> Because only this number of respondents gave a rating for every customer service measure.

<sup>25</sup> Despite the small number of responses (from the total respondent population) being used to determine the Cronbach's alpha.

A Cronbach's alpha was calculated for the combined doctors and nurses file in the second survey resulting in an alpha of 0.9649 and standardised item alpha of 0.9688. The Cronbach's alpha for the combined doctors and nurses file in the first survey was 0.9649 and standardised item alpha was 0.9683.

<sup>26</sup> In most cases (if a measure was deleted), only slight variations in alpha values were detected with most deletions not resulting in any improvement in the value of alpha.

<sup>27</sup> As an interesting exercise, the author substituted the mean rating for each measure of customer service into the database where doctors had chosen a non-rating option in 1993/94. When Cronbach's alpha was then calculated, the reliability coefficient for the 31 measures for 496 doctors was  $\alpha=0.9440$ , and standardised item  $\alpha=0.9469$ .

pharmacists were substituted with a value of 5.1 which represents a neutral rating (the mid-point on a 10 point scale) for a customer service measure.<sup>28</sup> When the Cronbach's alpha was recalculated the coefficient still remained high (above 0.9) as can be seen in Table 7.10. This further shows that the survey instruments are reliable.

**Table 7.10 Cronbach's alpha for both surveys substituting "no opinion" responses with 5.1**

Study year	Doctors		Nurses		Pharmacists	
	Alpha	Standardised item alpha <sup>a</sup>	Alpha	Standardised item alpha <sup>a</sup>	Alpha	Standardised item alpha <sup>a</sup>
1993/94 <sup>a</sup>	0.9536	0.9539	0.9483	0.9510	0.9401	0.9457
1999/2000 <sup>b</sup>	0.9334	0.9347	0.9572	0.9598	0.9222	0.9282

<sup>a</sup> The number of doctors included in this analysis for 1993/94 increased to 169. The number of nurses included in the analysis increased to 187, and the number of pharmacists increased to 55.

<sup>b</sup> The number of doctors included in this analysis for 1999/2000 increased to 251. The number of nurses included in the analysis increased to 435 and the number of pharmacists to 121.

### 7.1.3 Refinement of the questionnaires for doctors and nurses

A tailored questionnaire for doctors and nurses which takes into account the constructs which correlated most highly with the *overall service provided to the users of the service* and the measures which were most highly answered by each respondent type<sup>29</sup>, is suggested here (Table 7.11).

No clinical pharmacy service measures are included for doctors (Table 7.11). However, for a questionnaire to be truly reflective of the current state of pharmacy practice it is critical that some are included. At a minimum *drug information service, review of medication charts, adverse drug reaction monitoring, intervention in/ monitoring patient drug therapy, discharge medication counselling of patients, patient information & education on drugs/ medicines, and drug education for hospital staff-informal* should be included.<sup>30</sup> This is because these are core components of a clinical pharmacy service (see The Society of Hospital Pharmacists of Australia (1996b) Standards of Practice for Clinical Pharmacy), because they include measures associated with drug therapy monitoring and safety, and provision of drug information and education to doctors,

<sup>28</sup> 5.1 was chosen so as to differentiate this with any responses of "5" actually given by respondents in the surveys.

<sup>29</sup> Where at least 75% of respondents gave a rating for the measure in 1999/2000 (see Tables 7.6 and 7.7).

<sup>30</sup> With the exception of *intervention in/ monitoring patient drug therapy*, all these services were fundamental for doctors and nurses in the second survey (see Table 5.15)

Table 7.11 Measures of customer service to include in a refined customer service survey instrument

Doctors	Nurses
Cooperation of pharmacy staff to users of the service	Cooperation of pharmacy staff to users of the service
Friendliness of pharmacy staff to users of the service	Friendliness of pharmacy staff to users of the service
	Medical knowledge of the pharmacist
Pharmaceutical knowledge of the pharmacist	Pharmaceutical knowledge of the pharmacist
	Drug information service provided
Advice given on drug information queries	Advice given on drug information queries
Timeliness of response to drug information queries	Timeliness of response to drug information queries
Advice given on general queries	Advice given on general queries
	Timeliness of response to general queries
	Review of medication charts/ orders
Understanding and knowing the needs of the users	Understanding and knowing the needs of the users
Efficiency of the pharmacy service	Efficiency of the pharmacy service
Accuracy of dispensing	Accuracy of dispensing
	Discharge dispensing
	Timeliness of provision of medication
	Presentation of medicines
	Availability of stock
	Discharge medication counselling of patients
	Patient information & education on drugs/ medicines
	Drug education for hospital staff-informal
	In-service, structured lectures for hospital staff
Reliability of service	Reliability of service
Communication with users of the service	Communication with users of the service
	After hours service
Overall service provided to the users of the service	Overall service provided to the users of the service

nurses and patients. Patient focussed care encompasses many of these services (Hepler and Strand, 1990; Enright and Flagstad, 1991; Vogel, 1993; Harper and Proust, 1995).

A separate questionnaire is designed for doctors and nurses because the validation process has uncovered differences between them in their understanding of customer service and what constructs most relate to this (Figures 7.2 and 7.3). However, some clinical services are included for doctors as discussed, as well as *availability of stock* and *timeliness of provision of medication* because these measures reflect key constructs of customer service.

*Intervention in/ monitoring patient drug therapy* and *adverse drug reaction monitoring* are also included in the abridged nurses' questionnaire because nurses indicated a greater

Figure 7.2 Customer service questionnaire for doctors.

Hospital pharmacy customer service questionnaire for doctors			
How effective is the performance of the current pharmacy service at THIS hospital on the following measures?			
Please provide a SCORE between 0 and 10 where 0 = very poor performance on that issue (i.e. lowest score) and 10 = excellent performance on that issue (i.e. highest score).			
If the service is not applicable at your hospital or you have no opinion regarding the particular measure listed please tick the appropriate boxes.			
Please answer every line.			
	Score	Not applicable	No opinion
Cooperation of pharmacy staff to users of the service .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Friendliness of the pharmacy staff to users of the service ...	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Pharmaceutical knowledge of the pharmacists .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Drug information service provided .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Advice given on drug information queries .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Timeliness of response to drug information queries .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Advice given on general queries .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Clinical ward pharmacy- review of medication charts .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
adverse drug reaction monitoring.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
intervention in/ monitoring patient drug therapy ...	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Understanding and knowing the needs of the users .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Efficiency of the pharmacy service .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Accuracy of dispensing .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Timeliness of provision of medication .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Availability of stock .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Discharge medication counselling of patients .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Patient information and education on drugs/ medicines .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Drug education for hospital staff- informal .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Reliability of the service .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Communication with users of the service .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Overall service provided to the users of the service .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



Figure 7.3 Customer service questionnaire for nurses

Hospital pharmacy customer service questionnaire for nurses			
How effective is the performance of the current pharmacy service at <b>THIS</b> hospital on the following measures?			
Please provide a <b>SCORE</b> between 0 and 10 where 0 = very poor performance on that issue (i.e. lowest score) and 10 = excellent performance on that issue (i.e. highest score).			
If the service is not applicable at your hospital or you have no opinion regarding the particular measure listed please tick the appropriate boxes.			
Please answer every line.			
	Score	Not applicable	No opinion
Cooperation of pharmacy staff to users of the service .....	<input type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>
Friendliness of the pharmacy staff to users of the service ...	<input type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>
Medical knowledge of the pharmacists .....	<input type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>
Pharmaceutical knowledge of the pharmacists .....	<input type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>
Drug information service provided .....	<input type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>
Advice given on drug information queries .....	<input type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>
Timeliness of response to drug information queries .....	<input type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>
Advice given on general queries .....	<input type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>
Timeliness of response to general queries .....	<input type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>
Clinical ward pharmacy- review of medication charts .....	<input type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>
-adverse drug reaction monitoring.....	<input type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>
-intervention in/ monitoring patient drug therapy ...	<input type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>
Understanding and knowing the needs of the users .....	<input type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>
Efficiency of the pharmacy service .....	<input type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>
Accuracy of dispensing .....	<input type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>
Discharge dispensing .....	<input type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>
Timeliness of provision of medication .....	<input type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>
Presentation of medicines .....	<input type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>
Availability of stock .....	<input type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>
Discharge medication counselling of patients .....	<input type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>
Patient information and education on drugs/ medicines .....	<input type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>
Drug education for hospital staff- informal .....	<input type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>
In-service, structured lectures for hospital staff .....	<input type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>
Reliability of the service .....	<input type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>
Communication with users of the service .....	<input type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>
After hours service .....	<input type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>
Overall service provided to the users of the service .....	<input type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>

willingness to evaluate this measure of customer service in the second survey, possibly because these activities are gaining wider recognition amongst them.

#### **7.1.4 Validation of the questionnaires for patients**

The questionnaires for patients were designed to provide a "picture" of the perceptions that inpatients and outpatients have of hospital pharmacy services.

Validation focuses on the questionnaires used in the second survey because these questionnaires for inpatient and outpatients included an expanded list of customer service measures, and services for patients to rate, although the issues of validation would be equally applicable to the questionnaires used in the first survey (see Appendix 3).

##### **7.1.4.1 Face and content validity**

The face validity of the inpatient and outpatient questionnaires is addressed because they appear to be measuring or obtaining information about what they were intended to measure; patient's perceptions of hospital pharmacy services and pharmacists.

The content validity was addressed by designing questionnaires which allowed patients to add or give information regarding their perceptions of the role of the hospital pharmacist, their service requirements, ways to improve service to them, and by asking them to rate the performance of the pharmacy service on a number of measures of customer service. The measures of customer service which inpatients were required to rate the performance of the ward pharmacist on, and which outpatients were asked to score with regards to their importance and rate in terms of the performance of the pharmacy service, were adapted from the customer service and quality literature.

Consultation about questions included in the questionnaires was undertaken with a leading market researcher, hospital pharmacists and university academics (Chant, 1993; Hargreaves, 1993; Tong, 1993; Lyall, 1993; Stewart, 1993; Brien, 1993; Wilson, 1993; Chapman, 1993; Stewart, 1999; Brien, 1999; Wilson, 1999; Chapman, 1999) and

personal knowledge. The patient questionnaires used in the second survey were based on those developed and piloted in the first survey.<sup>31</sup>

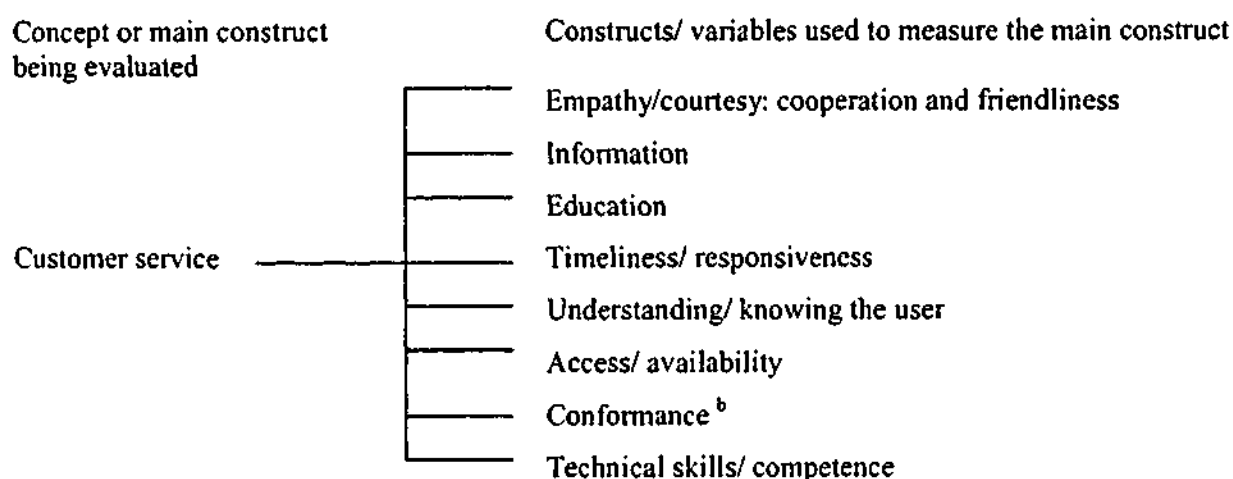
#### 7.1.4.2 Criterion-related validity

Criterion-related validity was not applicable to the patient questionnaires because these had no predictive function and were only endeavouring to explore patient's views/ perceptions of pharmacy services and pharmacists.

#### 7.1.4.3 Construct validity

Patients were asked fewer questions so as to keep the questionnaires relatively simple and brief. The variables or constructs used to measure the customer service construct are shown in Figure 7.4.<sup>32</sup>

Figure 7.4 The customer service construct and related sub-constructs/ variables<sup>a</sup>



<sup>a</sup> Incorporated within the patient survey instruments to measure customer service.

<sup>b</sup> Conformance refers to standards of practice e.g. *presentation of the medicines i.e. information on the labels and appearance of the labels; care taken by pharmacy to dispense the patient's medication* which also overlaps with technical skills/ competence.

#### 7.1.4.3.1 Outpatient questionnaire

In the second survey, outpatients had to first rate the importance of a number of pharmacy services and then rate the pharmacy's performance on those service

<sup>31</sup> This provided feedback regarding ease of completion, ease of understanding and length of questionnaires.

<sup>32</sup> See Figure 3.4 (Chapter 3) for the relationship between concept, construct and variables.

measures.<sup>33</sup> Measures that correlated highly for both are shown in Table 7.12.

Table 7.12 Customer service measures that correlated highly (1999/2000) <sup>a</sup>

Measure of customer service	Outpatient	
	Importance rating	Rating of pharmacy's performance
Time taken for prescription to be filled		
Advice given on medication	Overall information provided by the pharmacist (0.757) Understanding the needs of the patient (0.692)	Overall information provided by the pharmacist (0.859)
Friendliness of staff		Cooperation of staff (0.885)
Cooperation of staff		Friendliness of staff (0.885) Understanding the needs of the patient (0.695)
Overall information provided by the pharmacist	Advice given on medication (0.757) Understanding the needs of the patient (0.865)	Advice given on medication (0.859) Understanding the needs of the patient (0.752)
Understanding the needs of the patient	Advice given on medication (0.692) Overall information provided by the pharmacist (0.865)	Cooperation of staff (0.695) Overall information provided by the pharmacist (0.752)
Waiting room facilities		
Presentation of the medicines i.e. information on labels and appearance of label.		
The time the pharmacy department is open for service to the public		The care taken by the pharmacy to dispense the patient's medication (0.699)
The care taken by the pharmacy to dispense the patient's medication		The time the pharmacy department is open for service to the public (0.699)

<sup>a</sup> Correlations of 0.7 and above were considered to be high correlations. Correlations of 0.685 to 0.7 were also included because they are close to 0.7 and were rounded up to 0.7. Correlation significant at the 0.05 and 0.01 level (2-tailed)

Some constructs were characterised by a number of variables, for instance, *friendliness of staff* and *cooperation of staff*, correlated highly with each other, and are used to describe the constructs of courtesy or empathy. *Cooperation of pharmacy staff* also correlated highly with *understanding the patient's needs* which measures the construct of understanding/ knowing the user. These examples illustrate that construct validity is built into the questionnaire for outpatients.

<sup>33</sup> See Appendix 3.

The measures of customer service used in the second survey which outpatients rated the performance of the pharmacy service on, and the type of response they gave are shown in Table 7.13.

**Table 7.13 Types of responses from outpatients to performance on measures of customer service (1999/2000)**

Measure of customer service	Score <sup>b</sup> given	Score given	Not applicable	Don't know	System missing <sup>a</sup>	Total
	number	%	Number of outpatients			
Time taken for prescription to be filled	79	82.3	2	3	12	96
Advice given on medication	72	75	3	6	15	96
Friendliness of staff	77	80.2	2	2	15	96
Cooperation of staff	78	81.3	2	2	14	96
Overall information provided by the pharmacist	74	77.1	3	4	15	96
Understanding the needs of the patient	71	74	2	7	16	96
Waiting room facilities	72	75	3	4	17	96
Presentation of the medicines i.e. information on labels and appearance of labels	75	78.1	2	3	16	96
The time the pharmacy department is open for service to the public	62	64.6	2	16	16	96
The care taken by the pharmacy to dispense your prescription	76	79.2	2	2	16	96

<sup>a</sup> No response was given in the questionnaire for the particular measure.

<sup>b</sup> Score given as a "rating" between 0 and 10.

Between 74% to 82.3% of outpatients gave a rating for all customer service measures apart from *time the pharmacy department is open for service to the public*, indicating that most outpatients appeared to have understood the question asked. However, a few decided to write "not applicable" on the questionnaire even though this was not an option! A further 12.5% to 17.7% of outpatients did not give any response at all about the measures (Table 7.13).

Responses from outpatients to the importance of various pharmacy services (Table 7.14), indicates that most were able to provide a rating but there were still 12% to 16% who gave no response. This once again suggests that outpatients understood the question being asked, however, 2% of them decided to endorse the questions "not applicable" even though this was not a given option.

**Table 7.14 Types of responses from outpatients to the importance of measures of customer service (1999/2000)**

Outpatient Measure of customer service	Score <sup>b</sup> given	Score given	Not applicable	Don't know	System missing	Total
	number	%	Number of outpatients			
Time taken for prescription to be filled	82	85.4	2	0	12 <sup>a</sup>	96
Advice given on medication	82	85.4	2	0	12 <sup>a</sup>	96
Friendliness of staff	83	86.5	2	0	11 <sup>a</sup>	96
Cooperation of staff	83	86.5	2	0	11 <sup>a</sup>	96
Overall information provided by the pharmacist	83	86.5	2	0	11	96
Understanding the needs of the patient	81	84.4	2	0	13	96
Waiting room facilities	77	80.2	4	0	15	96
Presentation of the medicines i.e. information on labels and appearance of labels	80	83.3	2	0	14 <sup>a</sup>	96
The time the pharmacy department is open for service to the public	80	83.3	2	0	14	96
The care taken by the pharmacy to dispense your prescription	81	84.4	2	0	13 <sup>a</sup>	96

<sup>a</sup>One patient chose to tick each option rather than give a rating, this has been classified as a missing response.

<sup>b</sup>Score given as a "rating" between 0 and 10.

#### 7.1.4.3.2 Inpatient questionnaire

The Pearson's correlation coefficient was determined for the measures of customer service on which inpatients were required to rate the clinical pharmacist's performance. Measures that correlated highly with each other are shown in Table 7.15.

All of the measures of customer service correlated highly with each other. This implies that where patients rated one measure of performance of the clinical pharmacist highly, all others rated highly and the converse also applies.

The constructs measured for inpatients were associated with courtesy and empathy, information and education, availability, understanding or knowing the user, and competence.

**Table 7.15 Customer service measures that correlated highly for inpatients (1999/2000)<sup>a</sup>**

Measure of customer service	Measures which correlate highly for inpatients
Helpfulness of the pharmacist	Friendliness of the pharmacist (0.856) Cooperation of the pharmacist (0.908) Advice given about how to take drugs/ medicines (0.853) Advice given about your medication (0.859) Overall information provided by the pharmacist to you (0.851) Understanding the needs of the patient (your needs) (0.877) The availability of the pharmacist to answer you questions (0.793)

Measure of customer service	Measures which correlate highly for inpatients
Friendliness of the pharmacist	Helpfulness of the pharmacist (0.856) Cooperation of the pharmacist (0.913) Advice given about how to take drugs/ medicines (0.803) Advice given about your medication (0.808) Overall information provided by the pharmacist to you (0.739) Understanding the needs of the patient (your needs) (0.837) The availability of the pharmacist to answer you questions (0.750)
Cooperation of the pharmacist	Helpfulness of the pharmacist (0.908) Friendliness of the pharmacist (0.913) Advice given about how to take drugs/ medicines (0.858) Advice given about your medication (0.855) Overall information provided by the pharmacist to you (0.829) Understanding the needs of the patient (your needs) (0.877) The availability of the pharmacist to answer you questions (0.877)
Advice given about how to take drugs/ medicines	Helpfulness of the pharmacist (0.853) Friendliness of the pharmacist (0.803) Cooperation of the pharmacist (0.858) Advice given about your medication (0.985) Overall information provided by the pharmacist to you (0.945) Understanding the needs of the patient (your needs) (0.939) The availability of the pharmacist to answer you questions (0.852)
Advice given about your medication	Helpfulness of the pharmacist (0.859) Friendliness of the pharmacist (0.808) Cooperation of the pharmacist (0.855) Advice given about how to take drugs/ medicines (0.985) Overall information provided by the pharmacist to you (0.958) Understanding the needs of the patient (your needs) (0.936) The availability of the pharmacist to answer you questions (0.860)
Overall information provided by the pharmacist to you	Helpfulness of the pharmacist (0.851) Friendliness of the pharmacist (0.739) Cooperation of the pharmacist (0.829) Advice given about how to take drugs/ medicines (0.945) Advice given about your medication (0.958) Understanding the needs of the patient (your needs) (0.899) The availability of the pharmacist to answer you questions (0.823)
Understanding the needs of the patient (your needs)	Helpfulness of the pharmacist (0.877) Friendliness of the pharmacist (0.837) Cooperation of the pharmacist (0.877) Advice given about how to take drugs/ medicines (0.939) Advice given about your medication (0.936) Overall information provided by the pharmacist to you (0.899) The availability of the pharmacist to answer you questions (0.843)
The availability of the pharmacist to answer you questions	Helpfulness of the pharmacist (0.793) Friendliness of the pharmacist (0.750) Cooperation of the pharmacist (0.877) Advice given about how to take drugs/ medicines (0.852) Advice given about your medication (0.860) Overall information provided by the pharmacist to you (0.823) Understanding the needs of the patient (your needs) (0.843)

<sup>a</sup>Correlations of 0.7 and above were considered to be high correlations. Correlation significant at the 0.05 and 0.01 level (2-tailed)

The measures of customer service on which inpatients were required to rate the performance of the clinical pharmacist, and the type of responses they gave, are detailed in Table 7.16.

**Table 7.16 Types of responses from inpatients to performance of the clinical pharmacist on measures of customer service (1999/2000)**

Inpatient Measure of customer service	Score <sup>b</sup> given	Score given	Not applicable	Don't know	System missing <sup>a</sup>	Total
	number	%	Number of outpatients			
Helpfulness of the pharmacist	114	51.8	0	14	92	220
Friendliness of the pharmacist	121	55	0	8	91	220
Cooperation of the pharmacist	107	48.6	0	19	94	220
Advice given about how to take drugs/ medicines	90	40.9	1	33	96	220
Advice given about your medication	93	42.3	2	31	94	220
Overall information provided by the pharmacist to you	99	45	2	23	96	220
Understanding the needs of the patient (your needs)	96	43.6	0	25	99	220
The availability of the pharmacist to answer your questions	93	42.3	0	31	96	220

<sup>a</sup>No response was given in the questionnaire for the particular measure

<sup>b</sup>Score given as a "rating" between 0 and 10.

Approximately 40 to 45% of inpatients chose not to give a rating of the pharmacist's performance in the second survey (Table 7.16). However, inpatients were directed to bypass and not complete the question asking them to rate the clinical pharmacist's performance if they did not know *whether a pharmacist regularly visits the ward* or had not *met the pharmacist working in their ward*, which may explain why some patients have not given a response.

In the second survey 60.9% of inpatients indicated they *knew a pharmacist visits their ward* and 53.6% indicated they had *met the pharmacist working in their ward* (see Chapter 6). In addition to this 62.7% of questionnaires returned were endorsed (by the survey distributors) that the inpatient was in a ward with a clinical pharmacy service, so there were still some inpatients who chose not to respond to this question. To further confuse the issue a number of patients who indicated they did not *know whether a pharmacist regularly visits the ward* in the second survey were in wards where a clinical pharmacy service was provided.



These findings suggest that surveying inpatients about their perceptions of hospital pharmacy services is not a simple matter. Their knowledge of services provided is not always correct, and they are frequently exposed to a wide variety of health service providers within the hospital. It is understandable that patients may feel overwhelmed and uncertain about whom they have met if the healthcare providers do not introduce themselves and explain what they do. Another factor which may impact on the patient's ability to evaluate the healthcare service provider is their health status. Some patients are so ill that they are unable to grasp what is said to them or to deal with issues other than their immediate health concerns. So when discussing inpatients' perceptions of their care, these issues need to be kept in mind as they do influence how they feel and their capacity to respond to questionnaires. As one inpatient remarked in this study, their requirement was simply to get well.

Because about 80% of outpatients were able to rate pharmacy services, yet only about 40% of inpatients were able to rate the clinical pharmacist, suggests that patients are able to provide information but their circumstances may also impact upon their ability to do so. Giving patients an opportunity to comment on pharmacy services (or perhaps healthcare services in general) does not automatically imply that they will take up the opportunity to do so. This also means that researchers need to be aware of this and temper their results accordingly. For some patients, improvement in their health status is sufficient for them to feel satisfied even if services provided leave much to be desired. Some patients are also fearful that any negative comments made by them may impact negatively upon their care. This also needs to be borne in mind especially when considering patient satisfaction studies. In some instances cultural barriers may prevent patients from voicing concerns about services. However, this does not suggest that such studies have no use, this only suggests that results need to be considered in this context.

#### **7.1.4.4 Reliability of the patient questionnaires**

Reliability of the outpatient questionnaire was tested by applying Cronbach's alpha to ratings of the importance of the various pharmacy services, and to performance ratings for the measures of customer service in the second survey.

Cronbach's alpha was conducted on the ratings only, with all other options excluded from the analysis.<sup>34</sup> This resulted in only 72 outpatients being included in the analysis that focussed on the importance ratings, and 52 in the analysis considering performance ratings. The Cronbach's alpha obtained for outpatients shows the questionnaire to be reliable because a coefficient above 0.8 was achieved (Table 7.17).

Table 7.17 Cronbach's alpha for the outpatient questionnaire (1999/2000)

Related question	Alpha <sup>a</sup>	Standardised alpha <sup>b</sup>
Ratings of performance of the pharmacy service	0.8726	0.8761
Importance ratings of the various pharmacy services to the outpatients	0.8689	0.8762

<sup>a</sup> Reliability coefficient for 10 items (10 variables included in the analysis).

<sup>b</sup> The standardised item alpha is the alpha that would be obtained if all the items were standardised to have a variance of 1. If variances of items differ widely the alpha and standardised alpha can be quite different.

The alpha obtained if a measure was deleted remained between 0.8358 and 0.8787 for importance ratings, and between 0.8698 and 0.8759 for the performance ratings. The only improvement in reliability for the importance scale was associated with removing the measure *time taken for prescription to be filled* and by removing *the time the pharmacy is open for service to the public* from the pharmacy performance ratings scale.<sup>35</sup>

The Cronbach's alpha was calculated for the 8 measures on which inpatients were required to rate the clinical pharmacist's performance and was 0.9845, with a standardised item alpha of 0.9858. Seventy-five inpatients were included in the analysis because only this number of inpatients gave a rating for each measure. The alpha achieved was high showing the scale of measures to be reliable and inter-item correlations to be high. The alpha remained above 0.98 if any of the items was deleted (in fact it dropped very slightly) indicating that deletion of any of the items would not increase the overall reliability of the scale.

<sup>34</sup> "Don't know" and "not applicable" responses (an option patients gave but not included in the questionnaires) were excluded from the analysis.

<sup>35</sup> These two measures were the only ones that resulted in a slight increase in the value of the reliability coefficient if they were deleted.

#### 7.1.4.5 Limitations of the patient surveys

In the development of the questionnaires for patients the length and clarity were considered. As a result, the list of measures of customer service that patients were asked to rate were concise and sought to focus on issues relevant to pharmacy practice at the time of the surveys. The constructs which were evaluated centered on education and information about drugs and medicines, the provision of advice and information, courtesy and empathy, timeliness, availability, access, and the understanding that the pharmacy or clinical pharmacist had of the user. The outpatient questionnaire had a greater focus on the dispensing process, timeliness and information, whereas the inpatient questionnaire focussed more on the advice and information provided and the availability of the pharmacist. A possible future addition to both questionnaires would be a measure seeking their perception of the overall service provided.

#### 7.1.4.6 Refinement of the questionnaires for patients

A slightly modified questionnaire for outpatients is suggested, based on the ability of them to complete the questions seeking their ratings of the performance of the pharmacy services (Figure 7.5).<sup>36</sup>

It can be argued, however, that all the measures should remain in a questionnaire for outpatients. *The time the pharmacy department is open for service to the public* is included in Figure 7.5 because it relates to the construct of "access and availability" which has been used previously in numerous surveys of patients' satisfaction with medical care.<sup>37</sup>

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<sup>36</sup> Where 74% or more of patients provided a rating for a measure being evaluated in the second survey this measure is included in the abridged survey instrument.

<sup>37</sup> See for example Ware et al. (1983b), Quint and Fergusson (1997).

Figure 7.5 Customer service questionnaire for outpatients

Hospital pharmacy customer service questionnaire for outpatients		
How would you rate this hospital pharmacy's performance on the following measures?		
Please give a <b>NUMBER</b> between 0 and 10 where 0 is very poor (i.e. worst rating) and 10 is excellent (i.e. best rating)		
	Rating	Don't know
Time taken for prescription to be filled .....	<input type="text"/>	<input type="text"/>
Advice given on medication .....	<input type="text"/>	<input type="text"/>
Friendliness of staff .....	<input type="text"/>	<input type="text"/>
Cooperation of staff .....	<input type="text"/>	<input type="text"/>
Overall information provided by the pharmacist .....	<input type="text"/>	<input type="text"/>
Understanding the needs of the patient (your needs) .....	<input type="text"/>	<input type="text"/>
Waiting room facilities .....	<input type="text"/>	<input type="text"/>
Presentation of the medicines i.e. information on labels ..... and appearance of label	<input type="text"/>	<input type="text"/>
The time the pharmacy department is open for service to the public	<input type="text"/>	<input type="text"/>
The care taken by the pharmacy to dispense your ..... prescription	<input type="text"/>	<input type="text"/>
Overall service provided by the pharmacy .....	<input type="text"/>	<input type="text"/>

Ratings of the performance of clinical pharmacists were obtained from a small proportion of inpatients (Table 7.16), therefore the criteria for reducing the size of their questionnaire are not applicable here.<sup>38</sup> The Cronbach's alpha was high, and each of the measures correlated highly with each other, so there appears to be no need to change any of the measures included in the questionnaire. However, the measures *advice given about how to take drugs/ medicines* and *advice given about your medication* correlated highest and the latter measure could be easily incorporated within the first. Figure 7.6 shows the customer service questionnaire for inpatients based on the second survey.

<sup>38</sup> This is because only between 41% and 55% of inpatients gave a rating in the second survey and the criteria for reducing the size of the questionnaire required about 75% of respondents giving a rating.

Figure 7.6. Customer service questionnaire for inpatients

Hospital pharmacy customer service questionnaire for inpatients		
How would you rate the ward pharmacist's performance on the following measures?		
Please give a <b>NUMBER</b> between 0 and 10, where 0 is very poor (i.e. lowest rating) and 10 is excellent (i.e. the highest rating).		
	Rating (a number between 0 and 10)	Don't know (tick box only)
Helpfulness of the pharmacist .....	<input type="text"/>	<input type="checkbox"/>
Friendliness of the pharmacist .....	<input type="text"/>	<input type="checkbox"/>
Cooperation of the pharmacist .....	<input type="text"/>	<input type="checkbox"/>
Advice given about how to take drugs/ medicines .....	<input type="text"/>	<input type="checkbox"/>
Overall information provided by the pharmacist to you ...	<input type="text"/>	<input type="checkbox"/>
Understanding the needs of the patient (your needs) .....	<input type="text"/>	<input type="checkbox"/>
The availability of the pharmacist to answer your questions	<input type="text"/>	<input type="checkbox"/>
Overall service provided by the pharmacy .....	<input type="text"/>	<input type="checkbox"/>

In conclusion, the findings of this chapter suggest that the questionnaires for doctors, nurses and pharmacists used to measure the performance of the pharmacy service on measures of customer service were consistent, reliable and stable.

Considerations regarding the structure of the questionnaires used in both surveys have shown that most respondents did provide an answer to most questions, although there were differences between doctors, nurses and pharmacists in their understanding of customer service measures and how they relate to the concept of service. An abridged customer service questionnaire has been designed for doctors and for nurses based on these findings and includes measures which they most closely align with the concept of customer service in hospital pharmacy practice in 2000.

There was also validity and reliability of the questionnaires used for inpatients and outpatients. Examination of the structure of the questionnaires showed differences in the pattern of responses from inpatients and outpatients reflecting poorer response patterns

from inpatients, as seen by the larger number of missing responses. This disparity needs to be considered when surveying patients about health services because the information obtained needs to be presented in the context of how patients actually complete their questionnaires. Placing too much emphasis on patient satisfaction surveys without considering services on a broader scale from the perspective of providers and other customers, who in turn are also service providers, may lead to information which does not present an accurate picture of what is occurring. This issue does not question the validity or reliability of a questionnaire but does seek to highlight the variability found between respondents in how they interpret and seek to complete a questionnaire.

Survey participants do not exist in a vacuum. Environmental, behavioural, perceptual and social issues impact on their ability and endeavours to complete questionnaires. Results of patient surveys presented in Chapter 6 showed that even if patients are given the opportunity to criticise, suggest improvement or identify their service requirements, they are not always willing to do so.

## CHAPTER 8

### MODELS OF CUSTOMER SERVICE

#### 8.0 Introduction

Parasuraman et al. (1985, 1988, 1991a, 1991b) sought to identify attributes or determinants of service quality, and developed a service quality model which identified gaps between perceptions and expectations which impact upon service quality. They showed that by narrowing these gaps service quality is improved.

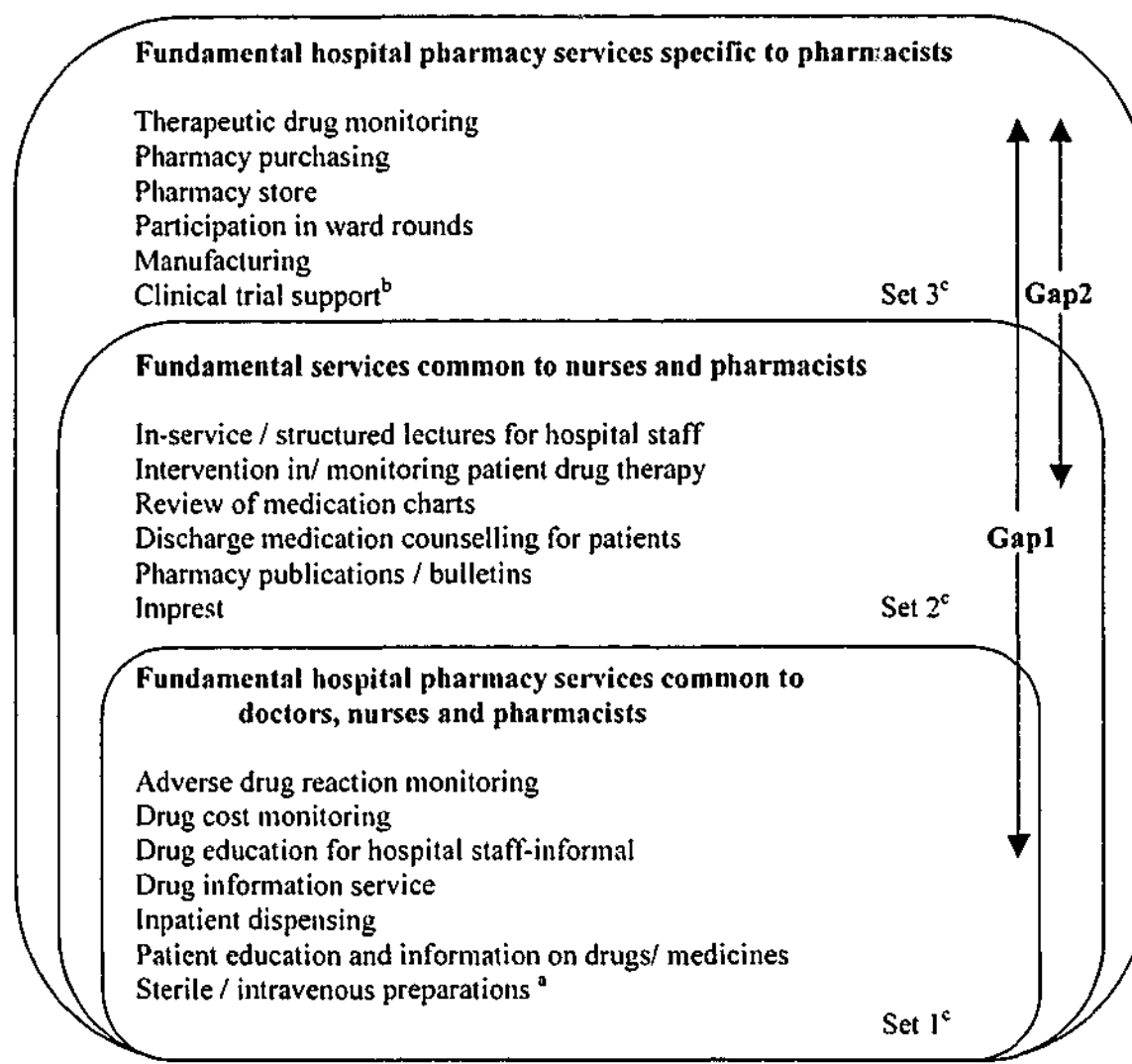
The Grönroos-Gummerson Quality Model (Chapter 2, Figure 2.2) conceptualises the relationship between expected and experienced quality, and individual components of quality which ultimately impact upon quality perceived by customers.

Research reported in this thesis has sought to adapt these concepts to hospital pharmacies. It is postulated that if the services provided by hospital pharmacies closely match the requirements of their major customers, then service quality is realised. The requirements of the customers are based on their past experiences with the hospital pharmacies, as well as their perceptions. It was shown earlier (Chapter 2) how important it is for hospital pharmacists to be aware of these perceptions so as to satisfy customer requirements and so that action can be taken to correct misperceptions held by customers about the services. By addressing the gaps identified in customer expectations against provider perceptions of requirements, services can be more effectively provided. If hospital pharmacy managers are able to show that the services they actually provide are well matched to the requirements of their customers, then they are able to use this knowledge to justify service provision, funding and staffing requirements. This information also enables pharmacists to clearly present a position regarding funding and remuneration when health service planners seek to determine priorities in spending in the health sector, or conversely seek to enforce major cutbacks which directly impact on customer requirements, and ultimately quality.

### 8.1 The Customer Service Model (1993/1994)

The customer service model developed from the results of the first survey of doctors, nurses and pharmacists was based on the fundamental service requirements identified for each of these groups.<sup>1</sup> By comparing the fundamental services for pharmacists with the fundamental services identified for doctors and nurses, a customer service model was developed (Figure 8.1).

Figure 8.1 Customer service model for hospital pharmacy (1993/94)



<sup>a</sup> Where 89.6% of doctors and nurses indicated that *sterile / intravenous preparations* should be provided, this has been rounded up to 90%.

<sup>b</sup> Where 89.5% of pharmacists indicated that *clinical trial support* should be provided this has been rounded up to 90%.

<sup>c</sup> Set 1 is contained in Set 2 which is contained in Set 3, the superset which contains all the other sets.

<sup>1</sup> As mentioned earlier, where at least 90% of all doctors, nurses or pharmacists indicated that a particular hospital pharmacy service should be provided, it was decided to designate that service as fundamental.



The model shows that the gap in service requirements was larger between doctors and pharmacists (Gap1) than between nurses and pharmacists (Gap 2).

### 8.1.1 Hospital size and location influences on the customer service model

The service gaps are obvious when fundamental services for the various respondent groups are broken up by hospital size and location (Figure 8.2).<sup>2</sup>

The model exists on three tiers and is multi-dimensional, with the fundamental services common to doctors, nurses and pharmacists across all hospitals on the lower tier. The model then breaks into services specific to each hospital size and location on the second tier. Finally, those fundamental services specific to pharmacists only and common across all the hospitals are shown in the third tier that is recessed between the first and second tiers.

The customer service model (Figure 8.2) indicated that there are only 5 fundamental pharmacy services that are common to all hospitals and amongst all groups surveyed, with all the others varying quite considerably according to the size and location of the hospitals, and according to the group surveyed.<sup>3</sup>

An example of the service gaps that exist between pharmacists and doctors and pharmacists and nurses is illustrated in Figure 8.3.

<sup>2</sup> By listing the fundamental services for pharmacists from each of the hospital demographic groups described previously, with fundamental services for doctors and nurses from each hospital size and location, a customer service model of fundamental hospital pharmacy services was developed.

<sup>3</sup> Within each hospital size and location grouping the services listed in the smaller circles contained within each of the larger circles are fundamental to the respondent type which encapsulated the smaller circle, for instance in large country hospitals the services within the smaller circle for doctors are also fundamental for nurses, and those services within the circles for doctors and nurses are fundamental to pharmacists in addition to those listed separately for them within the largest circle (i.e. Set 1 is contained in Set 2 which is contained in Set 3). These services are specific to this hospital demographic, then one has to consider the fundamental services common across the other hospital demographics in the lower plane and recessed plane to see the total service requirements from the large country hospital demographic. The service *sterile/ IV preparations* was only fundamental to nurses in small country hospitals and to doctors and nurses in small city hospitals.

Figure 8.2 Customer service model for hospital pharmacy for each hospital size and location (1993/94)

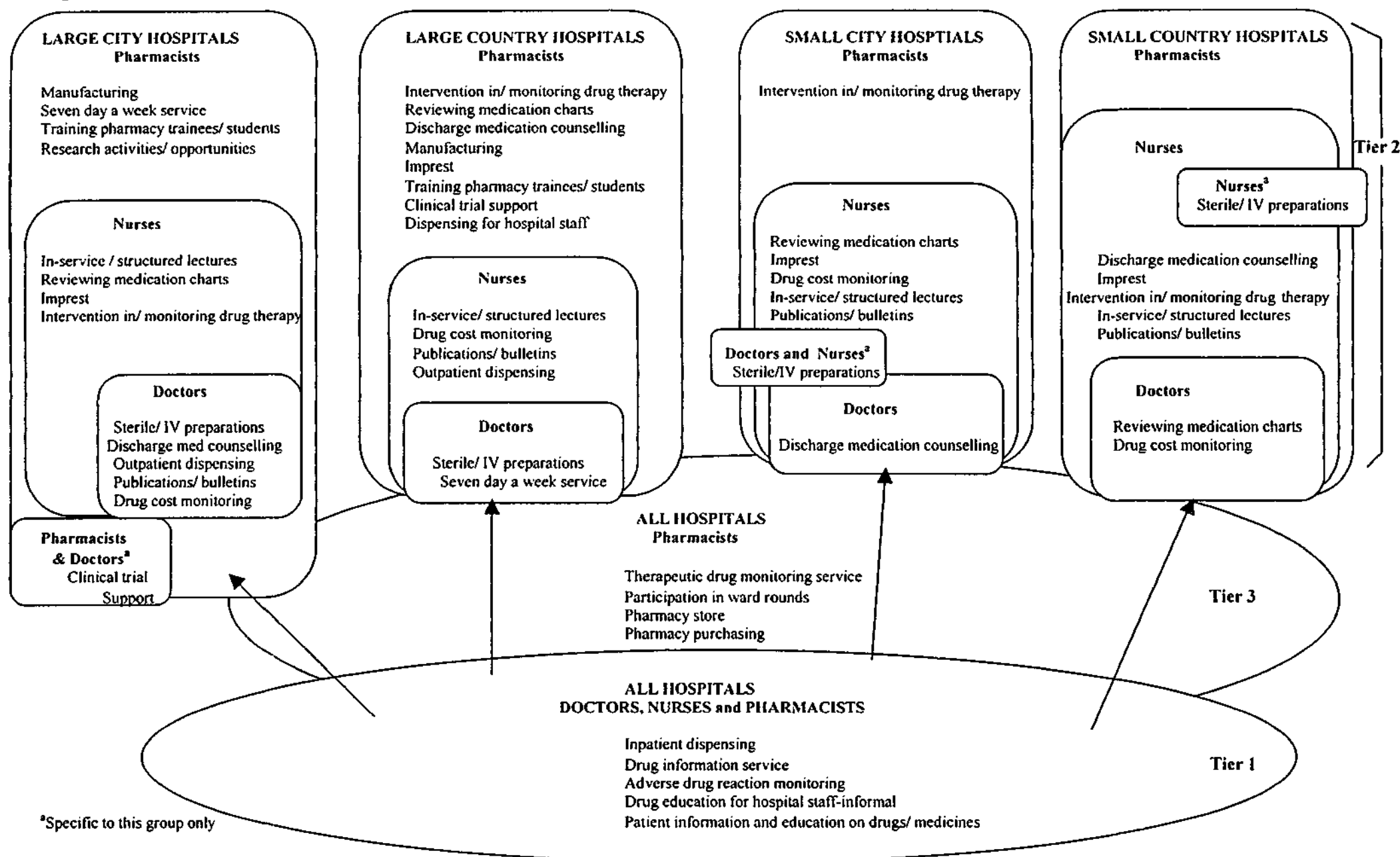
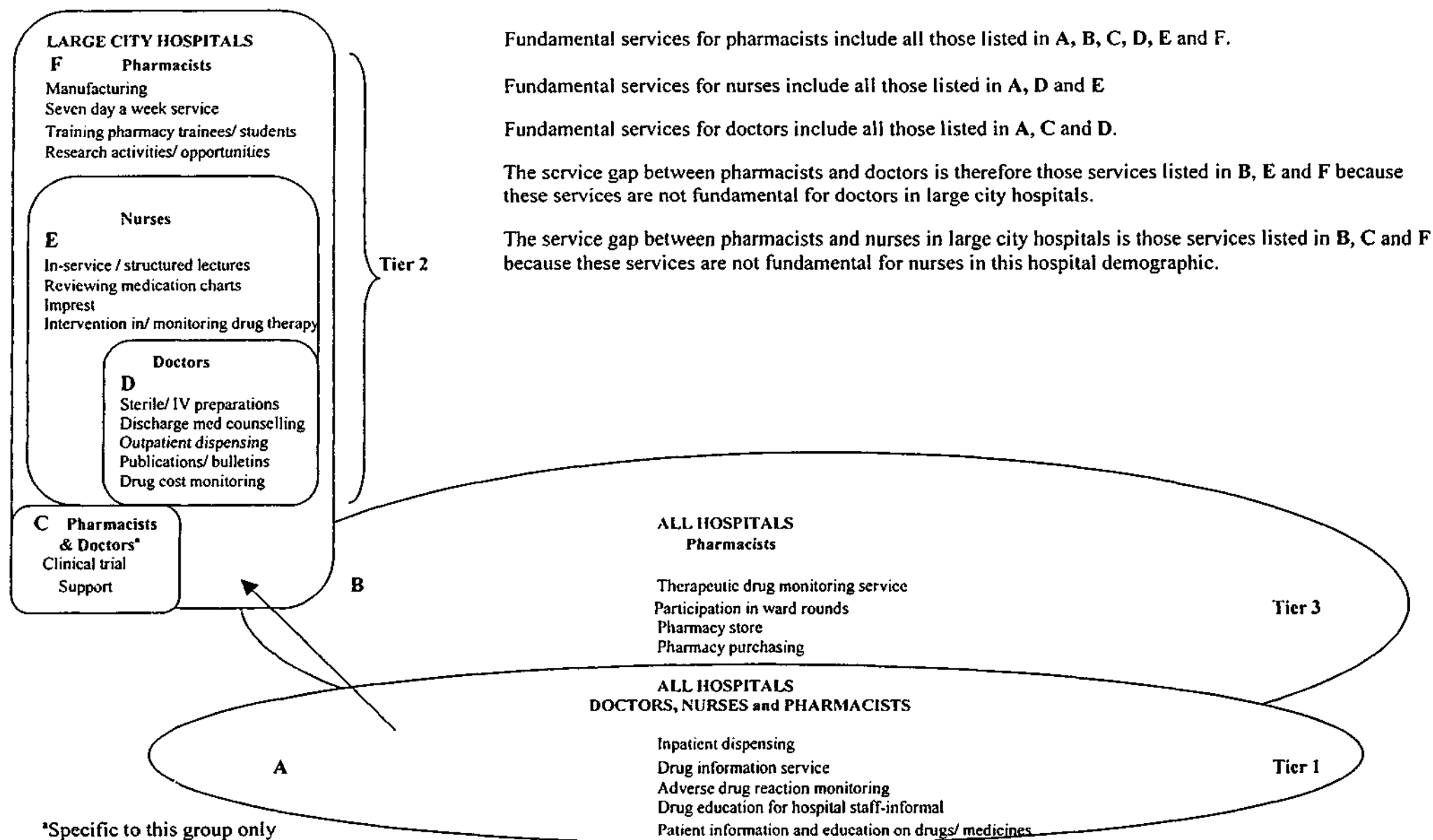


Figure 8.3 Customer service model for hospital pharmacy for *large city* hospitals (1993/94)



## 8.2 The Customer Service Model (1999/2000)

The customer service model was developed again following the second survey using the same principles as in the first (Figure 8.4), to determine whether the earlier model was robust to both change and time.<sup>4</sup>

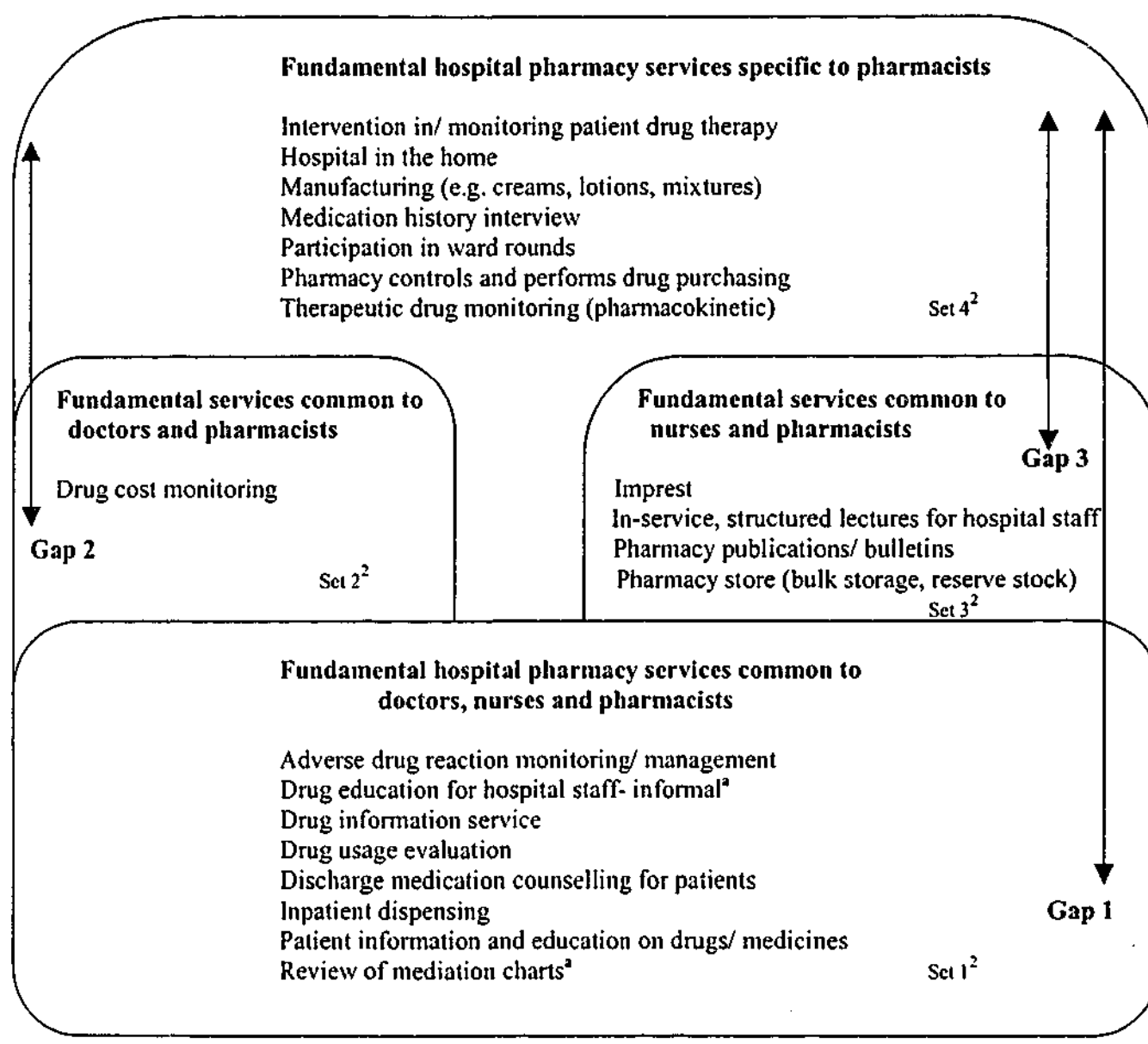
The model developed as a result of the second survey shows three service gaps exist, and a comparison between the models developed in the first and second surveys (Figures 8.1 and 8.4 respectively) shows that the patterns have remained reasonably similar. The changes were that *review of medication charts* and *discharge medication counselling* became fundamental for all groups, not just nurses and pharmacists, *drug usage evaluation*, which was added to the second survey, was found to be fundamental for all respondents, *sterile / intravenous preparations* was no longer included as a fundamental service, *drug cost monitoring* became a fundamental service for only doctors and pharmacists, and *intervention in or monitoring patient drug therapy* reverted to a fundamental service for pharmacists only.

Interestingly, the provision of a *pharmacy store for bulk storage and reserve stock* became fundamental for both nurses and pharmacists, whereas previously it was only so for pharmacists. Being able to access medication ordered in a timely, efficient manner is an indication of the reliability or efficiency of the pharmacy department which are determinants of service quality as determined by Parasuraman et al. (1985, 1991a, 1991b) and Garvin (1987).<sup>5</sup> It is interesting that nurses frequently commented in the second survey that having to chase up medication not on hand in the ward was an inconvenience to them. Some reasons for this situation included doctors ordering new medications after hours, not enough stock being supplied to the ward for a patient's treatment, imprest had run down or was not adequately maintained, discharge medications had not been dispensed, stock was not available, and an item not commonly kept in the ward was

<sup>4</sup> By comparing fundamental services for pharmacists with fundamental services for doctors and nurses in 1999/2000.

<sup>5</sup> *Timeliness of provision of medication, efficiency of the pharmacy service and reliability of service* are all customer service measures which correlated highly with each other for nurses in the second survey (See Chapter 7, Table 7.2).

Figure 8.4 Customer service model for hospital pharmacy (1999/2000)



<sup>a</sup> Where 89.7% of doctors indicated that *review of medication charts* should be provided and 89.9% indicated the pharmacy should provide *informal drug education to hospital staff*, this has been rounded up to 90%.

Set 1 is contained within Set 2 and Set 3, which in turn are contained in Set 4, which is the superset which contains all services fundamental for pharmacists.

ordered but not available elsewhere in the hospital.

*Clinical trial support* was no longer regarded as a fundamental service by any group in the second survey but services such as *hospital in the home* and *medication history interview* were added for pharmacists.

### 8.2.1 Hospital size and location influences on the customer service model

The service gaps are once again apparent when fundamental services for doctors, nurses and pharmacists were broken up by hospital size and location (Figure 8.5)<sup>6</sup> and the resulting customer service model has a similar layout to that developed from the first survey (Figure 8.2).

The second survey revealed that the only fundamental service common to doctors, nurses and pharmacists at all hospitals was *inpatient dispensing*, showing that hospital size and location had a more significant influence on service requirements in the second survey than the first. This was because the only fundamental service for doctors across all the hospitals in the second survey was *inpatient dispensing* (see Chapter 5, Table 5.19). Hospitals in Victoria underwent major restructuring during the six-year period of the study reported in this thesis. The development of Networks, downsizing, cost cutting, rationalisation of services, staff reductions and the adoption of business principles all had their impact on service provision and service requirements.<sup>7</sup> The model (Figure 8.5) further illustrates this finding by showing how the patterns of fundamental service requirement for doctors, nurses and pharmacists have shifted within each hospital size and location and across the hospitals since the first survey.

Doctors from large country hospitals were the least supportive of clinical services in the second survey than doctors at the other hospitals, and the service gap between them and pharmacists widened. Nurses from large country hospitals supported more clinical services at their hospitals in the second survey than the first, with the service gap narrowed between them and pharmacists.

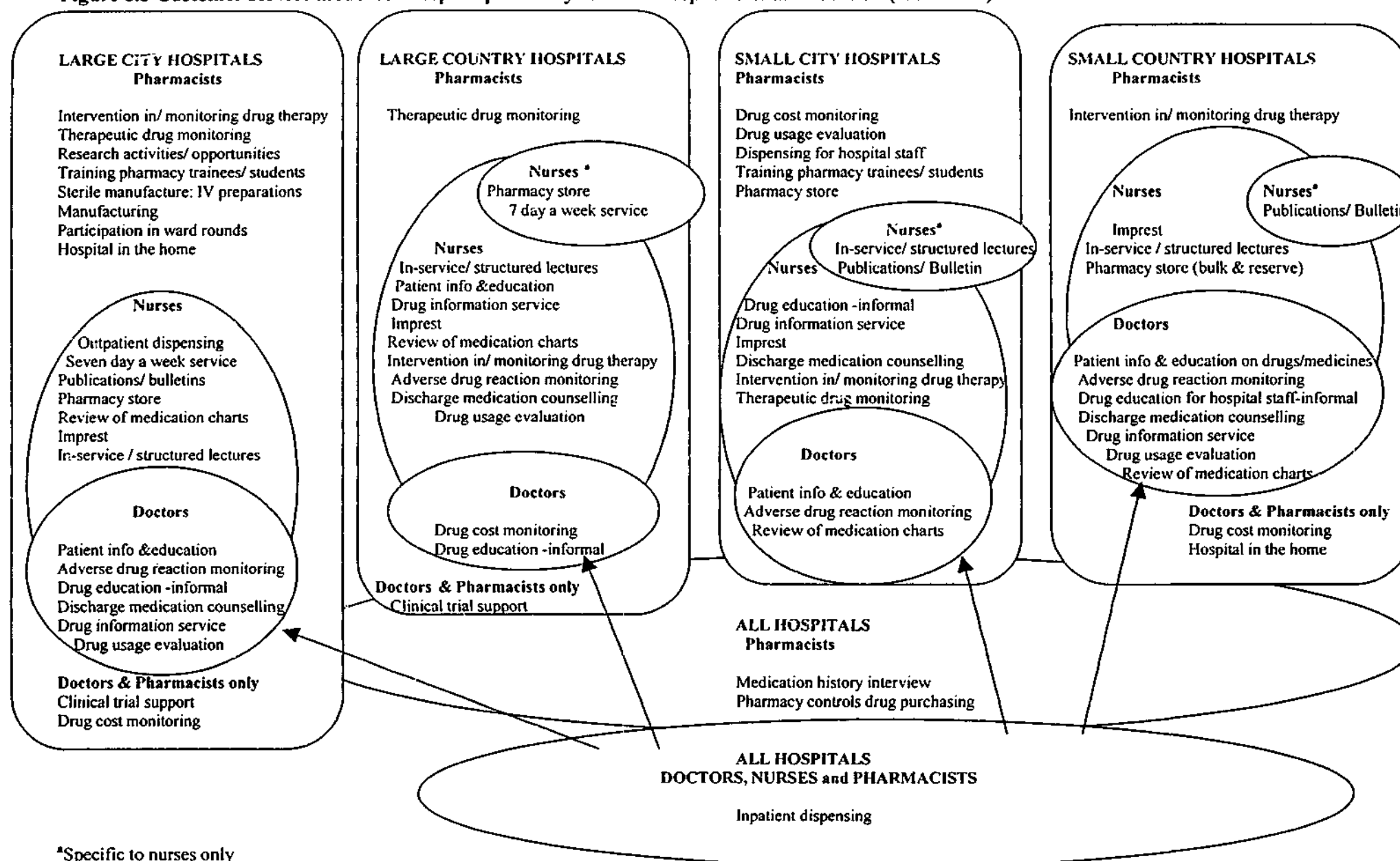
The smallest service gaps between doctors and pharmacists were seen in small country hospitals.

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<sup>6</sup> The customer service model for 1999/2000 was developed by listing the fundamental services for pharmacists from each of the hospital demographic groups with fundamental services for doctors and nurses from each hospital size and location as shown in Chapter 5.

<sup>7</sup> See Chapter 5.

Figure 8.5 Customer service model for hospital pharmacy for each hospital size and location (1999/2000)



\*Specific to nurses only

The service gap widened between nurses and pharmacists in large city hospitals over the two surveys, although the newer services have contributed to this change.<sup>8</sup>

### 8.3 The customer service models for patients

Models of customer service for inpatients (Figure 8.6) and outpatients (Figure 8.7) were also developed by considering what they think pharmacists do, based on a common question they had in the first survey<sup>9</sup>, and their service requirements and suggestions for improvement in both surveys. Those services which are patient-oriented, and which pharmacists identified as ones which should be provided, are included within the model.

Service requirement gaps were shown to exist.<sup>10</sup> For inpatients these gaps were somewhat different than those identified for doctors, nurses and pharmacists in that they were based on suggestions made by inpatients to improve services and their requirements, whereas doctors, nurses and pharmacists were not asked the same questions. However, the fact that patients offered suggestions for improvement implies that their requirements have not been fully met. This also shows that patients need the opportunity to offer their suggestions for service improvement when evaluating services because this helps identify issues of concern to customers.

For example, *supply of medication* was of concern to patients and this is influenced by

<sup>8</sup> *Medication history interview, hospital in the home.*

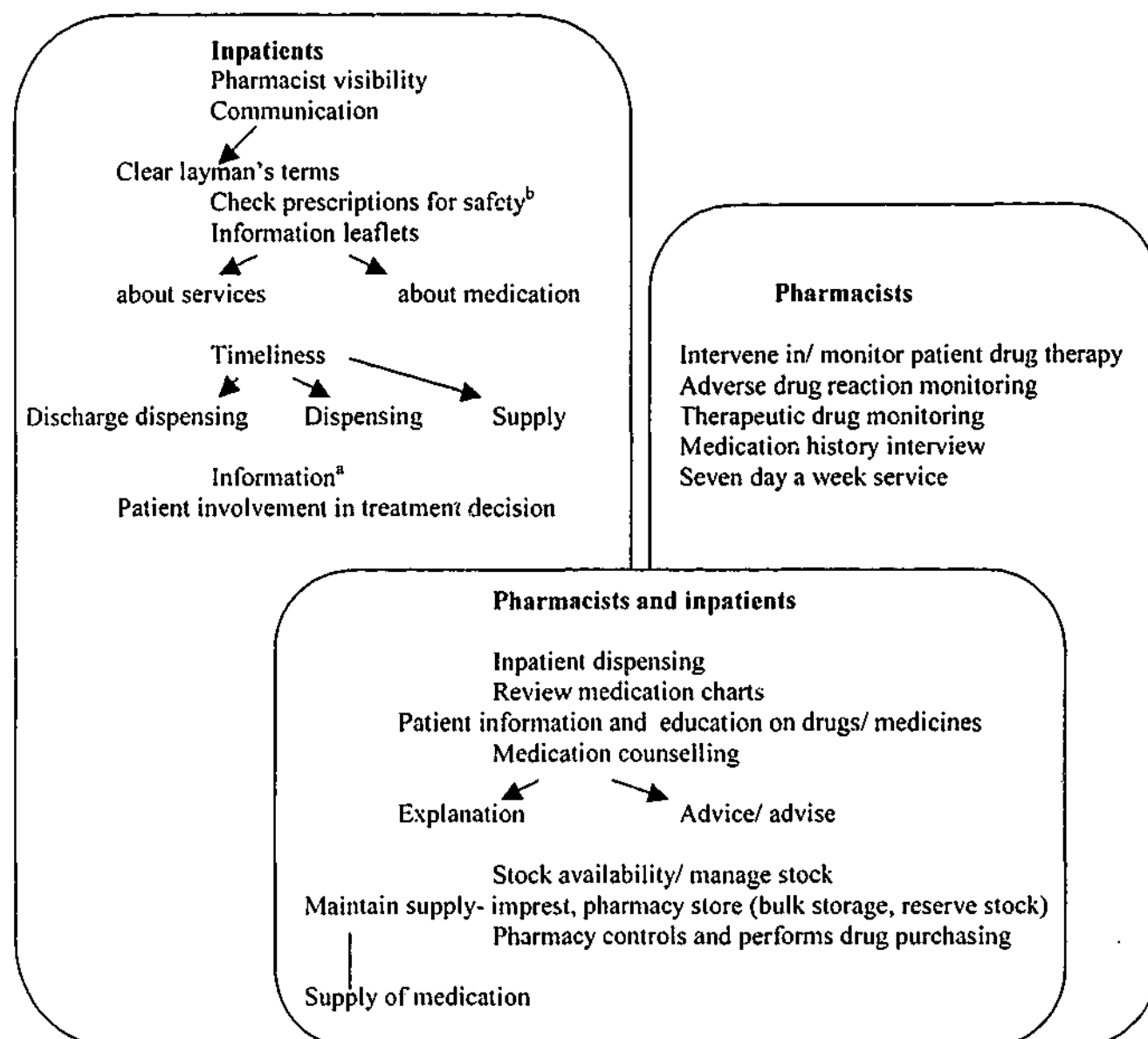
<sup>9</sup> The question in the first survey which asked both inpatients and outpatients to identify (from a list provided) what they think pharmacists do in their hospital and taking into account the responses from 75% or more of each group.

<sup>10</sup> The requirements of inpatients and outpatients are different because of the nature of the pharmacy service to each group. For instance, timeliness for an inpatient is associated with how quickly they receive their discharge medication when they are due to go home, and that any drugs ordered by the doctor during their hospitalisation arrive on the ward in a timely, reliable manner so there is no delay to their therapy. It is also associated with ensuring prompt supply of any medication needed both in an ongoing or newly initiated scenario. In the case of an outpatient, timeliness refers to the waiting time for their prescription to be dispensed and ensuring that enough staff are available to dispense prescriptions.

Fundamental services for pharmacists included the *pharmacy controlling and performing drug purchasing* and having a *pharmacy store for bulk storage or reserve stock*. These services together with an *imprest* system enable hospital pharmacies to ensure "stock availability, manage stock, and maintain supply", therefore these specific terms have been included in the model. In the case of inpatients, inventory management means supply of medication to them, for outpatients it means the availability of medication and that pharmacy departments are able to supply all medication, ideally any medication ordered by the doctor within the hospital, here again there are subtle differences.



Figure 8.6 Customer service model for inpatients



<sup>a</sup> Information for inpatients meant general information about their treatment, medical conditions, therapy, and services offered that is beyond just *patient information and education on drugs/ medicines*.

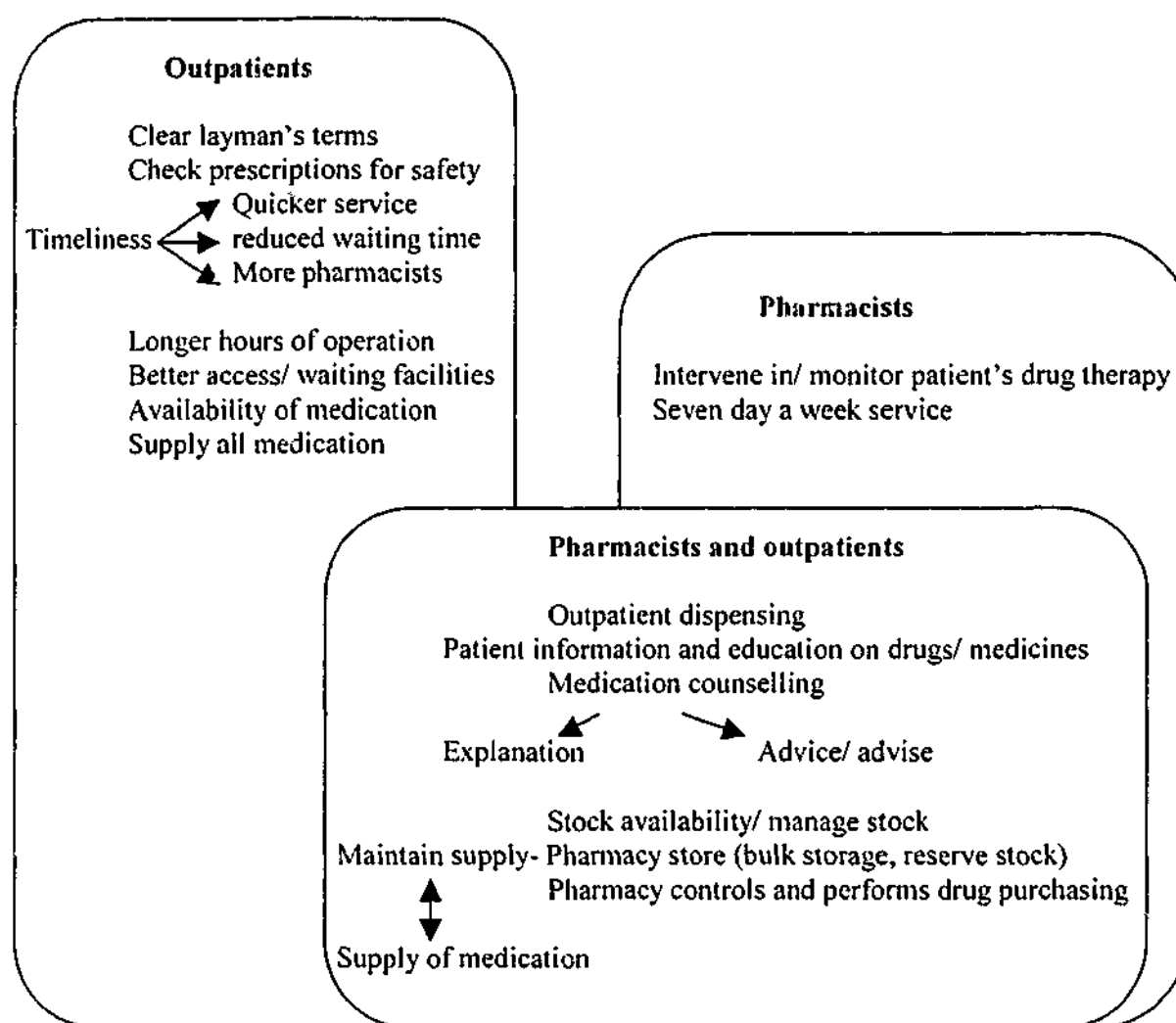
<sup>b</sup> *Checking prescriptions for safety* is listed as a separate service entity for patients because the actual dispensing process involves more than just *checking prescriptions for safety*, it requires the pharmacist to use their knowledge and technical skills to ensure that the correct medication is supplied, that any potential problems with the drug therapy are identified and addressed. Some patients in this study did not have enough knowledge of this as noted by some of their responses in Chapter 6.

the ability of pharmacy departments to manage their inventory efficiently and in a manner which does not impact negatively on patient care.

#### 8.4 Discussion

The customer service models for hospital pharmacies developed in this thesis are significant because such models have not previously been reported. Furthermore, it

Figure 8.7 Customer service model for outpatients



<sup>a</sup> Intervention in/ monitoring patient drug therapy is regarded as a clinical pharmacy inpatient service in this study, however, this activity is also performed when prescriptions are dispensed to outpatients because patient profiles can be accessed, or older records in prescription books checked for changes.

shows that gaps existed in requirements between users and providers of the services in both surveys, particularly those services which were not fundamental for doctors and nurses. For the doctors and pharmacists the gap is wider than is the gap between the pharmacists and nurses.

The model developed in the first survey (Figure 8.1) showed, that apart from dispensing, doctors only supported pharmacists having a role in *providing information and education on drugs*, and *monitoring adverse drug reactions and drug costs*, even though

pharmacists clearly supported a wider role for themselves.<sup>11</sup> Nurses on the other hand supported the pharmacists having a somewhat broader clinical role.

A larger service gap existed between doctors and pharmacists, and between nurses and pharmacists from large country hospitals than for the other hospitals (Figure 8.2) in the first survey. This may be explained by the lower awareness of some services by both doctors and nurses as a consequence of a lesser provision of these services by large country hospital pharmacy departments, and hence the value of the services not being established in the minds of doctors and nurses.<sup>12</sup> The focus of the pharmacy services may have been more on the dispensing and supply activities rather than a comprehensive service encompassing clinical activities.

The wide range of fundamental services common to nurses from all hospitals (Figure 8.2) included services largely related to the provision of information through the *drug information service, bulletins and publications, and education about drugs and medicines* both to hospital staff and patients. This acknowledges their continuing need for up-to-date information about drugs and drug therapy. *Drug cost monitoring* was fundamental for all nurses in the first survey reflecting the hospital climate at the time that was focused on restructuring, cost containment, and dealing with a narrowing funding base upon which to provide services.

The service gaps identified between doctors and pharmacists in the first survey were generally wider than that between nurses and pharmacists, particularly in relation to clinical services. This may suggest that doctors may perceive pharmacy services as less important than nurses. If pharmacists are able to convince doctors that all pharmacy services (and not just clinical pharmacy services) add value to patient care and complement patient management, then a better overall service would be provided to

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<sup>11</sup> An examination of the customer service model across all hospital sizes and locations (Figure 8.2) further emphasises the support for *drug information services, informal drug education for hospital staff, patient information and education on drugs and medicines and adverse drug reaction monitoring* by all respondents.

<sup>12</sup> For example *review of medication charts* (see Table 4.7, Chapter 4).

patients because there would be a common objective in providing the best possible care.<sup>13</sup>

The changes between the two surveys probably reflect the shifting trends in service provision that have occurred over the ensuing years. For example, *intervention in/monitoring patient drug therapy* was a fundamental service for nurses in large city and small country hospitals in the first survey however, in the second survey this service was only fundamental for nurses in large country and small city hospitals. *Drug usage evaluation*, *hospital in the home* and *medication history interview* became more common in hospital pharmacy practice, however, the latter two services are not yet regarded as fundamental services by doctors and nurses, highlighting obvious service gaps (Figure 8.4). Perhaps hospital pharmacists have not endeavoured to promote the benefits that these services may offer towards patient care?

The customer service model developed from the second survey (Figure 8.4) indicated that *review of medication charts* and *discharge medication counselling* became core services to all respondents probably reflecting a growing acceptance by doctors of these clinical activities.

The role of pharmacists in the provision of drug education and information was fundamental to all respondents in both surveys, but *drug cost monitoring* slipped from being fundamental in the opinion of nurses. It is possible that funding difficulties faced by hospitals between the two surveys have had an impact on nurses, particularly as some of them commented in the second survey that the fixation that some pharmacy departments had with fiscal management was sometimes misdirected and resulted in shifting cost to other sectors of the hospital. Perhaps the restriction or in some cases refusal, to supply newer and more expensive drugs to treat patients resulted in increased frustration and costs in nursing staff time.

The customer service model developed as a result of the second survey (Figure 8.4) shows that generally, the mix of services included in the model remained the same as the

<sup>13</sup> For instance by monitoring drug therapy for safety, appropriate use of medication, education about drugs, ensuring supply, cost effectiveness of therapy.

first survey, only their positioning within the model changed, reflecting changes in perceptions and requirements over time.

The service requirements for each respondent type in small country hospitals and the smaller gaps between them (Figure 8.5) seem to reflect a closer matching between the service requirements of customers and the capabilities of the pharmacies within these hospitals.<sup>14</sup> Pharmacist numbers are small and therefore services have had to be tailored to do what is possible, hence expectations by customers probably adjust to this. On the other hand large service gaps exist between doctors and pharmacist from each of the other hospitals showing that pharmacists still have a long way to go to convince doctors about the value of many of the services they provide.

Large city hospital pharmacies have traditionally been better able to offer a wider range of services than have their counterparts from other hospitals due to higher staffing levels and better resources, with most being tertiary teaching hospitals. However, these pharmacies appear to have encountered more difficulties in adjusting to reduced staff numbers and funding cuts over the six years than smaller hospitals.<sup>15</sup> This has resulted in compromised service provision, which may explain why larger service gaps were identified between nurses and pharmacists in large city hospitals in the second survey.<sup>16</sup> If customers are less satisfied with services provided they may indeed decide to go without those services.

The focus of this study has been the doctors, nurses and pharmacists. However, the patients are the primary customer for each of these healthcare providers. How hospital pharmacists provide services to doctors and nurses affects the services these groups ultimately provide to patients.

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<sup>14</sup> Small service gaps identified between pharmacists and nurses at small country hospitals in the first survey (Figure 8.2) also illustrated this greater alignment in expectations of services between them.

<sup>15</sup> See Chapter 5.

<sup>16</sup> As previously reported (Chapter 5), large city hospital pharmacies tended to rate poorer on various aspects of customer service in the second survey showing that nurses were not as happy with services from this group as they were for instance from small country hospitals.

The customer service models for patients reflect the growing desire by patients to be informed and educated about their medication. Pharmacists are now dealing with consumers who demand the right to know, are partners in the management of their illness or therapy, are people who have been given a 'voice' perhaps without the knowledge they need to exercise it but, none the less, have a right to know. Customer satisfaction is now being measured in the healthcare sector by hospitals and governments to help evaluate the quality of their care.<sup>17</sup>

In 1995, the Phase 1 report of the Metropolitan Hospitals Planning Board noted that "Patient care must be foremost in all deliberations. Hospital staff deal with patients and their families on a daily basis and must be cognisant of their needs and wishes in order to provide quality care.....mechanisms to ensure that patient concerns and complaints are dealt with quickly and sensitively must be established. A quality assurance focus will assist in promoting good communication with patients and their families" (Harper and Proust, 1995). Pharmacists have increasingly come to acknowledge this as seen by the patient-focused services included within the model common to patients and pharmacists.<sup>18</sup> However, pharmacists need to take note of the service requirements of inpatients and their suggestions for ways to improve pharmacy services to them which include increased 'visibility' of the pharmacist in the wards, good communication, simple language, and information leaflets about services and medications.

Perhaps pharmacists need to educate patients more about what they actually do when they dispense medication so that patients realise that pharmacists do not simply put a label on an item without going through a number of checks and processes which ensure the dispensed medication is correct, safe, and appropriate for patients, all of which require time and knowledge. By doing so they would address misperceptions that some patients have about pharmacists and their services.<sup>19</sup>

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<sup>17</sup> See Draper and Hill, 1996; Fitzpatrick, 1991a.

<sup>18</sup> Patient focused care has been discussed in the literature, see Hepler and Strand, 1990; Talley, 1993; Vogel, 1993; Thompson, 1995.

<sup>19</sup> Such as why the dispensing of prescriptions takes time.

Many services that pharmacists undertake within hospital practice overlap with each other, especially clinical services. *Monitoring patient's drug therapy, adverse drug reaction monitoring, therapeutic drug monitoring, and review of medication charts* should all be systematically considered by clinical pharmacists as they go about their work in everyday practice where a comprehensive clinical service is provided. Educating patients about clinical hospital pharmacy practice requires time and effort, but by doing so pharmacists will both help their patients in their understanding about their medication and treatment, and also enhance the support by patients for a role which ultimately seeks to "optimise patient outcomes by working to achieve the best quality use of medicines" (The Society of Hospital Pharmacists of Australia, 1996b).<sup>20</sup>

The customer service models developed in this thesis are original and important as they conceptualise service requirements from the perspective of hospital pharmacy customers. A customer service model for hospital pharmacy practice has not been documented in the literature before and this study has sought to address this deficiency by developing the model of service based on customer perceptions and requirements, fundamental components of quality.

The customer service models developed provide a framework that can be used to help in the design of pharmacy services. The models have shown that it is important for allowances to be made for hospital size and location, and the influence of these on perceptions, so as to ensure the accuracy of information obtained.

Four models of customer service are proposed: one for doctors, nurses and pharmacists; another for these same groups taking into account the influence of hospital size and location; one for inpatients, and one for outpatients.

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<sup>20</sup> SHPA Standards of practice for clinical pharmacy.

## CHAPTER 9

### CHANGE

#### 9.0 Introduction

This chapter compares the results obtained from the first survey with those from the second and reports on change measured between the two. To do this, the databases from the first and second surveys were combined to identify any statistically significant differences.<sup>1</sup>

Earlier in this thesis the issue of change and its impact upon pharmacy services was addressed. Change was examined with the aid of questions posed to doctors, nurses and pharmacists in the second survey. Specifically, these asked them to list the main factors that had changed the way pharmacy services operate in the hospitals since they had been at their hospital and then to indicate the effect these changes had on the services. Respondents were also asked if they thought the services had improved, stayed the same or were worse than six years before, and why they had responded the way they did.

There were three questions common to the surveys that are relevant to this chapter:

- (1) one seeking the service requirements of doctors, nurses and pharmacists,
- (2) one seeking their ratings of the effectiveness of the performance of the pharmacy services<sup>2</sup>; and
- (3) one seeking a rating of the importance of the pharmacist as a member of the healthcare team.

The questionnaires for both surveys are included in Appendices 1 and 3.

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<sup>1</sup> For service requirements, ratings of performance and importance ratings.

<sup>2</sup> On measures of customer service.



### 9.1 Service requirements

Both surveys asked doctors, nurses and pharmacists to indicate which services they thought should be provided by their hospital pharmacies from a predetermined list.<sup>3</sup>

The breakup of respondent numbers by survey are shown in Table 9.1.

**Table 9.1 Number of respondents**

Respondent type	Year of survey	
	1993/1994	1999/2000
Doctors	618	414
Nurses	1160	546
Pharmacists	211	143
Total	1989	1103

A crosstabulation of the service requirements between both surveys was performed and some statistically significant differences identified, as shown in Table 9.2, indicating that there have been some changes in service requirements over the six-year time frame of the study.<sup>4</sup>

### 9.2 Performance ratings on measures of customer service

The performance ratings for doctors, nurses and pharmacists on the various measure of customer service were compared over the two surveys using Analysis of Variance (ANOVA).<sup>5</sup> Statistically significant differences existed where the F value showed a significance  $<0.05$ .

#### 9.2.1 Doctors

Comparing the means for performance ratings from doctors between the two surveys showed that statistically significant differences existed for only thirteen of the 31 measures of customer service common to both surveys, as shown in Table 9.3.<sup>6</sup>

<sup>3</sup> See Chapter 4: Tables 4.5 and 4.12, Chapter 5: Tables 5.6 and 5.13.

<sup>4</sup> Within each respondent group.

<sup>5</sup> The independent samples T-test also yielded the same results but only ANOVA is reported here.

<sup>6</sup> As previously mentioned in the methodology and in Chapter 5, a few newer measures of customer service were included in the second survey for doctors, nurses and pharmacists to rate.

Table 9.2. Service requirements showing significant differences <sup>a</sup>

Doctors	Nurses	Pharmacists
	Outpatient dispensing <sup>b</sup>	
	Inpatient dispensing <sup>c</sup>	
Sterile manufacture: intravenous preparations <sup>d</sup>	Sterile manufacture: intravenous preparations <sup>d</sup>	Sterile manufacture: intravenous preparations <sup>d</sup>
Drug information service <sup>e</sup>	Drug information service <sup>e</sup>	
	Review of medication charts <sup>f</sup>	
Imprest <sup>g</sup>		
Manufacturing (non-sterile) <sup>h</sup>	Manufacturing (non-sterile) <sup>h</sup>	
Dispensing for hospital staff <sup>i</sup>		
	Pharmacy controls and performs drug purchasing <sup>j</sup>	
	Pharmacy store (bulk storage, reserve stock) <sup>k</sup>	Pharmacy store (bulk storage, reserve stock) <sup>k</sup>
Pharmacy publications/ bulletins <sup>l</sup>	Pharmacy publications/ bulletins <sup>l</sup>	Pharmacy publications/ bulletins <sup>l</sup>
In-service, structured lectures for hospital staff <sup>m</sup>		
	Research activities/ opportunities <sup>n</sup>	
	Drug cost monitoring <sup>o</sup>	

<sup>a</sup> Statistically significant differences in service requirements identified between the first survey and second survey of doctors, nurses and pharmacists within each individual respondent type. Chi-square significance  $p < 0.05$ .

<sup>b</sup> There was an increased "don't know" response for this service in the second survey with a corresponding reduced "yes" response.

<sup>c</sup> There was an increase in the "don't know" response for this service in the second survey.

<sup>d</sup> Fewer doctors indicated that this service should be provided in the second survey (77.8%) compared with the first (93.9%). There was also an increase in "no" and "don't know" responses. This shift was also seen with nurses, 82.8% indicating the service should be provided in the second compared with 96.7% in the first survey. With pharmacists there was a decrease in "yes" responses in the second (82%) compared with the first survey (95.2%) and a corresponding increase in "no" responses, from 4.3% in the first up to 17.3% in the second survey.

<sup>e</sup> There was a slight increase in the "no" and "don't know" response from doctors and nurses in the second survey with a slight reduction in the "yes" response (4.6% for doctors and 1.7% for nurses).

<sup>f</sup> More nurses indicated this should be provided in the second survey (5.1% increase).

<sup>g</sup> Fewer doctors indicated this service should be provided in the second survey (77.7% compared with 84.1% in the first) with a corresponding slight increase in "no" and "don't know" responses.

<sup>h</sup> Significantly fewer doctors (25% less) and nurses (17.4% less) indicated this service should be provided in the second survey compared with the first.

<sup>i</sup> Fewer doctors (9.3% less) indicated this service should be provided in the second survey.

<sup>j</sup> Slightly more nurses indicated this service should be provided in the second survey (2.7% more).

<sup>k</sup> Slightly more nurses indicated this service should be provided in the second survey (5.2% more) than in the first. On the other hand 4.1% fewer pharmacists indicated this service should be provided in the second survey with a corresponding increase in "no" responses (4.6% more) seen in 1999/2000.

<sup>l</sup> There was a slight increase in "no" and "don't know" responses from doctors, nurses and pharmacists in the second survey with a corresponding decrease in "yes" responses from doctors (6.7%) nurses (4.7%) and pharmacists (6.4%).

<sup>m</sup> Slightly fewer doctors supported provision of this service in the second survey (5.5% less) with more indicating "don't know".

<sup>n</sup> Fewer nurses indicated this service should be provided in the second (6.3% less) than in the first survey, with more indicating "don't know".

<sup>o</sup> Less nurses indicated this service should be provided in the second survey (88%) compared with the first (95.7%). There was an increase in "don't know" responses (5.2%) and a slight increase in "no" responses.

Table 9.3 Performance ratings by doctors

Measure of service	Survey <sup>b</sup>	Number	Mean rating	Std deviation
Cooperation of pharmacy staff	1	539	8.43	1.80
	2	362	8.41	1.49
Friendliness of pharmacy staff	1	534	8.49	1.75
	2	369	8.55	1.42
Medical knowledge of the pharmacists	1	407	7.58	1.69
	2	295	7.81	1.60
Pharmaceutical knowledge of the pharmacists	1	451	8.73	1.13
	2	326	8.64	1.23
Drug information service provided <sup>a</sup>	1	463	8.28	1.93
	2	308	7.84	1.91
Advice given on drug information queries <sup>a</sup>	1	494	8.53	1.65
	2	327	8.21	1.60
Timeliness of response to drug information queries	1	475	8.54	1.58
	2	315	8.38	1.56
Advice given on general queries <sup>a</sup>	1	472	8.43	1.50
	2	311	8.21	1.40
Timeliness of response to general queries	1	447	8.45	1.59
	2	298	8.25	1.51
Participation in ward rounds <sup>a</sup>	1	177	6.02	3.52
	2	135	4.67	3.56
Review of medication charts	1	304	7.73	2.16
	2	212	7.38	2.33
Adverse drug reaction monitoring/management <sup>a</sup>	1	270	7.37	2.37
	2	196	6.76	2.46
Intervention in/ monitoring patient drug therapy	1	261	7.34	2.32
	2	205	7.23	2.34
Therapeutic drug monitoring service (pharmacokinetic)	1	221	7.29	2.54
	2	173	6.83	2.71
Understanding and knowing the needs of the users	1	383	7.09	2.15
	2	250	7.17	2.01
Efficiency of the pharmacy service	1	488	7.75	1.83
	2	336	7.71	1.67
Accuracy of dispensing <sup>a</sup>	1	467	9.01	1.10
	2	321	8.81	1.17
Discharge dispensing	1	415	8.42	1.69
	2	294	8.18	1.79
Timeliness of provision of medication	1	450	7.90	1.91
	2	300	7.72	1.82
Availability of stock	1	441	7.60	2.01
	2	270	7.66	1.65
Sterile manufacturing- intravenous preparations <sup>a</sup>	1	349	8.84	1.33
	2	120	8.31	1.62
Discharge medication counselling of patients	1	224	7.08	2.56
	2	187	7.02	2.33
Patient information and education on drugs/ medicines	1	234	7.06	2.43
	2	193	6.93	2.13
Pharmacy bulletins/ publications <sup>a</sup>	1	359	7.17	2.46
	2	208	6.43	2.43
Drug education for hospital staff- informal <sup>a</sup>	1	303	7.20	2.27
	2	190	5.64	2.86
In-service, structured lectures for hospital staff <sup>a</sup>	1	134	4.34	3.38
	2	126	3.37	2.74

Measure of service	Survey <sup>b</sup>	Number	Mean rating	Std deviation
Extent of pharmacy department involvement in research <sup>a</sup>	1	139	5.89	3.12
	2	102	4.91	3.05
Reliability of the service <sup>a</sup>	1	497	8.49	1.44
	2	335	8.28	1.37
Communication with users of the service	1	456	7.92	2.04
	2	320	7.66	1.94
After hours service <sup>a</sup>	1	370	6.15	2.76
	2	254	5.13	2.80
Overall service provided to the users of the service	1	510	8.02	1.62
	2	345	7.85	1.40

<sup>a</sup> Statistically significant difference between surveys: ANOVA, F value significance <0.05. (Independent samples t-test for equality of means, 2-tailed, significance <0.05)

<sup>b</sup> Survey 1= 1993/94 survey, survey 2= 1999/2000 survey

In most cases where a statistically significant difference was identified (Table 9.3) there was a slightly reduced rating in the second compared with the first survey. In a few cases the standard deviation also widened slightly, showing overall that the performance of the pharmacy services deteriorated over the six years from the perspective of doctors.

### 9.2.2 Nurses

Comparison of the ratings of the performance of the pharmacy service for nurses between the two surveys showed that statistically significant differences existed for seventeen of the 31 measures of customer service common to both surveys, as shown in Table 9.4.

**Table 9.4 Performance ratings by nurses**

Measure of service	Survey <sup>b</sup>	Number	Mean rating	Std deviation
Cooperation of pharmacy staff	1	1097	8.19	1.88
	2	521	8.18	1.79
Friendliness of pharmacy staff	1	1110	8.31	1.89
	2	528	8.37	1.73
Medical knowledge of the pharmacists <sup>a</sup>	1	892	8.12	1.69
	2	471	8.39	1.55
Pharmaceutical knowledge of the pharmacists	1	1009	8.88	1.37
	2	502	8.92	1.26
Drug information service provided	1	1019	7.72	2.23
	2	492	7.64	2.20
Advice given on drug information queries	1	1085	8.45	1.77
	2	520	8.33	1.83
Timeliness of response to drug information queries <sup>a</sup>	1	1047	8.09	1.89
	2	513	7.83	2.09
Advice given on general queries	1	1056	8.26	1.72
	2	518	8.15	1.82
Timeliness of response to general queries	1	1031	8.03	1.83
	2	509	7.86	1.94
Participation in ward rounds <sup>a</sup>	1	498	5.74	3.65
	2	290	4.71	3.79

Measure of service	Survey <sup>b</sup>	Number	Mean rating	Std deviation
Review of medication charts <sup>a</sup>	1	791	7.38	2.72
	2	432	7.04	2.86
Adverse drug reaction monitoring/ management <sup>a</sup>	1	629	6.71	2.92
	2	376	6.25	3.06
Intervention in/ monitoring patient drug therapy	1	689	6.89	2.74
	2	380	6.63	2.92
Therapeutic drug monitoring service (pharmacokinetic)	1	545	6.81	2.84
	2	310	6.61	3.02
Understanding and knowing the needs of the users	1	894	7.21	2.28
	2	445	6.98	2.45
Efficiency of the pharmacy service <sup>a</sup>	1	1086	7.37	2.01
	2	522	7.00	2.32
Accuracy of dispensing <sup>a</sup>	1	1068	8.78	1.43
	2	515	8.62	1.59
Discharge dispensing <sup>a</sup>	1	902	8.05	1.93
	2	474	7.49	2.32
Timeliness of provision of medication <sup>a</sup>	1	1036	7.17	2.06
	2	505	6.63	2.48
Availability of stock	1	1077	7.46	2.05
	2	515	7.38	2.14
Sterile manufacturing- intravenous preparations <sup>a</sup>	1	910	8.52	1.69
	2	314	8.12	2.17
Discharge medication counselling of patients	1	745	6.42	3.11
	2	410	6.58	2.99
Patient information and education on drugs/ medicines	1	789	6.29	2.93
	2	439	6.52	2.99
Pharmacy bulletins/ publications <sup>a</sup>	1	825	6.11	2.92
	2	353	5.26	3.04
Drug education for hospital staff- informal <sup>a</sup>	1	965	6.48	2.79
	2	450	5.12	3.04
In-service, structured lectures for hospital staff <sup>a</sup>	1	784	4.74	3.29
	2	415	3.62	2.97
Extent of pharmacy department involvement in research <sup>a</sup>	1	225	5.27	3.42
	2	130	4.45	3.36
Reliability of the service <sup>a</sup>	1	1073	7.80	1.89
	2	506	7.49	2.09
Communication with users of the service	1	1004	7.44	2.22
	2	488	7.33	2.13
After hours service <sup>a</sup>	1	897	5.26	3.07
	2	427	4.33	3.00
Overall service provided to the users of the service <sup>a</sup>	1	1059	7.80	1.71
	2	499	7.42	1.92

<sup>a</sup> Significant difference between surveys: ANOVA, F value significance <0.05. (Independent samples t-test for equality of means, 2-tailed, significance <0.05)

<sup>b</sup> Survey 1= 1993/94 survey, survey 2= 1999/2000 survey.

These differences were mostly associated with a slight reduction in the rating in the second survey and/ or widening of the standard deviation, showing that for these seventeen measures of customer service, the effectiveness of performance of the pharmacy service deteriorated over the six years from the nurses' perspective. An

exception was *medical knowledge of the pharmacists*, where the rating increased slightly in the second survey.

### 9.2.3 Pharmacists

A comparison of the mean ratings by pharmacists, between the two surveys, for the performance of the pharmacy services identified statistically significant differences existed for five of the 31 measures of customer service shown in Table 9.5.

**Table 9.5 Performance ratings by pharmacists**

Measure of service	Survey <sup>b</sup>	Number	Mean rating	Std deviation
Cooperation of pharmacy staff	1	211	8.29	1.30
	2	138	8.36	1.04
Friendliness of pharmacy staff	1	211	8.41	1.30
	2	142	8.46	1.11
Medical knowledge of the pharmacists <sup>a</sup>	1	206	6.92	1.41
	2	139	7.27	1.09
Pharmaceutical knowledge of the pharmacists	1	208	7.96	1.15
	2	142	8.15	1.01
Drug information service provided	1	206	7.78	1.69
	2	134	7.54	1.85
Advice given on drug information queries	1	204	8.17	1.29
	2	138	8.25	1.30
Timeliness of response to drug information queries	1	200	7.82	1.37
	2	134	7.94	1.33
Advice given on general queries	1	208	8.23	1.03
	2	140	8.25	1.07
Timeliness of response to general queries	1	204	8.29	1.11
	2	139	8.22	1.17
Participation in ward rounds <sup>a</sup>	1	154	6.63	2.34
	2	97	5.75	2.64
Review of medication charts	1	196	8.19	1.58
	2	135	7.94	1.53
Adverse drug reaction monitoring/management	1	191	6.83	1.83
	2	135	6.93	1.67
Intervention in/ monitoring patient drug therapy	1	199	7.67	1.70
	2	136	7.62	1.30
Therapeutic drug monitoring service (pharmacokinetic) <sup>a</sup>	1	177	6.83	2.12
	2	125	7.30	1.75
Understanding and knowing the needs of the users	1	200	7.49	1.45
	2	139	7.64	1.17
Efficiency of the pharmacy service	1	208	7.68	1.40
	2	142	7.52	1.35
Accuracy of dispensing	1	211	8.65	1.00
	2	141	8.67	0.96
Discharge dispensing	1	202	8.37	1.13
	2	137	8.22	1.22
Timeliness of provision of medication <sup>a</sup>	1	210	7.87	1.10
	2	141	7.58	1.35

Measure of service	Survey <sup>b</sup>	Number	Mean rating	Std deviation
Presentation of medicines	1	210	8.61	1.06
	2	142	8.43	1.19
Availability of stock	1	209	8.14	1.21
	2	143	8.10	1.23
Sterile manufacturing- intravenous preparations	1	191	8.37	1.44
	2	112	8.28	1.57
Discharge medication counselling of patients	1	203	7.79	1.58
	2	136	7.81	1.50
Patient information and education on drugs/ medicines	1	201	7.59	1.53
	2	138	7.54	1.47
Drug education for hospital staff- informal	1	193	7.38	1.62
	2	131	7.15	1.70
In-service, structured lectures for hospital staff	1	177	6.90	2.06
	2	108	6.68	2.08
Continuing education for staff pharmacists	1	203	7.20	1.94
	2	134	6.77	2.08
<b>Education and training of non-pharmacist pharmacy staff<sup>a</sup></b>	1	185	5.91	2.35
	2	128	6.50	1.90
Extent of pharmacy department involvement in research	1	145	4.92	2.57
	2	91	4.96	2.70
Reliability of the service	1	210	8.33	1.05
	2	141	8.22	1.30
Communication with users of the service	1	206	7.80	1.34
	2	142	7.72	1.42
After hours service	1	198	7.94	1.66
	2	122	7.91	1.72
Overall service provided to the users of the service	1	210	8.10	1.01
	2	142	7.91	0.99

<sup>a</sup> Significant difference between surveys: ANOVA, F value significance <0.05. (Independent samples t-test for equality of means, 2-tailed, significance <0.05).

(Continuing education for staff pharmacists had an F value, significance = 0.054).

<sup>b</sup> Survey 1= 1993/94 survey, survey 2= 1999/2000 survey.

Where a statistically significant difference was identified (Table 9.5), there were slight increases in ratings with a narrowing of the standard deviations for *medical knowledge of the pharmacist, therapeutic drug monitoring, and education and training of non-pharmacist pharmacy staff* in the second survey, showing some improvement in the performance of the pharmacy services over the six years. However, the ratings for *pharmacist participation in ward rounds and timeliness of provision of medication* were slightly lower and the standard deviation slightly wider in the second survey compared with the first, indicating some deterioration in performance.

### 9.3 Perceived importance of the pharmacist as a member of the healthcare team

The ratings of the importance of the pharmacist as a member of the healthcare team obtained from the two surveys were statistically analysed by comparing the means.

There was no statistically significant difference between the ratings given by doctors in the first and second surveys: the mean was 7.33 (standard deviation of 2.20) in the first survey, and 7.49 (standard deviation of 1.89) in the second.<sup>7</sup>

For the nurses, however, there was a significant difference in the ratings between the two surveys: mean 7.92 (standard deviation of 2.0) in the first survey, and 8.15 (standard deviation of 1.87) in the second.<sup>8</sup>

The ratings pharmacists gave themselves showed no significant difference between the two surveys: the mean was 7.55 (standard deviation of 1.48) in the first survey and 7.29 (standard deviation of 1.34) in the second.<sup>9</sup>

### 9.4 Discussion

Over the six years between the two surveys many changes occurred within hospitals and pharmacy departments, as identified in Chapters 5 and 8. These included staff cuts and reductions that later manifested themselves in serious staff shortages. Pharmacy departments were also required to become more efficient, to justify services and to cut costs wherever possible, whilst at the same time enhancing their services, improving quality and becoming more customer or patient focussed. The major reason for these changes was that hospitals were faced with funding reductions whilst experiencing increased demands on their services. Networks of hospitals were established, some hospitals were amalgamated and others privatised, creating new organisational structures

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<sup>7</sup> ANOVA, F value significance < 0.05; independent samples t-test for equality of means, (2-tailed significance) < 0.05.

<sup>8</sup> ANOVA and independent samples t-test.

<sup>9</sup> ANOVA. Even though the mean rating was slightly lower for pharmacists in the second survey the standard deviation associated with this was narrower than for the first survey showing less variation in their responses.



and posing new challenges for hospital administrators and managers. In the face of these numerous changes, hospital pharmacies struggled to continue to provide the many services that the directors believed were fundamental to their role. Many hospital pharmacies continued to establish or expand their clinical services seeing this as essential to their practice as hospital pharmacists whilst others had to cut services (see Chapter 5, section 5.7.3).

Comments from doctors and nurses about changes that have occurred in pharmacy services over the six years confirmed that many came to consider the role of pharmacists as enhancing or complementing their role or patient care (see also Chapter 5). It is important to bear in mind that doctors and nurses have also been confronting the many changes that have taken place within the health system in the 1990s and that they acknowledge that newer drug therapies, changing technology and knowledge have raised new issues regarding safety of drugs and appropriate use:

*"Well informed doctor should know pharmacological preparations and interactions etc. but backup and check with pharmacy are important to minimise errors and supplement prescriber deficiencies." (Doctor, large city hospital (private))*

*"Great potential to expand services and raise the profile of the pharmacist as part of the team. Large evidence base to suggest that this is the benchmark we should aim for" (Doctor, small city hospital)*

*"More interface with the ward such as on rounds and available to see medically complex patients." (Nurse, large city hospital)*

Changes in service requirements between the two studies showed an increasing proportion of doctors and nurses indicated that pharmacists should *review medication charts*, although this change was only significant for nurses.<sup>10</sup> This service is now a fundamental hospital pharmacy service for both customer groups, who also continued to regard *patient information and education on drugs and medicines* and *adverse drug reaction monitoring and management* as fundamental services.<sup>11</sup> It is interesting that

<sup>10</sup> As noted in Table 9.2

<sup>11</sup> *Discharge medication counselling* became a fundamental pharmacy service from the perspective of all groups in the second survey although this was not a statistically significant change from the first survey.

these are all services that enhance drug therapy because they educate patients about their medication and ensure medication is used appropriately and safely.

Support decreased amongst doctors and nurses between the surveys for the provision of *non-sterile manufacturing* and amongst all three groups for *sterile manufacture*, highlighting a shift in service delivery within pharmacy departments. The reduced funding and tight budgetary control experienced by many hospital pharmacies over the past few years has resulted in departments having to decide what services they can continue to provide, and how effectively.

A recent study of materials management in Australian hospital pharmacies (Tsui et al., 2000), identified that an increased outsourcing of sterile manufacturing has occurred over the past two years. This is supported by the findings of the second survey that some pharmacy departments had outsourced their cytotoxic manufacture. It is highly likely that maintaining adequate sterile manufacture facilities is expensive, and that outsourcing allows the service to be offered to the hospital without drawing extensively on pharmacy infrastructure and personnel.

The reduced support for *non-sterile manufacture* may also reflect a shift in the perception of the pharmacist as being a compounder of medication to one who is beginning to be seen as having a more relevant clinical role. Additionally, many formulations which were previously compounded in hospital pharmacies are now commercially available.

There was a slight increase in support from doctors and nurses for pharmacy departments to *control and perform drug purchasing*. However this was only statistically significant for nurses. Nurses also increased their support for the pharmacy departments having a *store for bulk storage and reserve stock*, a statistically significant change from the first survey. They now perceive this service to be fundamental. Pharmacists were less supportive of a *store for bulk storage and reserve stock* in the second survey, although they still regard this as a fundamental service.

There was some fall in support for pharmacy *imprest* services from doctors between the two surveys, although nurses continued to support this service probably because they have more to do with administering medication and ensuring drugs are available on the ward.

Doctors indicated less support for *dispensing for hospital staff* in the second survey. They may feel that whilst hospitals are experiencing severe funding cuts this service is an unnecessary expense for pharmacy departments in terms of the cost of the medication supplied and pharmacists' time.

Interestingly, there was reduced support by all three groups for *pharmacy publications and bulletins* as a service which should be provided, even though these are often useful in informing the pharmacy's customers of new drugs, changes in regulations or formularies, or any other related issue. There was a reduction in support from doctors in the second survey for the pharmacy providing *in-service, structured lectures*. Perhaps they are unsure of what the pharmacy departments can offer in this area or they are unwilling to accept this type of service for themselves, maybe seeing it as a challenge to their knowledge, status or authority?

Slightly more nurses indicated they did not know whether the pharmacy should provide *outpatient and inpatient dispensing* in the second survey. The relevance of this is uncertain, because who should dispense to patients if not the pharmacy? It is possible the wholesale pharmaceutical manufacturers or the pharmaceutical industry are interested in dispensing direct to the patient in the hospital in the long term. At the time of the second survey some pharmaceutical distributors were trialing the distribution of *imprest* stock direct to the wards in a number of hospitals, bypassing the pharmacy departments in an endeavour to streamline drug distribution.

*Research activities* and *drug cost monitoring* showed loss of support from nurses in the second survey. In fact, nurses no longer considered *drug cost monitoring* as a fundamental pharmacy service, although pharmacists and doctors still do. The reduced

support may reflect a lack of knowledge amongst nurses about what research pharmacy departments undertake, the relevance of this, and lack of interest on their part or a realisation that in a leaner work environment some aspects of service can be downgraded. The reduced support by nurses for *drug cost monitoring* seems to confirm comments made by some of them regarding the excessive focus by some pharmacy departments on this issue without taking into account costs incurred outside the pharmacy departments.<sup>12</sup>

The second survey of Victorian hospital pharmacy services was designed to have a high statistical power, sensitive enough to detect a shift in performance ratings for measures of customer service of one point on a scale of 0 to 10. This appears to have been achieved when comparing the ratings of the performance of the pharmacy departments over the various measures of customer service (Tables 9.3 to 9.5). Statistically significant differences were associated with slight reductions or increases in the ratings and standard deviations for the measures between the two studies.

These lower ratings for some measures may reflect the difficulties that pharmacists faced providing some of these services under extreme staff shortages in many cases.

Services such as *participation in ward rounds* were rated lower in the second survey than in the first by doctors, nurses and even pharmacists. This may be because this aspect of clinical work was not provided consistently within the hospitals or was sacrificed in an endeavour to let pharmacists continue to provide a more general clinical service.<sup>13</sup> They may not have had the manpower and resources to allow a more thorough and comprehensive service to be available.<sup>14</sup> However, in some hospitals pharmacists do not participate in ward rounds (see Tables 4.11 and 5.12).

<sup>12</sup> Such as nursing time and increased bed stays where newer and more expensive therapies which may require less frequent administration and result in shorter hospitalisation are withheld.

<sup>13</sup> The pharmacist may only have *reviewed medication charts* in the ward rather than undertaking other clinical activities which are more time consuming.

<sup>14</sup> Some comments made by doctors, nurses and pharmacists in the second survey indicated that there had been a reduction in some clinical services

For doctors the measures that rated lower involved services associated with quality aspects of service: accuracy (security), reliability, information and advice (communication), after hours service (access) and competence. For nurses this also involved timeliness (serviceability, responsiveness), efficiency (responsiveness), after hours service (access), and the overall pharmacy service.<sup>15</sup>

These are measures of service that Parasuraman et al. (1985) and Garvin (1987) identified as dimensions of quality services. The measures in this research which have declined over the six years can be divided into the narrowed down dimensions of service quality as determined by Parasuraman et al. (1988, 1991b): reliability, tangibles, responsiveness, assurance and empathy. Because the ratings for these measures have deteriorated between the two studies it can be argued that customer service and the quality of services has declined over the timeframe of the surveys.

This deterioration should be of concern to all hospital pharmacists as well as health policy planners and senior hospital executives. One of the objectives of the rationalisation of healthcare services in Victoria in the 1990s was to improve the efficiency and quality of health services. This study has shown that despite the endeavours of hospital pharmacy departments to maintain services, these were adversely affected.<sup>16</sup> In actual fact some hospital pharmacy services were perceived to have improved, but in others they were worse.

*"The financial restraints and cost shifting (i.e. State and Federal) remain a farce. Give us a fully federally funded drug budget minus the double bureaucracy. And I will be happy". (Doctor, large city hospital).*

*"More staff are required to provide the expected services of a pharmacy in a public hospital. Decreased errors/incidents would occur if adequate staffing. (Nurse, large city hospital).*

*"There is a shortage of pharmacists at the moment and because of this we have had our ward pharmacist withdrawn (temporarily). This has brought to our attention the benefits of having one!" (Nurse, large country hospital).*

<sup>15</sup> Timeliness of provision of medication rated lower for nurses in the second survey and was mentioned by pharmacists as an aspect of service directly affected by resource difficulties, predominantly staffing issues.

<sup>16</sup> As noted by the numerous comments from doctors, nurses and pharmacists in the second survey.

*"Economic rationalism has adversely affected pharmacy, as all other departments: less people available, those that are remaining are overworked and demoralised. Hope this is changing!" (Nurse, small country hospital).*

The rating of the importance of the pharmacist as a member of the healthcare team in the second survey was slightly higher for doctors and nurses, but only statistically significant for nurses. Comments made by doctors and nurses regarding the importance of the pharmacist show that they are gradually being acknowledged by them as having a support role in overseeing, monitoring and guiding medication use in the wards (see Chapter 5, section 5.5.2). Both surveys show that in order for pharmacists to be considered to be part of the healthcare team they need to be 'visible' and on the ward with the team.

The improvement noted in the ratings of the importance of pharmacists is reassuring for hospital pharmacists because this shows that, despite the difficult circumstances under which they have had to operate in the six year period of this research there has been a gradual increase in acceptance of them in the clinical environment. Interestingly, pharmacists rated their importance as a member of the healthcare team slightly lower in the second survey, perhaps reflecting a lower morale during this time, although this change was not statistically significant.

Many of the services that saw a slight reduction in performance ratings in the second survey would have been influenced by resource and staff shortages. A number of doctors and nurses acknowledged that pharmacy departments were "doing it hard" because they too were also facing issues such as the funding and resource cuts, budgetary constraints, organisational restructuring, and staff shortages, in the ward situation. Therefore, it is surprising that the ratings were not even lower. Perhaps the doctors and nurses empathised with the pharmacists and subsequently chose to give a more favourable rating?

In an ideal healthcare environment which is well financed, resourced and staffed, and where there is unlimited access to funding, the possibilities and opportunities to exceed expectations and to deliver quality services and excellent customer service are many,

because these are only limited by the individuals delivering them and the vision of those planning them. However, the reality is that there is not an unlimited source of funding in the hospital sector, so organisations are required to determine what is important in terms of service delivery and customer requirements. But equally, governments and hospital planners need to appreciate the limitations created by this and be cognisant that at some point quality and customer service will be affected, as this research has shown.

These findings are important as the main objective in planning and delivering services in the healthcare sector should be to provide quality services to their primary customer, the patient. The way that each of the members of the healthcare team work together to provide the services ultimately determines whether this is achieved.

## **CHAPTER 10**

### **CONCLUSIONS**

#### **10.0 Introduction**

This thesis has reported the findings from two surveys of customer service conducted in Victorian hospitals in 1993/1994 and 1999/2000.

#### **10.1 Research objectives**

The surveys were undertaken to gain an understanding of the perceptions, awareness and requirements of customers of Victorian hospital pharmacies, to establish measures and ratings of performance of hospital pharmacy services, to develop a model of customer service, and to identify change in the healthcare environment and its impact on the services over the timeframe of this study.

Customer service and how it applies to hospital pharmacy practice has not previously been evaluated in a systematic and comprehensive fashion. This study has done so by exploring the concepts of customer service, quality and perceptions, by asking doctors, nurses, patients and pharmacists themselves about hospital pharmacy services and practice. It also sought to understand the influence of respondent type and hospital size and location on the results, something few other studies worldwide have considered.

The methodology used in this study can be applied broadly to the healthcare sector as shown by the reproducibility of results in the second survey.

#### **10.2 Model for the development of perceptions**

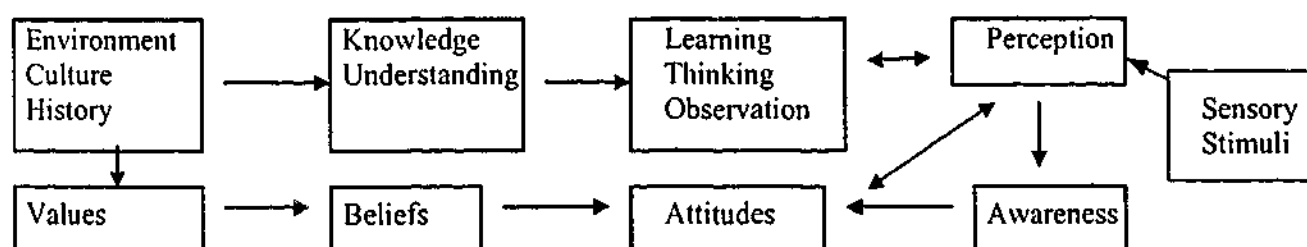
Perceptions are inextricably linked with customer service and quality of service because when evaluating these it is the perceptions that are being measured. The research reported in this thesis is based upon perceptions of doctors, nurses, pharmacists and patients of the



services provided by pharmacists, and it is these that make this study significant and interesting.

Perceptions are developed along the following lines. Firstly there is an association and combination of the environmental, cultural and historical background of the individual, their knowledge and understanding of the world and the environment in which they move and grow, and the learning processes they undertake within this environment. This, coupled with their values and beliefs, helps to form attitudes and awareness. The perceptions generated by sensory stimuli that they are exposed to influence their awareness and subsequently attitudes towards the numerous factors which combine to then make up the world as they understand it. This concept can be summarised by the model developed for this thesis, shown below (Figure 10.1).

**Figure 10.1 Model for the development of perceptions<sup>1,2</sup>**



Pharmacists need to understand the processes by which perceptions are developed because they lie at the heart of the role of the profession in the healthcare industry.<sup>3</sup> Pharmacists in hospitals are seen undertaking many and varied roles, and the impressions and images being formed by people who observe them will influence the way the profession as a whole is perceived. If pharmacists and pharmacy departments understand the perceptions of their many customers, they are in a better position to manage these perceptions. Variations between individual pharmacists in their attitudes, motivation, and practice in the hospitals can also influence perceptions of the services they provide. For

<sup>1</sup> Developed and presented in a poster: Wilson SG and Chapman CB (1998). Factors influencing perceptions of hospital pharmacy services and consequent management strategies. Cojoint meeting of The Australian Society of Clinical and Experimental Pharmacologists and Toxicologists and The Australian Pharmaceutical Science Association, Dec. 13-16 1998, Wrest Point Convention Centre, Hobart, Tasmania.

<sup>2</sup> See also Sternberg (1999) for in-depth treatment of awareness and perception in psychology literature.

<sup>3</sup> See also Chapter 2, section 2.4.

instance, some of the comments from doctors and nurses have shown that their interactions with, and observations of, different pharmacists have resulted in them being heavily influenced in relation to their acceptance of the clinical involvement of pharmacists.

Knowing customers' perceptions allows pharmacy departments to better target their services, to add value to services and indeed to improve the quality of services. As Mehl (1993) observed, perception is another factor required to reach the goal of excellence, and without it, excellence may not be realised.

### 10.3 Awareness

There were differences between doctors, nurses and pharmacists in their awareness of services provided by hospital pharmacies, and between patients in their awareness of pharmacists.

Nurses were more aware of services than doctors in the first survey, probably because the nature of their work brings them into more contact with pharmacists either in the clinical areas or with the pharmacy departments. The only service where there was not a significant hospital size and location effect on the awareness by doctors was *inpatient dispensing* and for nurses it was *pharmacy store* and *drug cost monitoring*. Large city hospitals appeared to offer a wider range of services than other hospitals from the perspective of doctors, nurses and pharmacists, probably reflecting greater staff numbers and resources in the big hospitals.

The different levels of awareness of pharmacy services identified should be of concern to pharmacists because unless their customers have a clear understanding of what they provide how can they use those services effectively and support their provision?

Interestingly, a significant degree of uncertainty, as seen by "don't know" responses, was identified amongst doctors and nurses about the provision of many pharmacy services,

particularly the clinical ones, research activities, and 'basic' services such as manufacturing and purchasing of pharmaceuticals.

Variations in the awareness of pharmacy services were identified between pharmacists in some hospitals in both surveys, and this could possibly influence how the services are provided and result in inconsistencies in service delivery. The variations need to be addressed to ensure that all customers obtain an accurate awareness and knowledge of services.

The responses of both inpatients and outpatients in the first survey showed that they were aware that pharmacists dispense medication but knowledge of other services was poor. It was of great interest that a significant numbers of inpatients either did not know if a pharmacist regularly visits the ward, or had not met the pharmacist, despite a clinical pharmacy service usually being available. However, there was improvement of awareness over time but still the number of those who had never spoken with a pharmacist at the hospital or met the clinical pharmacist was high. This is significant, because if pharmacists are indeed providing clinical service to patients, then they need to make their presence known so that patients can take advantage of the services.

Greater interaction with patients should lead to the development of a better awareness of the capabilities of pharmacists because research has shown that in hospitals where there were well-established clinical pharmacy services the patients had a good knowledge of what pharmacists do and their role in the wards, and welcomed the information received on medications.

Even though this thesis reports on the services provided by a single state in Australia, Victoria is generally considered to offer the same services as all the other states, with significant differences only found *for adverse drug reaction monitoring, non-sterile manufacturing, dispensing for hospital staff, sterile manufacture of intravenous*

*preparations and seven day a week service.*<sup>4</sup> Therefore, the findings reported in this thesis are generally applicable to all other states of Australia.

#### 10.4 Requirements

Differences in service requirements for doctors, nurses and pharmacists were identified in both surveys, with pharmacists supporting the provision of an extensive range of services and seeing themselves as having a clinical role, whereas nurses supported only some clinical roles and doctors gave even less support.

Hospital size and location, and respondent type were shown to influence service requirements, an important consequence being that these variables must be taken into account when evaluating services. Amongst the effects was that doctors and nurses from large city hospitals supported the provision of more services than those from other hospitals in the first survey. Surprisingly, the only difference in service requirements between nurses from large city and small country hospitals was that those from the city supported outpatient services that were not offered by small country hospitals. In the first survey, pharmacists from large hospitals (city and country) supported the provision of a wider range of services than their small hospital counterparts, whereas in the second survey only pharmacists from large city hospitals supported more services. Perhaps because large hospitals have traditionally been able to offer more services due to greater staff numbers and resources, customers appear to continue to expect this.

In the second survey, hospital size and location had a greater influence on service requirements than was shown in the first. For example, nurses from large hospitals supported more services than those from small hospitals but for doctors almost the reverse was the case: doctors from small country hospitals supported the provision of more services than those from other hospitals. It is likely that, because small country hospital pharmacies have usually had to provide services with few staff, they appear to have been able to meet changing demands on their services from the perspective of doctors.

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<sup>4</sup> See Wilson et al, 2000a.

With the increasing emphasis on customer service and patient-focused care in the healthcare sector, more weight has been placed on patient satisfaction and the need to determine their requirements (Hepler and Strand, 1990; Vogel, 1993; Harper and Proust, 1995). Government health departments have, in recent years, been conducting patient satisfaction surveys to determine whether hospitals are meeting the needs of their target "customers". For example, the Patient Satisfaction Survey-Victorian Public Hospitals (Quint and Fergusson, 1997) addressed various aspects related to a patient's time in hospital, along with pre-admission and discharge issues. However, patients were not asked to rate the services provided by pharmacists, instead being required to comment on medication and pain relief. The research reported in this thesis addressed this shortcoming.

The information requirements of both inpatients and outpatients were clearly evident in both surveys: they want to know a lot more about their medications. Written information was seen as a useful adjunct to verbal instructions but not a replacement for it, and patients wanted the information in clear, easy to understand language. It is worth quoting one patient who summarised the question of how the explanation about medicines could be improved by stating: *"It's my life- I want to know."* This is a timely reminder for all health professionals and one which pharmacists need to keep in mind at all times.

Yet it seems that there were patients who regarded doctors and nurses as the primary source of drug information, not pharmacists, a situation that may have arisen because of a perception that pharmacists are responsible only for supply of medications. This can be addressed by pharmacists engaging more with patients, and by educating and informing patients about their medication so that they come to realise that pharmacists provide this service.

Medication availability, its supply and the ability for pharmacy departments to dispense all medication prescribed were amongst patient requirements in 1999/2000.<sup>5</sup> Quicker supply of medication was a frequently offered suggestion by outpatients for improving

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<sup>5</sup> Patients were only asked for their service requirements in the second survey.

services to them, with some observing that at times there appeared to not be sufficient staff available in pharmacies to dispense prescriptions, resulting in long waiting times. Staff numbers and the allocation of duties need to be considered by pharmacy management to improve these services. In addition, pharmacists need to educate patients about the processes they follow in dispensing prescriptions so that patients are aware that it is not simply a matter of sticking a label on a packet of tablets but a more rigorous process of checking and ensuring the safety of the prescribed medication. A better understanding of the realities of practice may temper this 'speedier dispensing' requirement of patients.

A number of doctors commented that reduced outpatient dispensing, or in some instances the decision to not dispense outpatient prescriptions, had resulted in the pharmacy services being perceived to be worse. This indicates that decisions about reducing services cannot be made in an isolated manner: the implications for the patient and meeting their medication supply needs should be considered.

Comments from inpatients showed that interaction with pharmacists was viewed positively. It is believed that by interacting and communicating with patients, pharmacists should be able to ascertain the knowledge and information that patients have regarding their medication, so allowing services to be adjusted to better meet requirements. But this means pharmacists have to make the time and effort to speak with patients, and Directors of Pharmacy have to consider staffing numbers and allocation of duties so as to facilitate the process. However, if departments do not have the actual requirements of their patients documented it could prove difficult to convince administrators of staffing needs, which was the case in the early 1990s in Victoria when pharmacy departments were not only having to justify their service provision but also their staff numbers.

The open ended questions used in the surveys allowed patients to identify their needs and ways of improving services without being steered into a particular viewpoint regarding health service provision. A more valid picture of their perceptions is therefore obtained. If they are not given this opportunity, then the information obtained is lacking in its

accuracy and validity, and may be totally driven by what the healthcare provider considers to be important, rather than what the patient is concerned about. However, the comments of patients alone cannot be the sole basis for developing services because health professionals also need to be included in the decision making process based on their expertise and experience in their relevant fields.

### 10.5 Performance measurement

Hospital size and location, and respondent type, were shown to influence ratings of pharmacy performance on measures of customer service by doctors, nurses and pharmacists.

Interestingly, there was a reluctance by many doctors and nurses to give ratings for the many measures of service specifically associated with pharmacy practice, particularly clinical services, choosing instead to indicate that they had no opinion or that it was not applicable at their hospitals. This is believed to confirm the importance of allowing participants an opportunity to give these sorts of responses, otherwise they may be forced to make judgements about services without the knowledge or willingness to do so, leading to bias and inaccurate results.

In contrast to a reluctance to provide ratings for "pharmacy specific" services, doctors and nurses were less hesitant about rating the 'regular' aspects of customer service and service quality, such as friendliness, cooperation, timeliness, accuracy, efficiency, reliability and overall service.

One of the key objectives of this research was to gain an understanding of the perceptions and requirements of customers. By doing so, pharmacists should then be able to understand the needs of these people. However, a significant number of doctors and nurses did not rate *understanding and knowing the needs of the users*, choosing instead to indicate they had no opinion. This finding is of concern because it did not change over the six years, and demonstrates a need to address the hesitancy because it seems that

doctors and nurses are not convinced that pharmacists actually understand and know their needs.

The validation process of the questionnaires (Chapter 7) discussed whether some of the measures of customer service should be included in questionnaires if substantial numbers of doctors and nurses have chosen not to rate them. However, it was felt that many of the measures, particularly those related to clinical services, should be included. This is because the choice made by significant numbers of doctors and nurses not to give a rating as a response to some questions provides valuable feedback about the measures being evaluated. What has not been 'said' is as powerful as what has been 'said', because pharmacists need to ask themselves why so many doctors and nurses had no opinion about the services provided. One reason could be because they do not regard some of the services as necessary, a situation which is evident in the service gaps that exist in the customer service models. Alternatively, some doctors and nurses may have been practicing in areas where there were no clinical pharmacists or they have been at hospitals where some of the more contentious services were not offered.

If it is the case that the role of pharmacists in the clinical setting has not been fully accepted then something needs to be done about it. For example, pharmacists must be more 'effective' in the manner in which they deliver their clinical services. They should endeavour to participate in ward rounds where decisions about drug therapy are often made, where there is the opportunity to contribute in this decision making process, and where they can be an 'active' member of the healthcare team. They must communicate with doctors and nurses in the wards to promote their services and provide feedback about the impact of these services. The clinical services should be provided in a consistent fashion, so that the standard of service is maintained irrespective of changes in pharmacy staff or the economic environment. Underpinning the clinical services, the pharmacy departments must ensure a reliable, efficient supply of medication to the wards.

The ratings obtained for services highlight where improvements can be made. Amongst these are *participation in ward rounds, after-hours service, in-service, structured lectures*



*for hospital staff, and drug education for hospital staff.* Improvements could be achieved by greater involvement of pharmacists in these activities and by pharmacists actually initiating some of them where the services don't already exist. For instance, in-service lectures for nurses could be developed in areas of drug therapy.

Ratings given by inpatients of the performance of clinical pharmacists were favourable in both surveys. The lowest rating of performance was for the *availability of the pharmacist to answer inpatient's questions*, which occurred in the second survey. This probably reflects the time limitations that some pharmacists had in meeting workload demands.

As with the inpatients, the ratings given by outpatients were generally positive. The lowest ratings of performance of the pharmacy service were for the *time taken for prescriptions to be filled* and *waiting room facilities* which rated poorly in both surveys, and *the time the pharmacy department is open for service to the public* in the second. It was shown that outpatients waited longer for prescriptions in the second survey and this coupled with the lower ratings for the *time taken for prescriptions to be filled* probably reflect the problems with staffing numbers that many hospital pharmacies were experiencing, and clearly show that this aspect of customer service deteriorated.

The inclusion of a question asking outpatients to actually rate the importance of a number of pharmacy services in the second survey was valuable because it was then possible to prioritise these services. However, it is worth noting that, simply because a service gets a high rating does not necessarily mean that it is important, and because a measure of service is included in a questionnaire does not necessarily mean that the respondent regards it as significant. For example, outpatients rated the pharmacy's performance lowest for *the waiting room facilities* but this measure was also least important to them, indicating that there is no urgent need to improve this. On the other hand, the pharmacy's performance for *time taken for prescriptions to be filled* was rated poorly whilst this measure was relatively important to outpatients, indicating a need for improvement here. It is interesting to note that outpatients indicated *the care taken by the pharmacy to dispense their prescriptions* was more important to them than the *time taken for prescriptions to be filled*.

There was reluctance by some inpatients and outpatients to give ratings. This was unexpected, as was their hesitancy to offer any suggestions, comments or observations regarding pharmacy services despite being given the opportunity. This finding raises concerns about how much importance should be placed upon evaluations given by patients about services and care, and needs to be considered when interpreting responses and making decisions about services for patients based purely on satisfaction surveys.

The importance of this is that there have been many reports on patient satisfaction with medical and healthcare services but it is evident that too little focus is placed upon how responsive the patients are to providing this information and the factors that influence their decisions. The hesitation by patients may reflect the power dynamics of the various relationships that exist between them and their healthcare service providers, with the provider having the position of power and the patient being vulnerable to the processes and decisions that are made on their behalf. Patients may feel helpless.

In addition, the heavy reliance of patients on the healthcare sector seems to make them appreciative of any care they receive as long as they get well, and this may reduce their level of criticism about care received and their expectations of services. Healthcare service providers, governments and individual practitioners need to consider the reluctance shown by patients to give ratings or make comments or suggestions about services. Their responses are generally likely to be more favourable than critical because their primary focus is on their recovery and they do not want to compromise their care by being overly negative. The results from surveys in this thesis indicate that any data obtained from evaluating perceptions of patients should be balanced against the healthcare environment that exists at the time, as well as data received from internal customers in the complex area of healthcare delivery.

Patients do not receive their healthcare in an isolated manner. They receive input from many and varied sources whilst they are in the hospital, and the input of one professional cannot be isolated from the whole experience. It is that overall experience which limits

their ability to truly fine tune their evaluation of a single profession. So there is a need to exercise caution when interpreting patient satisfaction surveys.

The study has validated the questionnaires used and has established that they are reliable and can be used for ongoing monitoring of customer service, service requirements, performance, and service quality by hospital pharmacy departments. A standardised questionnaire does not appear to have been previously developed in Australia to measure customer service in hospital pharmacies.

Furthermore, the results obtained can be used to benchmark future evaluations of pharmacy services by comparing results with those from each respondent group, and by taking into account the hospital size and location.

#### **10.6 The customer service model**

The four customer service models developed in this study are original and important because they conceptualise service requirements. In particular, service gaps that exist between pharmacists and their customers were highlighted, as were the impacts of hospital size and location. The models reinforce the importance of healthcare planners not merely evaluating service delivery on a broad scale, but that they also consider the impact of the respondent types and the location of the hospitals.

There were a few core services which were regarded as fundamental for doctors, nurses and pharmacists across all hospital sizes and locations in the first survey: *inpatient dispensing, drug information, informal drug education for hospital staff, patient information and education, and adverse drug reaction monitoring*. However, the shifting trends in service requirement that occurred between the surveys can be seen when examining the customer service models developed after the second survey because the only fundamental pharmacy service for all respondents across all hospitals was *inpatient dispensing*.

The shifts in service requirements are important because they show that these are not static and that pharmacy departments must monitor these requirements on a regular basis to ensure the needs of doctors, nurses and patients are met. Furthermore, the service gaps identified in both surveys show that hospital pharmacies are actually exceeding their customer requirements as seen by the greater numbers of fundamental services for pharmacists than doctors and nurses, clearly illustrated in the customer service models developed. The problem with this is that doctors and nurses don't regard pharmacists as having as extensive a role as pharmacists believe they should have because they don't support the provision of as many pharmacy services as pharmacists. The question is why have pharmacists not been able to convince them of the value of these services because the results show that they obviously haven't? The gaps identified in the customer service models are those fundamental services which pharmacists believe they should provide but which doctors and nurses do not want. Where gaps were identified between the requirements of doctors and nurses and those of pharmacists in the first survey, clinical services featured highly. This improved slightly in the second survey, although there is still a way to go. If pharmacists believe they should be providing the many services they do, it is not good enough to just do so without the support of their "customers".

The models provide a simple visual means for pharmacists to see how accepted their services are within the context of the healthcare environment, and they identify areas where pharmacists need to improve the perceptions of these services. It seems that pharmacists need to be more active in promoting their services and should endeavour to improve how they go about delivering the services, particularly the clinical services, so that there is more widespread support from doctors and nurses.

Importantly, the customer service models have shown themselves to be robust yet sensitive enough to detect changes in service requirements over time.

### 10.7 Change

Perceptions of change and the impact of change on pharmacy services were ascertained in the second survey, and even though the original objectives of governments in applying

economic rationalist theories to the healthcare sector were to reduce costs and improve the efficiency and quality of services, these appear not to have been achieved (Wilson, 2002a). Despite the difficulties pharmacy departments have had to deal with over the six year period, comments by doctors, nurses and pharmacists indicated that some departments were able to improve their services by being innovative and creative, by showing leadership, by teambuilding, by improving efficiency, and by applying their resources more effectively. However, other departments appear to have had their services severely compromised. In fact, significant numbers of doctors and nurses indicated that services were worse or had remained the same over the time frame of the study.<sup>6</sup>

Interestingly, pharmacists were more positive about change and its effects, with over half of them indicating that services had improved. This optimism was however not uniform across all hospitals.

In fact, hospital size and location influenced perceptions of change. For example, more pharmacists from small city hospitals indicated that services had improved compared with their counterparts from the other hospitals.

More doctors, nurses and pharmacists from large city hospitals indicated that services were worse at their hospitals than elsewhere. These hospitals have traditionally been able to offer a wider range of pharmacy services because they have had the staff and resources to do so, but when subjected to more stringent financial conditions they appear to have struggled to maintain services.

On the other hand more doctors and nurses from small country hospitals indicated pharmacy services had improved than did their counterparts at the other hospitals. So, small country hospital pharmacies seem to have been able to cope with the changing healthcare environment, possibly because they have had to manage with the reduced staffing and resources available due to their geographic remoteness, and have been better

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<sup>6</sup> See Chapter 5, Table 5.32.

able to adapt to the various challenges they face as a result of this. The services were more resilient to changing economic circumstances and the uncertainties that these bring.

The issue of change and its effects on services showed that it is not simple to determine the outcomes. For example, factors such as organisational change which were identified by doctors, nurses and pharmacists as having brought about alterations in the way the pharmacy service operates were seen to have various effects ranging from improving services to making them worse, depending on the perspective of particular individuals. When comparing the performance ratings given by doctors, nurses and pharmacists between the two surveys, a number of measures of customer service were found to have deteriorated, such as *ward round participation* (for all respondents), *drug education for hospital staff-informal* and *accuracy of dispensing* (for doctors and nurses), and *timeliness of provision of medication* (for nurses and pharmacists). Reduced staff numbers was amongst the reasons given for the deterioration. These changes in ratings were statistically significant showing that customer service had declined over the six-year period.

### 10.8 The value of hospital pharmacists

The role of the pharmacist has been changing over the years with technicians now performing many distribution and even dispensing activities (Swan and Jones, 1986; Hargreaves, 1989; Low, 1996; Alexander, 1996; Benzie et al. 1997). In addition, outsourcing and privatisation of some of these activities now occurs, and some pharmaceutical manufacturers are endeavouring to deliver medications direct to wards (Tsui et al., 2000). All of these activities threaten to leave clinical services as one of the few remaining areas where pharmacists still have an opportunity to maintain a significant professional role but it is clear that they need to also convince doctors and nurses of this, so that administrators, health consultants and service planners are left in no doubt about the modern role of pharmacists in hospitals.

Clearly pharmacists have a long way to go to convince the doctors and nurses of this because the other professions are not fully supportive of the clinical role. It could be said

that pharmacists are not yet regarded as an equal member of the healthcare team, yet it is a clinical role which should be able to provide the greatest benefit to all concerned because pharmacists are a readily accessible source of drug information and drug therapy monitoring, and can easily complement the care provided by doctors and nurses.

Favourable ratings of the importance of the pharmacist as a member of the healthcare team were associated with them being 'visible', to be active and involved on the ward. It is clear that pharmacists need to 'market' their services in the wards. They need to continue to develop their clinical knowledge and skills, build their confidence in what they are able to contribute to the clinical environment, and refine their communication with their customers. In effect, hospital pharmacists should actively work towards changing the perceptions of their customers so that they can convince them that the services, particularly the clinical ones, are of considerable value.

A number of doctors and nurses commented that the constantly expanding and evolving area of drug therapy and technology has meant that the input from pharmacists in keeping a watchful eye over medication usage, providing up-to-date information on drug therapy, and ensuring safe use of medication are ways of minimising errors and providing a back-up, particularly in a resource-stretched practice environment. Perhaps an increased clinical involvement by some pharmacists has led to this change in the perceptions held by the relatively few doctors and nurses that support a clinical role of pharmacists?

#### **10.9 Future direction for the research**

A future direction for the research could be to conduct focus group interviews with doctors and nurses at a sample of the hospitals included in this study. This would provide a forum where findings from this research can be explored and considered. Clinical pharmacy services have now been in existence in hospitals in Australia for over 30 years (Low, 1994) yet the research from this thesis has shown that the overall acceptance of this role by two of the major customers, doctors and nurses, is lacking. A principal focus of further research needs to be how doctors and nurses regard the clinical role of the pharmacists. Another topic would be to determine the factors that influence the decisions

making processes that doctors and nurses use to decide on their pharmacy service requirements.

#### **10.10 Summary of key findings**

The major themes covered in the research were awareness, perceptions, requirements, performance of pharmacy services, and change.

There was a general poor awareness of what pharmacists do in hospitals (as seen by the don't know responses) by doctors and nurses. This was particularly so for clinical services, although it also affected services such as manufacturing, purchasing, research activities, clinical trial support and drug cost monitoring. Awareness was poorer by doctors than nurses.

The customer service models developed showed that gaps in service requirements existed between doctors and pharmacists and nurses and pharmacists.

Large numbers of doctors in particular and nurses to a lesser extent, had no opinion about pharmacy performance on measures of customer service in both surveys. Particularly for clinical services or pharmacy practice specific measures.

There was a customer service gap in the perceptions held by doctors, nurses and pharmacists of how pharmacy services had changed over the six-year timeframe of the study. More than half the pharmacists in the second survey indicated services had improved compared with only about a third of doctors and nurses. Significant numbers of doctors (14%) nurses (19%) and pharmacists (16%) indicated services were worse whilst more doctors and nurses felt services had stayed the same than did pharmacists.

The fact that customer service and service quality deteriorated over a period of six years should be of concern, and needs to be addressed. The numerous changes that were brought upon the healthcare sector in the 1990s have been shown to impact adversely on hospital pharmacy services. Hospital administrators, healthcare service planners and



governments need to be mindful of this because the changes not only affected pharmacists and their services, but also the many other players in the healthcare services area. Customer service deteriorated over the six-year time frame of the study.

Hospital demographics are important and must be considered when evaluating services because results vary by hospital size and location.

A baseline or benchmark has been established in this research from which to compare and assess hospital pharmacy in Victoria, Australia.

No other research has been reported in the literature that comprehensively evaluated hospital pharmacy services, customer service and the dynamics of change from the perspective of doctors, nurses, pharmacists and patients. This study is the first.

## APPENDIX 1

Questionnaires for doctors, nurses, pharmacists, inpatients and outpatients in  
1993/1994



# VICTORIAN HOSPITAL PHARMACY SURVEY

## DOCTOR'S QUESTIONNAIRE

VICTORIAN COLLEGE OF PHARMACY, MONASH  
UNIVERSITY (PARKVILLE CAMPUS),  
381 ROYAL PARADE,  
PARKVILLE,  
VICTORIA, 3052.



VICTORIAN COLLEGE OF PHARMACY  
Office of Dean

30 September 1993

Dear Doctor

The Victorian College of Pharmacy, Monash University, with the support and approval of your hospital and pharmacy department, is currently conducting a research project examining customer service in Victorian hospital pharmacies. The ultimate purpose of this survey is to provide information which will assist the ongoing development of pharmacy services.

It is important that we have your feedback in order to tell us how hospital pharmacies can best meet the needs of the users of the pharmacy services in the future. All the questions in this questionnaire refer to the pharmacy at THIS hospital.

Please complete the attached questionnaire and return it to the Victorian College of Pharmacy, Monash University (Parkville Campus) in the reply-paid envelope enclosed by 12 November 1993.

It will only take a few minutes of your time to answer the questions. This survey is strictly CONFIDENTIAL and individuals, departments and hospitals will not be identified. It is a small sample and your participation is important. Should you require further information, please contact Sally Wilson at the Victorian College of Pharmacy.

Thank you in advance for your time and effort in assisting us.

Yours sincerely



(Prof) C B Chapman  
Dean  
Victorian College of Pharmacy

## VICTORIAN HOSPITAL PHARMACY SURVEY HOSPITAL STAFF

Please enter today's date    Day    Month    Year  
       

Please note: All questions in this questionnaire refer to the pharmacy at THIS hospital

1. What is the name of this hospital? .....

2. How often do you have contact of any sort (including written communications, prescriptions, telephone and face to face) with this hospital's pharmacy?

(please tick the appropriate box)

More than five times a week	<input type="checkbox"/>	On average how many times a week? .....
One to five times a week	<input type="checkbox"/>	On average how many times a week? .....
Less than once a week	<input type="checkbox"/>	On average how many times a month? .....
Less than once a month	<input type="checkbox"/>	On average how many times a year? .....
Other .....	<input type="checkbox"/>	How often? .....
Never .....	<input type="checkbox"/>	

3. Thinking about the contacts you generally have with the pharmacy service, on a 10 point scale please indicate how frequently you use each of the following approaches where 10= very frequent contact approach and 0= never.

	Score
Telephone .....	<input type="checkbox"/>
Via a clinical ward pharmacist .....	<input type="checkbox"/>
Visited pharmacy department .....	<input type="checkbox"/>
Via a nurse .....	<input type="checkbox"/>
Via a ward assistant .....	<input type="checkbox"/>
Writing a prescription .....	<input type="checkbox"/>
Writing a drug requisition .....	<input type="checkbox"/>
Other, please explain .....	
.....	
.....	

4. Does THIS hospital pharmacy provide the following services?

(Please answer every line by ticking the appropriate boxes)

	Yes	No	Don't know
Outpatient dispensing .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Inpatient dispensing .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sterile preparations/ Intravenous preparations .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Drug information service .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Clinical Ward pharmacy-participation in ward rounds	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
-review of medication charts .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
-adverse drug reaction monitoring ...	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
-intervention in / monitoring of patient drug therapy	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Imprest .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Manufacturing(e.g. of creams, lotions, mixtures) ....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Therapeutic drug monitoring .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dispensing for hospital staff .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Pharmacy purchasing .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Pharmacy store .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Discharge medication counselling for patients ....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Patient information and education on drugs/ medicines	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Pharmacy publications/ bulletins .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Drug education for hospital staff (informal) .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
In-service, structured lectures for hospital staff ....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Seven day a week service .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Research activities/ opportunities .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Clinical trial support .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Drug cost monitoring .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

What other services does it provide? (Please list)

.....

.....

.....

.....

.....

5. Do you think THIS hospital pharmacy SHOULD provide the following services?

(Please answer every line by ticking the appropriate boxes)

	Yes	No	Don't know
Outpatient dispensing .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Inpatient dispensing .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sterile preparations/ Intravenous preparations .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Drug information service .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Clinical ward pharmacy-participation in ward rounds .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
-review of medication charts .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
-adverse drug reaction monitoring .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
-intervention in / monitoring of patient drug therapy	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Imprest .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Manufacturing (e.g. of creams, lotions, mixtures) .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Therapeutic drug monitoring .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dispensing for hospital staff .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Pharmacy purchasing .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Pharmacy store .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Discharge medication counselling for patients .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Patient information and education on drugs/ medicines	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Pharmacy publications/ bulletins .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Drug education for hospital staff (informal) .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
In-service, structured lectures for hospital staff .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Seven day a week service .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Research activities/ opportunities .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Clinical trial support .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Drug cost monitoring .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Please list any additional services that you feel the pharmacy should provide.

.....

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.....

6. How effective is the performance of the current pharmacy service at THIS hospital on the following measures?

Please provide a score between 0 and 10 where 0= very poor performance on that issue (i.e. lowest score) and 10= excellent performance on that issue (i.e. highest score).

If the service is not applicable at your hospital or you have no opinion on the measure listed please tick the appropriate boxes.

	Score	Not applicable	No opinion
Cooperation of pharmacy staff to users of the service	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Friendliness of the pharmacy staff to users of the service	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Medical knowledge of the pharmacists .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Pharmaceutical knowledge of the pharmacists .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Drug information service provided .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Advice given on drug information queries .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Timeliness of response to drug information queries ....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Advice given on general queries .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Timeliness of response to general queries .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Clinical Ward pharmacy-participation in ward rounds	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
-review of medication charts .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
-adverse drug reaction monitoring ....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
-intervention in / monitoring of patient drug therapy	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Therapeutic drug monitoring service .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Understanding and knowing the needs of the users ....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Efficiency of the pharmacy service .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Accuracy of dispensing .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Discharge dispensing .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Timeliness of provision of medication .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Availability of stock .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sterile preparations/ intravenous preparations .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Drug education for hospital staff (informal) .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
In-service, structured lectures for hospital staff ...	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Discharge medication counselling of patients .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Patient information and education on drugs/ medicines	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Pharmacy bulletins/ publications .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Extent of pharmacy department involvement in research	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Reliability of service .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Communication with users of the service .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
After hours service .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Overall service provided to the users of the service	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

7. How would you rate the pharmacist as a member of the health team in THIS hospital?

Please give a SCORE between 0 and 10 where 0= not at all important (i.e. lowest score) and 10= very important (i.e. highest score)

SCORE ..... ☐

Please give the reason for your score.

.....

.....

.....

.....

8. Please tell us a little about your background for statistical purposes.

Are you? Male ☐

Female ☐

Please tick the box corresponding to your age group.

Under 20 ☐ 20-29 ☐ 30-39 ☐ 40-49 ☐ 50-59 ☐ 60-70 ☐ over 70 ☐ years

How long have you been employed at this hospital? ☐ years ☐ months

What is your position in this hospital?

(Please tick as many boxes as applicable)

Resident medical officer .....	<input type="checkbox"/>
Registrar .....	<input type="checkbox"/>
Consultant .....	<input type="checkbox"/>
Professor .....	<input type="checkbox"/>
Head of department .....	<input type="checkbox"/>
Administrator	Medical <input type="checkbox"/>
	Nursing <input type="checkbox"/>
	Allied health <input type="checkbox"/>
	Administration <input type="checkbox"/>
Registered nurse .....	<input type="checkbox"/>
Associate charge nurse .....	<input type="checkbox"/>
Charge nurse/ nursing officer .....	<input type="checkbox"/>
Nurse educator .....	<input type="checkbox"/>
Other, please specify .....	



# VICTORIAN HOSPITAL PHARMACY SURVEY

## NURSING STAFF QUESTIONNAIRE

VICTORIAN COLLEGE OF PHARMACY, MONASH  
UNIVERSITY (PARKVILLE CAMPUS),  
381 ROYAL PARADE,  
PARKVILLE,  
VICTORIA, 3052.

9. Please comment here if there are any other points you wish to make regarding the services provided by this hospital's pharmacy department.

.....

.....

.....

.....

.....

.....

.....

THANKYOU FOR YOUR TIME AND COOPERATION



VICTORIAN COLLEGE OF PHARMACY  
Office of Dean

30 September 1993

Dear Nurse

The Victorian College of Pharmacy, Monash University, with the support and approval of your hospital and pharmacy department, is currently conducting a research project examining customer service in Victorian hospital pharmacies. The ultimate purpose of this survey is to provide information which will assist the ongoing development of pharmacy services.

It is important that we have your feedback in order to tell us how hospital pharmacies can best meet the needs of the users of the pharmacy services in the future. All the questions in this questionnaire refer to the pharmacy at THIS hospital.

Please complete the attached questionnaire and return it to the Victorian College of Pharmacy, Monash University (Parkville Campus) in the reply-paid envelope enclosed by 12 November 1993.

It will only take a few minutes of your time to answer the questions. This survey is strictly CONFIDENTIAL and individuals, departments and hospitals will not be identified. It is a small sample and your participation is important. Should you require further information, please contact Sally Wilson at the Victorian College of Pharmacy.

Thank you in advance for your time and effort in assisting us.

Yours sincerely



(Prof) C B Chapman  
Dean  
Victorian College of Pharmacy

# VICTORIAN HOSPITAL PHARMACY SURVEY HOSPITAL STAFF

Please enter today's date Day Month Year

Please note: All questions in this questionnaire refer to the pharmacy at THIS hospital

1. What is the name of this hospital? .....

2. How often do you have contact of any sort (including written communications, prescriptions, telephone and face to face) with this hospital's pharmacy?

(please tick the appropriate box)

More than five times a week <input type="checkbox"/>	On average how many times a week? .....
One to five times a week <input type="checkbox"/>	On average how many times a week? .....
Less than once a week <input type="checkbox"/>	On average how many times a month? .....
Less than once a month <input type="checkbox"/>	On average how many times a year? .....
Other ..... <input type="checkbox"/>	How often? .....
Never ..... <input type="checkbox"/>	

3. Thinking about the contacts you generally have with the pharmacy service, on a 10 point scale please indicate how frequently you use each of the following approaches where 10= very frequent contact approach and 0= never.

	Score
Telephone .....	<input type="checkbox"/>
Via a clinical ward pharmacist .....	<input type="checkbox"/>
Visited pharmacy department .....	<input type="checkbox"/>
Via a nurse .....	<input type="checkbox"/>
Via a ward assistant .....	<input type="checkbox"/>
Writing a prescription .....	<input type="checkbox"/>
Writing a drug requisition .....	<input type="checkbox"/>
Other, please explain .....	
.....	
.....	

4. Does THIS hospital pharmacy provide the following services?

(Please answer every line by ticking the appropriate boxes)

	Yes	No	Don't know
Outpatient dispensing .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Inpatient dispensing .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sterile preparations/ Intravenous preparations .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Drug information service .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Clinical Ward pharmacy-participation in ward rounds	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
-review of medication charts .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
-adverse drug reaction monitoring ...	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
-intervention in / monitoring of patient drug therapy	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Imprest .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Manufacturing(e.g. of creams, lotions, mixtures) ....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Therapeutic drug monitoring .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dispensing for hospital staff .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Pharmacy purchasing .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Pharmacy store .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Discharge medication counselling for patients ....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Patient information and education on drugs/ medicines	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Pharmacy publications/ bulletins .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Drug education for hospital staff (informal) .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
In-service, structured lectures for hospital staff .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Seven day a week service .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Research activities/ opportunities .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Clinical trial support .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Drug cost monitoring .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

What other services does it provide? (Please list)

.....

.....

.....

.....

.....

5. Do you think THIS hospital pharmacy SHOULD provide the following services?

(Please answer every line by ticking the appropriate boxes)

	Yes	No	Don't know
Outpatient dispensing .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Inpatient dispensing .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sterile preparations/ Intravenous preparations .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Drug information service .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Clinical ward pharmacy-participation in ward rounds .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
-review of medication charts .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
-adverse drug reaction monitoring .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
-intervention in / monitoring of patient drug therapy	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Imprest .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Manufacturing (e.g. of creams, lotions, mixtures) .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Therapeutic drug monitoring .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dispensing for hospital staff .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Pharmacy purchasing .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Pharmacy store .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Discharge medication counselling for patients .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Patient information and education on drugs/ medicines	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Pharmacy publications/ bulletins .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Drug education for hospital staff (informal) .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
In-service, structured lectures for hospital staff .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Seven day a week service .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Research activities/ opportunities .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Clinical trial support .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Drug cost monitoring .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Please list any additional services that you feel the pharmacy should provide.

.....

.....

.....

.....

.....

.....



6. How effective is the performance of the current pharmacy service at THIS hospital on the following measures?

Please provide a score between 0 and 10 where 0= very poor performance on that issue (i.e. lowest score) and 10= excellent performance on that issue (i.e. highest score).  
If the service is not applicable at your hospital or you have no opinion on the measure listed please tick the appropriate boxes.

	Score	Not applicable	No opinion
Cooperation of pharmacy staff to users of the service	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Friendliness of the pharmacy staff to users of the service	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Medical knowledge of the pharmacists .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Pharmaceutical knowledge of the pharmacists .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Drug information service provided .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Advice given on drug information queries .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Timeliness of response to drug information queries ....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Advice given on general queries .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Timeliness of response to general queries .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Clinical Ward pharmacy-participation in ward rounds	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
-review of medication charts .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
-adverse drug reaction monitoring ....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
-intervention in / monitoring of patient drug therapy	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Therapeutic drug monitoring service .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Understanding and knowing the needs of the users ....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Efficiency of the pharmacy service .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Accuracy of dispensing .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Discharge dispensing .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Timeliness of provision of medication .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Availability of stock .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sterile preparations/ intravenous preparations .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Drug education for hospital staff (informal) .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
In-service, structured lectures for hospital staff ....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Discharge medication counselling of patients .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Patient information and education on drugs/ medicines	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Pharmacy bulletins/ publications .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Extent of pharmacy department involvement in research	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Reliability of service .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Communication with users of the service .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
After hours service .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Overall service provided to the users of the service	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

7. How would you rate the pharmacist as a member of the health team in THIS hospital?

Please give a SCORE between 0 and 10 where 0= not at all important (i.e. lowest score) and 10= very important (i.e. highest score)

SCORE ..... ☐

Please give the reason for your score.

.....

.....

.....

.....

8. Please tell us a little about your background for statistical purposes.

Are you? Male ☐  
Female ☐

Please tick the box corresponding to your age group.

Under 20 ☐ 20-29 ☐ 30-39 ☐ 40-49 ☐ 50-59 ☐ 60-70 ☐ over 70 ☐ years

How long have you been employed at this hospital? ☐ years ☐ months

What is your position in this hospital?

(Please tick as many boxes as applicable)

Resident medical officer .....	<input type="checkbox"/>
Registrar .....	<input type="checkbox"/>
Consultant .....	<input type="checkbox"/>
Professor .....	<input type="checkbox"/>
Head of department .....	<input type="checkbox"/>
Administrator	Medical <input type="checkbox"/>
	Nursing <input type="checkbox"/>
	Allied health <input type="checkbox"/>
	Administration <input type="checkbox"/>
Registered nurse .....	<input type="checkbox"/>
Associate charge nurse .....	<input type="checkbox"/>
Charge nurse/ nursing officer .....	<input type="checkbox"/>
Nurse educator .....	<input type="checkbox"/>
Other, please specify .....	



# VICTORIAN HOSPITAL PHARMACY SURVEY

## PHARMACIST'S QUESTIONNAIRE

VICTORIAN COLLEGE OF PHARMACY, MONASH  
UNIVERSITY (PARKVILLE CAMPUS),  
381 ROYAL PARADE,  
PARKVILLE,  
VICTORIA, 3052.

9. Please comment here if there are any other points you wish to make regarding the services provided by this hospital's pharmacy department.

.....

.....

.....

.....

.....

.....

.....

THANKYOU FOR YOUR TIME AND COOPERATION



VICTORIAN COLLEGE OF PHARMACY  
Office of Dean

30 September 1993

# VICTORIAN HOSPITAL PHARMACY SURVEY PHARMACISTS

Please enter today's date Day Month Year

1. What is the name of this hospital? .....

2. Does THIS hospital pharmacy provide the following services?

(Please answer every line by ticking the appropriate boxes)

	Yes	No	Don't know
Outpatient dispensing .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Inpatient dispensing .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sterile preparations/ Intravenous preparations .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Drug information service .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Clinical Ward pharmacy- participation in ward rounds ...	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
- review of medication charts .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
- adverse drug reaction monitoring .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
- intervention in / monitoring of patient drug therapy	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Imprest .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Manufacturing (e.g. of creams, lotions, mixtures) .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Therapeutic drug monitoring .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dispensing for hospital staff .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Pharmacy purchasing .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Pharmacy store .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Discharge medication counselling for patients .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Patient information and education on drugs/ medicines	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Pharmacy publications/ bulletins .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Drug education for hospital staff (informal) .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
In-service, structured lectures for hospital staff .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Training of pharmacy trainees and students .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Seven day a week service .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Research activities/ opportunities .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Clinical trial support .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Drug cost monitoring .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

What other services does it provide ? (Please list)

.....  
 .....  
 .....

Dear Pharmacist

The Victorian College of Pharmacy, Monash University, with the support and approval of your hospital and pharmacy department, is currently conducting a research project examining customer service in Victorian hospital pharmacies. The ultimate purpose of this survey is to provide information which will assist the ongoing development of pharmacy services.

It is important that we have your feedback in order to tell us how hospital pharmacies can best meet the needs of the users of the pharmacy services in the future.

We are also seeking your advice on the educational and training requirements of pharmacy students in order to better prepare them for hospital practice.

Please complete the attached questionnaire and return it to the Victorian College of Pharmacy, Monash University (Parkville Campus) in the reply-paid envelope enclosed by 12 November 1993.

It will only take a few minutes of your time to answer the questions. This survey is strictly CONFIDENTIAL and individuals, departments and hospitals will not be identified. It is a small sample and your participation is important. Should you require further information, please contact Sally Wilson at the Victorian College of Pharmacy.

Thank you in advance for your time and effort in assisting us.

Yours sincerely



(Prof) C B Chapman  
Dean  
Victorian College of Pharmacy

3. Do you think THIS hospital pharmacy SHOULD provide the following services?

(Please answer every line by ticking the appropriate boxes)

	Yes	No	Don't know
Outpatient dispensing .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Inpatient dispensing .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sterile preparations/ Intravenous preparations .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Drug information service .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Clinical Ward pharmacy-participation in ward rounds ...	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
-review of medication charts.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
-adverse drug reaction monitoring .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
-intervention in / monitoring of patient drug therapy	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Imprest .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Manufacturing (e.g. of creams, lotions, mixtures) .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Therapeutic drug monitoring .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dispensing for hospital staff .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Pharmacy purchasing .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Pharmacy store .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Discharge medication counselling for patients .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Patient information and education on drugs/ medicines	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Pharmacy publications/ bulletins .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Drug education for hospital staff (informal) .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
In-service, structured lectures for hospital staff .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Training of pharmacy trainees and students .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Seven day a week service .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Research activities/ opportunities .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Clinical trial support .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Drug cost monitoring .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Please list any additional services that you feel the pharmacy should provide and make any comments relating to any of the activities listed.

.....

.....

.....

.....

.....

4. How effective is the performance of the current pharmacy service at THIS hospital on the following measures?

Please provide a SCORE between 0 and 10 where 0=very poor performance on that issue (i.e. lowest score) and 10=excellent performance on that issue (i.e. highest score).

If the service is not applicable at your hospital or you have no opinion regarding the particular measure please tick the appropriate boxes.

Please answer every line.

	Score	Not applicable	No opinion
Cooperation of pharmacy staff to users of the service	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Friendliness of the pharmacy staff to users of the service	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Medical knowledge of the pharmacists .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Pharmaceutical knowledge of the pharmacists .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Drug information service provided .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Advice given on drug information queries .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Timeliness of response to drug information queries .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Advice given on general queries .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Timeliness of response to general queries .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Clinical ward pharmacy -participation in ward rounds .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
-review of medication charts .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
-adverse drug reaction monitoring .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
-intervention in/ monitoring of patient drug therapy	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Therapeutic drug monitoring service .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Understanding and knowing the needs of the users .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Efficiency of the pharmacy service .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Accuracy of dispensing .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Discharge dispensing .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Timeliness of provision of medication .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Presentation of medicines .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Availability of stock .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sterile preparations/ intravenous preparations .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Discharge medication counselling of patients .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Patient information and education on drugs/ medicines	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Drug education for hospital staff-informal .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
In-service, structured lectures to hospital staff .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Continuing education for staff pharmacists .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Education and training of non-pharmacist pharmacy staff	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Extent of pharmacy department involvement in research	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

[illegible]

Additional comments or explanation of your response



FOR OFFICE USE ONLY

7. Please tell us a little about your background for statistical purposes.

Are you? Male ☐ Female ☐

Please tick the box corresponding to your age group.

Under 20 ☐ 20-29 ☐ 30-39 ☐ 40-49 ☐ 50-59 ☐ 60-70 ☐ over 70 ☐ years

How long have you been employed at this hospital? ☐ years ☐ months

How long have you been practicing in hospital pharmacy? .....Years

Which year were you registered as a pharmacist? 19.....

Do you work full-time? ☐ Part-time? ☐

Please list your qualifications and the college/ university/ conferring body where they were obtained. (e.g. BSc Melbourne) and the year.

Degrees/ Diplomas	Institution/Conferring body	Year
.....	.....	.....
.....	.....	.....
.....	.....	.....
.....	.....	.....

8. Please comment here if there are any other points you wish to make regarding the services provided by this hospital pharmacy department or the education and training of pharmacists.

.....  
 .....  
 .....  
 .....  
 .....  
 .....  
 .....

THANKYOU FOR YOUR TIME AND COOPERATION

# VICTORIAN HOSPITAL PHARMACY SURVEY

## INPATIENT QUESTIONNAIRE

VICTORIAN COLLEGE OF PHARMACY, MONASH  
 UNIVERSITY (PARKVILLE CAMPUS),  
 381 ROYAL PARADE,  
 PARKVILLE,  
 VICTORIA, 3052.



VICTORIAN COLLEGE OF PHARMACY  
Office of Dean

30 September 1993

Dear Patient

The Victorian College of Pharmacy, Monash University, with the support and approval of your hospital and pharmacy department, is currently conducting a research project examining customer service in Victorian hospital pharmacies. The ultimate purpose of this survey is to provide information which will assist the ongoing development of pharmacy services to you.

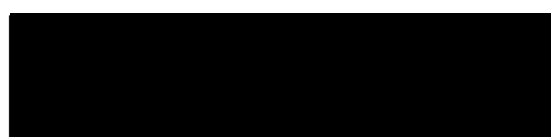
It is important that we have your feedback in order to tell us how hospital pharmacies can best meet the needs of the users of the pharmacy services in the future. All the questions in this questionnaire refer to the pharmacy at THIS hospital.

Please complete the attached questionnaire, place it in the envelope enclosed and return it to the person who gave you this questionnaire so they can return it to the Victorian College of Pharmacy, Monash University (Parkville Campus).

It will only take a few minutes of your time to answer the questions. This survey is strictly CONFIDENTIAL and individuals, departments and hospitals will not be identified. It is a small sample and your participation is important.

Thank you in advance for your time and effort in assisting us.

Yours sincerely



(Prof) C B Chapman  
Dean  
Victorian College of Pharmacy

## VICTORIAN HOSPITAL PHARMACY SURVEY INPATIENTS

Please enter today's date Day Month Year

Please note: All questions in this questionnaire refer to the pharmacy at THIS hospital

1. What is the name of this hospital? .....

2. What do you think pharmacists do in THIS hospital?

(Please answer every line by ticking the appropriate boxes)

	Yes	No	Don't know
Dispense medicines .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sell toys and cosmetics .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Charge for drugs/ medicines .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Perform operations .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Manufacture drugs/ medicines .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Administer drugs/ medicines to patients .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Provide information on drugs/ medicines to patients .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Make up sterile drug solutions, .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e.g.: intravenous feeding solutions			
Attend patients in wards .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Make the beds .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Advise doctors and nurses on drugs/ medication ....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Buy drugs/ medicines for the hospital .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Give educational lectures on drugs/ medicines .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sell bandages and dressings .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Check prescriptions for safety .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Advise patients on drug/ medicine use .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Report adverse reactions to drugs/ medicines .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

3. Do you know whether a pharmacist regularly visits this ward?

(Please tick the appropriate box)

Yes ☐

No ☐ → IF NO

GO TO QUESTION 7.

4. What do you think the pharmacist does in the ward?

.....  
.....  
.....  
.....  
.....  
.....  
.....

5. Have you met the pharmacist working in this ward?

(Please tick the appropriate box)

Yes ☐

No ☐

→ IF NO  
GO TO QUESTION 7

6. How would you rate the ward pharmacist's performance on the following measures?

Please give a **NUMBER** between 0 and 10, where 0 is very poor (i.e. lowest rating) and 10 is excellent (i.e. the highest rating).

	Rating	Don't know
Helpfulness of the pharmacist .....	<input type="checkbox"/>	<input type="checkbox"/>
Friendliness of the pharmacist .....	<input type="checkbox"/>	<input type="checkbox"/>
Advice given about how to take drugs/ medicines	<input type="checkbox"/>	<input type="checkbox"/>
Overall information provided by the pharmacist	<input type="checkbox"/>	<input type="checkbox"/>
Understanding the needs of the patient .....	<input type="checkbox"/>	<input type="checkbox"/>

7. When did you last speak with a pharmacist in this hospital?

(Please tick the appropriate box)

Never .....

☐ → IF NEVER  
GO TO QUESTION 9

Today .....

☐

Yesterday .....

☐

If none of the above, please specify how long ago? .....

8. What did you ask the hospital pharmacist related to your health needs, treatment and medicine?

.....  
.....  
.....  
.....  
.....

9. How would you suggest the pharmacy's service to you in the ward could be improved?

.....  
.....  
.....  
.....  
.....

10. Are you taking any medicines while in hospital? If no, please go to question 15

Yes .....

☐

No .....

☐

→ IF NO  
GO TO QUESTION 15

11. Who gives you your medicines in this hospital?

(Please tick as many boxes as appropriate)

Yourself .....

☐

Doctor .....

☐

Pharmacist .....

☐

Nurse .....

☐

Other, please specify .....

12. Who explained to you how to use the medicines?

(Please tick as many boxes as appropriate)

Nobody .....

☐

→ IF NOBODY  
GO TO QUESTION 14

Doctor .....

☐

Pharmacist .....

☐

Nurse .....

☐

Other, please specify .....

13. Please rate how well you understand the instructions on using your medicines.

Please list a **number** between 0 and 10, where 0 is 'no understanding' and 10 is 'perfectly clear explanation'

rating ☐

14. How do you think the explanation about your medicines could be improved?

.....  
.....  
.....



15. Now, please tell us a little about your background for statistical purposes.

Are you?      Male ..... ☐  
                 Female ..... ☐

Please tick the box corresponding to your age group.

Under 20 ☐ 20-29 ☐ 30-39 ☐ 40-49 ☐ 50-59 ☐ 60-70 ☐ over 70 ☐ years

What language/s do you speak at home? .....

Which suburb do you live in? ..... Postcode .....

How long have you been an inpatient in this hospital?

(Please tick the appropriate box)

One day ..... ☐  
Two to three days ..... ☐  
Four to seven days ..... ☐  
More than seven days ..... ☐ How long? .....days

THANKYOU FOR YOUR TIME AND COOPERATION



## VICTORIAN HOSPITAL PHARMACY SURVEY

### OUTPATIENT QUESTIONNAIRE

VICTORIAN COLLEGE OF PHARMACY, MONASH  
UNIVERSITY (PARKVILLE CAMPUS),  
381 ROYAL PARADE,  
PARKVILLE,  
VICTORIA, 3052.



VICTORIAN COLLEGE OF PHARMACY  
Office of Dean

30 September 1993

Dear Patient

The Victorian College of Pharmacy, Monash University, with the support and approval of your hospital and pharmacy department, is currently conducting a research project examining customer service in Victorian hospital pharmacies. The ultimate purpose of this survey is to provide information which will assist the ongoing development of pharmacy services to you.

It is important that we have your feedback in order to tell us how hospital pharmacies can best meet the needs of the users of the pharmacy services in the future. All the questions in this questionnaire refer to the pharmacy at THIS hospital.

Please complete the attached questionnaire, place it in the envelope enclosed and return it to the person who gave you this questionnaire so they can return it to the Victorian College of Pharmacy, Monash University (Parkville Campus).

It will only take a few minutes of your time to answer the questions. This survey is strictly CONFIDENTIAL and individuals, departments and hospitals will not be identified. It is a small sample and your participation is important.

Thank you in advance for your time and effort in assisting us.

Yours sincerely

(Prof) C B Chapman  
Dean  
Victorian College of Pharmacy

# VICTORIAN HOSPITAL PHARMACY SURVEY OUTPATIENTS

Please enter today's date    Day    Month    Year  
       

Please note: All questions in this questionnaire refer to the pharmacy at THIS hospital

1. What is the name of this hospital? .....

2. What do you think pharmacists do in this hospital?

(Please answer every line by ticking the appropriate boxes)

	Yes	No	Don't know
Dispense medicines .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sell toys and cosmetics .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Charge for drugs/ medicines .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Perform operations .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Manufacture drugs/ medicines .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Administer drugs/ medicines to patients .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Provide information on drugs/ medicines to patients ..	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Make up sterile drug solutions .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e.g.: intravenous feeding solutions			
Attend patients in wards .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Make the beds .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Advise doctors and nurses on medication/ drugs .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Buy drugs/ medicines for the hospital .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Give educational lectures on drugs/ medicines .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sell bandages and dressings .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Check prescriptions for safety .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Advise patients on drug/ medicine use .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Report adverse reactions to drugs/ medicines .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

3. When did you last use the pharmacy in this hospital?

(Please tick the appropriate box)

- Never before today ..... ☐
- Within the last month ..... ☐
- Between 2 to 6 months ago ..... ☐
- Between 7 to 12 months ago ..... ☐
- Over 12 months ago ..... ☐

4. What did you require on that occasion?

(Please tick the appropriate box or boxes)

- To obtain a prescription ..... ☐
- Drug/ medicine information ..... ☐
- Advice on medication ..... ☐
- Medical information ..... ☐
- Other, please specify .....

5. If you waited for a prescription, where did you wait whilst it was being prepared?

(Please tick the appropriate box)

- Did not wait-(dropped prescription off and picked it up later) ☐
- Pharmacy waiting room ..... ☐
- Corridor ..... ☐
- Kiosk ..... ☐
- Other, please specify .....

6. How long from the time you arrived at the pharmacy did you wait until you received your prescription?

(Please tick the appropriate box)

- less than 5 minutes ..... ☐
- 5 to 10 minutes ..... ☐
- 11 minutes to 20 minutes ..... ☐
- 21 minutes to 30 minutes ..... ☐
- 31 minutes to 45 minutes ..... ☐
- 46 minutes to 1 hour ..... ☐
- more than 1 hour, up to 1 hour 30 minutes ..... ☐
- more than 1 hour 30 minutes, up to 2 hours ..... ☐
- if more than 2 hours, how long? .....hours.....minutes

7. How would you rate this pharmacy's performance on the following measures?

Please give a **NUMBER** between 0 and 10 where 0 is very poor (i.e. worst rating) and 10 is excellent (i.e. best rating)

	Rating	Don't know
Time taken for prescription to be filled .....	<input type="checkbox"/>	<input type="checkbox"/>
Advice received on medication .....	<input type="checkbox"/>	<input type="checkbox"/>
Friendliness of staff .....	<input type="checkbox"/>	<input type="checkbox"/>
Overall information provided by the pharmacist ...	<input type="checkbox"/>	<input type="checkbox"/>
Understanding the needs of the patient .....	<input type="checkbox"/>	<input type="checkbox"/>
Waiting room facilities .....	<input type="checkbox"/>	<input type="checkbox"/>
Presentation of medicines i.e. information on labels ... and appearance of label	<input type="checkbox"/>	<input type="checkbox"/>

8. How many times in the last month did you telephone this pharmacy department for information on medications?

(Please tick the appropriate box)

- Never ..... ☐
- Once ..... ☐
- Twice ..... ☐
- If more than twice, how often? .....

9. Why do you use this hospital pharmacy?

.....

.....

.....

.....

.....

10. How would you suggest this hospital's pharmacy service to you could be improved?

.....

.....

.....

.....

.....

.....

11. Now, please tell us a little about your background for statistical purposes.

Are you? Male ☐  
Female ☐

Please tick the box corresponding to your age group.

Under 20 ☐ 20-29 ☐ 30-39 ☐ 40-49 ☐ 50-59 ☐ 60-70 ☐ over 70 ☐ years

What language/s do you speak at home? .....

How long have you been coming to this hospital as a patient?

(Please tick box)

Less than 6 months ..... ☐

6 months to 1 year ..... ☐

More than 1 year to 2 years ..... ☐

More than 2 years, please specify how many years .....years

How did you arrive at the hospital today?

(Please tick box)

Walk ..... ☐

Public transport ..... ☐

Private car - driver .. ☐ passenger.. ☐

Taxi ..... ☐

Ambulance ..... ☐

Which suburb do you live in? .....Postcode .....

Today, did you attend

an outpatient clinic? ..... ☐

casualty / emergency? ..... ☐

private consulting rooms? ..... ☐

day procedure? ..... ☐

Other, please specify .....

THANKYOU FOR YOUR TIME AND COOPERATION

## APPENDIX 2

Performance rating for each measure of customer service in 1993/1994.

and

Comments made by pharmacists, doctors and nurses about reasons for their score rating the importance of the pharmacist in 1993/1994.

Figures showing ratings of performance of the pharmacy service on various measures of customer service 1993/1994.

Figure A2.1 Rating of performance of the pharmacy service on cooperation of pharmacy staff to users of the service (1993/1994)

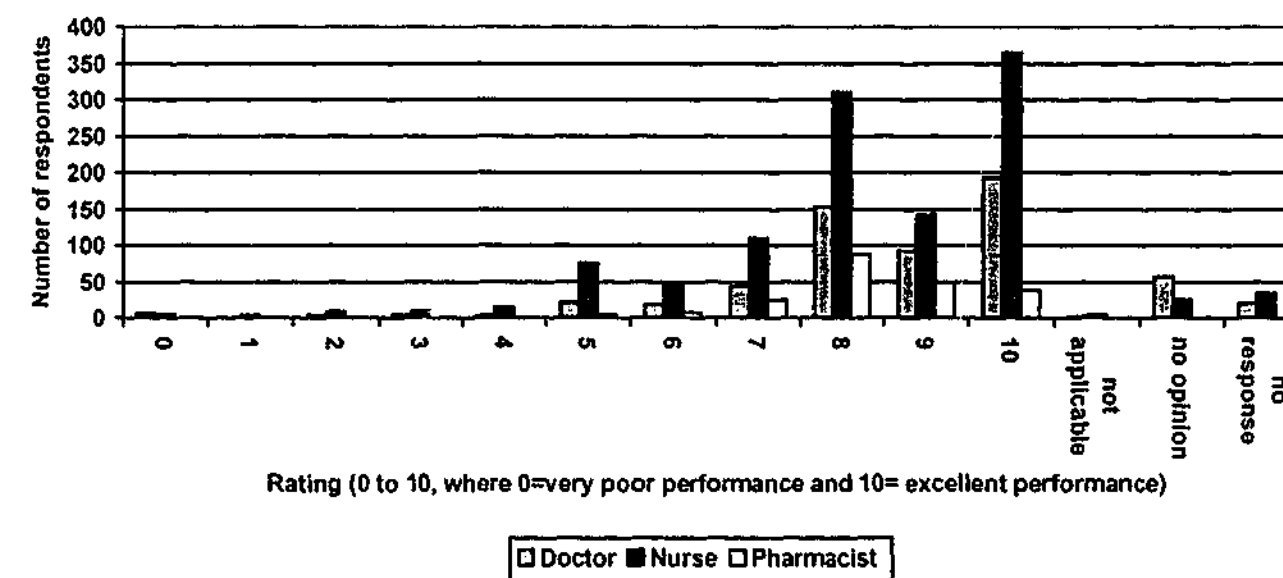


Figure A2.2 Rating of performance of the pharmacy service on friendliness of the pharmacy staff to users of the service (1993/1994)

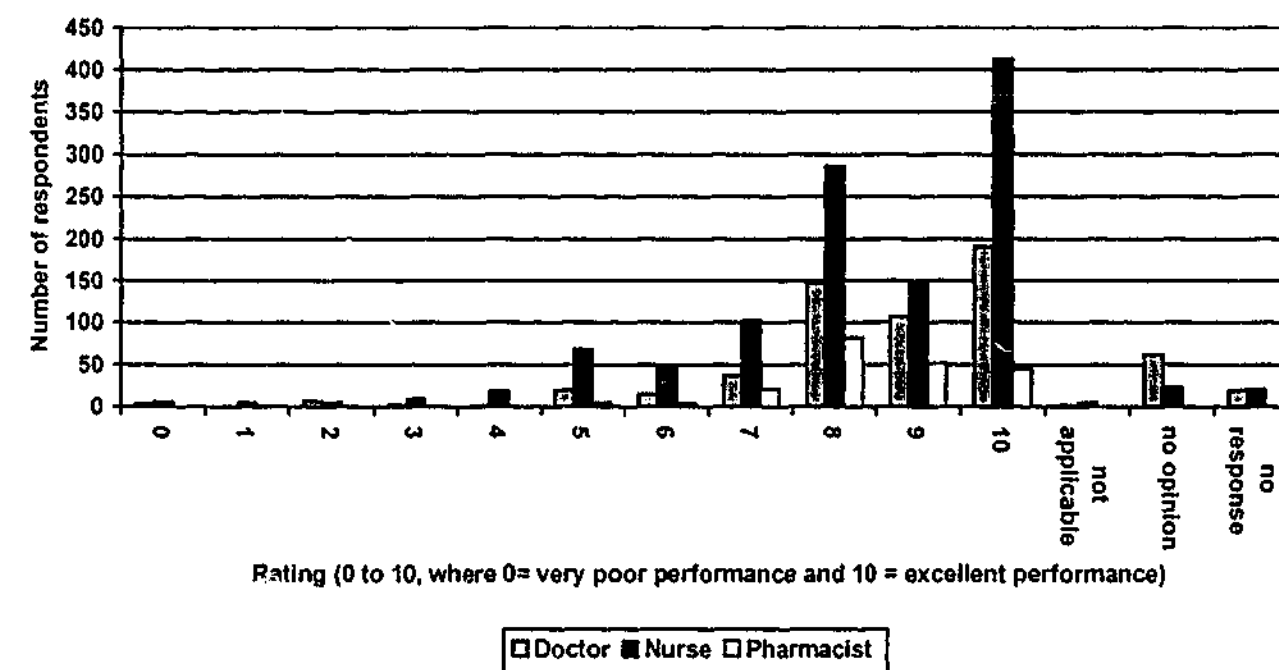


Figure A2.3 Rating of performance of the pharmacy service on medical knowledge of the pharmacists (1993/ 1994)

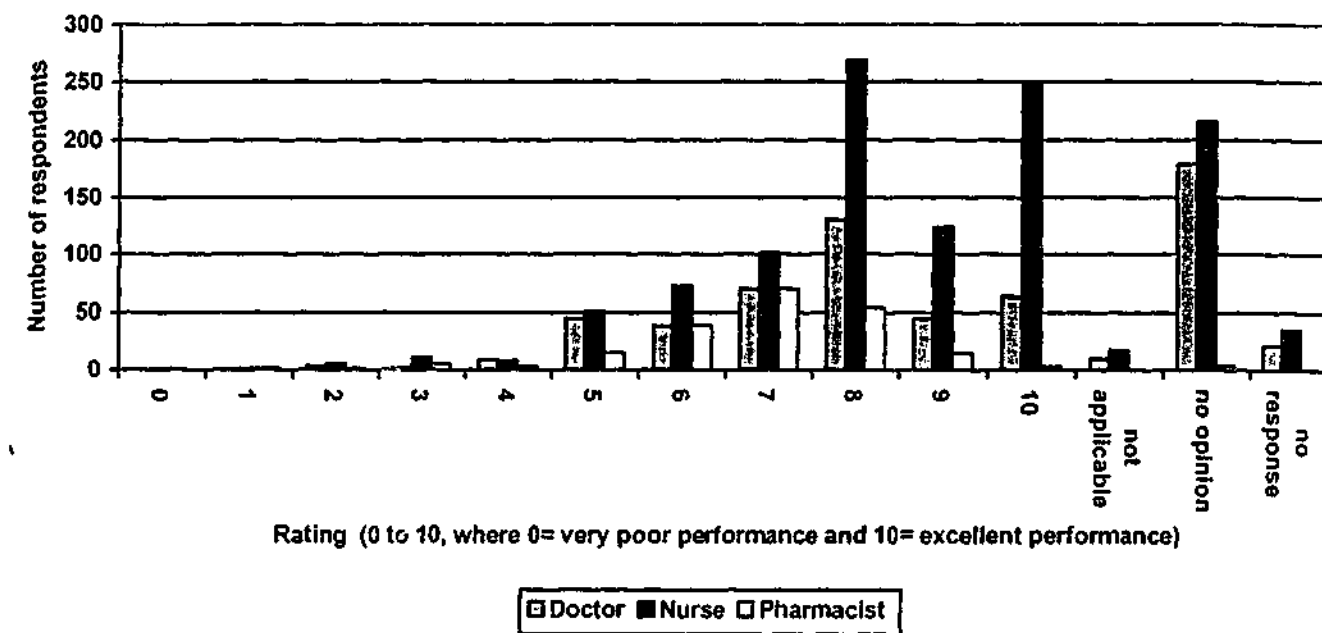


Figure A2.4 Rating of performance of the pharmacy service on pharmaceutical knowledge of the pharmacists (1993/1994)

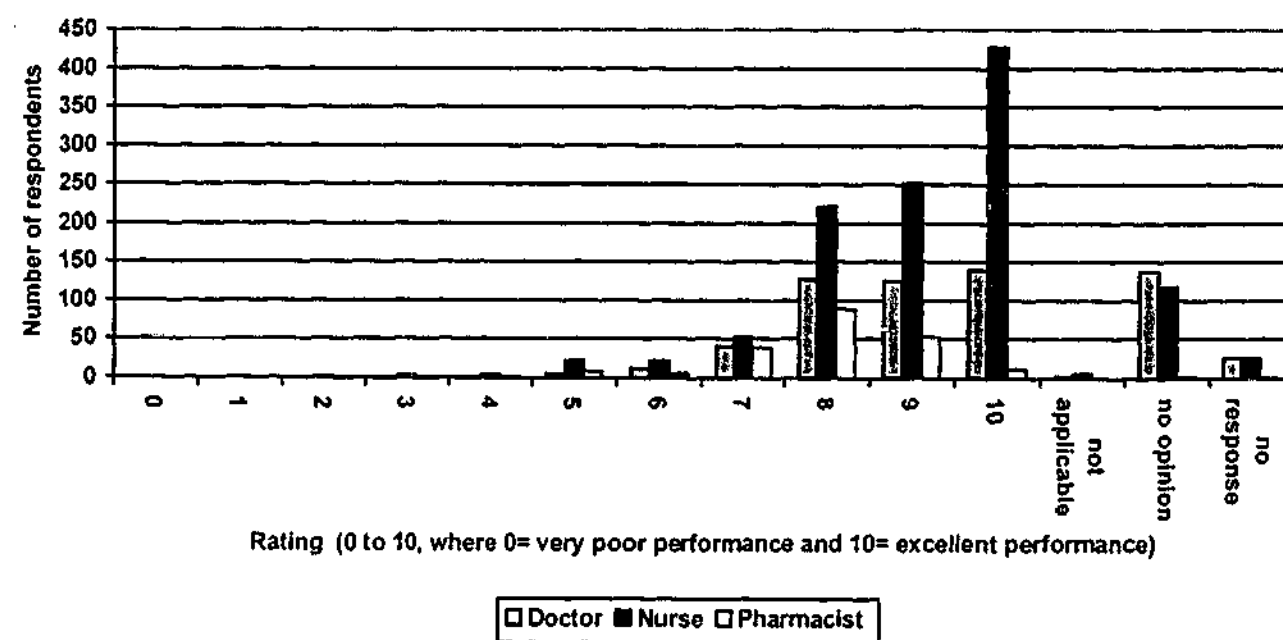


Figure A2.5 Rating of performance of the pharmacy service on drug information service provided (1993/ 1994)

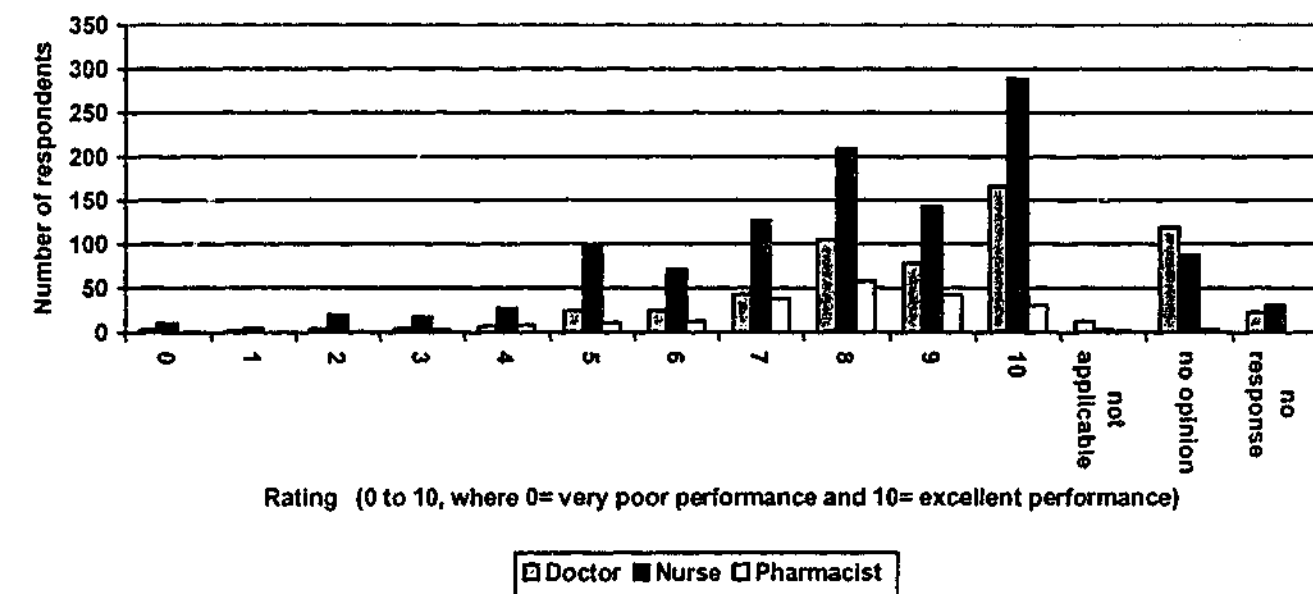


Figure A2.6 Rating of the performance of the pharmacy service on advice given on drug information queries (1993/ 1994)

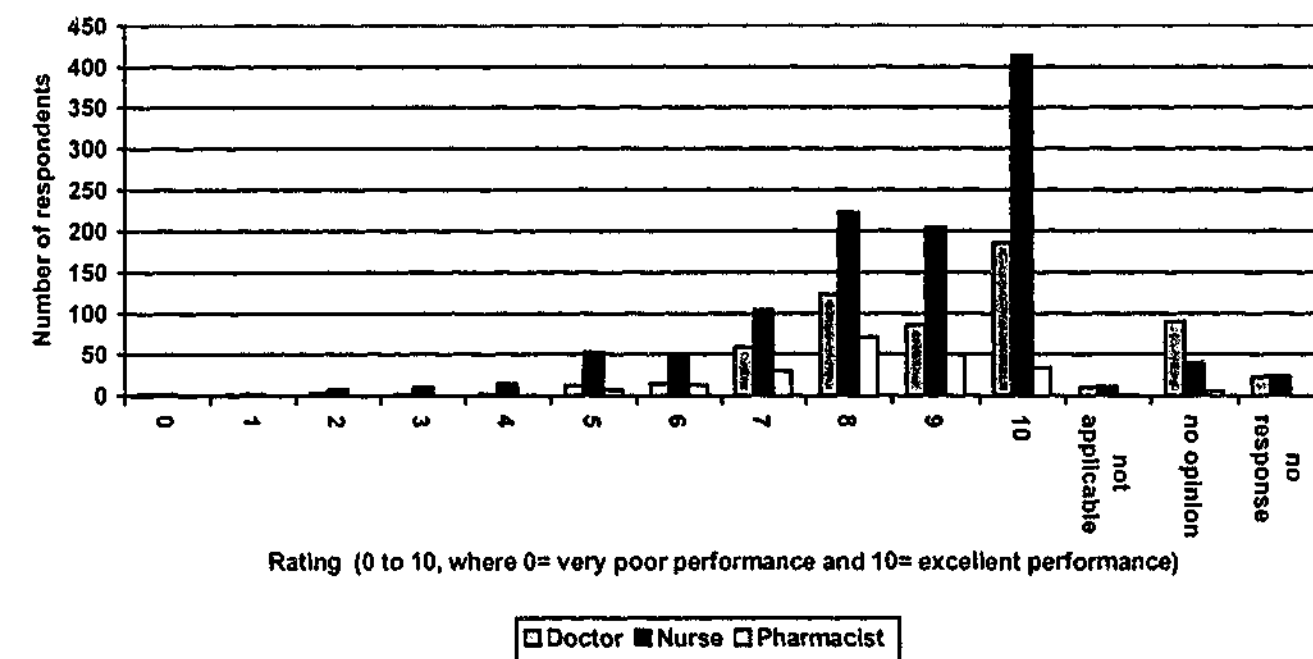


Figure A2.7 Rating of the performance of the pharmacy service on timeliness of response to drug information queries (1993/ 1994)

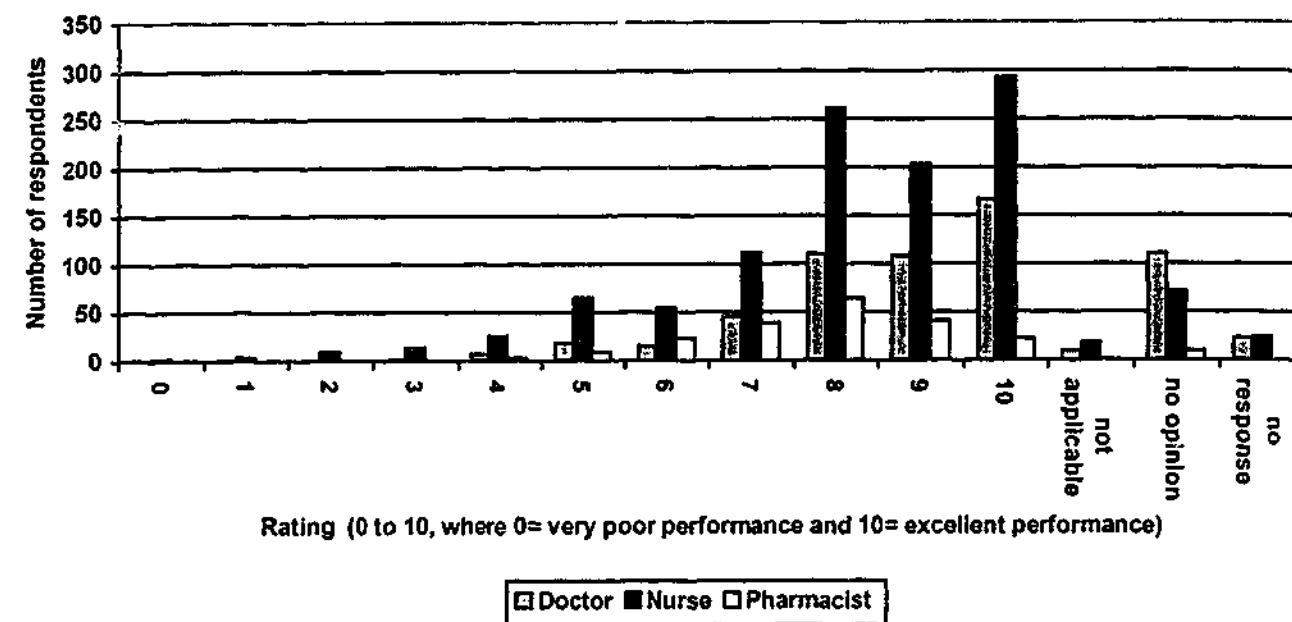


Figure A2.8 Rating of performance of the pharmacy service on advice given on general queries (1993/ 1994)

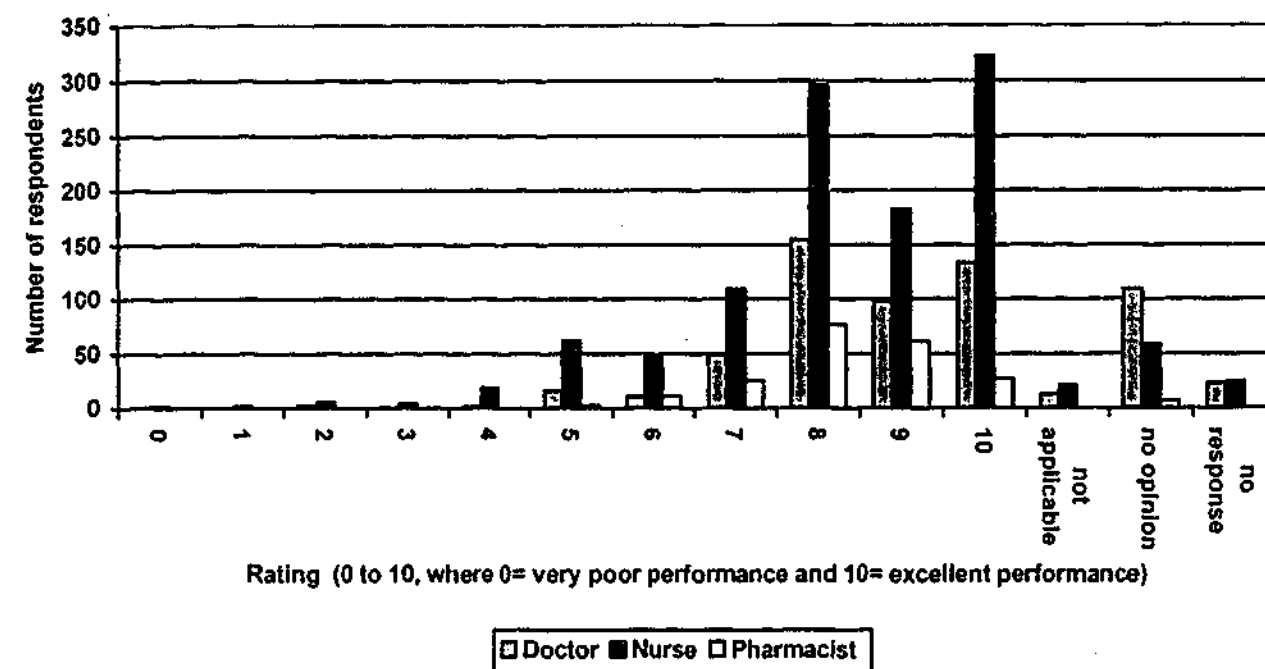


Figure A2.9 Rating of the performance of the pharmacy service on timeliness of response to general queries (1993/1994)

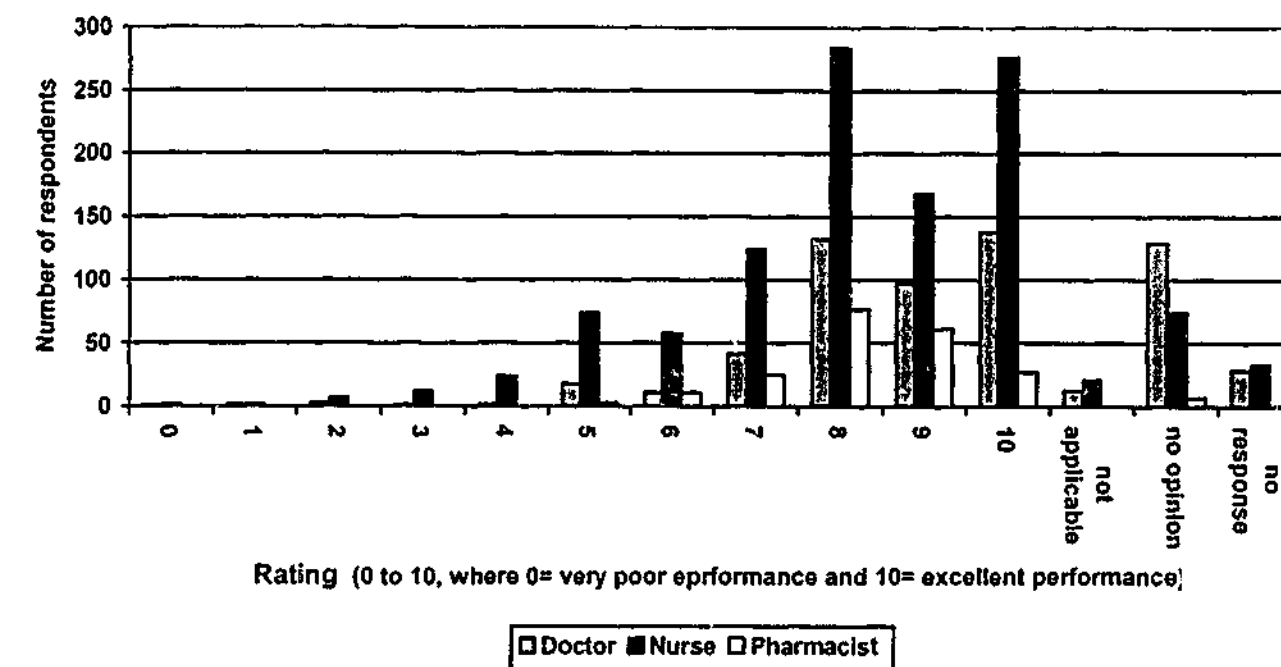


Figure A2.10 Rating of the performance of the pharmacy service on participation in ward rounds (1993/ 1994)

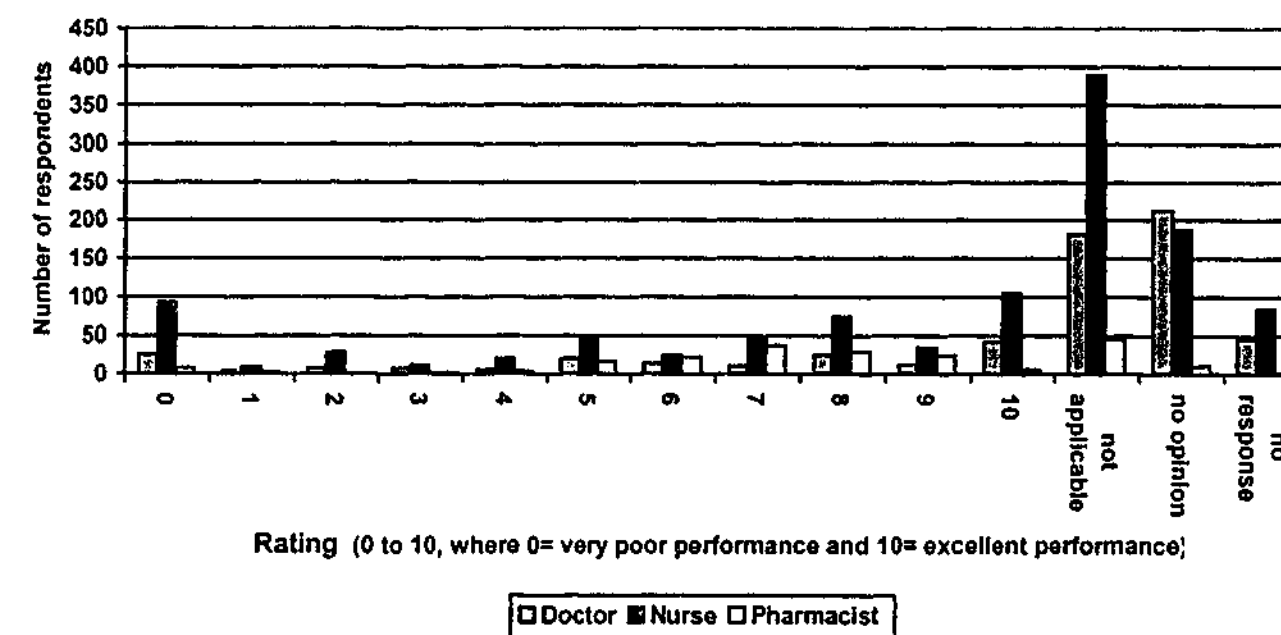




Figure A2.11 Rating of performance of the pharmacy service on review of medication charts (1993/ 1994)

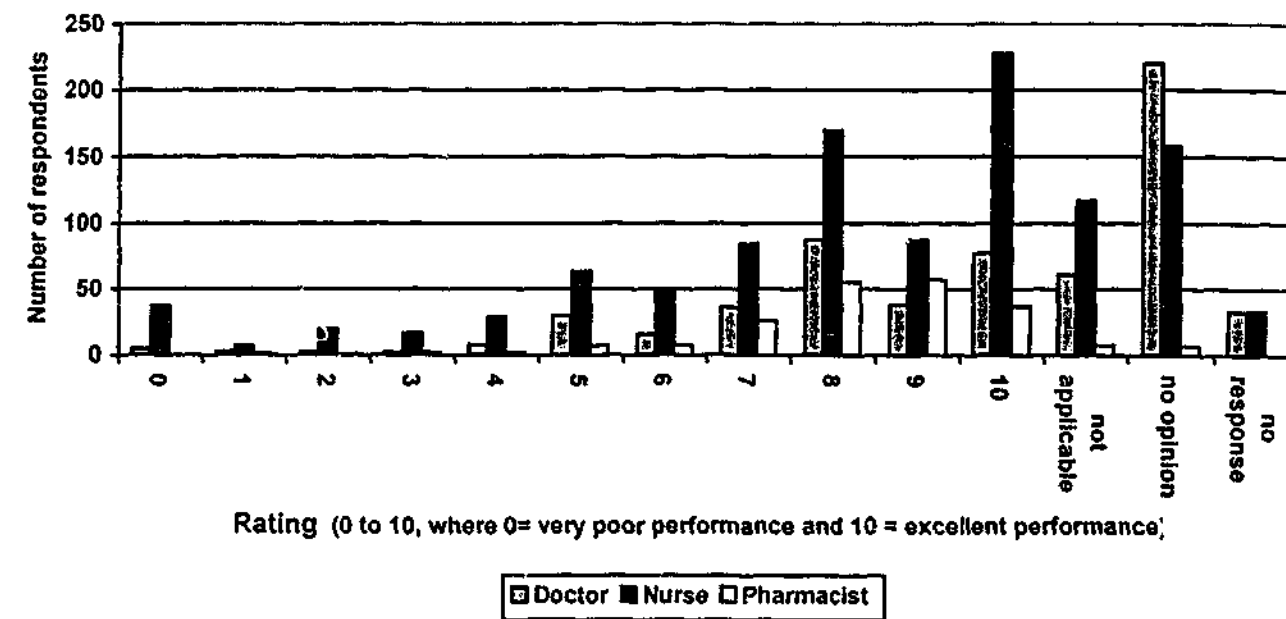


Figure A2.12 Rating of performance of the pharmacy service on adverse drug reaction monitoring (1993/ 1994)

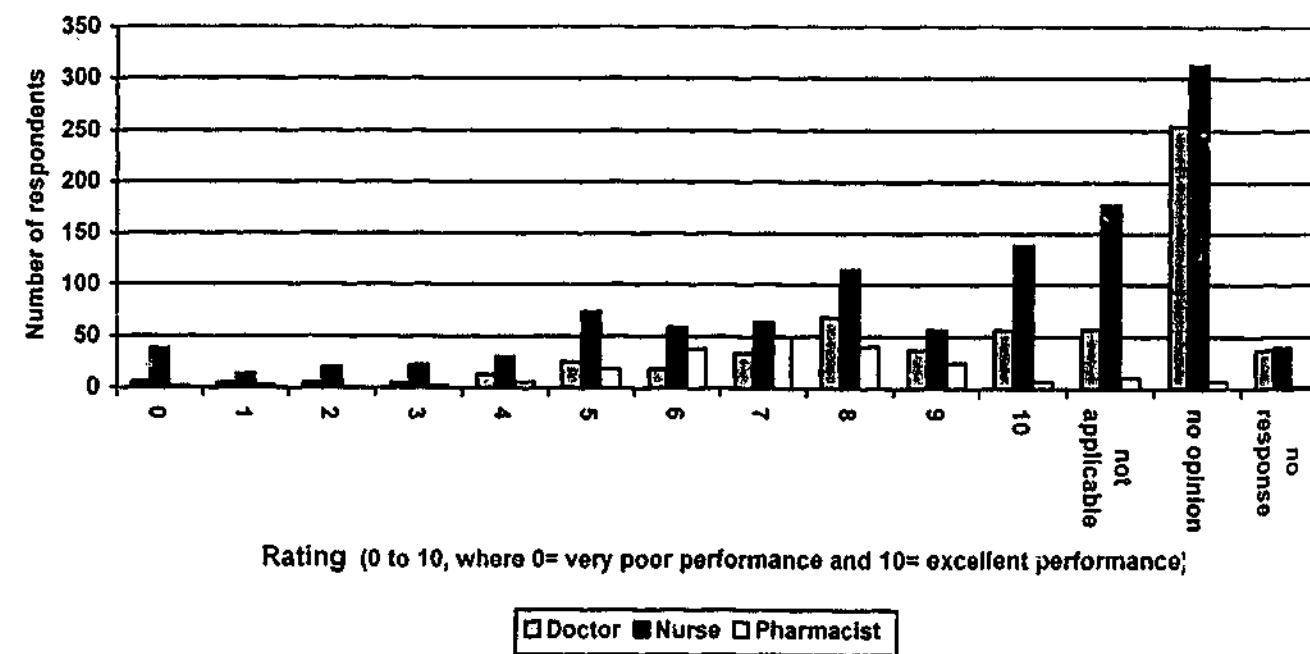


Figure A2.13 Rating of performance of the pharmacy service on intervention in/ monitoring of patient drug therapy (1993/ 1994)

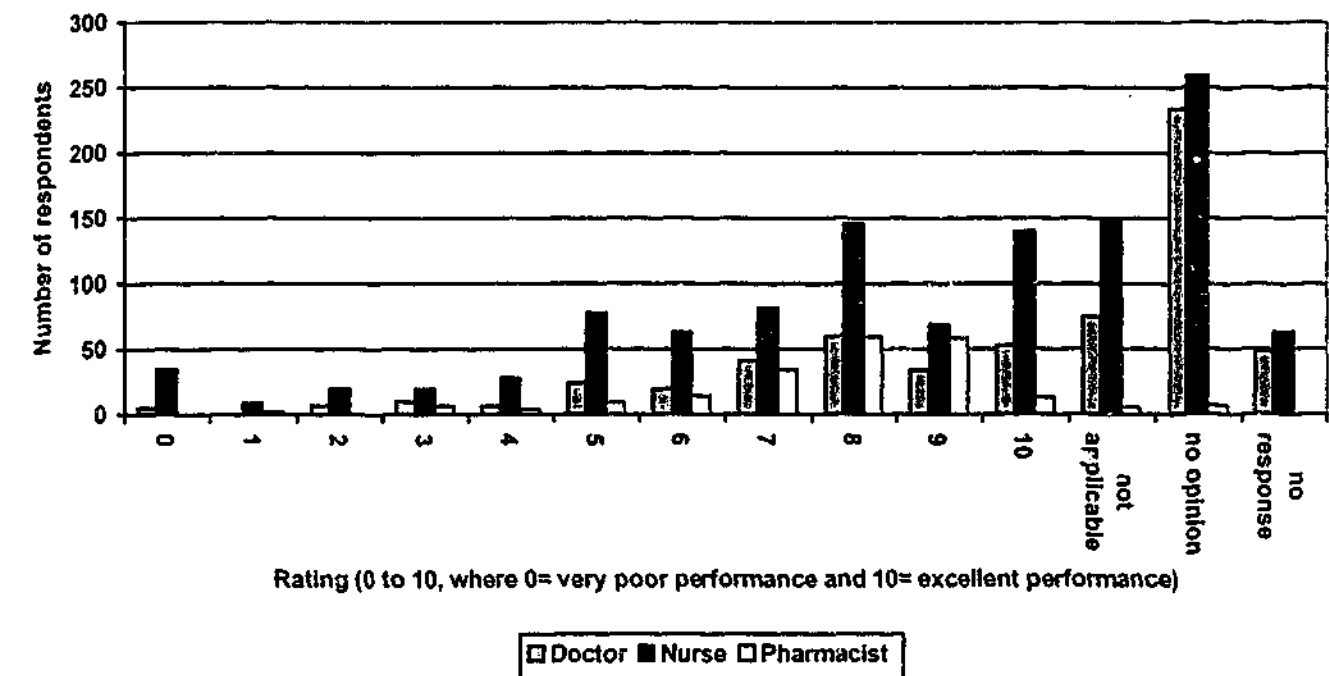


Figure A2.14 Rating of performance of the pharmacy service on therapeutic drug monitoring service (1993/ 1994)

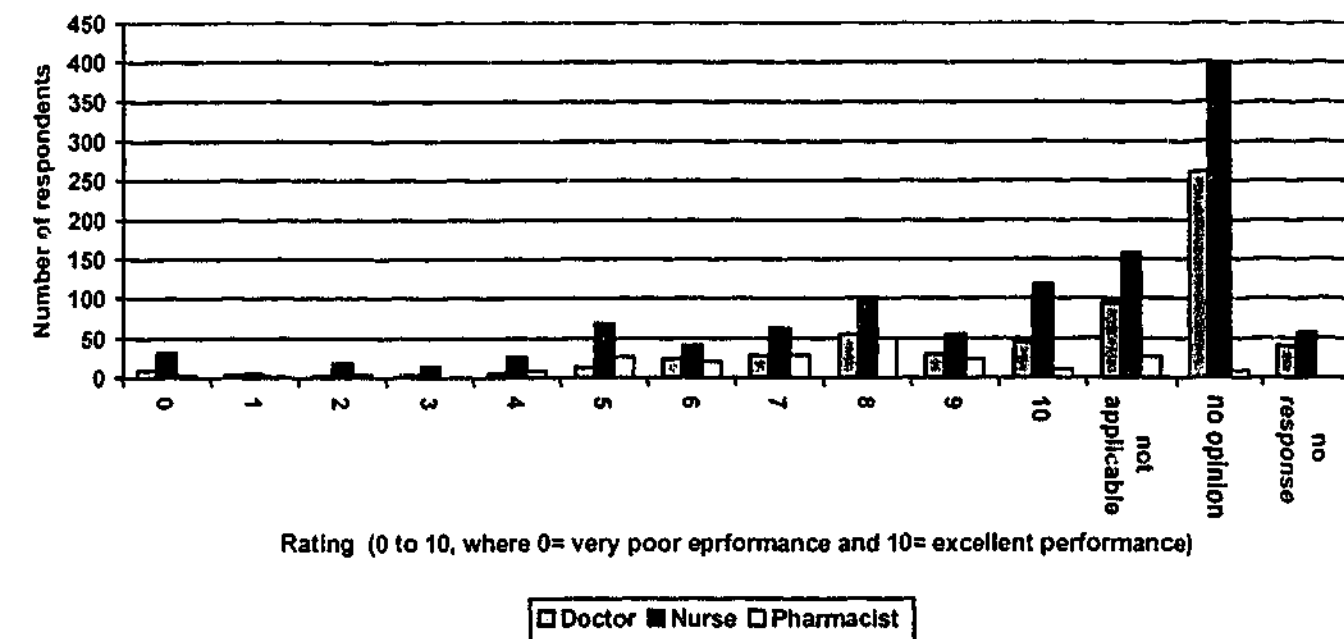


Figure A2.15 Rating of performance of the pharmacy service on understanding and knowing the needs of the users (1993/ 1994)

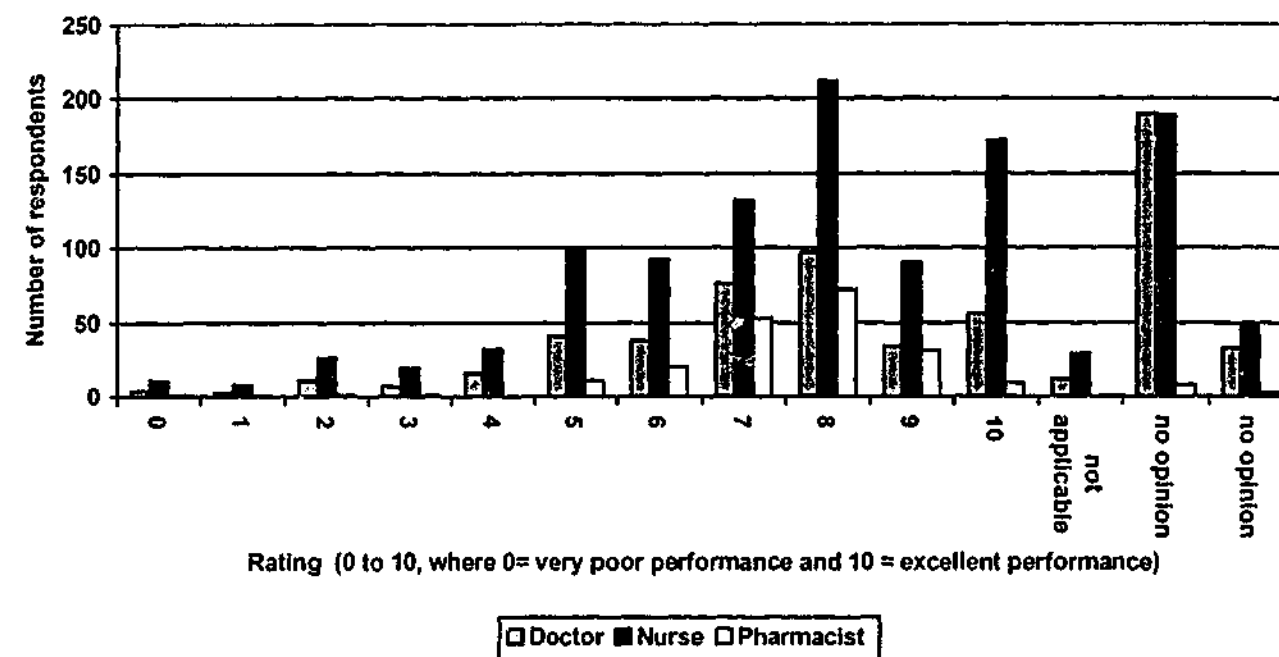


Figure A2.16 Rating of the performance of the pharmacy service on efficiency of the pharmacy service (1993/ 1994)

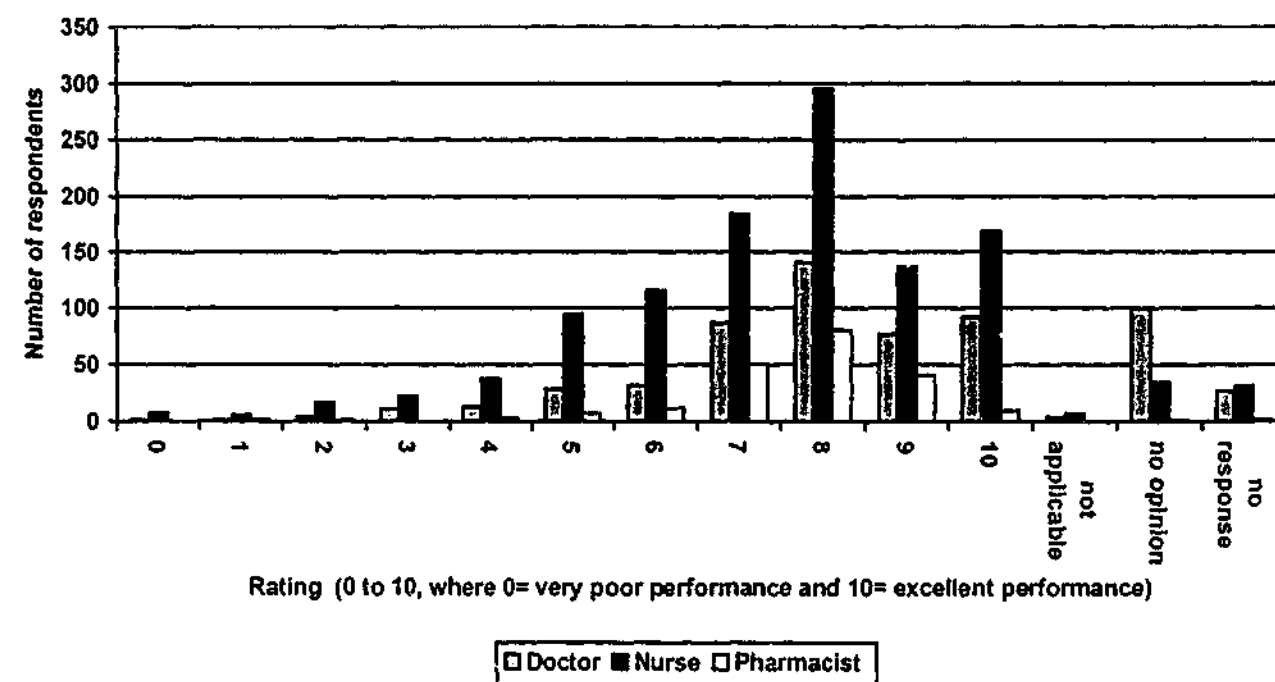


Figure A2.17 Rating of performance of the pharmacy service on accuracy of dispensing (1993/1994)

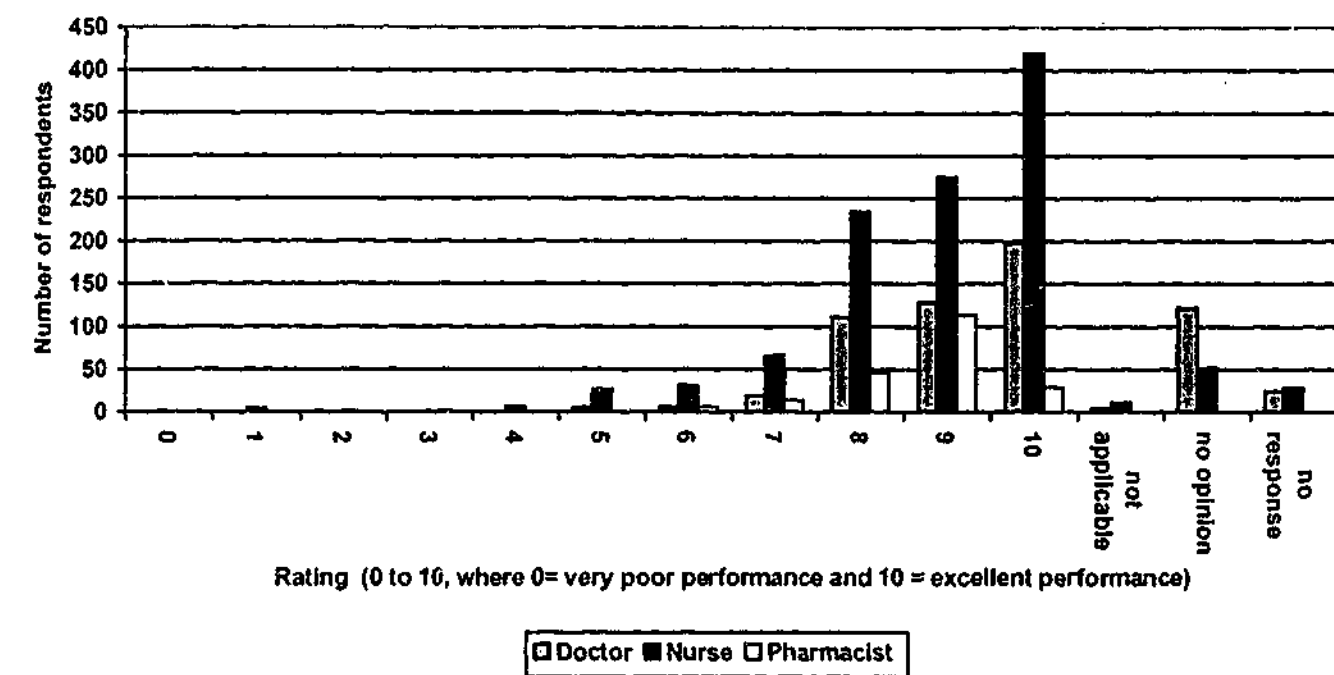


Figure A2.18 Rating of performance of the pharmacy service on discharge dispensing (1993/ 1994)

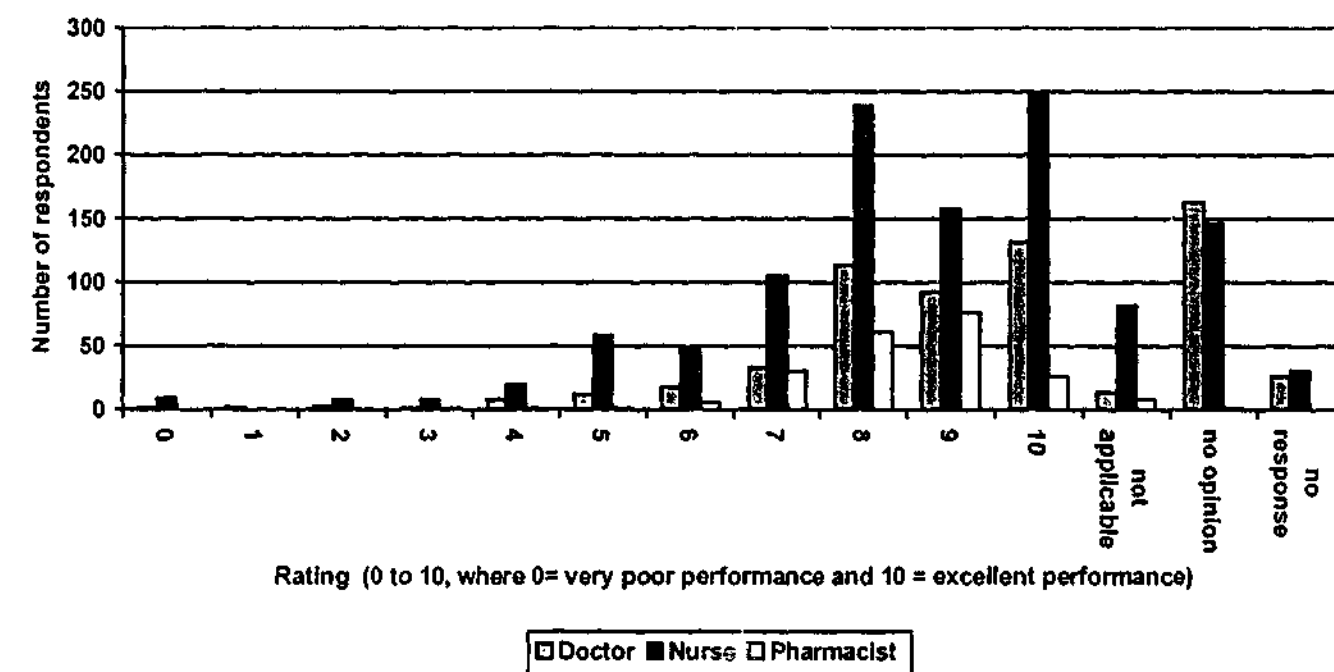


Figure A2.19 Rating of performance of the pharmacy service on timeliness of provision of medication (1993/ 1994)

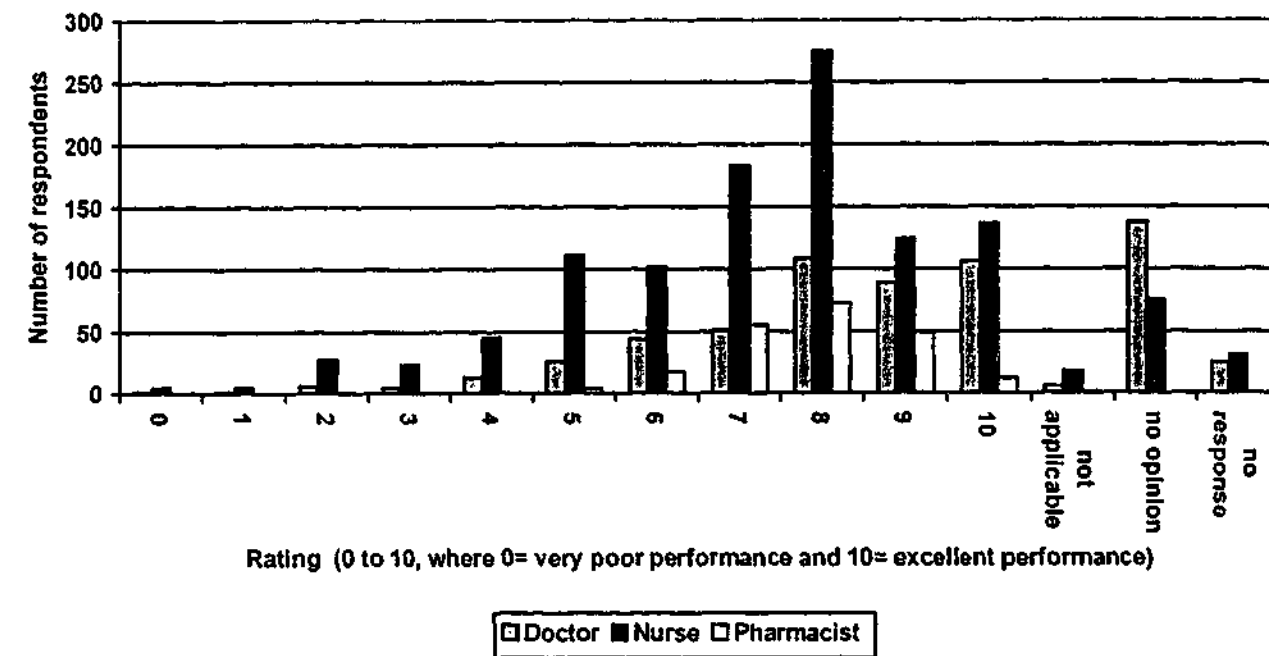


Figure A2.20 Rating of performance of the pharmacy service on availability of stock (1993/ 1994)

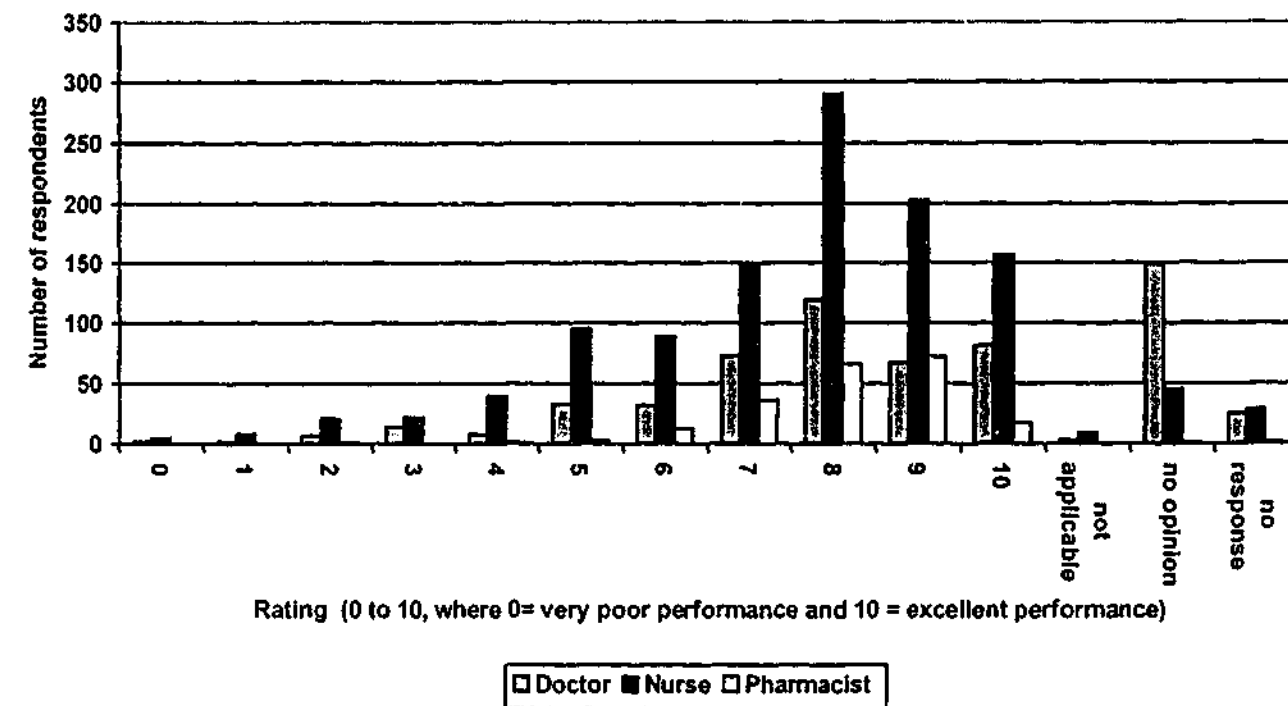


Figure A2.21 Rating of the performance of the pharmacy service on sterile preparations/ intravenous preparations (1993/ 1994)

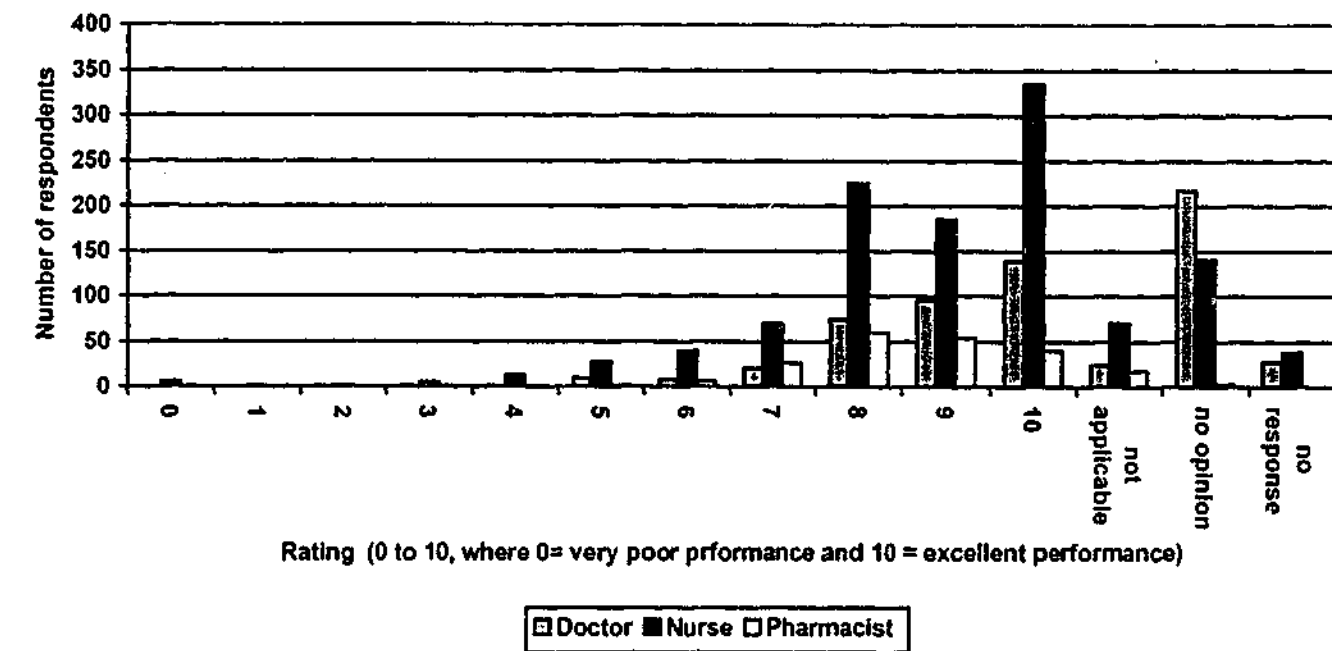


Figure A2.22 Rating of performance of the pharmacy service on drug education for hospital staff- informal (1993/ 1994)

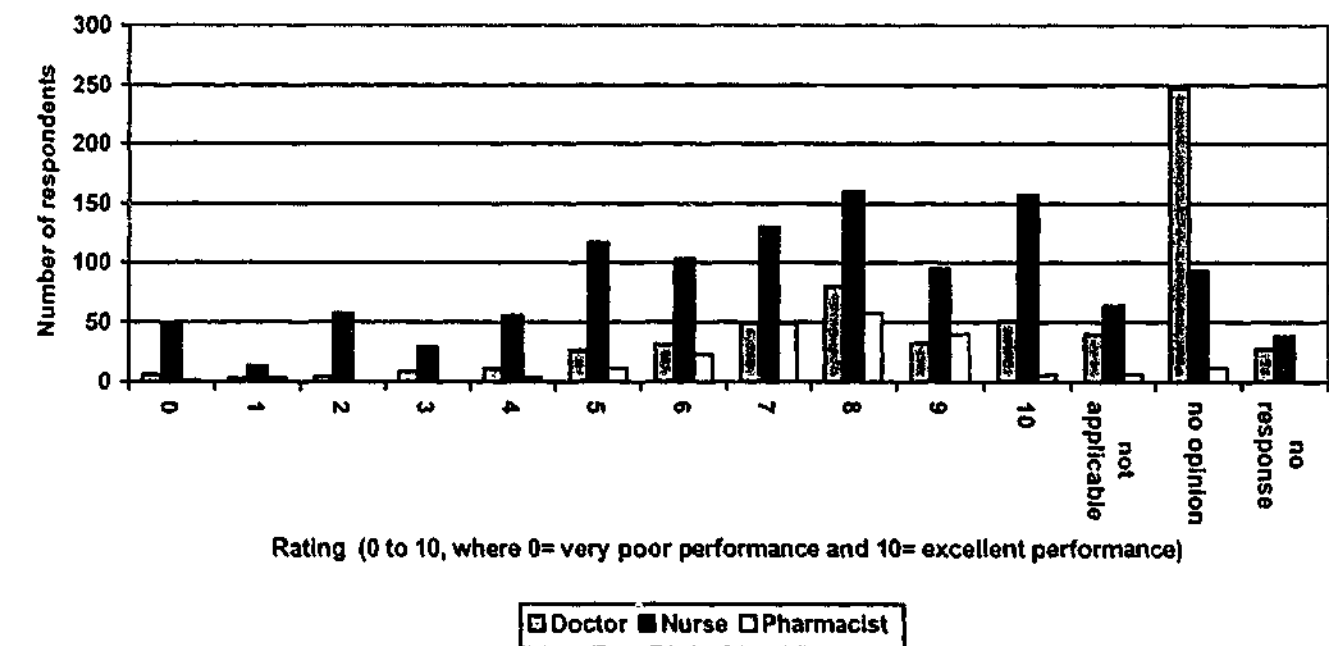


Figure A2.23 Rating of performance of the pharmacy service on in-service, structured lectures for hospital staff (1993/ 1994)

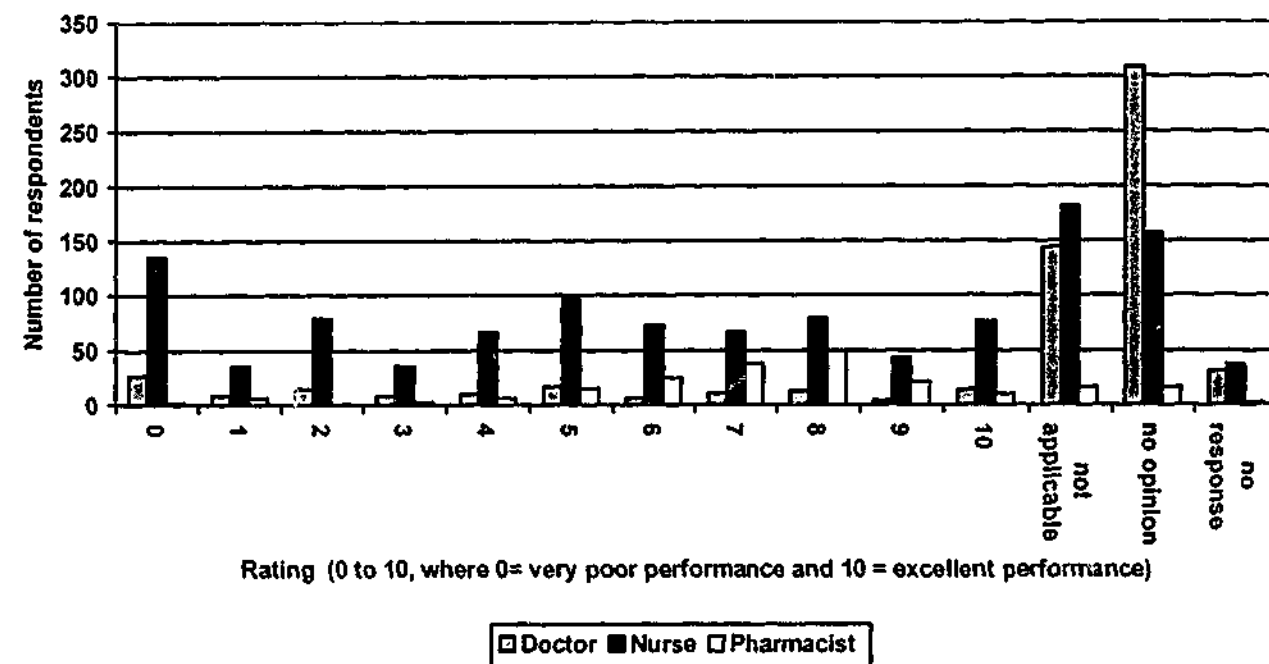


Figure A2.24 Rating of the performance of the pharmacy service on discharge medication counselling of patients (1993/ 1994)

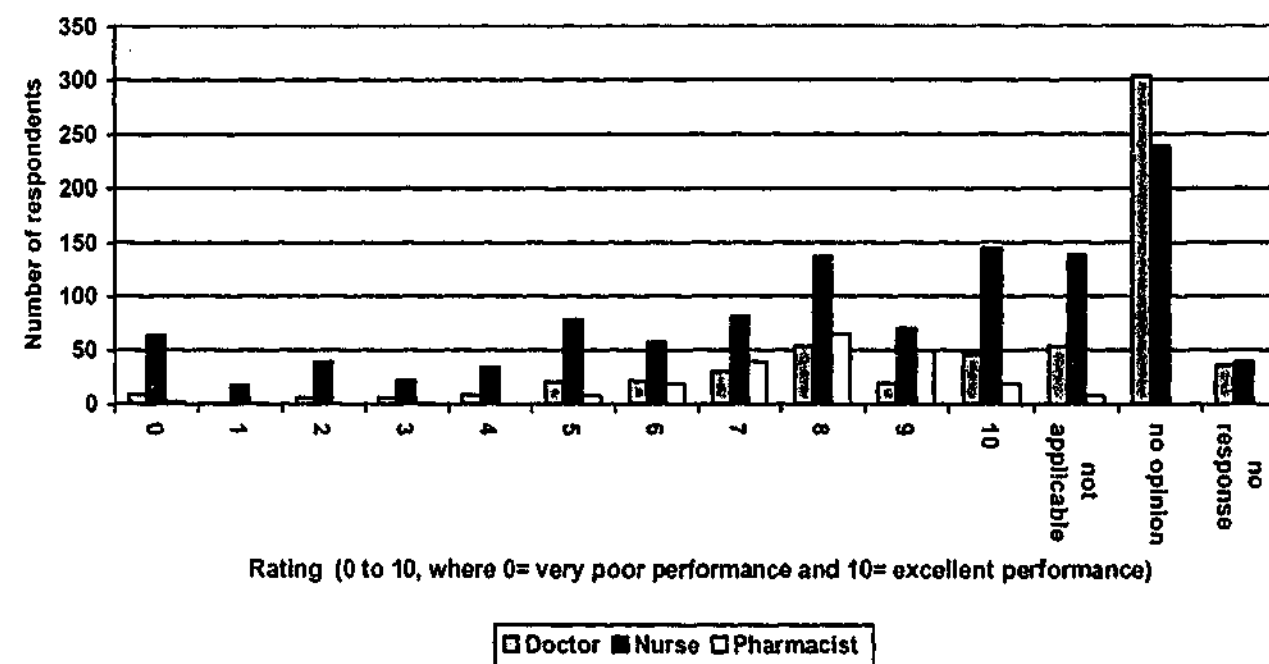


Figure A2.25 Rating of the performance of the pharmacy service on patient information and education on drugs/ medicines (1993/ 1994)

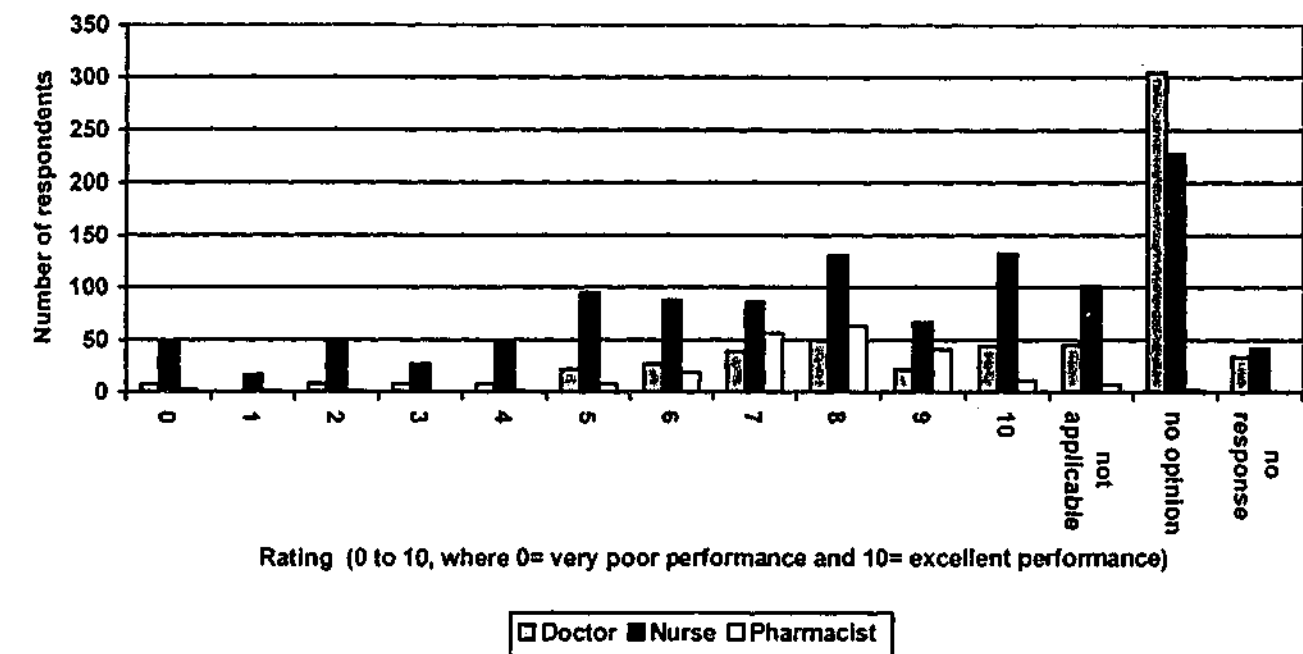
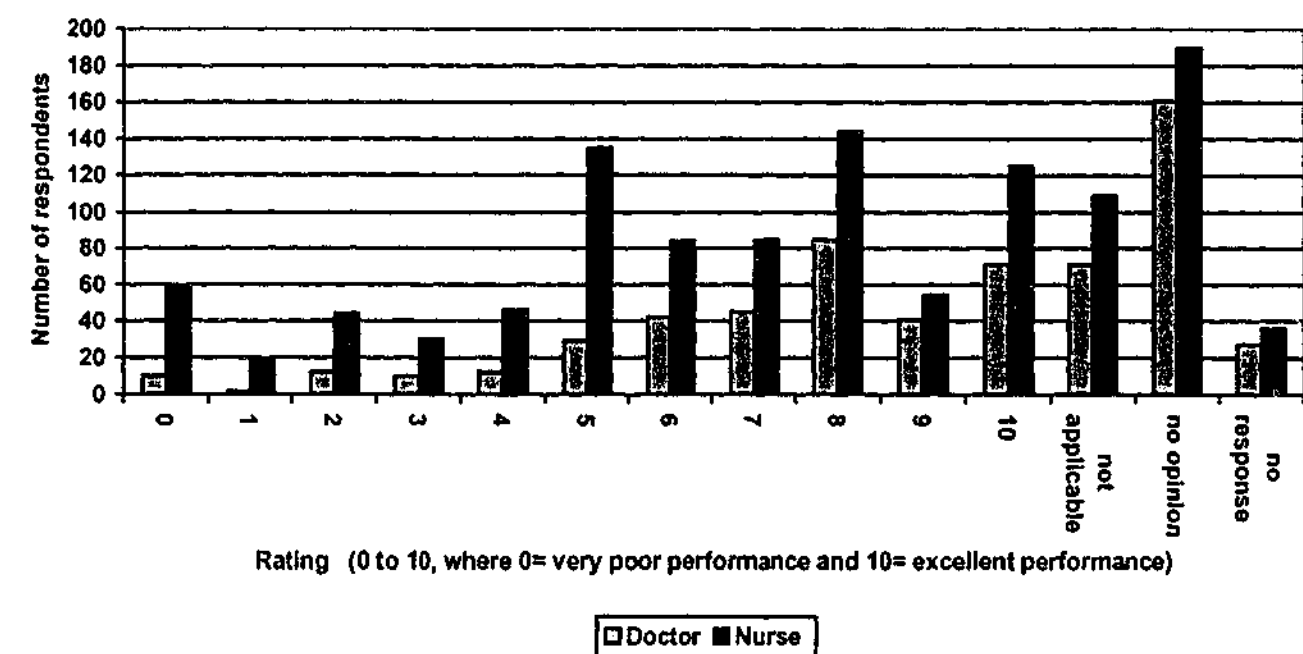


Figure A2.26 Rating of performance of the pharmacy service on pharmacy bulletins/ publications (1993/ 1994)\*



\*Pharmacists were not asked to rate the effectiveness of the performance of the pharmacy service on pharmacy bulletins / publications.

Figure A2.27 Rating of the performance of the pharmacy service on extent of pharmacy department involvement in research (1993/ 1994)

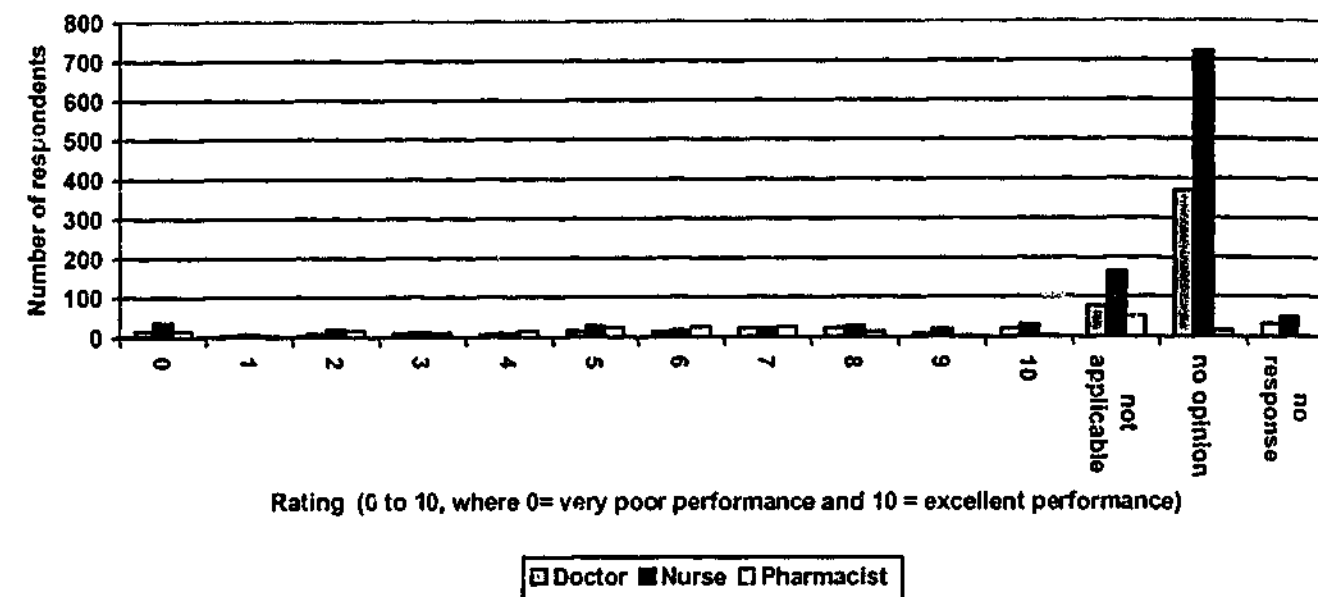


Figure A2.28 Rating of performance of the pharmacy service on reliability of the service (1993/ 1994)

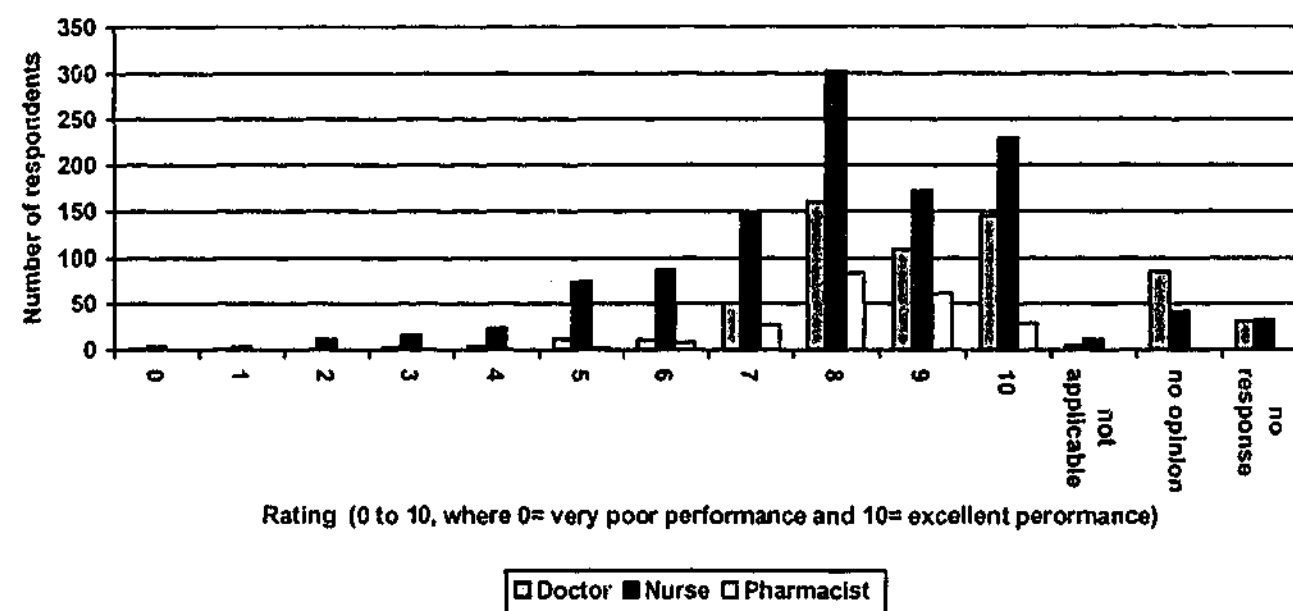


Figure A2.29 Rating of the performance of the pharmacy service on communication with users of the service (1993/ 1994)

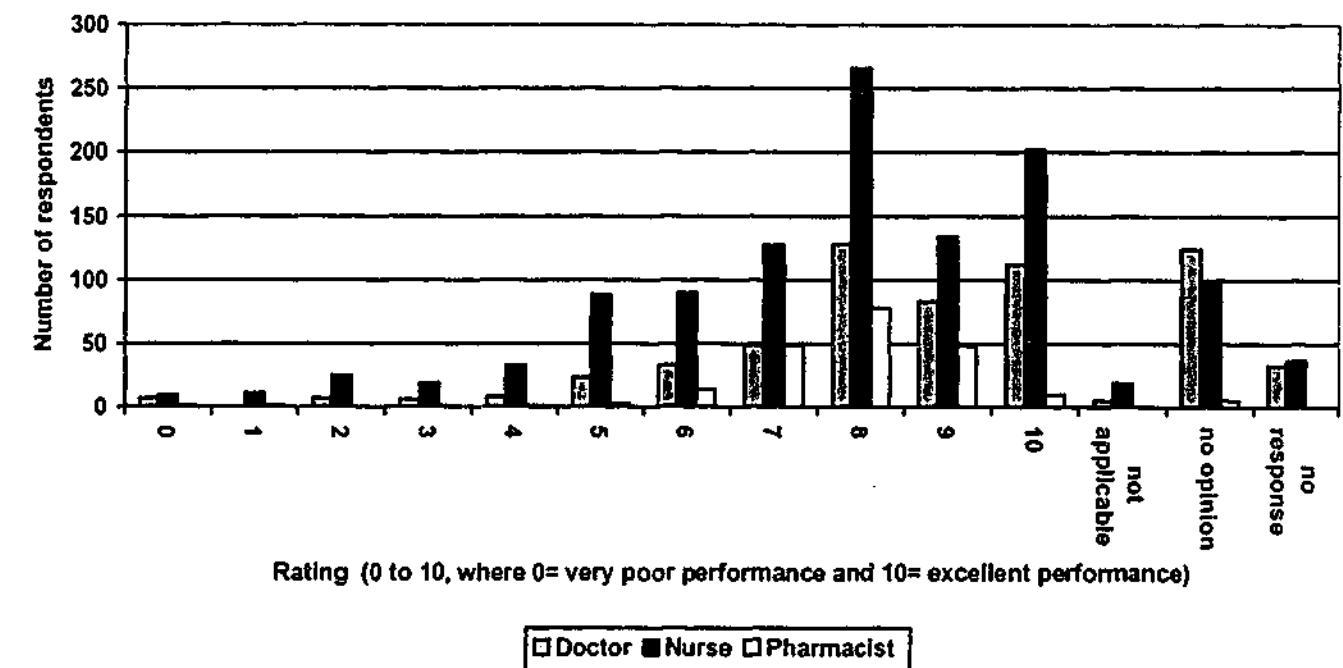


Figure A2.30 Rating of performance of the pharmacy service on after hours service (1993/ 1994)

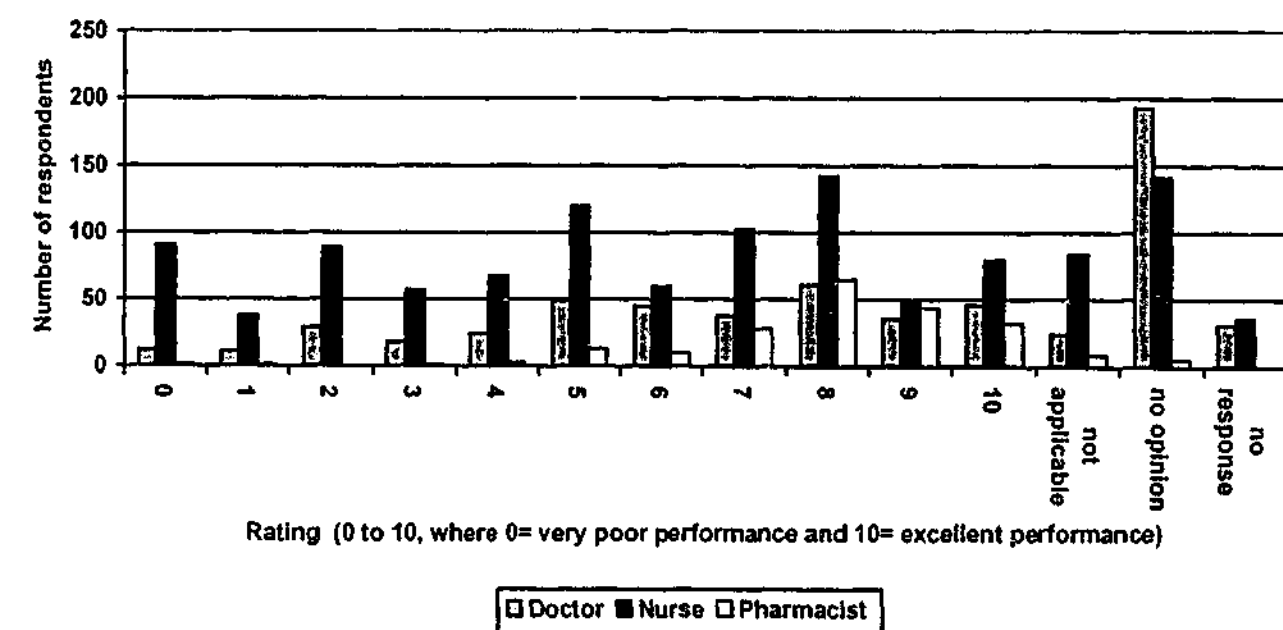


Figure A2.31 Rating of performance of the pharmacy service on overall service provided to the users of the service (1993/ 1994)

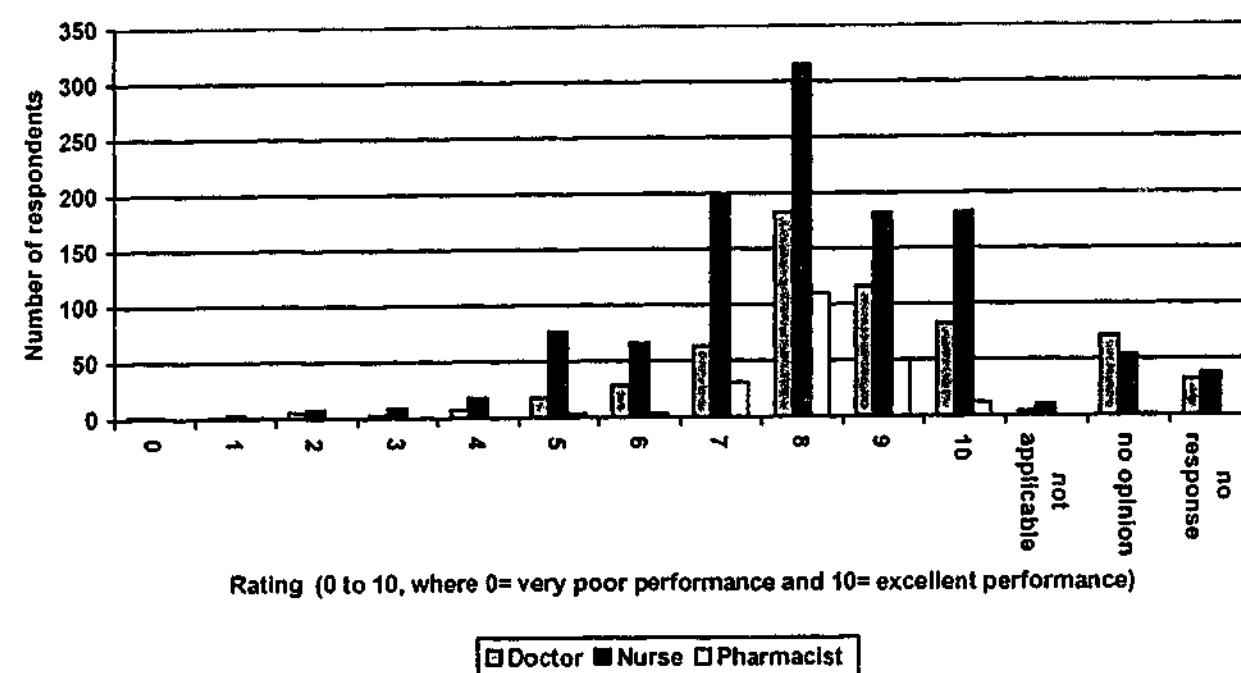


Table A2.1 Reasons given by *pharmacists* for their rating of their importance as a member of the healthcare team (1993/94)

- Pharmacists seen as reliable member of team by nurses and doctors and have a lot of involvement in medical round and direct patient care. Consultation is often widely sought and our contribution, I believe, is highly valued.
- Clinical pharmacist attends some medical rounds, some ward meetings. Respected more by physio, O.T, dietitian rather than doctors and nurses.
- In teaching hospital feel pharmacist has valuable input into staff training and patient care.
- Not on all wards. Pharmacists standards range from excellent to poor. Admin structure sometimes gets in way of service delivery. There must be a closer working relationship between the University and hospitals. E.g. joint appointment at a senior level.
- High rating in some areas as ICU, renal, oncology where pharmacists play central role and IV preparation, dispensing of SAS and trial are prevalent.
- Important member in areas where have a large input. Wards without pharmacist don't rate pharmacists with the same importance as ward with pharmacist.
- Pharmacists called for drug information extensively as hospital doctors from overseas and not familiar with Australian drugs and dosage. Pharmacists advise and counsel.
- Traditionally considered as providers. As involvement at ward level and drug information services have improved so has our image.
- The involvement is largely up to the individual and so can vary from next to none (merely a supply function) to very high clinical involvement.
- Pharmacist knowledge in disease states, treatment options and use of drugs is not as good as other member of team. Pharmacists are unfortunately too generalised in their knowledge to be able to keep pace with specialised treatments. They should excel in knowledge of drugs.
- Pharmacists not on all wards- so not reaching all areas directly. Need to be seen to be there as part of the team. Emphasis on practical application of information is very important. Cannot be a 'drug expert' by knowing theory alone. More contact needed with patients during training. Witnessing effect of drugs is a greater teacher than text book e.g. medical intern knows very little re drugs at start of year- at end have often developed knowledge exceeding that of pharmacist.
- Clinical knowledge of drugs insufficient to actively participate and contribute to patient's drug therapy.
- Some doctors do not recognise pharmacists very much whereas most nurses do and appreciate the role and involvement of the pharmacist
- Not great deal of involvement in ward. Not available to supply information to doctors and patients and to intervene early when required for drug interaction problems. From patient's point of view and medical staff, not enough involvement to be counted a vital part of a health team.
- Important member of some teams i.e. in some units, but economic restraints mean unable to attend all rounds, meetings etc. We do attempt to maintain a high profile in the wards at all times.
- Generally highly regarded by nurses and interns as member of health team but not so by consultants and specialists.
- Ward pharmacy not operating throughout all wards so contact with all members of health team not always at optimum.
- Pharmacists significantly affect proper medication use in this hospital but knowledge/ skill is underutilised due to users still predominantly seeking pharmacists in a supply role (seen as responsible for drug acquisition and distribution).
- We aren't totally involved in everything occurring in hospital. Presence on wards is insufficient due to lack of staff, pharmacist/ doctor relationship could be improved as doctors seem to forget pharmacists are part of the hospital staff/ team. (private hospital)
- Pharmacist provides a good service; clean, efficient, friendly, helpful- but if he wasn't involved job would still be done.
- Apart from selected areas (e.g. ICU) - not considered part of a team- not involved in major decision making in patient treatment. The current budgetary climate is only serving to reduce pharmacist's participation as a member of the team and pushing us into a policing role.
- Pharmacists seen to be 'interfering' at ward level by doctors and some nursing staff.

- Pharmacist is able to advise on doses, interaction, availability of products and alternatives, adverse drug reactions etc.
- Very respected by nursing and medical staff. Advice asked and given on many and varied aspects of drug therapy of patient. Very motivated pharmacy department. Would like to see more available time to spend more time doing ward rounds with doctors.
- 'Health team' doesn't really exist in this hospital. Patient care is divided into medical and other. Not much communication between doctors and allied health. Pharmacy seems to work quite well with other allied health departments and some of the doctors.
- Pharmacist is able to advise on doses, interaction, availability of products and alternatives, adverse drug reactions etc.
- Though in any health team the final medical decision rests upon doctors, presence of the pharmacist is invaluable for knowledge of drugs, pharmacology. A pharmacist should act as a consultant in this area when it comes to rational drug therapy for a patient. In this day and age, his knowledge and experience on drug costs, health dept. 'red-tape', etc is increasingly being demanded upon. Pharmacists should realise this reality and become an expert in all areas that concern them.
- Provide a lot of assistance to nurses in products and information, but though doctors (all but two are GP's) listen to what we have to say, it seems to rarely influence their prescribing habits. The two residents are more open to suggestions. (small country hospital)
- Pharmacist is seen as a reliable member of the team by nurses and doctors and have a lot of involvement in medical rounds and direct patient care. Consultation is often and widely sought, and our contribution, I believe, is highly valued.

**Table A2.2 Reasons given by doctors for their rating of the importance of the pharmacist as a member of the healthcare team (1993/94)**

- Essential role in dispensing, monitoring charts and prescriptions.
- Often the only person to carefully check charts for drug interactions, dosages etc. It would be better, ideally, if the resident and ward pharmacist had more time to discuss medications.
- Pharmacists do good job handling and dispensing drugs but aren't essential- doctors and nurses could do job.
- Important patients understand drugs they take and possible complications, access to reliable medication service vital.
- Can't do without drugs.
- Important role regarding drug choice, dose, cost balance and drug monitoring.
- Pharmacist often used as a reference rather than a daily input.
- Very insignificant role, keeping low profile.
- Pharmacist is a vital member of the health care team. Unfortunately because of staffing problems within the pharmacy, we have little contact between pharmacy and medical staff, and in effect they currently contribute very little to the team.
- Always important member of the health care team, excellent knowledge and ability to get information re drug interactions.
- Medical practice would be impossible without pharmaceutical backup.
- Need not be involved in bedside clinical manner unless invited by the physician as a member of the team.
- Efficient low profile service.
- Highly regarded, knowledgeable, approachable and cooperative.
- Source of pharmaceutical information/ assistance with prescribing.
- Not very obvious in surgical wards.
- Keep us up-to-date on new drugs/ costing.
- Department-high profile, efficient, participate constructively in all clinical and relevant administrative activities.
- Valuable source of information. Essential dispensing and manufacturing of certain items.

- In this small hospital- pharmacy staff provide a well integrated and interactive service.
- Keeps very much to itself. Very strict and defensive re interpreting medication guidelines.
- Pharmacy plays important but limited role in the overall management of patients.
- Pharmacists provide necessary and essential service re patient care- monitoring dosage/ side effects of medications.
- Detailed drug knowledge essential component of patient clinical management and contribution is important.
- Contact point between doctors, nurses and patients, need for close liaison to reduce error and improve patient compliance.
- Where I work team has little interaction with pharmacist apart from supply of ordered medications.
- Role in management is not major. More role in ward/ stores/ imprest and hospital costs management.
- Not involved in clinical judgements.

**Table A2.3 Reasons given by nurses for their rating of the importance of the pharmacist as a member of the healthcare team (1993/94)**

- Doctors/ surgeons come first then sisters/ nurses, then pharmacists.
- My ward does not have a pharmacist and thus lacks pharmacist ward consultation. It would be very valued.
- Play only peripheral part of the team and no real involvement.
- Most patients need medication during stay. Accurate dispensing/ monitoring of medication crucial.
- Lack of participation in ward rounds.
- Integral part of patient management.
- Limited imprest done at times leaves hospital short of medication on weekends.
- Whether we like it or not pharmaceutical products are part of overall patient care and pharmacist is the specialist in this area and can advise, supervise and dispense all products needed. It is important that all staff recognise this expertise.
- Pharmacist always checks treatment sheets re correct doses/ time of administration. Pharmacist also checks interactions with other drugs. Great job.
- As part of multidisciplinary team pharmacist has large knowledge base to share with whole team.
- Important role monitoring drug administration. Could expand role as educators to patients and staff.
- Pharmacist mainly concerned with cost of product not with client needs.
- Pharmacist extremely important in this hospital to supply drugs for patient and answer drug queries.
- Pharmacist advises, but not included in management of treatment except if doctor asks opinion about specific drugs or service.
- Ward is without clinical pharmacist due to budget. Ward pharmacist important for informal staff education, patient education and organising and ordering of patient drugs. They are a very valuable source of information.
- All members of health team equally important in providing high standard of patient care.
- In small rural hospital, pharmacist role in team is very important due to limited external resources.
- Rely on their knowledge for accuracy (no clinical pharmacy).
- Vital role to play providing an efficient accurate service for patients and nurses in medications. A good source of knowledge currently not spread to doctors and nurses in a comprehensive structured manner of education.
- Pharmacist part of the health care team in providing accurate info and dispensing of drugs. Pharmacy department within hospital provides an excellent service and I am well aware they would like to extent their service to the wards as clinical ward pharmacists, but this could lead to encroachment on the nursing field, which already provides education on drugs to patients.
- Essential member of team, provides excellent service to doctors, nurses and patients. Always available for questions.
- They should be more active with patients and medication education.
- All hospital pharmacy's should rate 9-10, sadly in this hospital, pharmacists aren't 'team players'
- Pharmacists attend unit meetings; monitor patients medications; give advice and education; always willing to assist with queries and are respected members of the health care team.

- Very important member of the team with broader knowledge in their field than others.
- Medications are important/ major part of patient's health and correct backup/ dispensing of medications is vital.
- Pharmacists able to question doctors and keep them on their toes, thus stopping complacency.
- Reasonably important, but could be more involved and be seen more.
- Our hospital pharmacists are integral members of health care team and have daily contact with nurses/ doctors and paramedics.
- Pharmacists need to be more involved and aware of needs of the area they are allocated to.
- Important part of health care team- e.g. monitor medications and dosages, provide relevant information to doctors and nurses to add to and fill in gaps in doctors and nurses knowledge and memory, thereby providing a needed resource person.
- Pharmacists are a source of drug information and administration. Reliable and efficient and cooperative providers of medications and information.
- Important member of health care team in monitoring, education, discharge therapy.
- Pharmacists very important, but due to budgeting their time and duties are restricted. But they try to be available.
- Pharmacy department always friendly/ helpful. Check if script dosage OK. Good job with limited numbers.
- Important, but must meet customer needs including staff. Must remember they are not doctors and that in practice medicine is not always black or white.
- Provision of service very good. Involvement with patient care is minimal.
- In this hospital they are a background member of the team- thus a dispensing agent.
- Very little contact with pharmacist. We have no ward pharmacist.
- Pharmacy department are reliable and efficient considering their workload and budget cuts.
- Pharmacist is vital member of health care team but should take more active role in patient care in this hospital.
- Pharmacy impacts on nursing time and effort. Supports staff and needs. Enables efficient service.
- To ensure safe and correct drugs/ dosage/ route and frequency of drugs given to patient. Need pharmacist also to keep up to date with new medications, and general advice regarding all aspects of medicines.
- Continual confrontational approach to nurses questioning why medication orders by doctors are needed.
- Without the pharmacist the chain would be broken in the treatment circle.
- Availability of pharmacist on ward rounds is important and reinforces team approach to patient care.
- Primarily view pharmacist as a provider of patient medication. He puts in large number of hours however, I am not sure of how much time he has to spend on staff education or being a visible part of the health team (e.g. as part of care conferences for example).
- A valuable resource. Trust opinion / advice, very approachable, high standard of knowledge.
- Critical care department- resource on drug administration, therapeutic monitoring and all round queries- essential.
- There is only one pharmacist at this hospital. There is not a thing this man does not know.

## APPENDIX 3

Questionnaires for doctors, nurses, pharmacists, inpatients and outpatients in  
1999/2000





# **VICTORIAN HOSPITAL PHARMACY SURVEY**

## **DOCTOR'S QUESTIONNAIRE**

**VICTORIAN COLLEGE OF PHARMACY  
MONASH UNIVERSITY  
381 ROYAL PARADE,  
PARKVILLE,  
VICTORIA, 3052**

Should you have any complaint concerning the manner in which this research (Project number 99/331) is conducted, please do not hesitate to contact The Standing Committee on Ethics in Research on Humans at the following address:

The Secretary  
The Standing Committee on Ethics in Research on Humans  
Monash University  
Wellington Road  
Clayton Victoria 3168  
Telephone (03) 9905 2052 Fax (03) 9905 1420



VICTORIAN COLLEGE OF PHARMACY  
Office of the Dean

14 October 1999

Dear Doctor,

The Victorian College of Pharmacy, with the support and approval of your hospital and pharmacy department, is currently conducting a research project examining customer service in Victorian hospital pharmacies. This survey is the final stage of a study which commenced several years ago. The ultimate purpose of this study is to provide information which will assist the ongoing development of pharmacy services in hospitals, and to investigate changes in services that have occurred during the time this project has been underway.

It is important that your feedback is obtained in order to determine how hospital pharmacies can best meet the needs of the users of the pharmacy services in the future. All the questions in this questionnaire refer to the pharmacy at THIS hospital.

Please complete the attached questionnaire and return it to the Victorian College of Pharmacy in the reply paid envelope enclosed by 26 November 1999.

It will take only a few minutes of your time to answer the questions. This survey is strictly CONFIDENTIAL and individuals, departments and hospitals will not be identified. This survey is voluntary. However, it is a small sample and your participation is important. Should you require further information, please contact Sally Wilson at the Victorian College of Pharmacy, Monash University (Telephone: 9903 9108; Facsimile: 9903 9629).

Thank you in advance for your time and assistance.

Yours sincerely,

(Prof) C B Chapman  
Dean  
Victorian College of Pharmacy

# VICTORIAN HOSPITAL PHARMACY SURVEY HOSPITAL STAFF (DOCTORS AND NURSES)

Please enter today's date Day Month Year

Please note: All questions in this questionnaire refer to the pharmacy at THIS hospital

- What is the name of this hospital? .....
- How often do you have contact of any sort (including written communications, prescriptions, telephone and face to face) with this hospital's pharmacy?  
(Please tick the appropriate box)  

More than five times a week	<input type="checkbox"/>	On average how many times a day? .....
One to five times a week	<input type="checkbox"/>	On average how many times a week? .....
Less than once a week	<input type="checkbox"/>	On average how many times a month? .....
Less than once a month	<input type="checkbox"/>	On average how many times a year? .....
Other .....	<input type="checkbox"/>	How often? .....
Never .....	<input type="checkbox"/>	
- Thinking about the contacts you generally have with the pharmacy service, please indicate how frequently you use each of the following approaches, where 10 = very frequent contact approach (daily) and 0 = never.

	Score
Telephone .....	<input type="text"/>
Via a clinical ward pharmacist .....	<input type="text"/>
Visited pharmacy department .....	<input type="text"/>
Via a nurse .....	<input type="text"/>
Via a ward assistant .....	<input type="text"/>
Writing a prescription .....	<input type="text"/>
Writing a drug requisition .....	<input type="text"/>
Contacting the drug information service ..	<input type="text"/>
Other, please explain .....	
.....	
.....	

4. Do you think **THIS** hospital pharmacy **SHOULD** provide the following services?

(Please answer every line by ticking the appropriate boxes)

	Yes	No	Don't know
Outpatient dispensing .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Inpatient dispensing .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sterile manufacture : Intravenous preparations .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sterile manufacture: Cytotoxics .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Drug information service .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Clinical ward pharmacy- Participation in ward rounds .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Review of medication charts .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Medication history interview .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Adverse drug reaction monitoring/ management ....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Intervention in/ monitoring of patient drug therapy ..	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Therapeutic drug monitoring (pharmacokinetic) ....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Imprest .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Manufacturing (e.g. creams, lotions, mixtures) .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dispensing for hospital staff .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Pharmacy controls and performs drug purchasing .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Pharmacy store (bulk storage, reserve stock) .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Discharge medication counselling for patients .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Patient information and education on drugs/ medicines .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Pharmacy publications/ bulletins .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Drug education for hospital staff (informal) .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
In-service, structured lectures for hospital staff .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Seven day a week service .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Research activities/ opportunities .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Clinical trial support .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Drug cost monitoring .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Drug usage evaluation .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Hospital in the home .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Please list any additional services that you feel the pharmacy should provide and make any comments relating to any of the activities listed.

.....

.....

.....

5. How effective is the performance of the current pharmacy service at **THIS** hospital on the following measures?

Please provide a **SCORE** between 0 and 10 where 0 = very poor performance on that issue (i.e. lowest score) and 10 = excellent performance on that issue (i.e. highest score).

If the service is not applicable at your hospital or you have no opinion regarding the particular measure listed please tick the appropriate boxes.

Please answer every line.

	Score	Not applicable	No opinion
Cooperation of pharmacy staff to users of the service .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Friendliness of the pharmacy staff to users of the service ...	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Medical knowledge of the pharmacists .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Pharmaceutical knowledge of the pharmacists .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Drug information service provided .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Advice given on drug information queries .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Timeliness of response to drug information queries .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Advice given on general queries .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Timeliness of response to general queries .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Clinical ward pharmacy- participation in ward rounds .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
-review of medication charts .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
-medication history interview .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
-adverse drug reaction monitoring/ management ....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
-intervention in/ monitoring patient drug therapy ...	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
-therapeutic drug monitoring service (pharmacokinetic) ..	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Understanding and knowing the needs of the users .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Efficiency of the pharmacy service .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Accuracy of dispensing .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Discharge dispensing .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Timeliness of provision of medication .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Presentation of medicines .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Availability of stock .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sterile manufacturing- intravenous preparations .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sterile manufacturing-cytotoxics .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Discharge medication counselling of patients .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Patient information and education on drugs/ medicines .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

5. (continued)

	Score	Not applicable	No opinion
Pharmacy bulletins/ publications .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Drug education for hospital staff- informal .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
In-service, structured lectures for hospital staff .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Extent of pharmacy department involvement in research .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Pharmacy bulletins/ publications .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Reliability of the service .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Communication with users of the service .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
After hours service .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Overall service provided to the users of the service .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

6. How long have you been employed at this hospital? ..... Years ..... Months

7. First please list what have been the main factors since you have been at this hospital, (up to a period over the past 6 years), that have changed the way the pharmacy service operates in this hospital, then, please tick the box which best describes the effect of these changes on the pharmacy services.

	First		Next			
	factors which have brought change to the pharmacy service		Effect on service			
	Improved	Stayed the same	worse	don't know		
1. ....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
2. ....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
3. ....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
4. ....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
5. ....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
6. ....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
7. ....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
8. ....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
9. ....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
10. ....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
11. ....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
12. ....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		

8. Do you think the pharmacy service at this hospital has improved, stayed the same, or is worse than 6 years ago? If you have only been at the hospital less than 6 years, please respond for the period since you started at the hospital.

Please tick appropriate box

Improved ☐ Stayed the same ☐ Worse ☐

Why? .....

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9. How would you rate the overall service provided by this hospital's pharmacy?

Please give a **SCORE** between 0 and 10, where 0= very poor service (i.e. lowest rating) and 10= excellent service (i.e. highest rating).

**SCORE**

Please give the reason for your score.

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10. How would you rate the pharmacist as a member of the health team in this hospital?

Please give a **SCORE** between 0 and 10 where 0 = not at all important (i.e. lowest rating) and 10 = very important (i.e. highest rating)

**SCORE**

Please give the reason for your score.

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11. Please tell us a little about your background for statistical purposes.

Are you? Male ☐

Female ☐

Please tick the box corresponding to your age group.

Under 20 ☐ 20-29 ☐ 30-39 ☐ 40-49 ☐ 50-59 ☐ 60-70 ☐ over 70 ☐ years

What is your position in this hospital?

(Please tick as many boxes as applicable)

Resident medical officer ..... ☐

Registrar ..... ☐

Consultant ..... ☐

Professor ..... ☐

Head of department ..... ☐

Administrator ..... ☐

Medical ..... ☐

Nursing ..... ☐

Allied health .. ☐

Administration ☐

Registered nurse ..... ☐

Associate charge nurse ..... ☐

Charge nurse / nursing officer ..... ☐

Nurse educator ..... ☐

Other, please specify ..... ☐

12. Do you remember completing a similar survey to this one. (from the Victorian College of Pharmacy, Monash University), six years ago? (Please tick one option).

Yes ☐ No ☐ Don't know ☐

13. Please comment here if there are any other points you wish to make regarding the services provided or changes to services provided by this hospital's pharmacy department.

.....  
.....  
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.....

THANKYOU FOR YOUR TIME AND COOPERATION



## VICTORIAN HOSPITAL PHARMACY SURVEY

### NURSING STAFF QUESTIONNAIRE

VICTORIAN COLLEGE OF PHARMACY  
MONASH UNIVERSITY  
381 ROYAL PARADE,  
PARKVILLE,  
VICTORIA, 3052

Should you have any complaint concerning the manner in which this research (Project number 99/331) is conducted, please do not hesitate to contact The Standing Committee on Ethics in Research on Humans at the following address:

The Secretary  
The Standing Committee on Ethics in Research on Humans  
Monash University  
Wellington Road  
Clayton Victoria 3168  
Telephone (03) 9905 2052 Fax (03) 9905 1420



VICTORIAN COLLEGE OF PHARMACY  
Office of the Dean

14 October 1999

Dear Nurse,

The Victorian College of Pharmacy, with the support and approval of your hospital and pharmacy department, is currently conducting a research project examining customer service in Victorian hospital pharmacies. This survey is the final stage of a study which commenced several years ago. The ultimate purpose of this study is to provide information which will assist the ongoing development of pharmacy services in hospitals, and to investigate changes in services that have occurred during the time this project has been underway.

It is important that your feedback is obtained in order to determine how hospital pharmacies can best meet the needs of the users of the pharmacy services in the future. All the questions in this questionnaire refer to the pharmacy at THIS hospital.

Please complete the attached questionnaire and return it to the Victorian College of Pharmacy in the reply paid envelope enclosed by 26 November 1999.

It will take only a few minutes of your time to answer the questions. This survey is strictly CONFIDENTIAL and individuals, departments and hospitals will not be identified. This survey is voluntary. However, it is a small sample and your participation is important. Should you require further information, please contact Sally Wilson at the Victorian College of Pharmacy, Monash University (Telephone: 9903 9108; Facsimile: 9903 9629).

Thank you in advance for your time and assistance.

Yours sincerely,



(Prof) C B Chapman  
Dean  
Victorian College of Pharmacy

# VICTORIAN HOSPITAL PHARMACY SURVEY HOSPITAL STAFF (DOCTORS AND NURSES)

Please enter today's date Day Month Year

Please note: All questions in this questionnaire refer to the pharmacy at THIS hospital

1. What is the name of this hospital? .....

2. How often do you have contact of any sort (including written communications, prescriptions, telephone and face to face) with this hospital's pharmacy?

(Please tick the appropriate box)

More than five times a week	<input type="checkbox"/>	On average how many times a day? .....
One to five times a week	<input type="checkbox"/>	On average how many times a week? .....
Less than once a week	<input type="checkbox"/>	On average how many times a month? .....
Less than once a month	<input type="checkbox"/>	On average how many times a year? .....
Other .....	<input type="checkbox"/>	How often? .....
Never .....	<input type="checkbox"/>	

3. Thinking about the contacts you generally have with the pharmacy service, please indicate how frequently you use each of the following approaches, where 10 = very frequent contact approach (daily) and 0 = never.

	Score
Telephone .....	<input type="checkbox"/>
Via a clinical ward pharmacist .....	<input type="checkbox"/>
Visited pharmacy department .....	<input type="checkbox"/>
Via a nurse .....	<input type="checkbox"/>
Via a ward assistant .....	<input type="checkbox"/>
Writing a prescription .....	<input type="checkbox"/>
Writing a drug requisition .....	<input type="checkbox"/>
Contacting the drug information service ..	<input type="checkbox"/>
Other, please explain .....	
.....	
.....	

4. Do you think **THIS** hospital pharmacy **SHOULD** provide the following services?

(Please answer every line by ticking the appropriate boxes)

	Yes	No	Don't know
Outpatient dispensing .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Inpatient dispensing .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sterile manufacture : Intravenous preparations .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sterile manufacture: Cytotoxics .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Drug information service .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Clinical ward pharmacy- Participation in ward rounds .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Review of medication charts .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Medication history interview .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Adverse drug reaction monitoring/ management ....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Intervention in/ monitoring of patient drug therapy ..	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Therapeutic drug monitoring (pharmacokinetic) ....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Imprest .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Manufacturing (e.g. creams, lotions, mixtures) .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dispensing for hospital staff .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Pharmacy controls and performs drug purchasing .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Pharmacy store (bulk storage, reserve stock) .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Discharge medication counselling for patients .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Patient information and education on drugs/ medicines .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Pharmacy publications/ bulletins .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Drug education for hospital staff (informal) .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
In-service, structured lectures for hospital staff .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Seven day a week service .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Research activities/ opportunities .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Clinical trial support .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Drug cost monitoring .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Drug usage evaluation .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Hospital in the home .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Please list any additional services that you feel the pharmacy should provide and make any comments relating to any of the activities listed.

.....

.....

.....

5. How effective is the performance of the current pharmacy service at **THIS** hospital on the following measures?

Please provide a **SCORE** between 0 and 10 where 0 = very poor performance on that issue (i.e. lowest score) and 10 = excellent performance on that issue (i.e. highest score).

If the service is not applicable at your hospital or you have no opinion regarding the particular measure listed please tick the appropriate boxes.

Please answer every line.

	Score	Not applicable	No opinion
Cooperation of pharmacy staff to users of the service .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Friendliness of the pharmacy staff to users of the service ...	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Medical knowledge of the pharmacists .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Pharmaceutical knowledge of the pharmacists .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Drug information service provided .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Advice given on drug information queries .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Timeliness of response to drug information queries .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Advice given on general queries .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Timeliness of response to general queries .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Clinical ward pharmacy- participation in ward rounds .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
-review of medication charts .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
-medication history interview .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
-adverse drug reaction monitoring/ management ....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
-intervention in/ monitoring patient drug therapy ...	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
-therapeutic drug monitoring service (pharmacokinetic) ..	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Understanding and knowing the needs of the users .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Efficiency of the pharmacy service .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Accuracy of dispensing .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Discharge dispensing .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Timeliness of provision of medication .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Presentation of medicines .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Availability of stock .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sterile manufacturing- intravenous preparations .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sterile manufacturing-cytotoxics .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Discharge medication counselling of patients .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Patient information and education on drugs/ medicines .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

5. (continued)

	Score	Not applicable	No opinion
Pharmacy bulletins/ publications .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Drug education for hospital staff- informal .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
In-service, structured lectures for hospital staff .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Extent of pharmacy department involvement in research .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Pharmacy bulletins/ publications .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Reliability of the service .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Communication with users of the service .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
After hours service .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Overall service provided to the users of the service .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

6. How long have you been employed at this hospital? ..... Years ..... Months

7. First please list what have been the main factors since you have been at this hospital, (up to a period over the past 6 years), that have changed the way the pharmacy service operates in this hospital, then, please tick the box which best describes the effect of these changes on the pharmacy services.

First ↓ factors which have brought change to the pharmacy service	Next ↓ Effect on service			
	Improved	stayed the same	worse	don't know
1. ....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. ....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. ....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. ....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. ....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. ....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. ....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. ....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. ....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. ....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. ....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. ....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

8. Do you think the pharmacy service at this hospital has improved, stayed the same, or is worse than 6 years ago? If you have only been at the hospital less than 6 years, please respond for the period since you started at the hospital.

Please tick appropriate box

Improved ☐

Stayed the same ☐

Worse ☐

Why? .....  
.....  
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.....

9. How would you rate the overall service provided by this hospital's pharmacy?

Please give a SCORE between 0 and 10, where 0= very poor service (i.e. lowest rating) and 10= excellent service (i.e. highest rating).

SCORE

Please give the reason for you score.

.....  
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.....  
.....

10. How would you rate the pharmacist as a member of the health team in this hospital?

Please give a SCORE between 0 and 10 where 0 = not at all important (i.e. lowest rating) and 10 = very important (i.e. highest rating)

SCORE

Please give the reason for your score.

.....  
.....  
.....  
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.....  
.....  
.....



11. Please tell us a little about your background for statistical purposes.

Are you? Male ☐

Female ☐

Please tick the box corresponding to your age group.

Under 20 ☐ 20-29 ☐ 30-39 ☐ 40-49 ☐ 50-59 ☐ 60-70 ☐ over 70 ☐ years

What is your position in this hospital?

(Please tick as many boxes as applicable)

Resident medical officer ..... ☐

Registrar ..... ☐

Consultant ..... ☐

Professor ..... ☐

Head of department ..... ☐

Administrator Medical ..... ☐

Nursing ..... ☐

Allied health .. ☐

Administration ☐

Registered nurse ..... ☐

Associate charge nurse ..... ☐

Charge nurse / nursing officer ..... ☐

Nurse educator ..... ☐

Other, please specify ..... ☐

12. Do you remember completing a similar survey to this one, (from the Victorian College of Pharmacy, Monash University), six years ago? (Please tick one option).

Yes ☐ No ☐ Don't know ☐

13. Please comment here if there are any other points you wish to make regarding the services provided or changes to services provided by this hospital's pharmacy department.

.....  
.....  
.....  
.....  
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**THANKYOU FOR YOUR TIME AND COOPERATION**



## VICTORIAN HOSPITAL PHARMACY SURVEY

### PHARMACIST'S QUESTIONNAIRE

**VICTORIAN COLLEGE OF PHARMACY  
MONASH UNIVERSITY  
381 ROYAL PARADE,  
PARKVILLE,  
VICTORIA, 3052**

Should you have any complaint concerning the manner in which this research (Project number 99/331) is conducted, please do not hesitate to contact The Standing Committee on Ethics in Research on Humans at the following address:

The Secretary  
The Standing Committee on Ethics in Research on Humans  
Monash University  
Wellington Road  
Clayton Victoria 3168  
Telephone (03) 9905 2052 Fax (03) 9905 1420



VICTORIAN COLLEGE OF PHARMACY  
Office of the Dean

14 October 1999

Dear Pharmacist,

The Victorian College of Pharmacy, with the support and approval of your hospital and pharmacy department, is currently conducting a research project examining customer service in Victorian hospital pharmacies. This survey is the final stage of a study which commenced several years ago. The ultimate purpose of this study is to provide information which will assist the ongoing development of pharmacy services in hospitals, and to investigate changes in services that have occurred during the time this project has been underway.

It is important that your feedback is obtained in order to determine how hospital pharmacies can best meet the needs of the users of the pharmacy services in the future. All the questions in this questionnaire refer to the pharmacy at THIS hospital.

Please complete the attached questionnaire and return it to the Victorian College of Pharmacy in the reply paid envelope enclosed by 26 November 1999.

It will take only a few minutes of your time to answer the questions. This survey is strictly CONFIDENTIAL and individuals, departments and hospitals will not be identified. This survey is voluntary. However, it is a small sample and your participation is important. Should you require further information, please contact Sally Wilson at the Victorian College of Pharmacy, Monash University (Telephone: 9903 9108; Facsimile: 9903 9629).

Thank you in advance for your time and assistance.

Yours sincerely,



(Prof) C B Chapman  
Dean  
Victorian College of Pharmacy

# VICTORIAN HOSPITAL PHARMACY SURVEY-PHARMACISTS

Please enter today's date Day Month Year

1. What is the name of this hospital? .....

2. Does THIS hospital pharmacy provide the following services?

(Please answer every line by ticking the appropriate boxes)

	Yes	No	Don't know
Outpatient dispensing .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Inpatient dispensing .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sterile manufacture: Intravenous preparations .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sterile manufacture: Cytotoxics .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Drug information service .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Clinical ward pharmacy- Participation in ward rounds .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Review of medication charts /order .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Medication history interview .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Adverse drug reaction monitoring/ management ...	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Intervention in/ monitoring of patient drug therapy ..	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Therapeutic drug monitoring (pharmacokinetic) ....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Imprest .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Manufacturing (e.g. creams, lotions, mixtures) .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dispensing for hospital staff .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Pharmacy controls and performs drug purchasing .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Pharmacy store (bulk storage, reserve stock) .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Discharge medication counselling for patients .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Patient information and education on drugs/ medicines .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Pharmacy publications/ bulletins .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Drug education for hospital staff (informal) .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
In-service, structured lectures for hospital staff .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Training of pharmacy trainees and students .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Seven day a week service .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Research activities/ opportunities .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Clinical trial support .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Drug cost monitoring .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Drug usage evaluation .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Hospital in the home .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

©

What other services does **THIS** hospital pharmacy provide? (Please list)

.....  
.....  
.....  
.....  
.....  
.....

3. Do you think **THIS** hospital pharmacy **SHOULD** provide the following services?

(Please answer every line by ticking the appropriate boxes)

	Yes	No	Don't know
Outpatient dispensing .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Inpatient dispensing .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sterile manufacture : Intravenous preparations .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sterile manufacture: Cytotoxics .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Drug information service .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Clinical ward pharmacy- Participation in ward rounds .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Review of medication charts/order .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Medication history interview .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Adverse drug reaction monitoring/ management ...	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Intervention in/ monitoring of patient drug therapy ..	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Therapeutic drug monitoring (pharmacokinetic) ....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Imprest .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Manufacturing (e.g. creams, lotions, mixtures) .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dispensing for hospital staff .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Pharmacy controls and performs drug purchasing .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Pharmacy store (bulk storage, reserve stock) .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Discharge medication counselling for patients .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Patient information and education on drugs/ medicines .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Pharmacy publications/ bulletins .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Drug education for hospital staff (informal) .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
In-service, structured lectures for hospital staff .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Training of pharmacy trainees and students .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Seven day a week service .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Research activities/ opportunities .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

3. Services pharmacy should provide (continued)

	Yes	No	Don't know
Clinical trial support .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Drug cost monitoring .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Drug usage evaluation .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Hospital in the home .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Please list any additional services that you feel the pharmacy should provide and make any comments relating to any of the activities listed.

.....  
.....  
.....  
.....  
.....

NOW, PLEASE GO TO QUESTION 4 ON THE NEXT PAGE

4. How effective is the performance of the current pharmacy service at **THIS** hospital on the following measures?

Please provide a **SCORE** between 0 and 10 where 0 = very poor performance on that issue (i.e. lowest score) and 10 = excellent performance on that issue (i.e. highest score).

If the service is not applicable at your hospital or you have no opinion regarding the particular measure please tick the appropriate boxes.

Please answer every line.

	Score	Not applicable	No opinion
Cooperation of pharmacy staff to users of the service .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Friendliness of the pharmacy staff to users of the service ...	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Medical knowledge of the pharmacists .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Pharmaceutical knowledge of the pharmacists .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Drug information service provided .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Advice given on drug information queries .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Timeliness of response to drug information queries .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Advice given on general queries .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Timeliness of response to general queries .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Clinical ward pharmacy- participation in ward rounds .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
-review of medication charts/ order .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
-medication history interview .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
-adverse drug reaction monitoring/ management ...	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
-intervention in/ monitoring patient drug therapy ..	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
-therapeutic drug monitoring service (pharmacokinetic)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Understanding and knowing the needs of the users .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Efficiency of the pharmacy service .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Accuracy of dispensing .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Discharge dispensing .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Timeliness of provision of medication .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Presentation of medicines .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Availability of stock .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sterile manufacturing- intravenous preparations .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sterile manufacturing-cytotoxics .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Discharge medication counselling of patients .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Patient information and education on drugs/ medicines .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Drug education for hospital staff- informal .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

4. (continued)

	Score	Not applicable	No opinion
In-service, structured lectures for hospital staff .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Continuing education for staff pharmacists .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Education and training of non-pharmacist pharmacy staff .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Extent of pharmacy department involvement in research ..	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Pharmacy bulletins/ publications .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Reliability of the service .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Communication with users of the service .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
After hours service .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Overall service provided to the users of the service .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

5. How long have you been employed at this hospital? ..... Years ..... months

6. First please list what have been the main factors since you have been at this hospital, (up to a period over the past 6 years), that have changed the way the pharmacy service operates in this hospital, then, please tick the box which best describes the effect of these changes on the pharmacy services.

	First ↓ factors which have brought change to the pharmacy service	Next ↓ Effect on service			
		Improved	stayed the same	worse	don't know
1. ....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2. ....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3. ....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4. ....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
5. ....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
6. ....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
7. ....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
8. ....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
9. ....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
10. ....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
11. ....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
12. ....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

7. Do you think the pharmacy service at this hospital has improved, stayed the same, or is worse than 6 years ago? If you have only been at the hospital less than 6 years, please respond for the period since you started at the hospital.

Please tick appropriate box

Improved ☐ Stayed the same ☐ Worse ☐

Why? .....

.....

.....

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.....

.....

8. How would you rate the overall service provided by this hospital's pharmacy?

Please give a **SCORE** between 0 and 10, where 0= very poor service (i.e. lowest rating) and 10= excellent service (i.e. highest rating).

**SCORE**

Please give the reason for your score.

.....

.....

.....

.....

.....

9. How would you rate the pharmacist as a member of the health team in this hospital?

Please give a **SCORE** between 0 and 10 where 0 = not at all important (i.e. lowest rating) and 10 = very important (i.e. highest rating)

**SCORE**

Please give the reason for your score.

.....

.....

.....

.....

.....

.....

10. Please tell us a little about your background for statistical purposes.

Are you? Male ☐

Female ☐

Please tick the box corresponding to your age group.

Under 20 ☐ 20-29 ☐ 30-39 ☐ 40-49 ☐ 50-59 ☐ 60-70 ☐ over 70 ☐ years

How long have you been practicing in hospital pharmacy? .....years

Which year were you registered as a pharmacist? 19.....

Do you work full-time? ☐ part-time? ☐

Please list your qualifications and the college/ university/ conferring body where they were obtained (e.g. BSc Melbourne) and the year.

Degrees/ Diplomas	Institution / Conferring body	Year
.....	.....	.....
.....	.....	.....
.....	.....	.....
.....	.....	.....
.....	.....	.....

10. Do you remember completing a similar survey to this one. (from the Victorian College of Pharmacy, Monash University), six years ago? (Please tick one option)

Yes ☐ No ☐ Don't know ☐

11. Please comment here if there are any other points that you wish to make regarding the services provided or changes to services provided by this hospital's pharmacy department.

.....

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.....

**THANKYOU FOR YOUR TIME AND COOPERATION**



AUSTRALIA

VICTORIAN COLLEGE OF PHARMACY

3004

<b>To the survey distributor</b>	
<b>Does this ward have a clinical ward pharmacy service?</b>	
<b>(tick one please)</b>	
Yes <input type="checkbox"/>	No <input type="checkbox"/>

# **VICTORIAN HOSPITAL PHARMACY SURVEY**

## **INPATIENT QUESTIONNAIRE**

**VICTORIAN COLLEGE OF PHARMACY  
MONASH UNIVERSITY  
381 ROYAL PARADE,  
PARKVILLE,  
VICTORIA, 3052**

Should you have any complaint concerning the manner in which this research (Project number 99/331) is conducted, please do not hesitate to contact The Standing Committee on Ethics in Research on Humans at the following address:

The Secretary  
The Standing Committee on Ethics in Research on Humans  
Monash University  
Wellington Road  
Clayton Victoria 3168  
Telephone (03) 9905 2052 Fax (03) 9905 1420



VICTORIAN COLLEGE OF PHARMACY  
Office of the Dean

14 October 1999

Dear Patient,

The Victorian College of Pharmacy, with the support and approval of your hospital pharmacy department, is currently conducting a research project examining customer service in Victorian hospital pharmacies. The ultimate purpose of this study is to provide information which will assist the ongoing development of pharmacy services to you.

It is important that we have your feedback in order to tell us how hospital pharmacies can best meet the needs of the users of the pharmacy services in the future. All the questions in this questionnaire refer to the pharmacy at THIS hospital.

Please complete the attached questionnaire, place it in the envelope enclosed and then either return it to the person who gave you the questionnaire so they can send it back to the Victorian College of Pharmacy or send the completed questionnaire directly to us in the enclosed envelope.

It will take only a few minutes of your time to answer the questions. This survey is strictly CONFIDENTIAL and individuals, departments and hospitals will not be identified. The questionnaire is voluntary. However, since only a relatively small number of people are being surveyed, your participation is important.

Thank you in advance for your assistance.

Yours sincerely,

(Prof) C B Chapman  
Dean  
Victorian College of Pharmacy

## VICTORIAN HOSPITAL PHARMACY SURVEY

### INPATIENTS

Please enter today's date      Day      Month      Year  
           

**Please note: All questions in this questionnaire refer to the pharmacy at THIS hospital**

1. What is the name of this hospital? .....

2. Do you know whether a pharmacist regularly visits this ward?

(Please tick the appropriate box)

Yes ☐

No ☐ → IF NO, GO TO QUESTION 6

3. Have you met the pharmacist working in this ward?

(Please tick the appropriate box)

Yes ☐

No ☐ → IF NO, GO TO QUESTION 6

4. What do you think the pharmacist does in the ward?

.....

.....

.....

.....

.....

.....

5. How would you **rate** the ward pharmacist's performance on the following measures?

Please give a **NUMBER** between 0 and 10, where 0 is very poor (i.e. lowest rating) and 10 is excellent (i.e. the highest rating).

	Rating (a number between 0 and 10)	Don't know (tick box only)
Helpfulness of the pharmacist .....	<input type="text"/>	<input type="checkbox"/>
Friendliness of the pharmacist .....	<input type="text"/>	<input type="checkbox"/>
Cooperation of the pharmacist .....	<input type="text"/>	<input type="checkbox"/>
Advice given about how to take drugs/ medicines	<input type="text"/>	<input type="checkbox"/>
Advice given about your medication .....	<input type="text"/>	<input type="checkbox"/>
Overall information provided by the pharmacist to you	<input type="text"/>	<input type="checkbox"/>
Understanding the needs of the patient (your needs)	<input type="text"/>	<input type="checkbox"/>
The availability of the pharmacist to answer your questions	<input type="text"/>	<input type="checkbox"/>

6. When did you last speak with a pharmacist at **this** hospital?

(Please tick the appropriate box)

Never .....	<input type="checkbox"/>	→ IF NEVER, GO TO QUESTION 8
Today .....	<input type="checkbox"/>	
Yesterday .....	<input type="checkbox"/>	
If none of the above, please specify how long ago? .....		

7. What did you ask the hospital pharmacist related to your health needs, treatment and medicine?

.....

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8. What services or information do you want from the pharmacy at **THIS** hospital?

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.....

.....

9. Please tell us how you would suggest/ think the pharmacy's service to you in the ward could be **improved**?

.....

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.....

.....

.....

.....



10. Are you taking any medicines while in hospital?

Yes ☐

No ☐ → IF NO, GO TO QUESTION 15

11. Who gives you your medicines in this hospital?

(Please tick as many boxes as appropriate)

Yourself ..... ☐

Doctor ..... ☐

Pharmacist ..... ☐

Nurse ..... ☐

Other, please specify .....

12. Who explained to you how to use the medicines?

(please tick as many boxes as appropriate)

Nobody ..... ☐ → IF NOBODY, GO TO QUESTION 14

Doctor ..... ☐

Pharmacist ..... ☐

Nurse ..... ☐

Other, please specify .....

13. Please **rate** how well you understand the instructions on using your medicines.

Please list a **number** between 0 and 10, where 0 is 'no understanding' and 10 is 'perfectly clear explanation'

Rating

14. How do you think the explanation about your medicines could be improved?

.....  
.....  
.....  
.....  
.....

15. Now, please tell us a little about your background for statistical purposes.

Are you? Male ☐ Female ☐

Please tick the box corresponding to your age group.

Under 20 ☐ 20-29 ☐ 30-39 ☐ 40-49 ☐ 50-59 ☐ 60-70 ☐ over 70 ☐ years

What language /s do you speak at home? .....

Which suburb do you live in? ..... Postcode .....

How long have you been an inpatient in this hospital?

(Please tick the appropriate box)

One day ..... ☐

Two to three days ..... ☐

Four to seven days ..... ☐

More than seven days ..... ☐ How long? ..... days

**THANKYOU FOR YOUR TIME AND COOPERATION**



## **VICTORIAN HOSPITAL PHARMACY SURVEY**

### **OUTPATIENT QUESTIONNAIRE**

**VICTORIAN COLLEGE OF PHARMACY  
MONASH UNIVERSITY  
381 ROYAL PARADE,  
PARKVILLE,  
VICTORIA, 3052**

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The Standing Committee on Ethics in Research on Humans  
Monash University  
Wellington Road  
Clayton Victoria 3168  
Telephone (03) 9905 2052 Fax (03) 9905 1420



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Office of the Dean

14 October 1999

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Thank you in advance for your assistance.

Yours sincerely,

(Prof) C B Chapman  
Dean  
Victorian College of Pharmacy

## VICTORIAN HOSPITAL PHARMACY SURVEY

### OUTPATIENTS

Please enter today's date      Day      Month      Year  
           

**Please note: All questions in this questionnaire refer to the pharmacy at THIS hospital**

1. What is the name of this hospital? .....

2. When did you last use the pharmacy at this hospital?

(Please tick the appropriate box)

- Never before today ..... ☐  
 Within the last month ..... ☐  
 Between 2 to 6 months ago ..... ☐  
 Between 7 to 12 months ago ..... ☐  
 Over 12 months ago ..... ☐

3. What did you require on that occasion?

(Please tick the appropriate box or boxes)

- To obtain a prescription ..... ☐  
 Drug/ medicine information ..... ☐  
 Advice on medication ..... ☐  
 Medical information ..... ☐  
 Other, please specify .....

4. If you had a prescription, where did you wait whilst it was being prepared?

(Please tick the appropriate box)

- Did not wait - (dropped prescription off and picked it up later) ☐  
 Pharmacy waiting room ..... ☐  
 Corridor ..... ☐  
 Kiosk ..... ☐  
 Other, please specify .....

5. How long from the time you arrived at the pharmacy did you wait until you received your prescription?

(Please tick the appropriate box)

less than 5 minutes .....	<input type="checkbox"/>
5 to 10 minutes .....	<input type="checkbox"/>
11 minutes to 20 minutes .....	<input type="checkbox"/>
21 minutes to 30 minutes .....	<input type="checkbox"/>
31 minutes to 45 minutes .....	<input type="checkbox"/>
46 minutes to 1 hour .....	<input type="checkbox"/>
more than 1 hour, up to 1 hour 30 minutes .....	<input type="checkbox"/>
more than 1 hour 30 minutes, up to 2 hours .....	<input type="checkbox"/>
if more than 2 hours, how long? .....	hours ..... minutes

6. How **important** are the following pharmacy services to you?

Please give a **NUMBER** between 0 and 10, where 0 is not at all important (i.e. worst rating) and 10 is very important (i.e. best rating).

	Score
Time taken for prescription to be filled .....	<input type="text"/>
Advice given on medication .....	<input type="text"/>
Friendliness of staff .....	<input type="text"/>
Cooperation of staff .....	<input type="text"/>
Overall information provided by the pharmacist .....	<input type="text"/>
Understanding the needs of the patient (your needs) .....	<input type="text"/>
Waiting room facilities .....	<input type="text"/>
Presentation of the medicines i.e. information on labels .....	<input type="text"/>
and appearance of label	
The time the pharmacy department is open for service to the public	<input type="text"/>
The care taken by the pharmacy to dispense your prescription .....	<input type="text"/>

Are there any other pharmacy services that are important to you? (Please list)

.....

.....

7. Now, how would you **rate** this pharmacy's performance on the following measures?

Please give a **NUMBER** between 0 and 10 where 0 is very poor (i.e. worst rating) and 10 is excellent (i.e. best rating)

	Rating	Don't know
Time taken for prescription to be filled .....	<input type="text"/>	<input type="checkbox"/>
Advice given on medication .....	<input type="text"/>	<input type="checkbox"/>
Friendliness of staff .....	<input type="text"/>	<input type="checkbox"/>
Cooperation of staff .....	<input type="text"/>	<input type="checkbox"/>
Overall information provided by the pharmacist .....	<input type="text"/>	<input type="checkbox"/>
Understanding the needs of the patient (your needs) ....	<input type="text"/>	<input type="checkbox"/>
Waiting room facilities .....	<input type="text"/>	<input type="checkbox"/>
Presentation of the medicines i.e. information on labels and appearance of label	<input type="text"/>	<input type="checkbox"/>
The time the pharmacy department is open for service to the public	<input type="text"/>	<input type="checkbox"/>
The care taken by the pharmacy to dispense your prescription	<input type="text"/>	<input type="checkbox"/>

8. How many times in the last month did you telephone the pharmacy department for information on medications?

(Please tick the appropriate box)

Never .....	<input type="checkbox"/>
Once .....	<input type="checkbox"/>
Twice .....	<input type="checkbox"/>
If more than twice, how often? .....	

9. Why do you use this hospital pharmacy?

.....

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10. What services or information do you want from the pharmacy at this hospital?

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11. Please tell us how this hospital's pharmacy service to you could be improved?

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12. Now, please tell us a little about your background for statistical purposes.

Are you?    Male    ☐    Female    ☐

Please tick the box corresponding to your age group.

Under 20 ☐    20-29 ☐    30-39 ☐    40-49 ☐    50-59 ☐    60-70 ☐    Over 70 ☐ years

What language/s do you speak at home? .....

How long have you been coming to this hospital as a patient?

(Please tick box)

less than 6 months ..... ☐  
6 months to 1 year ..... ☐  
More than 1 year to 2 years ..... ☐  
More than 2 years, please specify how many years ..... years

How did you arrive at the hospital today?

(Please tick box)

Walk ..... ☐  
Public transport ..... ☐  
Private car - driver ☐    passenger ☐  
Taxi ..... ☐  
Ambulance ..... ☐

Which suburb do you live in? ..... Postcode .....

Today, did you attend

An outpatient clinic ..... ☐  
Casualty / emergency? ..... ☐  
Private consulting rooms? ..... ☐  
Day procedure? ..... ☐  
Other, please specify .....

**THANYKOU FOR YOUR TIME AND COOPERATION**

## APPENDIX 4

- (a) Performance ratings for each measure of customer service in 1999/2000.
- (b) Some reasons given by doctors, nurses and pharmacists for their scores rating the importance of the pharmacist as a member of the healthcare team in 1999/2000.
- (c) Some reasons given by pharmacists, doctors and nurses for their scores rating the overall service provided by the hospital pharmacy in 1999/2000.
- (d) Some comments made by pharmacists, doctors and nurses about why they thought the hospital's pharmacy service had improved, stayed the same or was worse in 1999/2000.
- (e) Factors identified by pharmacists, doctors and nurses as having contributed to pharmacy services changing and their effects in 1999/2000.

(a) Frequency diagrams showing the performance ratings for each measure of customer service in 1999/2000

Figure A4.1 Rating of the performance of the pharmacy service for cooperation of the pharmacy staff to users of the service (1999/2000)

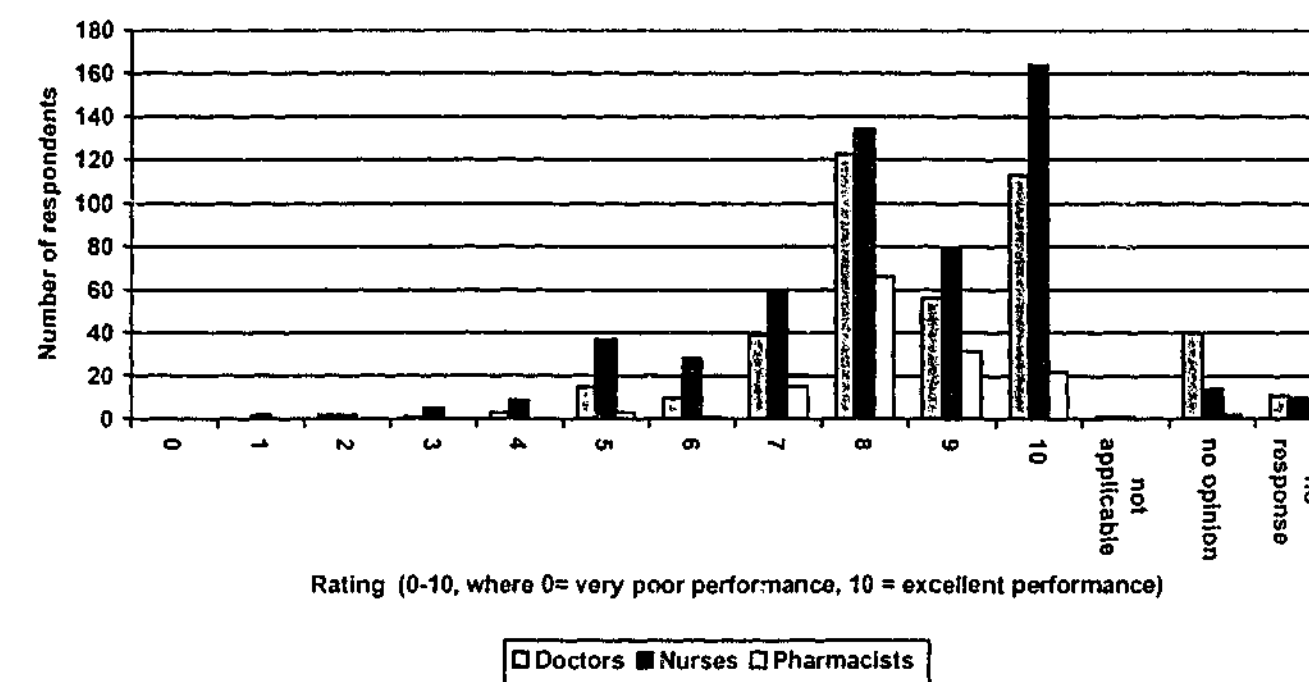


Figure A4.2 Rating of performance of the pharmacy service on friendliness of the pharmacy staff to users of the service (1999/2000)

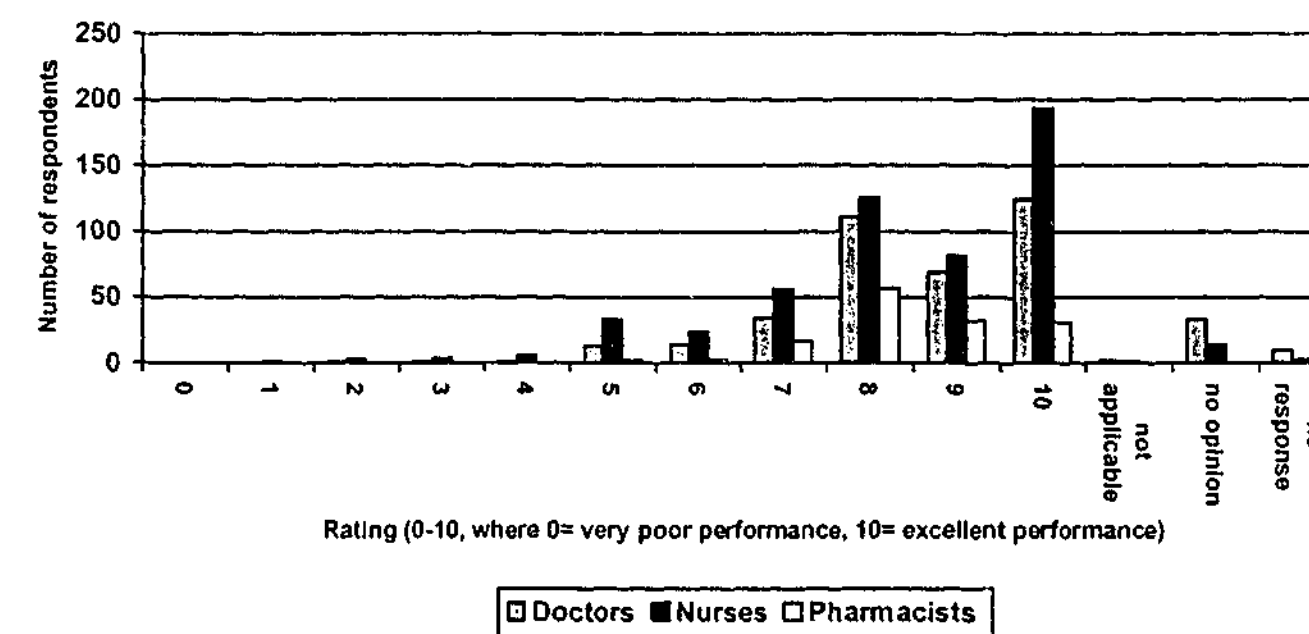


Figure A4.3 Rating of performance of the pharmacy service on medical knowledge of the pharmacists (1999/2000)

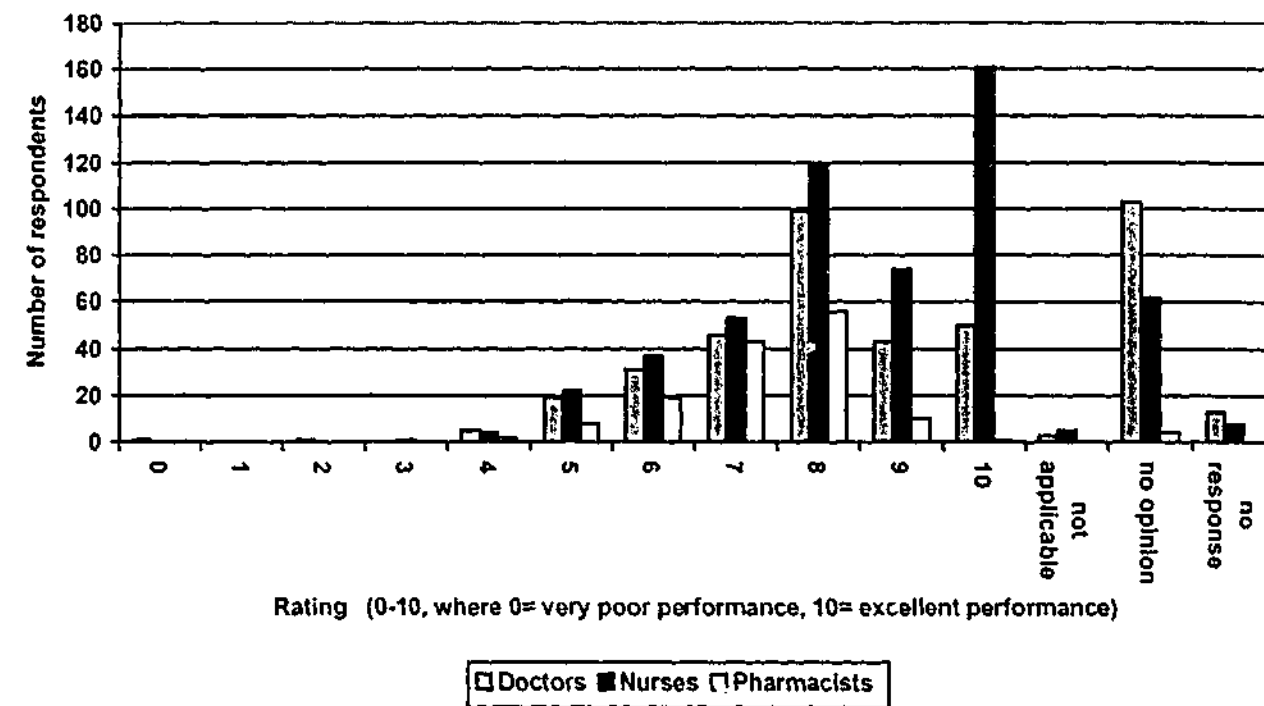


Figure A4.4 Rating of performance of the pharmacy service on the pharmaceutical knowledge of the pharmacist (1999/2000)

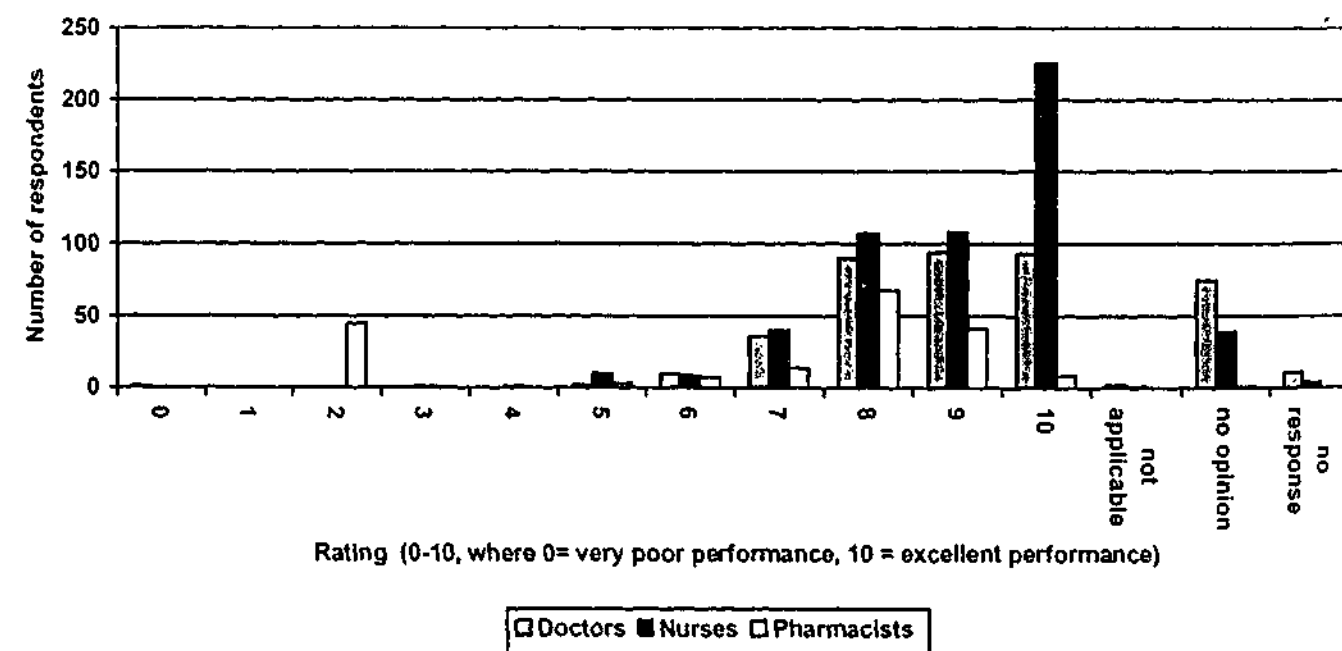


Figure A4.5 Rating of performance of the pharmacy service on drug information service provided (1999/2000)

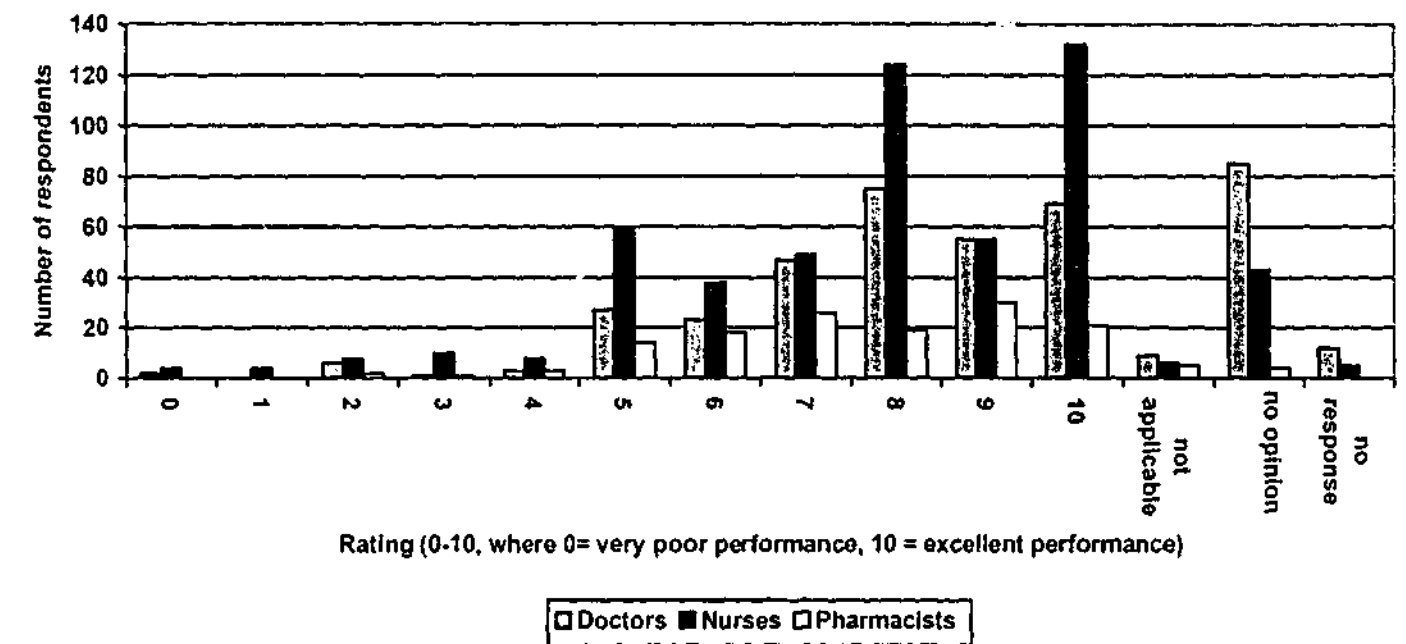


Figure A4.6 Rating of performance of the pharmacy service on advice given on drug information queries (1999/2000)

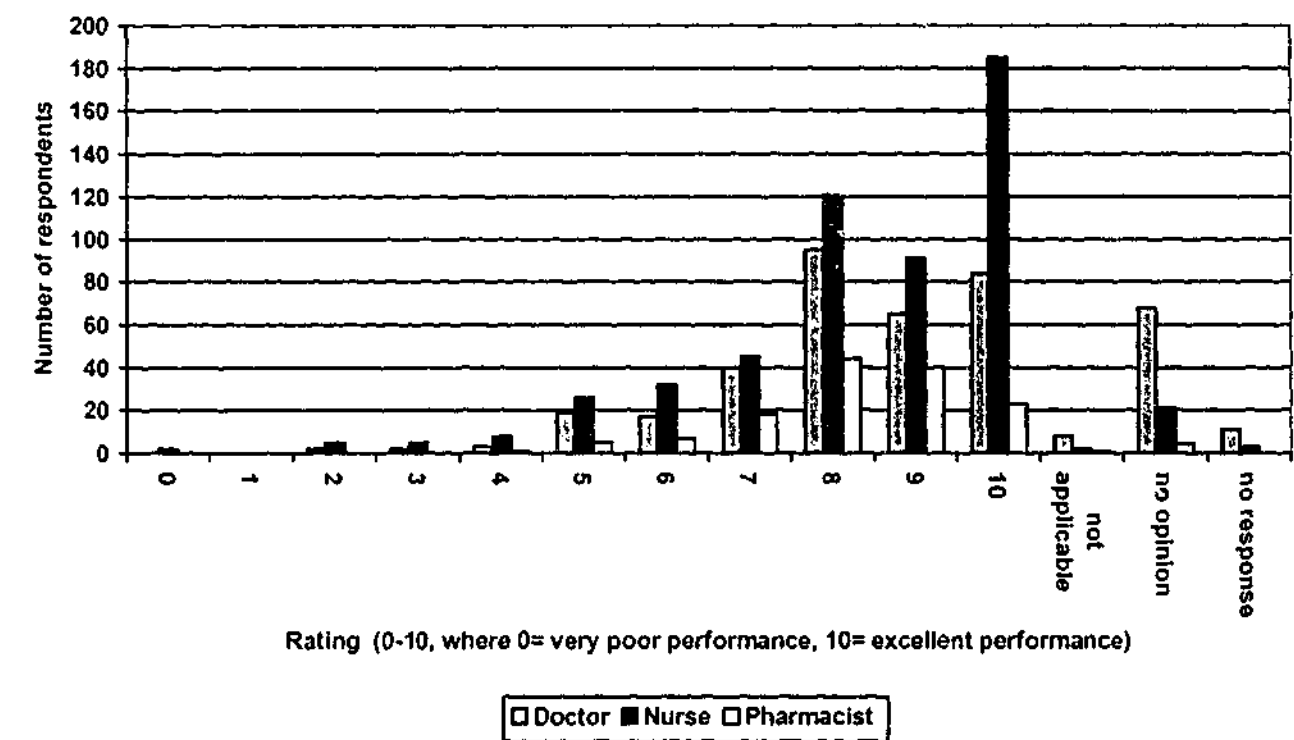




Figure A4.7 Rating of performance of the pharmacy service on timeliness of response to drug information queries (1999/2000)

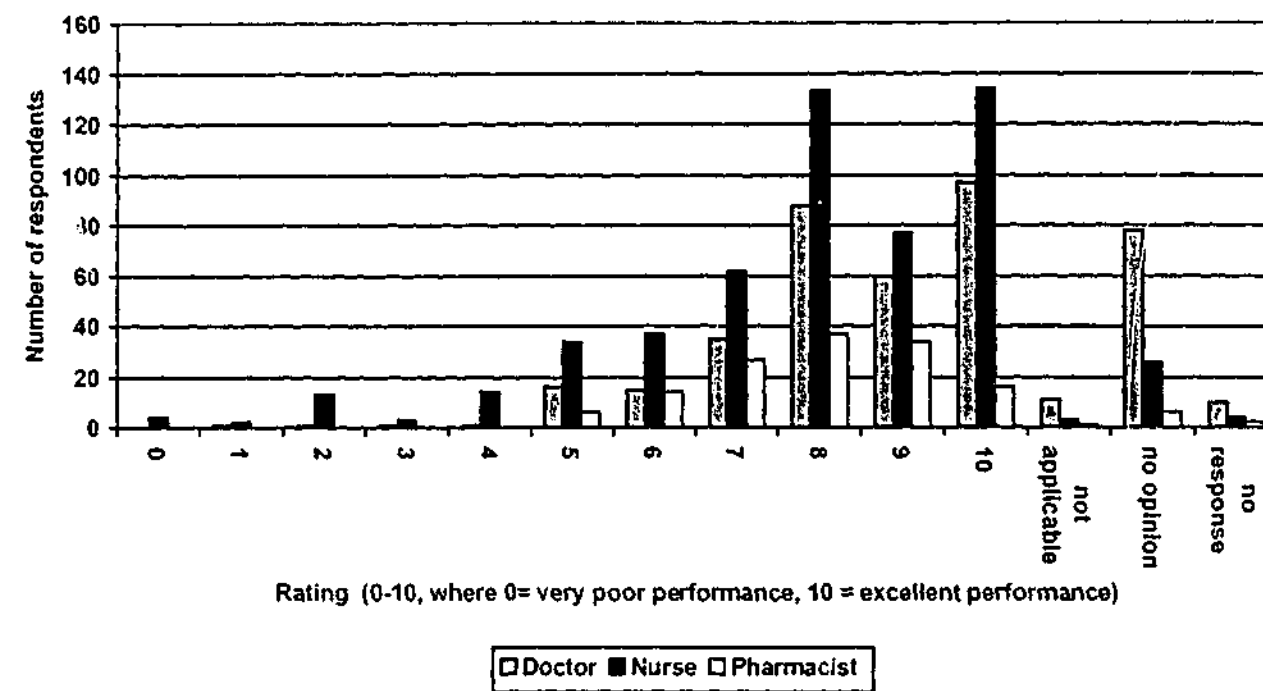


Figure A4.8 Rating of the performance of the pharmacy service on advice given on general queries (1999/2000)

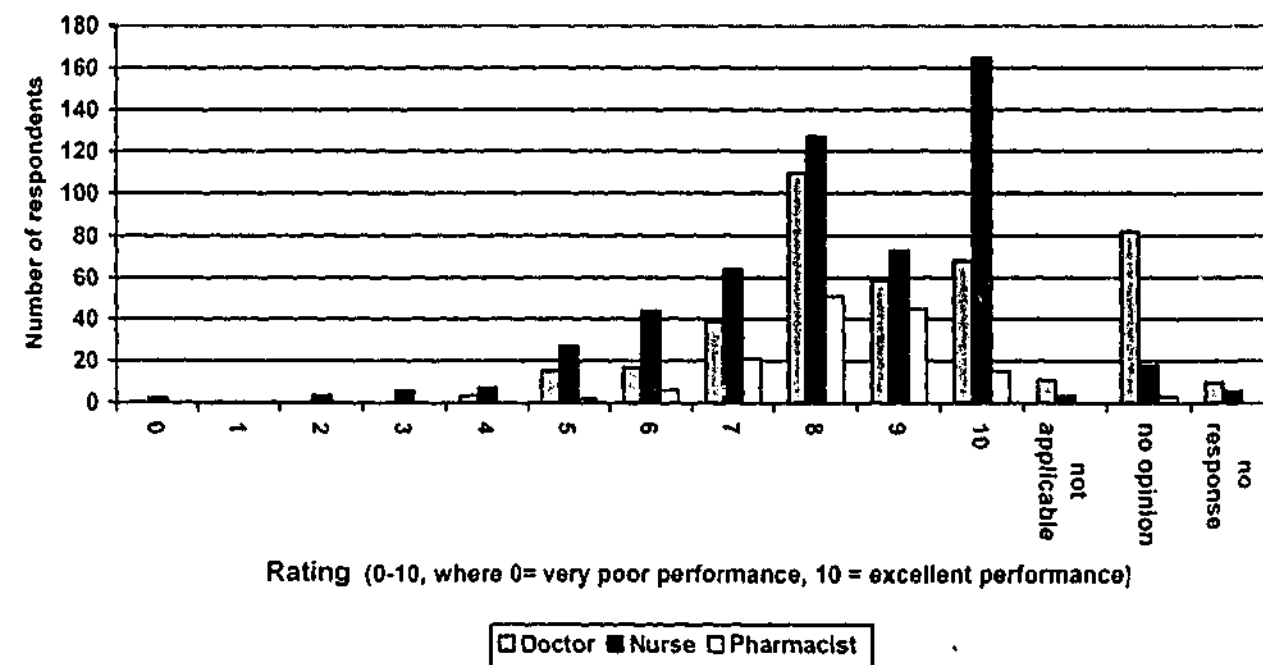


Figure A4.9 Rating of the performance of the pharmacy service on timeliness of response to general queries (1999/2000)

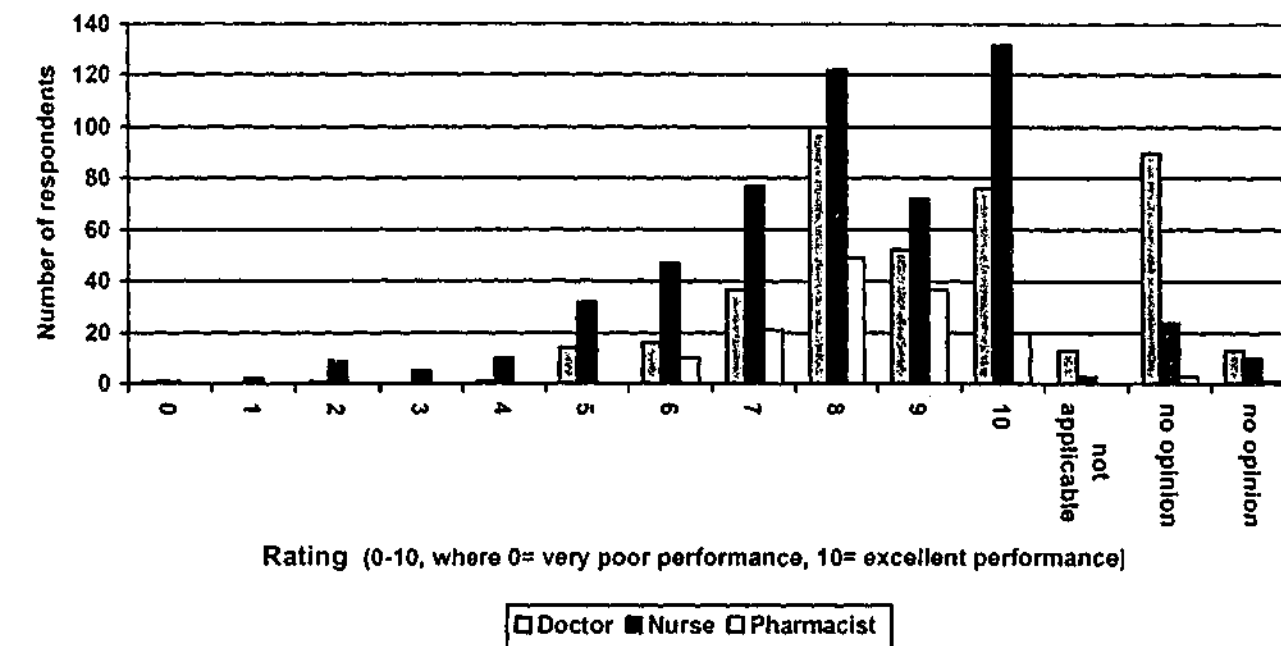


Figure A4.10 Rating of the performance of the pharmacy service on participation in ward rounds (1999/2000)

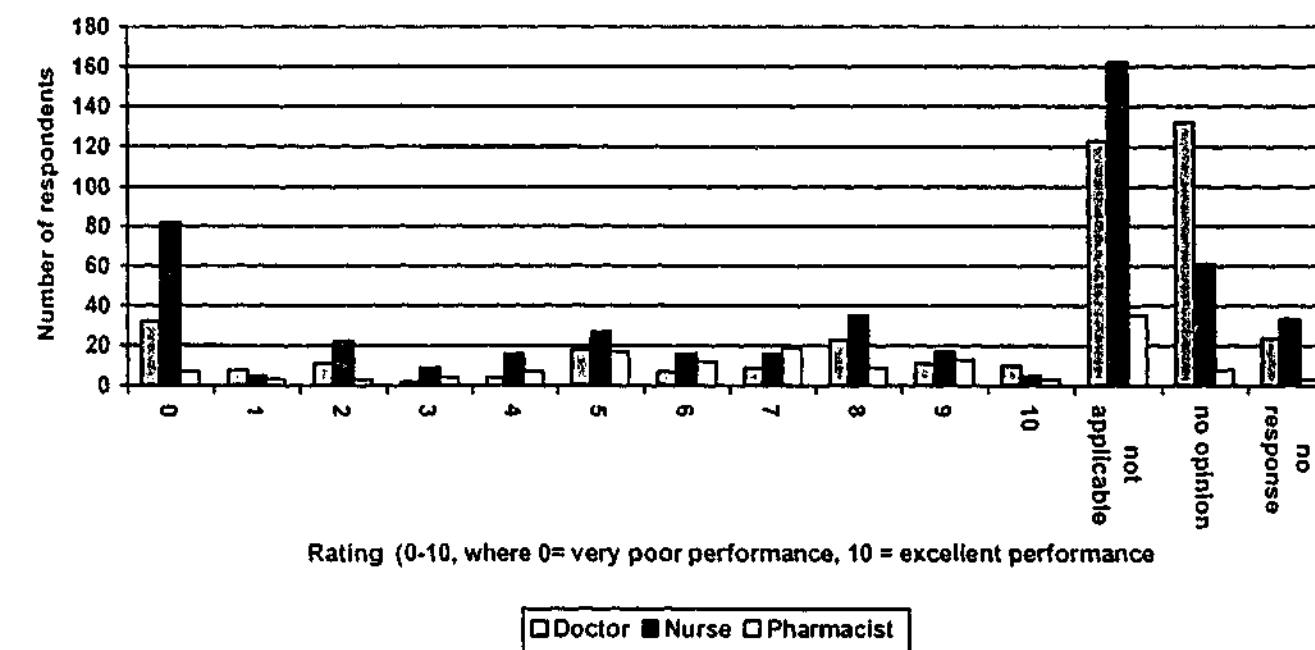


Figure A4.15 Rating of performance of the pharmacy service on the therapeutic drug monitoring service (pharmacokinetic) (1999/2000)

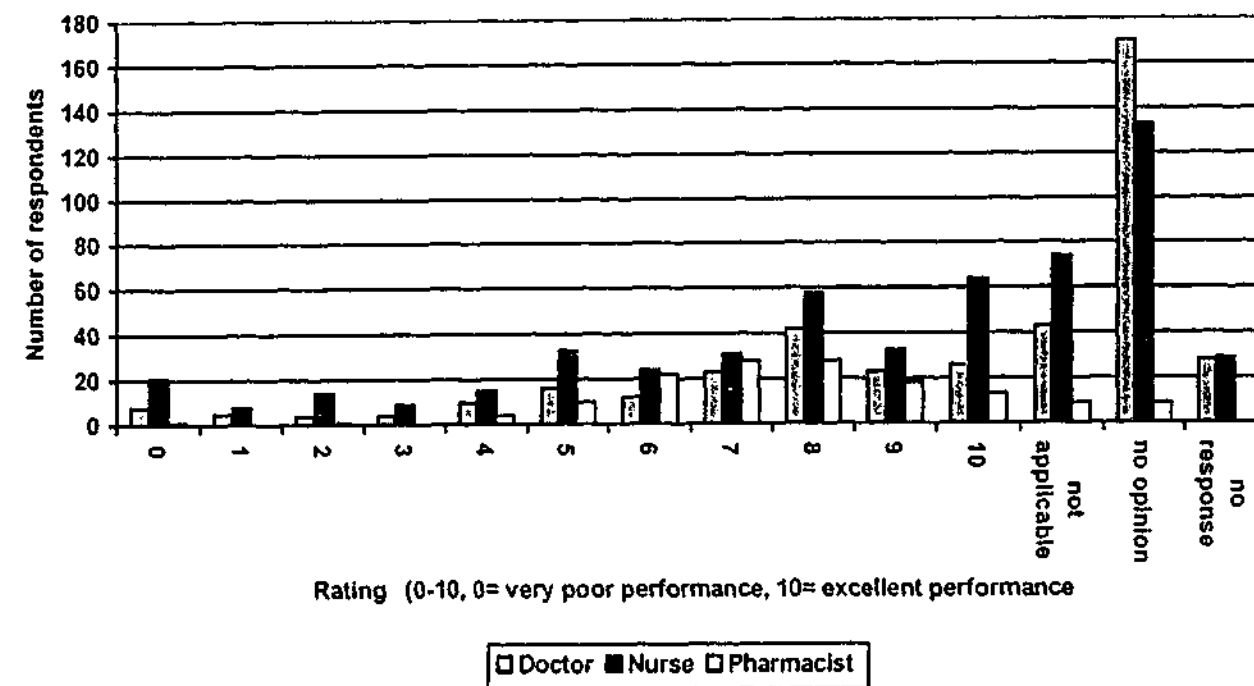


Figure A4.16 Rating of performance of the pharmacy service on understanding and knowing the needs of the users (1999/2000)

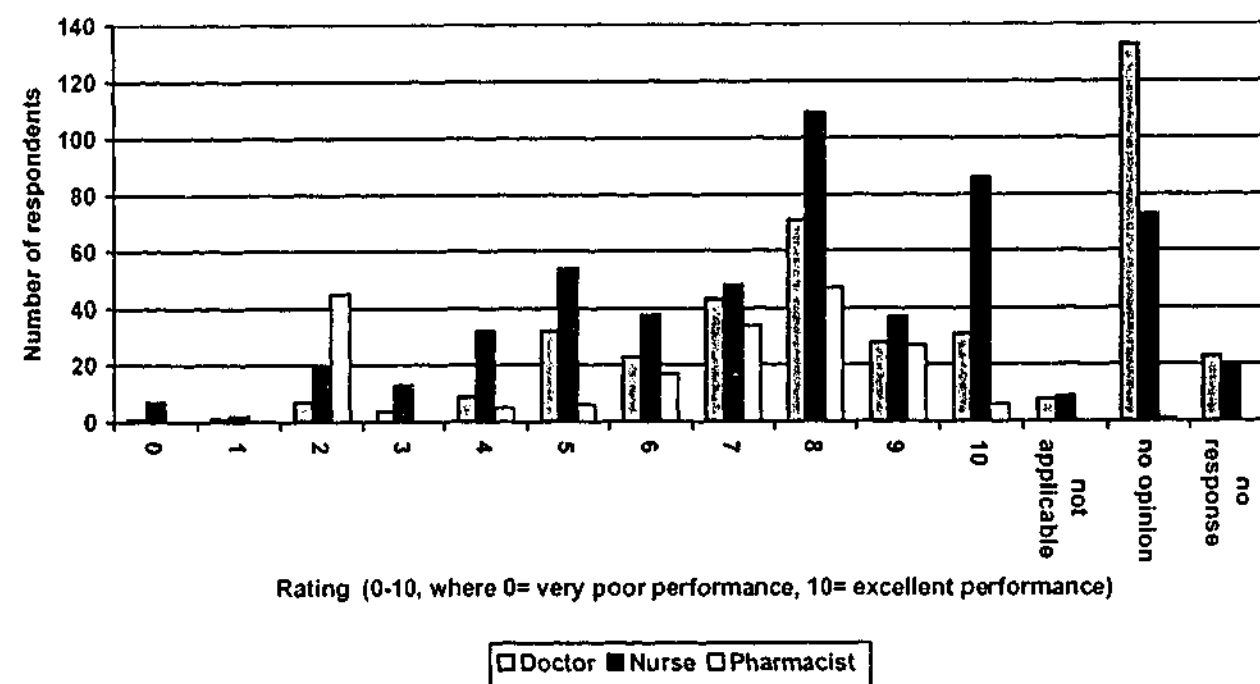


Figure A4.17 Rating of performance of the pharmacy service on efficiency of the pharmacy service (1999/2000)

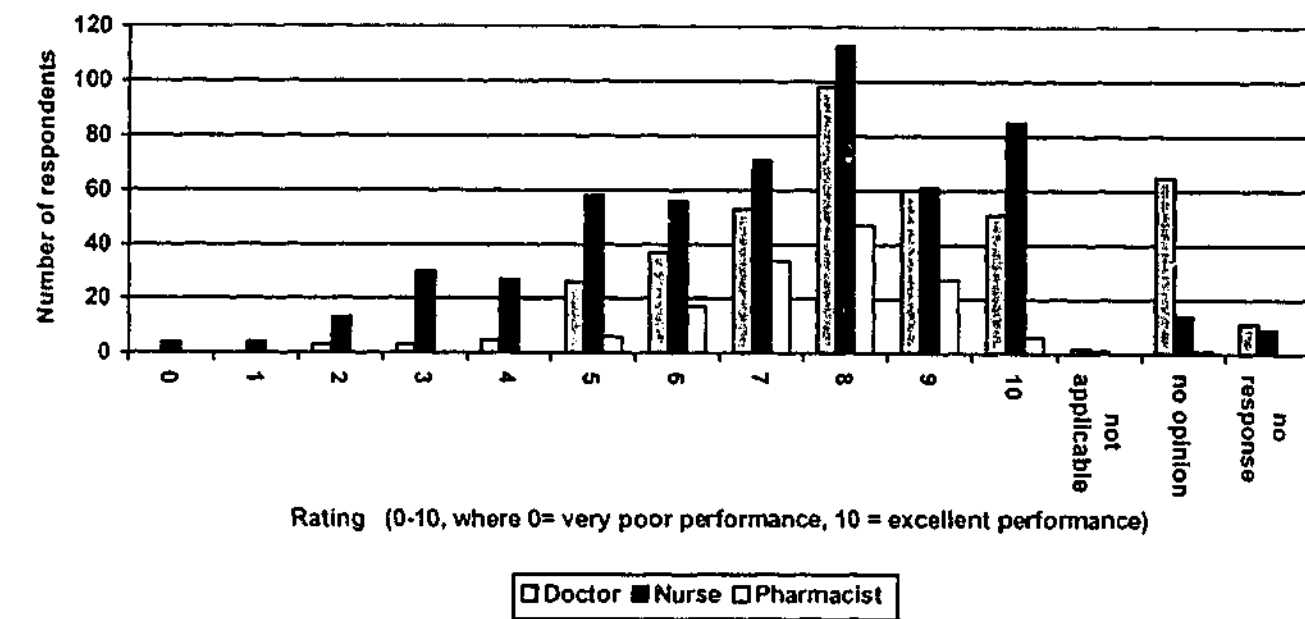


Figure A4.18 Rating of the performance of the pharmacy service on accuracy of dispensing (1999/2000)

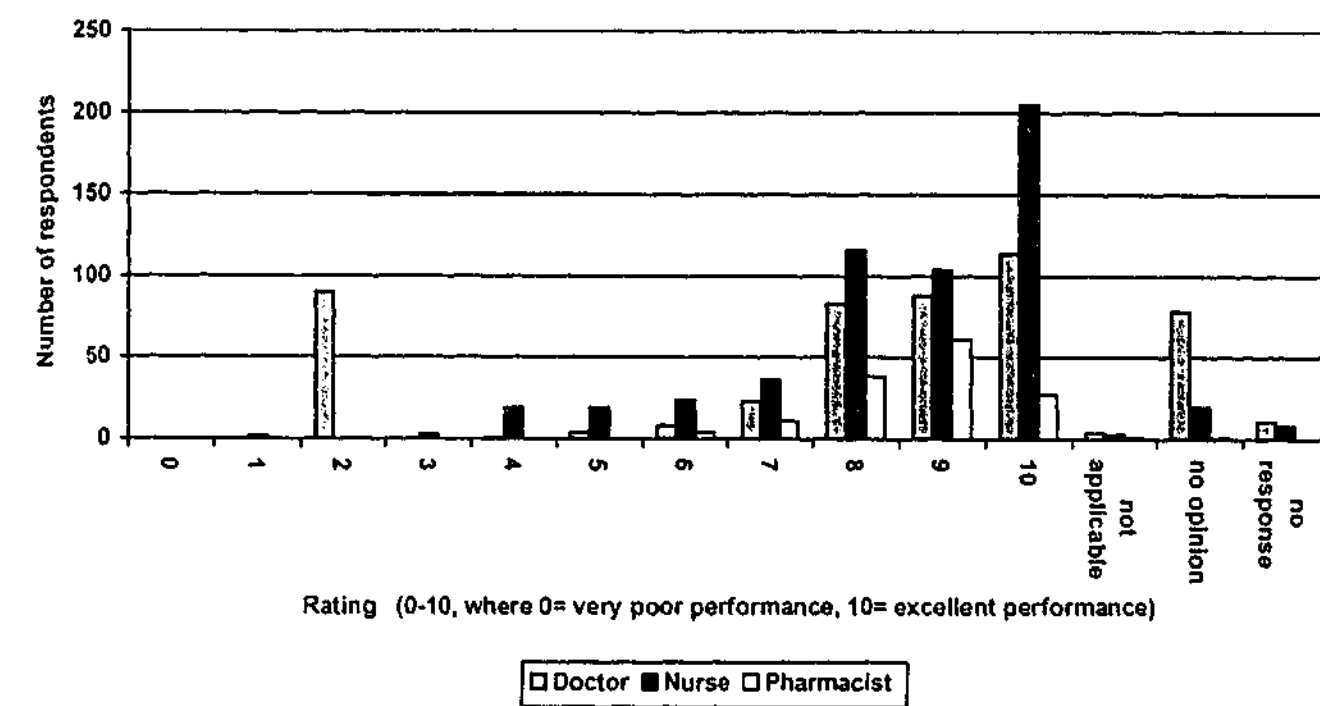


Figure A4.19 Rating of performance of the pharmacy service on discharge dispensing (1999/2000)

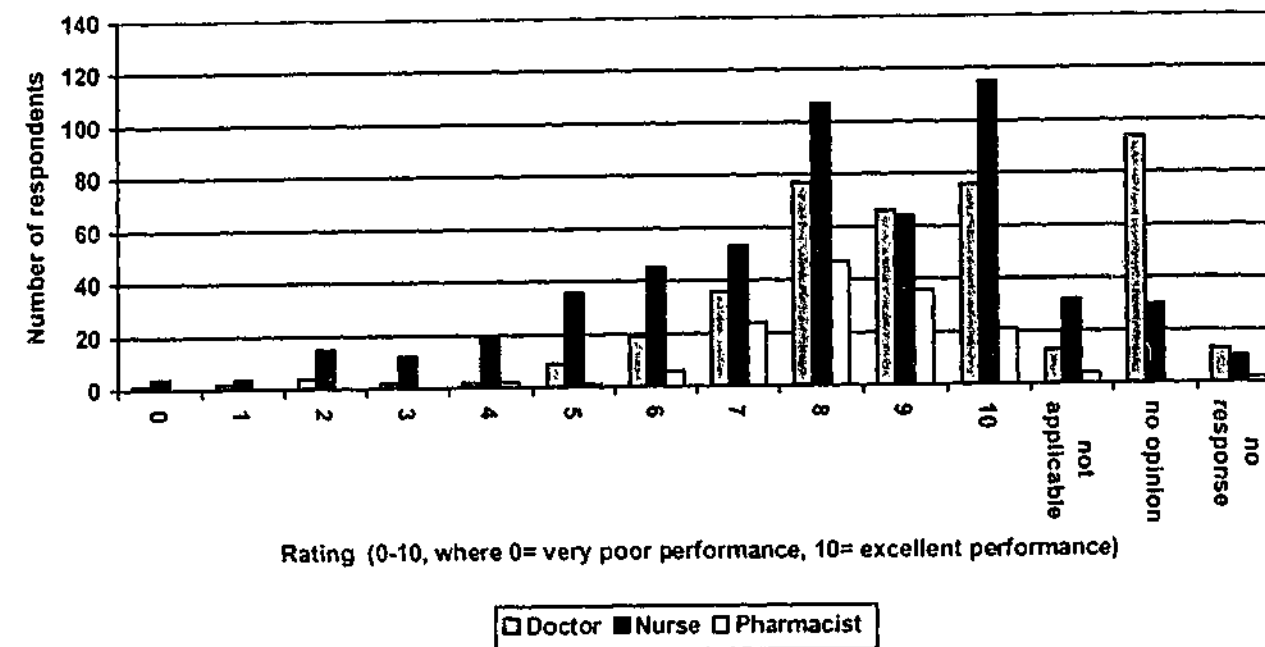


Figure A4.20 Rating of performance of the pharmacy service on timeliness of provision of medication (1999/2000)

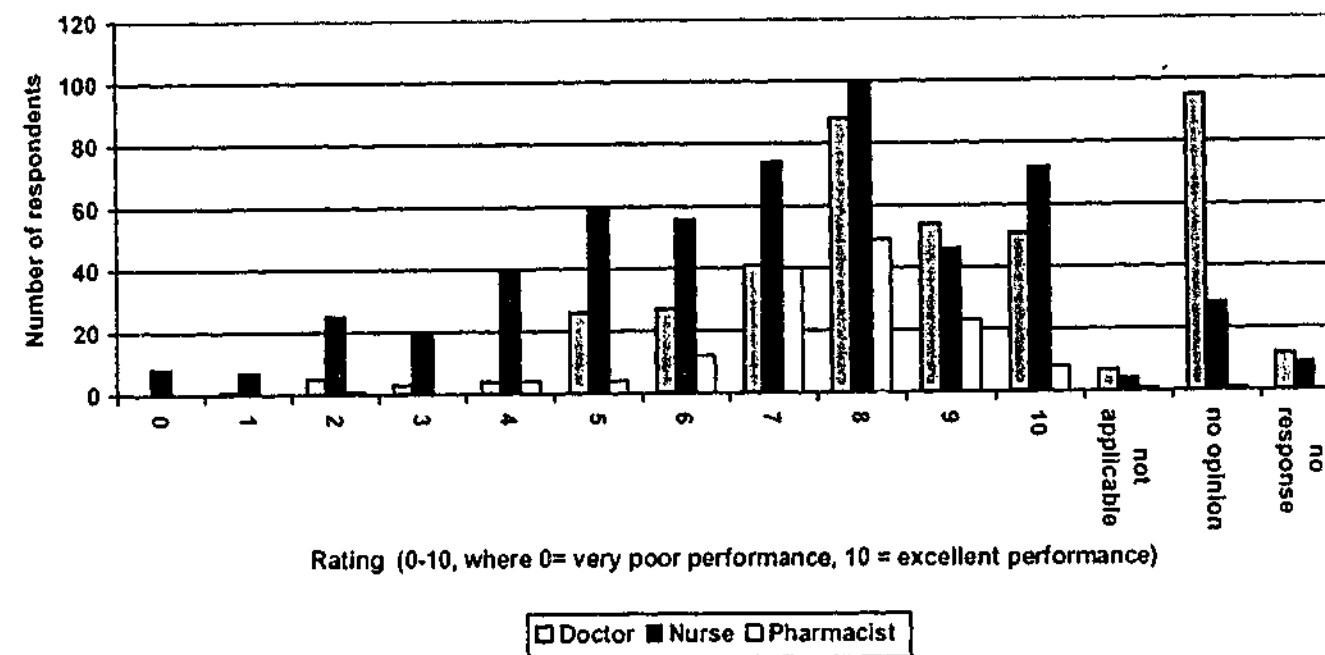


Figure A4.21 Rating of performance of the pharmacy service on presentation of medicines (1999/2000)

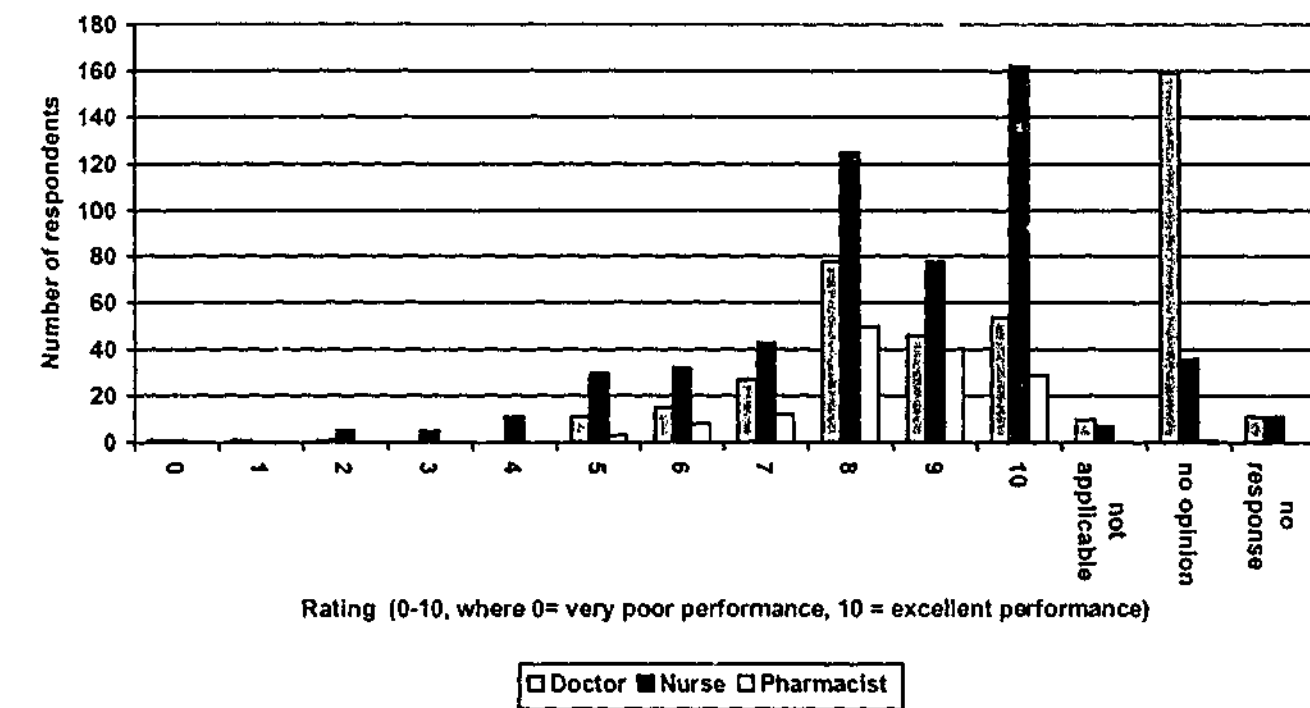


Figure A4.22 Rating of performance of the pharmacy service on availability of stock (1999/2000)

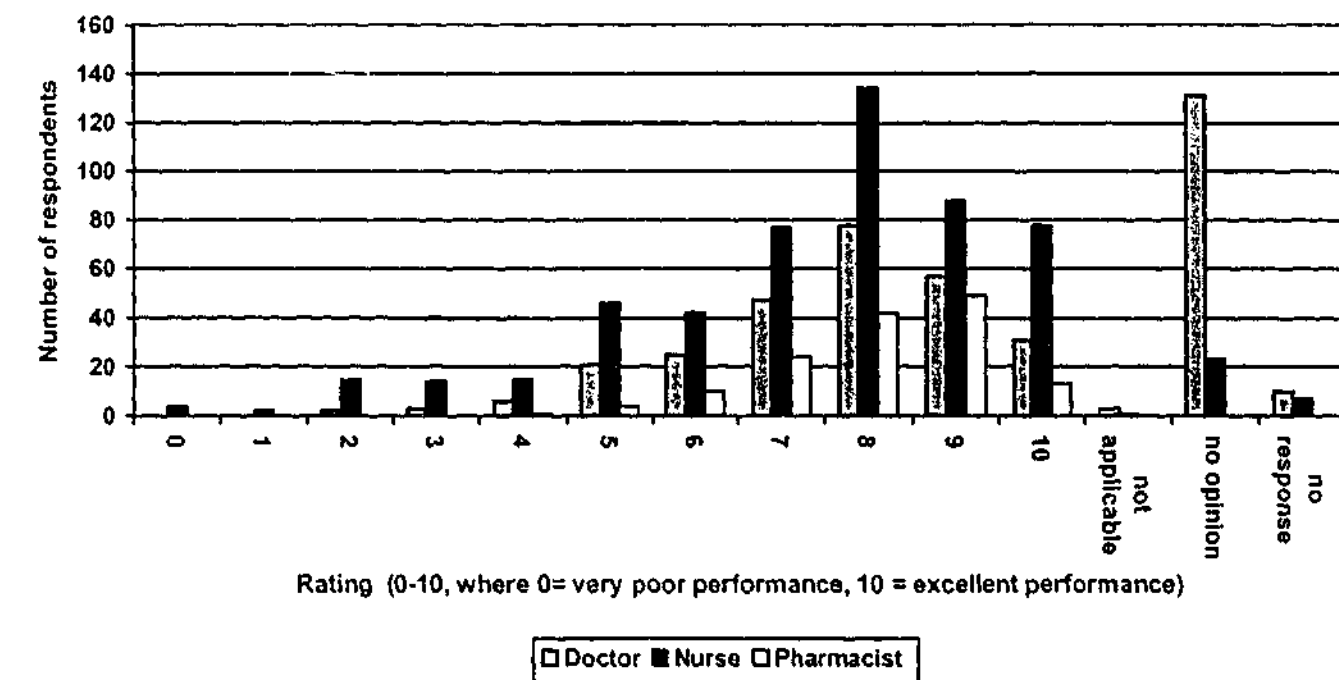


Figure A4.23 Rating of performance of the pharmacy service on sterile manufacturing- intravenous preparations (1999/2000)

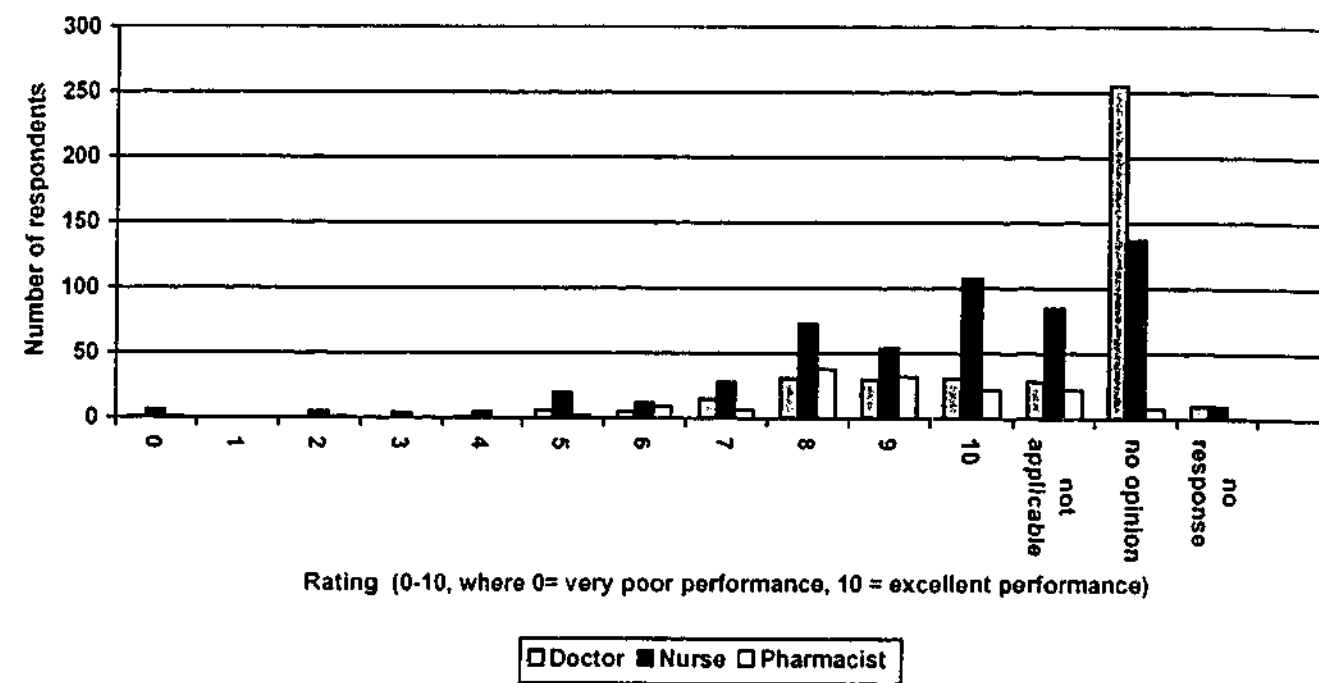


Figure A4.24 Rating of performance of the pharmacy service on sterile manufacturing- cytotoxics (1999/2000)

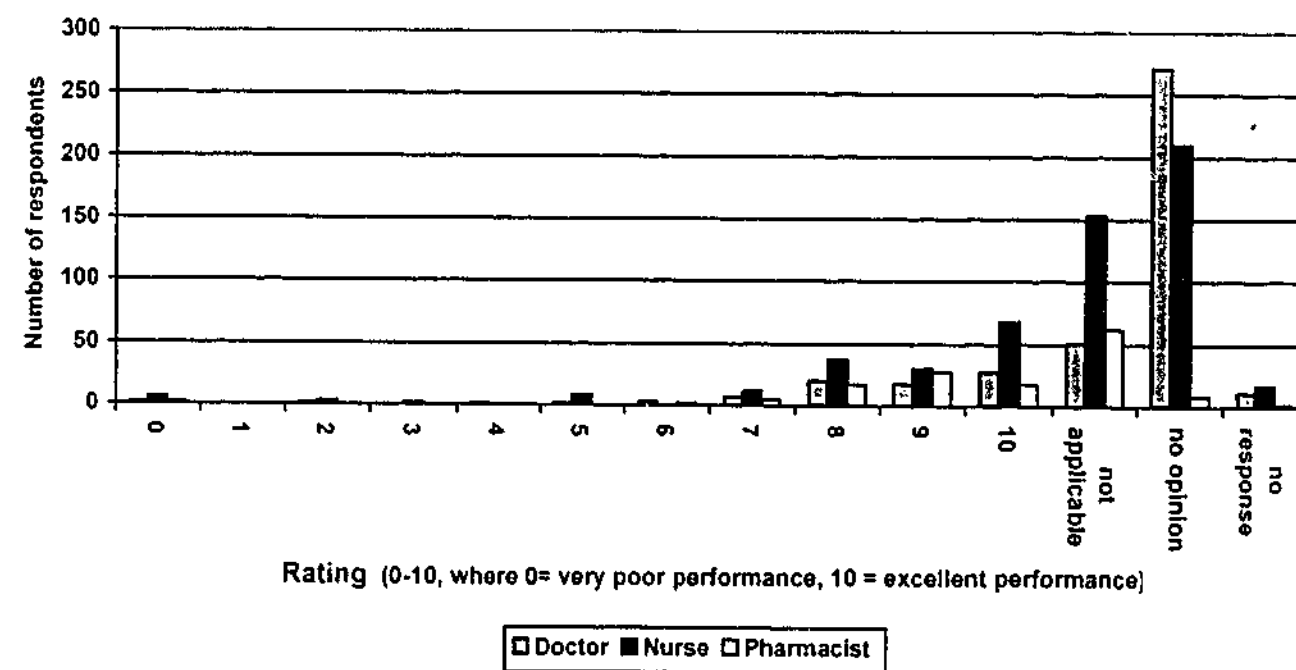


Figure A4.25 Rating of the performance of the pharmacy service on discharge medication counselling of patients (1999/2000)

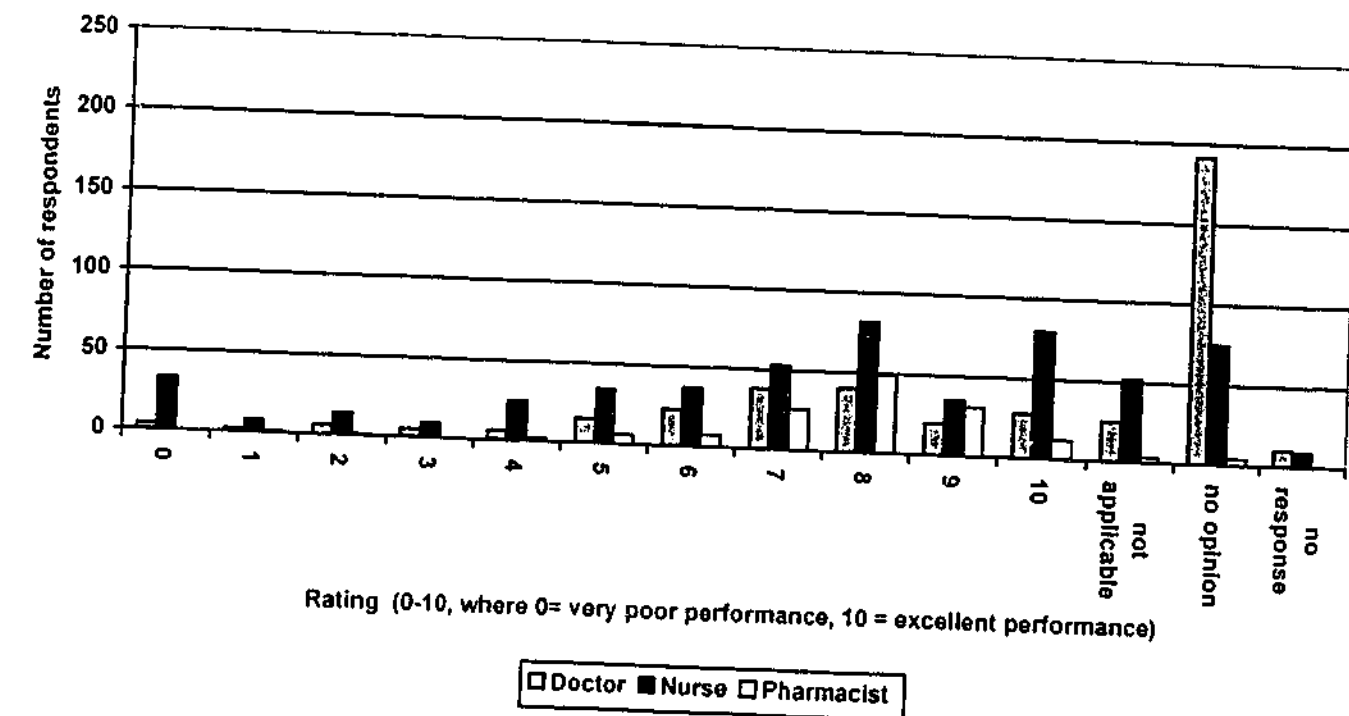


Figure A4.26 Rating of the performance of the pharmacy service on patient information and education on drugs/ medicines (1999/2000)

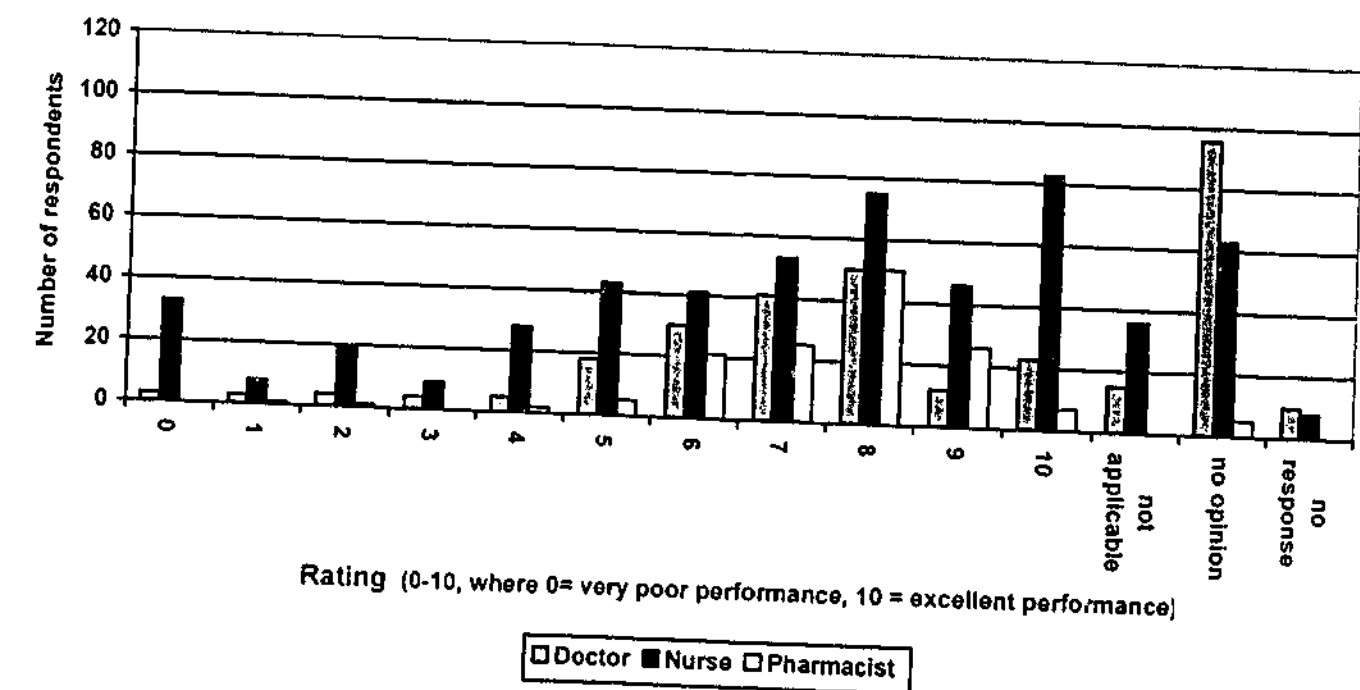


Figure A4.27 Rating of performance of the pharmacy service on drug education for hospital staff- informal (1999/2000)

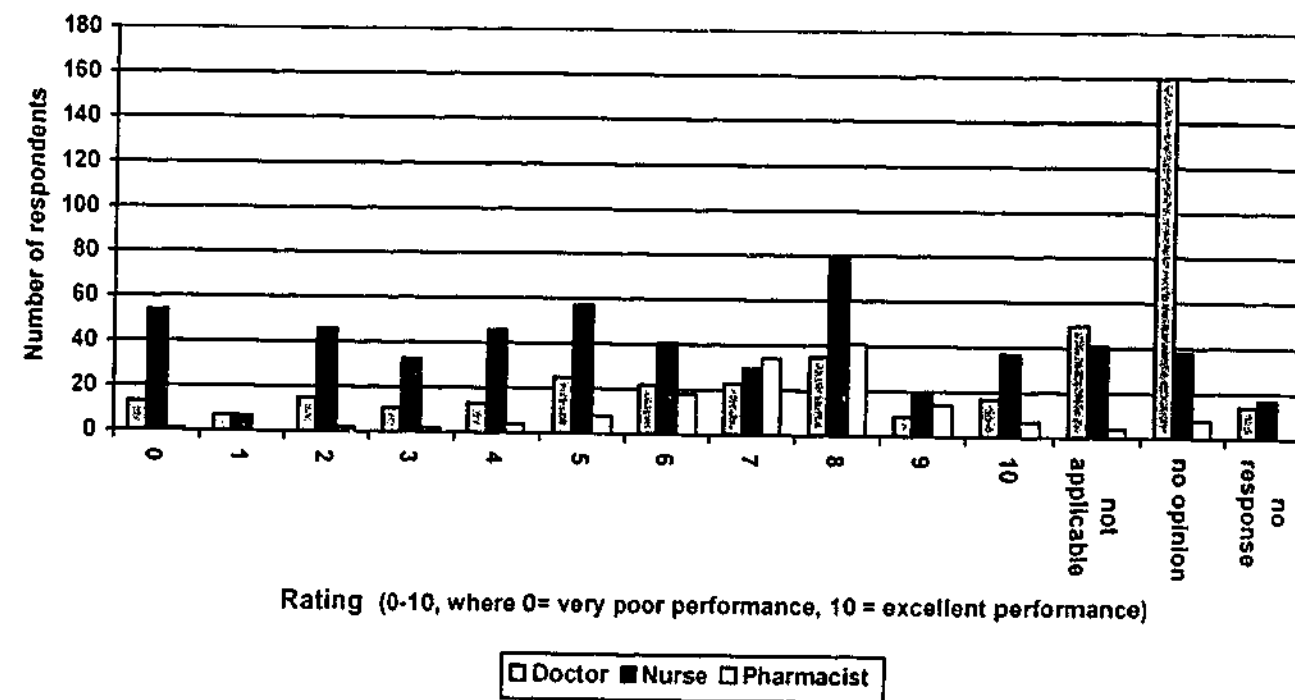


Figure A4.28 Rating of the performance of the pharmacy service on in-service, structured lectures for hospital staff (1999/2000)

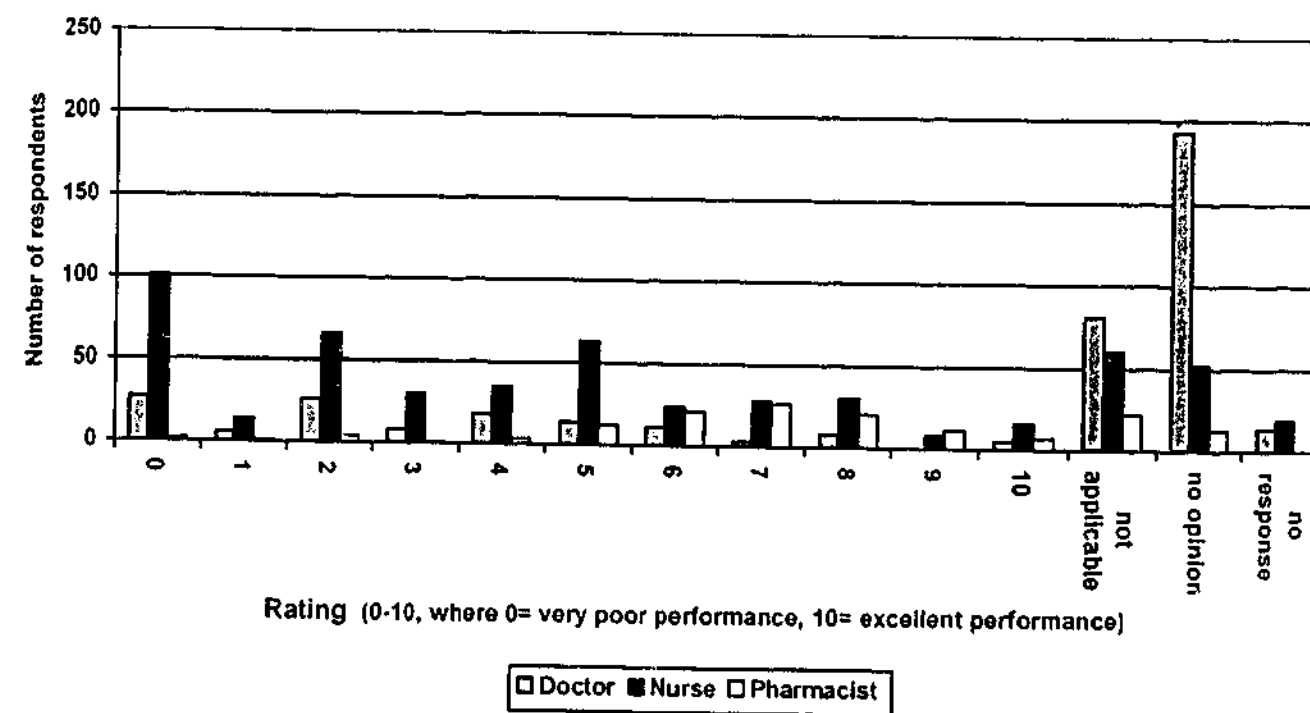


Figure A4.29 Rating of the performance of the pharmacy service on extent of pharmacy department involvement in research (1999/2000)

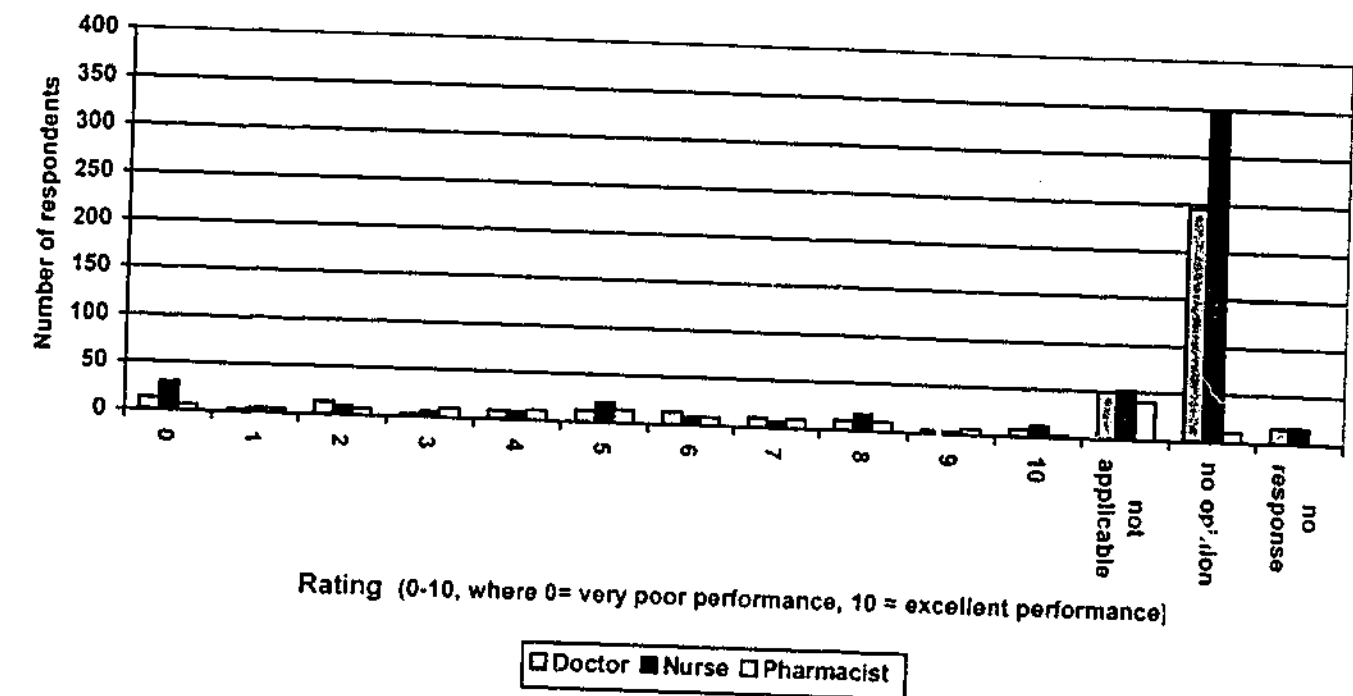


Figure A4.30 Rating of the performance of the pharmacy service on pharmacy bulletins/ publications (1999/2000)

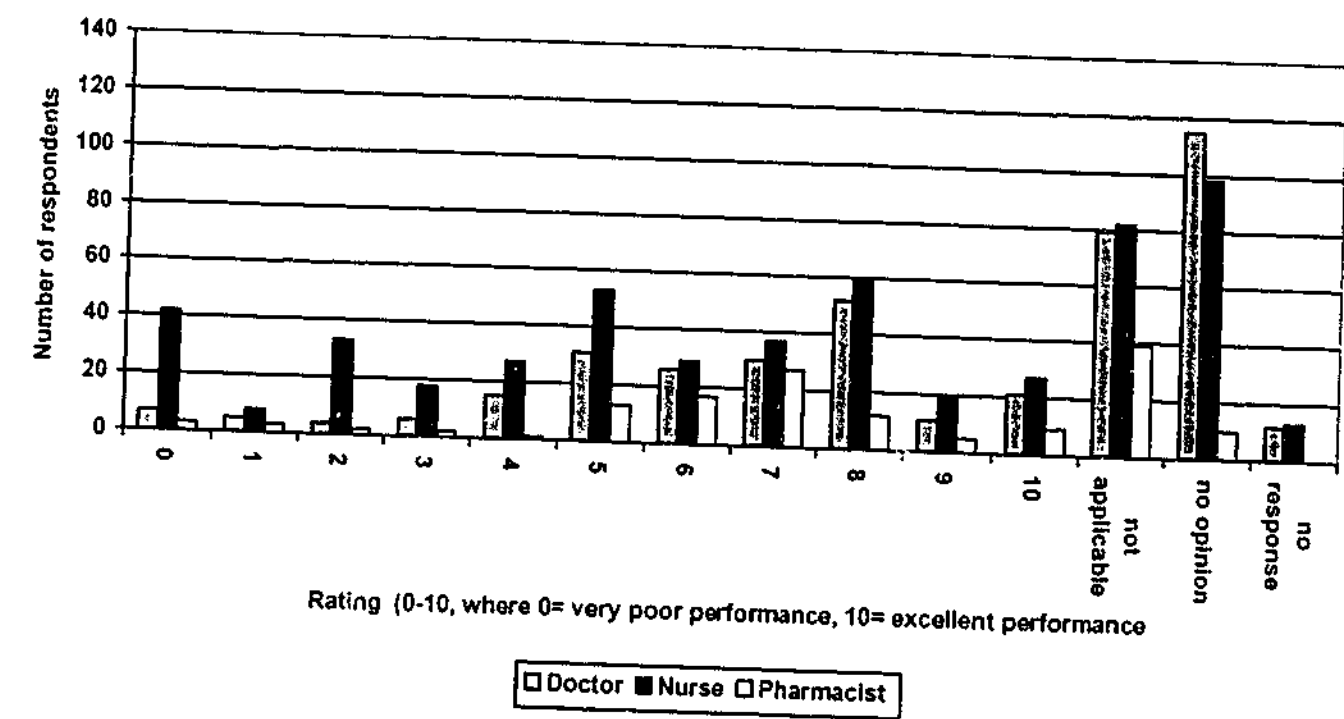


Figure A4.31 Rating of the performance of the pharmacy service on reliability of the service (1999/2000)

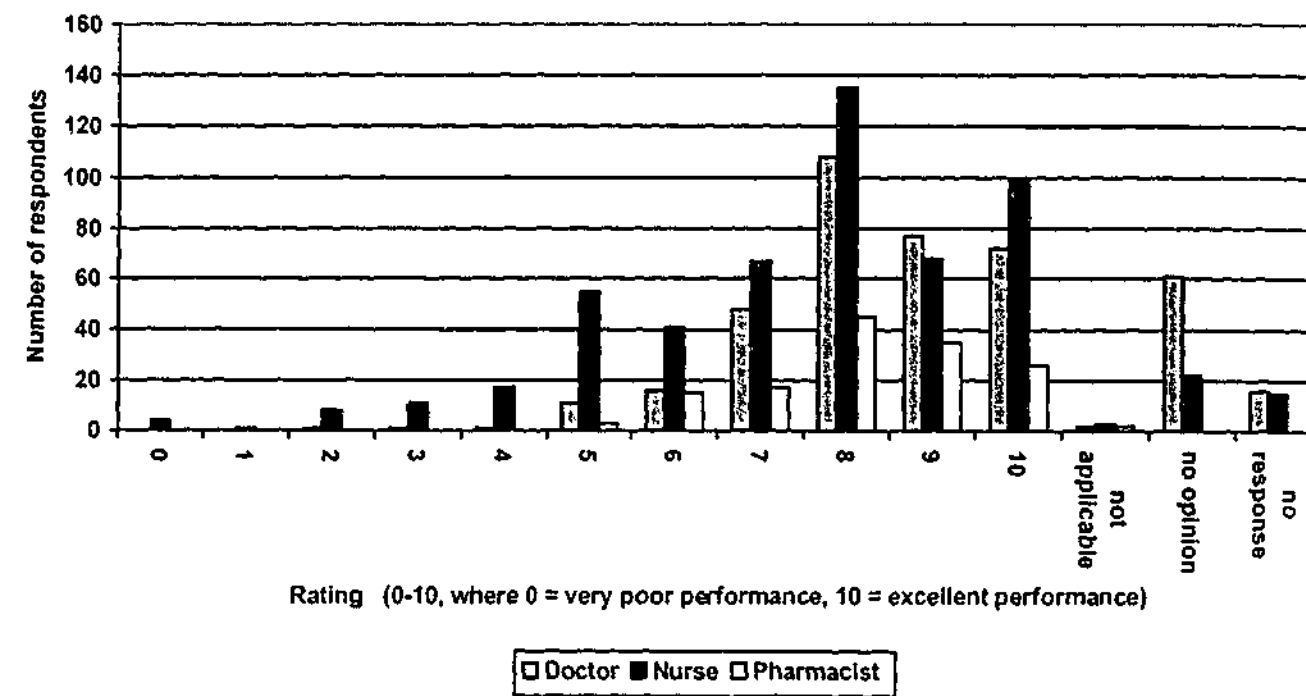


Figure A4.32 Rating of the performance of the pharmacy service on communication with users of the service (1999/2000)

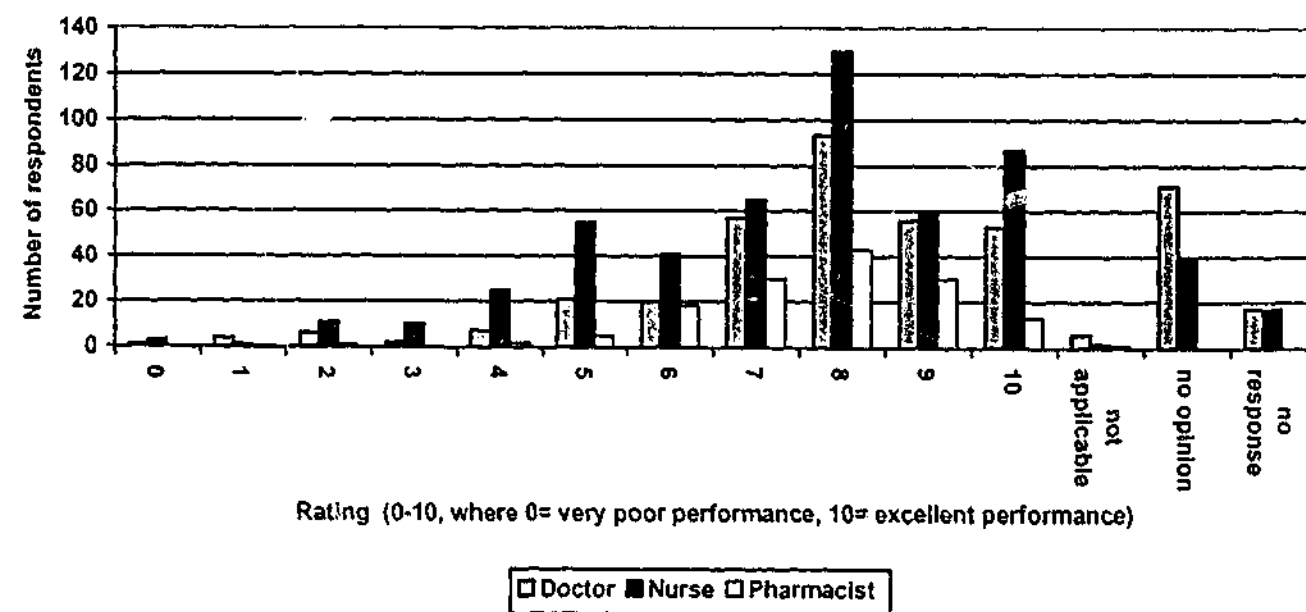


Figure A4.33 Rating of the performance of the pharmacy service on after hours service (1999/2000)

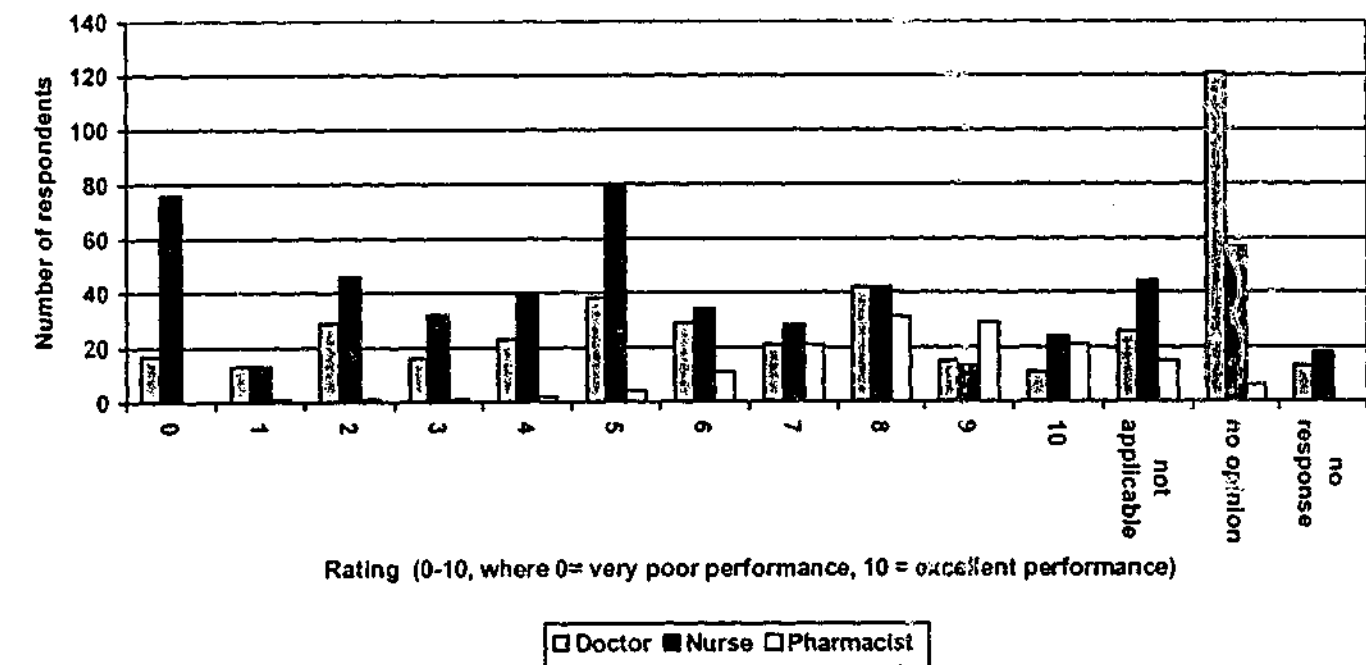
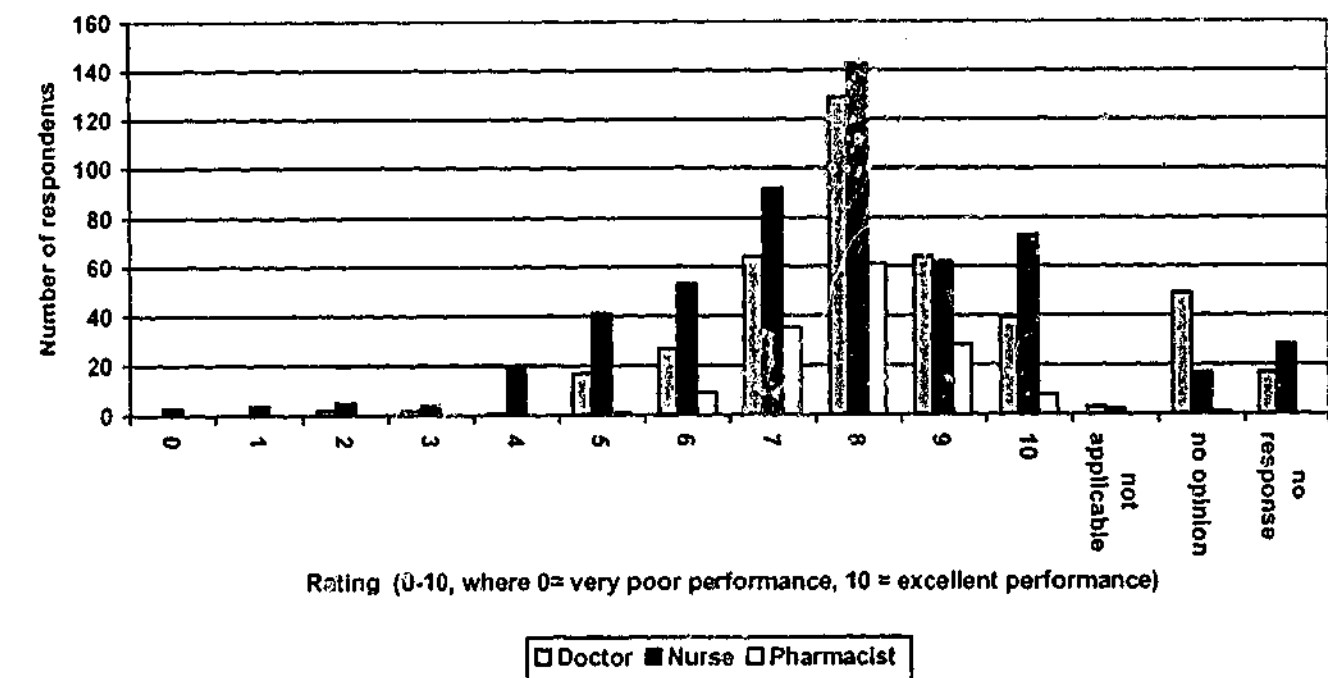


Figure A4.34 Rating of the performance of the pharmacy service on overall service provided to the users of the service (1999/2000)



**(b) Table A4.1 Reasons given by pharmacists for their rating of their importance as a member of the healthcare team (1999/2000)\***

- The pharmacy department are constantly intervening in the medical treatment of patients; to optimise therapy, minimise side-effects and enhance patient compliance. The doctors, nurses and patient appreciate the work done by the department. (8)
- Staff keen and highly motivated. They are engaged with patient care at the coalface and are not confined to the boundaries created by the pharmacy. We provide services to patient and our other customers through a multitude of different services such as clinical pharmacy, drug information, DUE, drug distribution, clinical trial support etc. (8)
- Pharmacist is important but still not at same level as other health professionals (depends on patient type). The pharmacist is still under-utilised in some situations. They could increase their involvement but time constraints make it difficult. (7)
- Variable, depending on area of hospital and staff involved. Still much potential to increase acceptance as important part of team e.g. increase involvement in ward rounds etc. (7)
- We are the source of nearly all drug information to nursing staff and doctors and play a vital role in patients, nursing and doctor education (country hospital). (8)
- Pharmacists tend to feel part of the team, however, due to staff shortages there has been limited time spent on the wards in recent times. Fe! more involved when fully staffed, we were more involved as a member of the health team. Lack of pharmacist involvement in ward rounds as private hospital and consultants do ward rounds at different times. (7)
- There is not a physical participation in ward rounds so we are less visible and accessible at the time an order or medication review is taking place. (7)
- Some staff more knowledgeable and efficient than others. The few poor performers drag the team down. (6)
- In our specialist areas the score is 10. But as our service to the other areas is not as intense- the score falls. If we could service such areas to the fullest then again the score would be higher. (7)
- Other health teams see the pharmacy as more of a "supplier" of medication and our daily task does involve a lot of supply to wards and not as much clinical involvement. (5 to 6)
- Most people don't realise the work we do and service that we provide. We receive mere complaints because of requiring correct paperwork and not providing medications or doing discharges in a timely enough manner. (5)
- We don't participate in as many ward rounds/ meetings as we used to (due to increased workload) thus our involvement is less than it COULD be. (6)
- Could be seen as more important if we had more time to do the things we're trained to do. At the moment our day is full with supply and simple chart checks and simple interventions. (7)
- Small rural hospital where we are considered part of the overall team approach. Used as a resource by all departments including VMO's. Our willingness to chase issues and information and spend time particularly with elderly patients sorting out medication and ways of presentation. (9)
- Management doesn't understand pharmacy services, so not paying appropriate heed to needs. Not enough money to go around. Some areas have greater pharmacist availability than others. (7)
- Recognised as a supplier of medicines and information. (7)
- Most patients require some form of medication. (8)
- I think most nurses and allied health staff regard us as important parts of the team. We only have LMO's who visit this hospital (country). We have had some breakthroughs re communications with some of the GP's i.e. some of the younger ones do consult with the pharmacist re medication and are happy with interventions. However, others still have a very guarded opinion and are resistant to any input beyond supply. Things are steadily improving though I feel that part of the problem in cross communication lies in the perception by the GP's of what the pharmacists role is. Some GP's perceive pharmacy as a threat rather than as a valued contribution. (7)
- Depending on the area. Specialised areas value the pharmacist more for their clinical work. General areas e.g. medical, surgical view the pharmacist as paramount in supply and discharge-turn around and counselling. (7)
- Doctors are seen as very important, pharmacists are regarded by some as a person who supplies medication only with supply role. Hopefully this will change. (7)

- Recent reviews and customer surveys show that all clinical areas would like a pharmacist as part of their health team. (8)
- Pharmacy provides an important role in advising, prescribing and providing services supporting these treatments-chemotherapy, symptom control. (8)
- Our role tends more to be correcting errors of medical staff than to be involved in selecting the optimal drug therapy. (7)
- Not relied upon for clinical expertise as much as in the public system, however where present, staff appreciate availability to answer questions. (6)

\*Respondents were asked to rate the importance of the pharmacists as a member of the healthcare team on a scale of 0 to 10 where 0 = not at all important and 10 = important. The score for the comments listed are shown in brackets following each comment.

**Table A4.2 Reasons given by doctors for their rating of the importance of the pharmacist as a member of the healthcare team (1999/2000)**

- Critical in overseeing therapeutic regimes specially when junior medical staff make unsupervised decisions. (8)
- Pharmaceuticals are a very important aspect of patient care. (10)
- Pharmacist is an invaluable resource for medico's; hopefully able to provide substantial info about individual medications and more importantly their side effects and any interactions. (8)
- They're good backup to check dosing etc. when human error by doctors could result in >/< dose etc. (8)
- Pharmacists have a key role in ensuring drugs used safely because of complexity of patients' illnesses and multi specialist involvement and high likelihood of adverse medication events. (8)
- The pharmacist should be more involved in monitoring and research. (8)
- The pharmacists are very capable and very helpful, but I would like to see more active participation in patient management e.g. attendance at certain rounds. (7)
- Essential member of the health team to provide excellent medical treatment on a primary and ongoing level to every patient and support doctors with up to date therapeutic knowledge and monitoring patients medication. (8)
- Important in monitoring and guiding medication use especially on medical wards, but ultimate decision should rest with medical team. (7)
- Adverse drug reactions are a major problem for patients and doctors particularly with numbers of newer agents and polypharmacy seen in hospitalised patients. (8)
- Clearly important though a hospital COULD function without a hospital-based pharmacy (7)
- Must be more proactive and communicative. (7)
- The pharmacist I feel is equally important as other members of the health team (doctors/ nursing staff/allied health). A well informed, enthusiastic pharmacist on the health team, judging from past experience, is definitely an asset and can result in modifications and changes to management of a patient resulting from their input. Also, availability of medications is important in instituting treatment as soon as possible. (10)
- Monitors drug charts. Picks up mistakes/ inconsistencies. (5)
- Well informed doctor should know pharmacological preparations and interactions etc. but backup and check with pharmacy are important to minimise errors and supplement prescriber deficiencies. (8)
- Hardly ever seen in the ward setting (5)
- Very important due to high role of use of medications and potential side effects, interactions etc. (8)
- Need more face to face involvement at ward level but current staffing/ resource issues are the major problem, not the enthusiasm or willingness to cooperate (7).
- Very important team role- enhances efficiency and safety of our service. (9)
- Not accorded a high priority. Staff (pharmacy) have generally been here a long time and are comfortable providing a basic service. In other hospitals treating older people, the pharmacist is much more pro-active and consequently has a much higher profile and receives a greater respect. (4)
- Some pharmacists in department- committed team players, focussed on delivery of patient care, but



perceive a significant group tend to display negative attitude that places their routine and work habits above patient care resulting in inflexibility and antagonism. Also see resource problem that probably exacerbates such negative attitudes and limits capacity of pharmacists to be involved in 'value adding' beyond basic services. (6)

- Essential to safe dispensing in hospital with interns, overseas graduates and aging consultants. (10)
- Very important but could be more involved with the medical team. Lecture/ presentations would be good too. (7)
- Medication is an important aspect of patient care and pharmacists play a very important role in terms of drug monitoring/ dispensing/ counselling of drug information and drug information service. (10)
- Need to be more involved in interacting with medical staff and reviewing medication chart and also educating patients appropriately prior to discharge. Medication compliance and poor understanding is a major issue. (3)
- Barely involved. (2)
- My knowledge of non-specialty medication is poor. Need a monitor with wider pharmacology knowledge base in the team. (10)
- Important in ensuring patients get the right drugs in the right doses. (8)
- Constant and cooperative pharmacist who is always willing to help. (9.5)
- Another cog in the wheel. (5)
- We'd be unable to treat without them. (4)
- Provides prompt delivery of medication to ward. Monitor drug interactions and proper usage/ dosage. Feedback on any adverse reactions. Inform about new medications. (7)
- Non-attendance at rounds. Good information when requested. (5)
- Poor participation in the clinical aspect of patient management. (6)
- Most interventions in acute hospital involve medications. Over 6 years since graduation, whole new classes of drugs have come up. (7)
- All patients receive pharmaceutical therapy. Monitoring of cost usage, adverse incidents from this therapy is important. Essential component of multidisciplinary team approach to patient care. Reduce morbidity and mortality and this costs also. Provide essential education support to nursing and junior medical staff. (10)
- It would be impossible to efficiently cater to the organisations pharmaceutical needs without the pharmacist as a member of the team. (10)
- There is an important role in reviewing medications and discussing with patient the discharge medications. (8)
- Drug interactions, quality control. (8)
- Essential to have someone to check on drug doses/ side effects/ interactions. Especially someone with proper knowledge and education on pharmaceuticals. (10)
- Could be more important, low profile at moment. (6)

**Table A4.3 Reasons given by nurses for their rating of the importance of the pharmacist as a member of the healthcare team (1999/2000)**

- I believe the pharmacist is an important member of the health team, more especially in the acute and medical areas. (10)
- The medications patient take often affect their rapidity of improvement and/ or comfort and should standards slip in this area, patient care would be compromised as well as their health and safety. They are also a good resource for medical staff (especially junior staff). (8)
- Crucially important and can make the highest difference to the whole team in a positive and or in a negative way. (10)
- Our ward pharmacist is very professional and very dedicated. She is an asset to our unit. (10)
- The pharmacist that looks after my ward is fantastic. Any request or inquiries are never too difficult and if he doesn't know the answer an effort is always made to find out. (10)
- Medications and drug therapy- very important part of patients hospitalisation. (10)
- Pharmacists are an essential part of the health team. They are responsible for stocking and dispensing

all drugs in the hospital and for maintaining standards. Unfortunately their role is limited and could be expended given the resources to do so. (9)

- I think in an ideal situation, a pharmacist is a critically important member of the health care team and as such should have a large clinical input to both patients and doctors/ nurses. Unfortunately the clinical role taken by our pharmacist is minimal. (8)
- No ward-based service- no patient interaction. (3)
- Most patients are given medications in hospital and to take home- these patients require access to information and education on these medications. (10)
- Not much point in a hospital without drug availability. Ours need to have more input on a day to day basis, checking drug charts etc. (8)
- Pharmacist is a vital member of the health team as it is her/ his job to ensure adequate/ accurate supply of appropriate medications to assist the recovery of patients. He/ she should advise both patients and staff and medico's regarding appropriate dispensing and administration of drugs. (10)
- Pharmacist SHOULD be a key member of the team on a medical ward. This is not the case and is a sad part of reduced resources. (8)
- I feel they are an important member of the health team due to their knowledge base but unfortunately they don't seem to have enough time to share the knowledge with others. (7)
- Too distant- don't seem to interact with staff at ward level. (6)
- Pharmacists are a very important member in that they are available as a resource person for medications/ side-effects, drug administration- Doctors do not always prescribe correct medications!! So its nice to know if a registered nurse is unsure- the pharmacist is available to answer any questions which may arise. (10)
- Quite a variable according to pharmacist. Depends on pharmacist. (7)
- It doesn't seem that the pharmacists play an important role- they are in the background of patient management, unlike the doctor and nurse. Patients often ask "who is that?" when the pharmacist tiptoes in and out of their room. (6)
- Hardly ever see them on the ward. (5). Not involved in ward rounds. (5)
- Present on ward rounds, liaises with nurses and doctors easily. (10)
- The pharmacists here are efficient and reliable. Because of the 'cut-backs' they are unable to perform all the necessary work. (9)
- We rely on the pharmacist for prompt information regarding medications, providing stock, discharge dispensing. (10)
- Generally more important in a medical ward where people are "unwell" and on higher amounts of multiple drugs (5)
- Pharmacy is one of the necessary and most important backbones of any hospital. We are most fortunate to have such friendly, helpful and efficient staff in ours. (10)
- Pharmacists are a vital link between doctors and nurses and patients. They provide an invaluable service but like everyone they are stressed with their load to cope with the enormous demand on their time. They are always friendly and willing to help and most efficient when time allows. (10)
- The pharmacist has a specialised knowledge in drug use., therefore the pharmacist is a valuable check in the chain between the written order, the nurse dispensing the medication and the patient receiving the correct medication. (10)
- The sheer weight of medications, side-effects, interactions etc. in an ageing population makes the pharmacist an integral member of the health team. (9)
- Does not participate in ward rounds or during Team meetings. Do not communicate with the team very well. (2)
- Our pharmacist is an effective member of our unit's health team. An important team member to provide quality care to patient. A vital person in regards to drugs cause/ effect. (10)
- Pharmacists are extremely important and we do have some EXCELLENT pharmacists in our hospital. Sometimes the systems in place and some negligence in restocking lets down the team. (8)
- Many patients have multiple medication requirements, need vigilance with regard to prescribed drugs and potential drug interactions. Often the pharmacists have better drug knowledge than doctors and query unsuitable prescribed drugs- this is extremely important. (10)
- Apart from providing medications ordered by doctors, they are a good source of info for nurses and



doctors if any questions are raised and provide patients with further information often greater than that given by other medicos. (10)

- Don't interact with medical teams a lot. Minimal self proposed education for staff. (6)
- Integral part (member) of the health team- chase up medications patients were on prior to admission, liaise with doctors re. IV antibiotic levels (saves nurses worrying about this) although the level of liaising could be increased. (9)
- The more dependent we become on drugs and the more specialised they become, the more we need experts in the field to educate staff and make sure they are used safely. (8)
- Very rare personal appearances by pharmacy on the wards, most communication is through the telephone these days and queries are no longer necessarily handled in what I consider to be a timely period of time. Poor visibility is not helping perception of the service. (5)
- Western medical model of health care relies heavily on drug therapy to implement/ provide health care delivery. This makes the pharmacist pivotal in the smooth running of things. (8)
- Definitely very important service for drug information, providing and dispensing and storage and delivery of medication. Re enforcing and education of staff and clients. (8)
- Could be far more valuable but only have time to do the bare essentials and even then we have long waits. (5)
- Like a ship's captain- without a good pharmacist the hospital sinks. (10)
- Medication administration is a large proportion of nursing work. Pharmacist available for information, accessing drugs and monitoring supplies. (9)
- Once a service is available it is hard to imagine it not being there. A good example is ward pharmacy- this service is now limited and sorely missed. (10)
- I feel there is less likelihood of medication errors when the pharmacist is responsible for stocking the patient's medications drawers and the checking of medication orders written by doctors- so a very important member of the health team. (10)
- The supply and monitoring of medications is a vital part of patient treatment. (10)
- All team members are of equal value because they all bring different areas of expertise to the team. (10)
- Treatment relies on pharmacy. Pharmacist is a reliable source of current drug information. Pharmacy cooperation is mandatory for patient. (10)
- Very important. Resource person. (10)
- Accurate dispensing and information vital to patient care in hospital and ongoing treatment following discharge of patient. (10)
- They are only there 48 hours/ 168 hr week = 0.28. Nurses are pharmacists the rest of the time. They don't contribute to pre-admission procedures. They have failed to take the educational opportunity expected of other (e.g. nursing) departments. They have no in-service for other departments. Not computer linked in hospital for ordering. Pharmacy records are not on a database. That's why the pharmacist has to do this work. They have intransigent interpretation of legislation that has potential for adverse outcomes for others. They bend the rules to suit themselves. None of drug cupboards are locked (except S8) because they won't allow extra keys to be cut. (3)
- Invaluable support for patients, nurses and doctors. (9)
- Medication and the administration of medications is such a significant factor in the treatment of patients that a pharmacist input in care as part of the health care team is essential. Health care requires a multidisciplinary response!! If we are to meet the needs of our patients. (9)

**(c) Table A4.4 Reasons given by pharmacists for their ratings of the overall service provided by the hospital's pharmacy (1999/2000)**

- They work together as a team and this shows through in their work. They take a professional approach to pharmacy and pharmacy practice. Meal breaks are often missed and they regularly stay back to finish off work (unpaid). (8)
- Professional staff, committed, competent.
- We have a dedicated, motivated and well educated work-force who are genuinely interested in patient care. (8)
- Patient always comes first; genuinely interested in patient care.
- We do our best to provide excellent service under current staffing structure. We could do better if we had a bit extra budget. (7)
- Compared to other hospitals I believe this service is good, and this is largely due to the support the staff receive from pharmacy management. But people are being more and more stretched and the timeliness of service delivery has been compromised. (8)
- More involved consistent service, better support within the department and from outside than other hospitals here and abroad that I've worked in. (10)
- Enthusiastic pharmacists. Good liaison with medical and nursing staff. Progressive management. (8)
- Overall efficient and productive service. Most services provided at a level appropriate for a private pharmacy in a private hospital. All areas are open to improvement and could be improved if we had more staff (staff shortages at present). (8)
- Quite efficient service, the staff all work hard. Available on the weekends (limited) (8)
- Insufficient staff causes stress to existing staff endeavouring to deliver service of a high standard. Stressed staff has led to increased absenteeism and even heavier workload on remaining staff members. (6)
- Frequent turnover of staff lead to inefficiencies due to salaries and lack of career path. (7)
- Comprehensive service, focus on service quality, continual review of processes. (8)
- Service affected by staff loss, recruitment difficulties, budget
- The best service is provided with the poor resources available. (8)
- Good patient / pharmacist interaction- pharmacist constantly on wards. (9)
- No funding stream for clinical services mean such services have to be funded from stock supply. Margins on stock supply are being reduced making it more difficult to finance a broad professional service. (7)
- Overall service limited to staff numbers. (8)
- Service is provided in an efficient manner but could be improved if more staff or time was available for closer interaction with patients. (8)
- Pharmacists dedicated and try to improve the service where possible. (7)
- Commitment to provide service quality. (8)
- Patient and client focused. Place their needs first. Maintain services even when staffing levels are critical. Positive feedback from medical and nursing staff (8)
- Pharmacists grossly overworked. To do job expected a lot of unpaid overtime put in by all. No support from hierarchy for lack of manpower. So in general it would be fair to say that we do the very best we can in an extremely stressed environment, where an extremely poor in-service education system is provided. (5)
- User-unfriendly Network computer system. (7)
- Some pharmacists lack motivation and interpersonal skills and don't really care about their day to day exchange with other colleagues and only do what they have to do. This is because of a perceived lack of acknowledgement of their problems and taking notice of their input. (5)
- Time delays in providing discharge medications are enormous. A few staff are very poor time managers and therefore provide poor service to their ward/ area (?lazy too). (6)
- Very little patient counselling. Patients unaware of pharmacy service. (2)
- Very good service, long hours- advantage to hospital, many pharmacists. We are continually doing customer service. (9)
- Ward pharmacist profile on wards. (8)

- In this hospital the turnover of patients has increased. Although the pharmacists have increased workloads they stay after work for up to 2 hours voluntarily to complete the tasks they set out for themselves. In the end, if the patients are happy with the service, so are we. (9)
- We provide a comprehensive service and in general have competent skilled personnel. The problem is not enough staff to do the job comprehensively. (7)
- Feedback from patients and hospital staff. (8)
- Feedback from hospital executive. The interest is the perception difference between executive and workers on the floor in the wards. The loss of experienced personnel is a factor- attracted to retail. (8.5)
- Service to specialised areas, oncology, infectious diseases, paediatrics, psyche services and cardiology are excellent. (8)
- Focus on patient education. (8)
- Shortage of pharmacists means clinical work not always done and pressure on dispensing discharge medication. Sometimes work more reactive than proactive. Poor pharmacy design leads to inefficient workflow practices. (8)
- There are resource and physical environment problems. These hamper the departments ability to provide the required service. (7)
- Any service can be improved. Some services we should offer but manpower doesn't allow. Restricting consumer's ability to 'do their own thing' does not create a popular service. Demand has been so great and resources so limited the staff have sometimes started to attack each other. (7)
- Feedback from nurses who have come from other facilities- some say we are good, others say they have worked at better places. Attitude of senior medical staff towards pharmacy staff- not very positive. Emphasis on patients care is less than the emphasis placed on financial aspects of the pharmacy service. Restrictions to a lot of medications. Availability to patients leads to missed doses of medications- leads to a negative attitude towards the pharmacy department. (6)
- Very proficient at what we do, always looking for ways to improve service. (8)
- More efficient and customer focused. Introduction of new and innovative services. (10)
- All essential areas are covered despite high workloads. (8)
- Generally service is good, time efficiency is difficult due to lack of staff/ permanent staff. (8)
- Small rural hospital where we are considered part of the overall team approach. Used as a resource by all departments including VMO's. ((9)
- Medical, nursing and pharmacy staff, and more importantly our patient population provide positive feedback on the service. Medication is provided in a timely manner, with good education. The pharmacy department is actively involved in clinical and practice based research. (8)
- What we do we do well, we are concerned about what we can't cover. Not meeting best practice guidelines, i.e. individuals working as hard as possible, but can't cover all ground. (6)
- Teamwork, cooperation between staff has helped maintain an above average level of service even under circumstances of extreme staff shortages. (8)
- The service provided is excellent given the limited resources. Staff. Great team of VERY dedicated staff. Clinical input could be increased in staff numbers were increased. (9)
- I feel we could improve the service by offering more expertise in drug usage, choice of drugs, research into use etc. Involvement at ward level is not enough and pharmacy often is not informed of changes to practice. (7)
- Most users are satisfied- we get few complaints. Pharmacy is traditionally staffed by people who are willing to go as far as is necessary to help and facilitate others requests. (9)
- All staff committed to providing a high standard of service, both in quality and efficiency. The department also seeks to cooperate with, even to AID other areas within the hospital to achieve the ultimate goal of contributing to the local community effectively, efficiently and economically. (9)
- Believe standard of service is quite high- we perform all our duties with the utmost care to ensure minimal errors and customer satisfaction. Patients may complain of a delay in receiving their meds. At times, but this is mainly as a result of doctors writing up scripts very late. (8)

**Table A4.5 Reasons given by doctors for their ratings of the overall service provided by the hospital's pharmacy (1999/2000)**

- Good service. Reliable. Efficient. Friendly. (8) Cooperative.
- Efficient, knowledgeable, friendly. An improvement would be attendance at ward rounds. (8)
- Good knowledge, education of patients etc. but very poor weekend service and long dispensing times. (6)
- Reliable; better provision of stock; friendly and helpful service. (10)
- Seems good quality. Assisted enormously with drug trials. But perhaps could provide positive reports of utilisation by individual unit and by clinician so we are aware of 'geographic' variation in drug utilisation. (10)
- Available, approachable, quick response to needs. (8)
- Good quick accurate dispensing but NO presence of pharmacist on ward. (5)
- Loses points for : apparent lack of medication chart reviews/ patient histories; limited dispensable stock; limited time frame for discharge medication prescriptions (i.e. only able to (dispense) discharge medications for limited number of days) (7)
- Obviously in need of additional resources. (7)
- All that I would expect of a pharmacy. (9)
- Reasonably efficient but little contact on ward rounds. Only limited medications given to patients on discharge. (6)
- Excellent on service basis (rated 10), 6 on an educative basis.
- Good quality service that has had to adjust to budget demands, but "at the end of the day" you get the drug you want! (9)
- Need more staff formal and informal education. (7)
- Good service whilst pharmacist available during weekdays. Non-existent service most weekends and public holidays- we often have to anticipate discharge medications 3 days before discharge. (6)
- Improved communication and availability of pharmacy staff. (9)
- Whenever I have contact with the pharmacy whether for information or for supply, the response is rapid, to the point and useful. I cannot recall an unsatisfactory response. (10)
- Cooperation between private on-site pharmacy and hospital, and willingness for pharmacy to provide services other than filling prescriptions. I would rate 10 if I knew that other activities such as education, drug monitoring (including cost) and research were being carried out. (rated 9)
- Little monitoring of prescribing practices. (7)
- Prompt and accurate advice. Willing to assist with queries. (9)
- It is a good friendly, efficient service which has maintained standards while the hospital has grown. (9)
- Service is adequate, but not much pro-active work is done- mostly reactive. Potential to improve education and awareness of drug problems in the elderly is not acted upon. Greater involvement in ward would be an advantage. (7)
- Very good communications with the medical staff and patients. (9)
- They review all the medical charts and provide comments. Involvement in ward rounds lacking. Need more pharmacy staff. (6)
- Functionally adequate but not always user friendly. (7)
- Provision of service is as good as can be expected with budget allocation. (9)
- Excellent service by clinical ward pharmacists and drug info service. However, after hours service/ 7 day service is lacking for a tertiary hospital, which ideally give 7 day service. (8)
- Efficient management. Good communication with staff at ward level and generally. (7)
- General good service. Could improve communication. Tries to cut costs too much. (8)
- I believe it provides a good service within budgetary constraints. Drug info and drug info pharmacist - fantastic. (8)
- Bare minimum except for drug info service which excellent. (4)
- Provide high quality and extensive service with limited manpower and suffering the adverse effects of economic rationalism. (8)
- Trying hard; a skeleton of what the service was 10 years prior. (6)
- Excellent service for poor resources,- however, little involvement in patient education/ monitoring.- Reduced ability to supply overall picture re usage/ costs/ alternatives etc to users/ departments. (8)

- The quality of service is excellent, the quantity of the service is not good for reasons mentioned before (split responsibility between Federal/ State Governments). (7)
- Provides basic service. But no "frills". (6)
- Good work with limited facilities and finance. (8)
- Very helpful and keen staff, happy to find out the information you require if they don't already know it. Ring up with queries and pick up errors in drug treatment and discharge medications overlooked, but don't hassle you at all! Very helpful. (9)
- A more speedy dispensing service and more comprehensive ward pharmacist service would improve what is a reasonably sound basic service. (6)
- Generally OK but ward activities are curtailed and staff changes make continuity difficult. (7)
- Only problem is lack of out of hours service. Otherwise excellent. Some constraint on drug availability/ choice. (8)
- Positive feedback from patients. (7)
- I like it, the current pharmacist is dynamic. (10)
- Basically my interactions with her have revolved around corrections or suggestions to drug regimes. Sometimes this has seemed a bit overstated. But she has been very helpful with my questions re drug costs and availability. (7)
- Excellent daily service. Pharmacist very approachable and easily contacted. Excellent cooperation between pharmacy and nursing and medical staff. (10)
- Still have to sign scripts. Drug sheet not sufficient. (private hospital) (9)
- Patient requirements met well, accurately and on time. (8)
- Do their best with expanding pharmaceutical range and less money. (10)
- Accessible, amenable, cooperative, sensible. (9)
- Despite financial constraints, has maintained efficiency. (8)
- Pharmacy seems resistant to provide some medications especially antibiotics. No real discharge medication counselling. Yet always happy to answer questions and advise on medications/ side effects. (6)
- No outpatient service. (1)

**Table A4.6 Reasons given by nurses for their ratings of the overall service provided by the hospital's pharmacy (1999/2000)**

- Proper and correct (most of the time) dispensing of discharge medications and educating patients, families and relatives and those involved in patient care. (8)
- Only real problem I see is that it is difficult at the weekend from 12/0hrs Saturday to access a drug which is not in ward or other area. BUT in an emergency they can be called in. (8)
- Too much expected from too few. (5)
- Very good staff, do a very good job with the amount of work they have to do. Very vigilant in regards to drugs written up. Assist in telling patients all the effects of medications. Give lectures when asked. Good resource person. (10)
- Very dedicated and committed but have a terrible shortage of staff. (8)
- Little in-service education. Staff seem very overworked and can spare little time for other things- some staff seem unhappy every day and morale low!! Discharge medications and complete process seem to be less streamlined than they could be. (6)
- Ward pharmacist- a new bonus- a vast improvement. Opening hours and out of hours service has decreased. (6)
- It depends on which pharmacist is responsible for your area. Some are more efficient than others. (8)
- Hours of operation on weekend very, very poor; nursing / medical staff require a 9-5pm service Saturday/ Sunday. All elective patients are admitted Sunday afternoon and hence miss more than 12 hours ordered medications secondary to closing of pharmacy at 1200pm. (6)
- Unfortunately, my view of the hospital's pharmacy and its service as a whole is tainted by inadequate and inconsistent service by the pharmacist allocated to my area. (7)

- The current ward pharmacist is excellent, she has in-services, explains drugs to patients well, is very organised and efficient when dispensing discharge and inpatient medications. Other pharmacists are not as efficient and could be described as lazy, not on the ward at all and hold up the discharge process. (7)
- Pharmacy does the best they can with their limited resources which impacts greatly on their users. Often long waiting period for inpatient drugs, limited after hours availability, limited hours and extra services. Having worked in larger public hospitals with better resources- I certainly notice the severe limitations this hospital's pharmacists work under. (country) (5)
- Very friendly, knowledgeable, approachable staff. Always able to be located quickly. When on call or after hours they are always happy to be of help by phone if required. If asked something and the pharmacist is unsure he is always happy to find out and get back to you quickly. (10)
- There have been over many years gaps in the provision of pharmacy support which we have tried without success to address. (3)
- More information on drugs and in-service required. Need to update imprest. (7)
- I work in the Emergency Department and only problems I perceive as an Assoc. Charge Nurse are the limited hours on weekends (necessitating me procuring many medications from wards, mainly for patients who are to be discharged) and not always having adequate stock of some medications. (8)
- Service is good, people are very cooperative and helpful. Discharge info sheet excellent. Need to open longer hours (not 9-1) on weekends- hospital is open 24hours a day and late or unexpected discharged are a problem. (8)
- Pharmacy staff working very hard with continuing decrease in funding affecting their ability to function effectively. (5)
- Seem to be understaffed. Service for ward and OPD (outpatient department) slow often. Pharmacists/ assistants often rushed and abrupt. (5)
- Some pharmacists limited knowledge. Ward pharmacist great, but extremely busy. Some not pleasant at times. After hours service poor. (7)
- Believe pharmacy department does as much as they can, unfortunately constraints mean pharmacists are short on time especially for education or provision of information. Many staff in the service are untrained or students so unable to provide anything more than basic service. (5)
- 1. Hours not compatible with 24hour hospital service. 2. No provision of computer access to pharmacy. 3. No after hours access to staff. 4. Poor imprest replacement- especially for weekend needs. 5. Pharmacy staff seem totally removed from patients. 6. Pharmacy staff- seem not to be part of hospital community providers/ servers. (1)
- Imprest stock is poorly maintained. Drugs ordered take excessive time to arrive. Discharge medications take too long. When IV antibiotics are ordered too little stock is supplies e.g. 2 vials. Very frustrating when we continually run out of non imprest antibiotics. (2)
- Believe the clinical ward pharmacist could have a much higher profile on the unit. Could attend handover and team meeting and be a real member of the unit team. Patients would benefit from discharge counselling and this would reduce the margin for human error even further. (6.5)
- Drug charts are not returned to patient folders. Ordered drugs are not put into patient lockers by the pharmacist, they are just left on the bench. (6)
- Less staff. No pharmacists come to ward to explain discharge medications to patient. No pharmacist on ward round. Hard to get some drugs, approval. Imprest not done by pharmacist. Couriers shouldn't bring medication to ward. (3)
- The service provided is very good within the limitation of the human resources available. (9)
- The hospital pharmacy provides adequate service to the ward. Sometimes info is hard to get re medication information. Profits tend to be higher priority than service. (7)
- Pharmacists do try but budget cuts are all TOO obvious. (7)
- The pharmacy has been working undermanned up until a short while ago. During this time their resources and limited manpower was pushed to the limit. In view of this they still maintained a good service albeit a slower one. (8)
- It is obvious that the staff do their very best. They appear well informed and are always happy to inform and advise. Also they readily clarify medication issues with medical staff relieving the nursing staff of this tiresome duty. (9)

- Overall the service is good when it is not busy otherwise the delays are enormous due to a huge load of dispensing of discharge medications and the high turnover of discharges from each area. The weekend and after hours are frustrating for the wards if stock is not adequately covered, i.e. lack of medical drugs on surgical wards etc. (8)
- Usually very efficient, helpful, knowledgeable and informative. Hard to get drugs on Saturday/ Sunday. Discharge medications often take a long time to organise- families can become quite irate. (8)
- Good info exchange. Very accessible. Always willing to help. Good communication skills. (10)
- They work hard to provide a good service but do not have sufficient resources. (5)
- Imprest on ward often understocked. Stock items we don't regularly use and don't stock things we need frequently. Service very slow especially re: discharge scripts. Understaffed. Service very slow. Give differing answers when phone. (5)
- Accessible, cooperative, knowledgeable staff. Provide prompt response to queries. Able to identify problems with polypharmacy or drug interactions and advocate on behalf of patients. (9)
- I hesitate to put a score here, because I feel it is cruel to blame the pharmacy department who really try to do the best they can with limited funds/ resources. (5)
- Sometimes very reliable. Sometimes useless- unreliable. When you are providing for peoples HEALTH and drugs can change this. I think it should always be reliable- not just depending on the drugs. (5)
- They're usually very helpful and responsive, but I feel they need more communication with inpatients and need to come to the wards and review their medication charts and talk to patients regarding the knowledge of the drugs they are taking. (7)
- The shortfalls of the pharmacy service are mostly caused by the budgetary restraints. Considering the restraints that the dept. works under I think they do an excellent job. (9)
- Our usual ward pharmacist is simply "the best", knowledgeable, approachable, friendly. Her knowledge base never ceases to amaze me. The little contact we have with the pharmacy is usually excellent and timely. (10)
- Service provided previously was more friendly and user friendly. Pharmacists actually made ward rounds on a daily basis and picked up on medical staff errors. (nursing staff are now required to perform at higher standard). (5)
- I can see the decline in what used to be what I considered to be an excellent service. I can no longer say this. (5)
- Reliable in business hours, should provide a weekend service as patients are admitted and discharged at all times, not only in business hours. Also our after hours service sometimes runs out. (8)
- The staff are extremely helpful at any time of day. The main reason for not scoring 10/10 would be as stated: no after hours service; emergency doctor's dispensing discharge drugs to patients leaving the wards after hours. (8)
- Pharmacists are great. They are willing to help and always follow up queries. (9)
- Chief pharmacist willing to listen- to be helpful to come up with solutions to problems, good customer service skills. (10)
- Always prompt, friendly and able to give advice on medication. (10)
- Need more staff for educating patients, checking drug charts on wards and discharge lists. (7)
- The hospital employs one pharmacist who has a large workload and who does an excellent job- will always help with any drug queries and with patient education. (8)
- Within their department they are efficient and effective i.e. 10. Outside their department the service is spread so thinly that it becomes virtually absent- i.e.3. (7)
- The head pharmacist is not very approachable compared with the previous one. Only looks at his department's cost for drugs, does not look at the whole picture of the hospital, or patients. e.g. Refuses to supply drugs that are slightly more expensive but needed only once per day instead of 3-4 times daily. Therefore less nursing time, less needles/ syringes etc. = more cost effective. (5)
- The staff are excellent workers and provide the best service possible, however the service could be much better if staffing levels were improved. Pharmacists constantly complain and state the "they are overworked and understaffed" and many have left because of it! (4)
- Some pharmacy staff are fantastic. Some, only a couple, can be very rude and actually question everything that we request- making them very unhelpful and wasteful of time. (5)

- Generally the service has improved and is very efficient. Occasionally personalities cause multi disciplinary team work problems. (7)
- Pharmacy staff have excellent communication skills. Work extremely well with nursing staff and with patients. (9)
- Efficient service. Excellent patient education. No weekend/ after hours service. Sometimes ward rounds infrequent/ conducted later in day when patient requires medication in the morning. (8)
- Our pharmacy staff are always helpful, cooperative and easy to access for advice. Only disadvantage to the service is there is nothing provided on weekends. (8)



**(d) Table A4.7 Reasons given by *pharmacists* for why the pharmacy service had improved (1999/2000)**

- Dedicated staff
- Focus on patient outcomes
- Computerisation/ increased IT -leading to increased efficiency, history access, follow drug usage, stock, drug usage evaluation
- Faxes
- Greater clinical focus- but prioritised by need
- Increased clinical focus; introduction / expansion of clinical services
- Increased efficiency; more efficient use of time and resources; more services
- Amalgamation resulting in review of service and a rethink approach
- Increased customer service ; increased customer focus; emphasis on customer service
- Greater awareness and responsiveness to needs in clinical areas
- Dynamic, pro-active, strong focus on service delivery, great director of pharmacy
- Good clinical service
- More staff training, QA, dedication, enthusiasm despite budget cuts and increase in unpaid overtime
- More contact with doctors
- More clinical service, more ward pharmacists, more ward involvement, more counselling, medication lists
- Continual improvement- management receptive
- Better training of all staff
- Drug usage evaluation
- Increased staff numbers/ change in staff
- Rationalisation of services not patient focused- resulting in more time for counselling and information giving to patients
- Greater education provided by pharmacy
- Networking allows for sharing of ideas/ practices
- New drug chart for paperless prescription trial
- Better communication between hospital and pharmacy management and between pharmacy and hospitals staff- doctors, nurses, management
- More hours of service
- Technician support- freeing pharmacists for clinical work
- More accountable drug prescribing
- New premises
- Amalgamation- more efficient use of resources
- Development of a teamwork culture, accepting challenges
- Pharmaceutical care, counselling
- New / innovative services
- Faster service/ faster script turnaround
- Vacuum delivery service
- Increased practice- based research
- New work practices; better workflow practices
- Better pharmacy liaison
- A much tighter and efficient service- accomplish more with less resources
- Clinical rather than supply focus
- Improved knowledge of pharmacists
- Imprest system- introduction/ updating-better stock availability
- Pharmacist stability
- Quality activities high
- Meeting users wants- sometimes resulting in less clinical work time!
- Streamlined service- more efficient
- Less government intervention (i.e. salaries)
- Improved stock inventory and distribution systems

- Patient histories
- Implementing best practice guidelines
- Staying up- to- date with practice changes
- Becoming more part of the health management team

**Table A4.8 Reasons given by *pharmacists* for why the pharmacy service was worse (1999/2000)**

- Lack of funding; funding cuts; budget cuts
- Lack of staff; inability to attract suitably qualified staff; inability to recruit staff
- Uncertainty about hospital future direction
- Reduced staff levels
- Less staff so fewer opportunities for innovative programs
- More discharge scripts and more wards to cover with less staff
- Outsourcing of some functions/ inflexibility
- Increased workloads
- Poor computer system
- Lack of leadership/ direction/ communication
- Reduced services; staff cuts/ shortages
- Stress
- Greater demand on services coupled with reduced staff to service demand
- Instability of staff numbers
- More work- same staff numbers- no remuneration
- Staff shortage, increased workload, inability to meet requirements
- Deterioration in some services due to extra workload
- No improvement in facilities
- Networking completely disrupting systems that worked
- Doing everything at a minimum/ less than desired level due to lack of time and staff to go around- affects most important customer- the patient
- Morale low
- Not enough staff to provide efficient/ safe service
- Reduced pharmacy hours
- Change of management
- Reduced to a service struggling to maintain services

**Table A4.9 Reasons given by *pharmacists* for why the pharmacy service stayed the same (1999/2000)**

- Some services improved e.g. clinical participation, but now significantly increased level of stress on staff - increased rate of turnover of staff so continually training new staff
- Service more structured- expectations higher. QA introduced. Guidelines and protocols established
- Key people ensuring standards are upheld against all odds
- Efficiencies gained in work practices have been absorbed by increase in unfunded draws against pharmacist time e.g. HITH
- Overall gains and losses balance out
- Lack of staff has reduced involvement in clinical research balanced by improvement in service in the few specialised units covered
- New facility has improved efficiency of dispensing, but lack of staff results in longer waiting times due to increased bulk of work.
- Improvements e.g. counselling, communication, patient information, balanced out by lack of staff, increased workload- making timely maintenance of service a challenge
- Still working in cramped conditions. Not enough staff. Department not cleaned
- Some excellent improvements- some setbacks
- Staff available have continued to absorb negative changes to conditions and worked under more pressure to provide service at the best possible level.

- Service as good as ever but staff increasingly stressed- wonder how long it can go on!
- Attitude of staff to changes in work practice

**Table A4.10 Reasons given by *doctors* for why the pharmacy service had *improved* (1999/2000)**

- Has developed more of a community focus- previously had a very narrow concept of the pharmacy's role
- More ward involvement
- Expanded staff, energetic manager, improved facilities
- Broader range of service and involvement in discussion
- More monitoring, More patient education. Better adverse reaction monitoring
- Seven day service, 8am – midnight. Availability
- Global improvement in services
- Cooperation between private on-site pharmacy and the hospital and willingness of pharmacy to provide services other than filling prescriptions
- More involved clinically
- More in tune with the needs of patient and clinicians. Education issues need further attention but they do remarkably well with the resources available.
- Better discharge information/ education
- Better leadership
- Drug information/ education. Ward pharmacists
- I believe it provides a good service within budgetary constraints. Drug info-fantastic
- Improved quality vs. marked reduction in quantity i.e. staff numbers
- Pharmacist plays a more active role with each medical unit- suggestions of medications, often detect interactions/ allergies etc. Play very important role in patient education. Very proactive these days in phoning/ chasing residents re authority/ discharge medications etc.
- Clinical involvement on ward rounds helpful especially with updates on drugs
- Despite reduced staff it is doing more than ever and doing it efficiently
- More staff, more information, more background knowledge of clinical situation
- Increased needs- increased service. Better response to user needs
- Better communication and understanding, better dispensing practice. friendly staff
- Very professional. Good quality control
- Better stock levels
- Accessible, amenable, cooperative, sensible!
- More efficient service coping with an increased workload
- Documentation/ monitoring/ written instructions to patients and feedback of discharge medication to VMO, and interaction with medical staff
- Good to excellent discharge medication list for patients
- Computerised medical scripts
- More accessible at getting medications especially weekends

**Table A4.11 Reasons given by *doctors* for why the pharmacy service was *worse* (1999/2000)**

- Deteriorating relationship with resident staff- not hostile, just removed- fewer clinical meeting where they interact and develop rapport
- More restrictions on dispensing
- The quality is fine-just seem to be too few pharmacists to do everything
- Despite the superb efforts of pharmacy staff- reduced budget, reduced staffing increased changes- worse effect
- Budgetary restrictions
- Non-existent service most weekends and public holidays- we often have to anticipate discharge medications 3 days before discharge!
- Restricted access to drugs- i.e. newer drugs because of cost

- Budget is too tight
- Reduction in outpatient prescriptions. Charges for some drugs
- Too few staff. Unhappy staff. Inability to dispense for outpatients ( hospital policy)
- (Much worse) Funding has been squeezed by the split responsibility between Federal and State Governments
- Network control- loss of autonomy and budget control. Reduced services especially outpatient dispensing
- Increasing work, difficulty maintaining needs
- Funding reduced
- Cutback of pharmacists. Loss of staff
- Management induced budget restrictions: cost reduction, reduction in ward pharmacist presence, reduction in after hours service
- Cost cutting, cost shifting to Commonwealth, reduced hours, charging patients.
- Less staff numbers on reduced working hours, poor after hours service- due to reduced funding
- Cost cutting, higher patient throughput, less time etc.
- Reduced activities of ward pharmacists
- Staff are stretched too thin, stresses and overworked, so, less friendly and approachable. Some wards do not have a pharmacist. Reduced weekend hours and no on call means that even if medications are made up for discharge, no access available.
- Less after hour support. Less ward pharmacists. Slower to obtain new medications requested.
- Curtailment of services available, through cost cutting
- Mainly because of funding and alterations of management and Network arrangements
- It is intolerable that we are not able to write outpatient prescriptions for all patients to ENSURE they receive immediate good treatment.

**Table A4.12 Reasons given by *doctors* for why the pharmacy service *stayed the same* (1999/2000)**

- Consistently good
- Cost control is important but the perceived need to interfere offsets this gain
- Though my contact is purely clinical and on needs basis- to which pharmacy responds very well. I don't feel they've been particularly proactive in my field helping me (with info) keeping up to date. I'd prefer their input than drug company.
- All dependent on how many pharmacists are employed in the hospital
- Overall about the same though good and bad parts of the mix are different. Should have seen improvement so it is less good. Many issues seem to be beyond pharmacists control- inadequate drug budgets, expensive new drugs, tight staffing. Some issues addressable by improving pharmacist interaction skills.
- High level quality service over the year I have worked at (large city hospital). I am impressed by the clinical ward pharmacists I work with.
- No major changes noted by me apart from outpatient drug supplies ( worse), determined by economic considerations
- Drug information and assistance to patients have improved the service to 'customers'. However, reduction in ward pharmacists and overall service have worsened the service.
- Despite the lack of financial, physical and human resources, I think the pharmacy department here has done well in striving to provide the same service given the harsh circumstances.
- No difference, always have what I need, respond well to questions and helpful.
- Short association
- Lack of innovation- introduction of new agents- restricted/ stationary items on imprest- cost containment- no clinical research ?unless initiated by medical unit.
- Very good, caring service, pharmacists very willing to help
- Still a high standard service (unfortunately the service only works during the week).

Table A4.13 Reasons given by *nurses* for why the pharmacy service had *improved* (1999/2000)

- All staff in the area are approachable, willing to help, and will find further information if needed.
- Even though there is earlier discharge and more throughput of patients, the pharmacy has been very supportive and adaptable.
- Communication between nursing staff and pharmacy.
- Regular ward pharmacist who is helpful, approachable and friendly.
- Very efficient service. Great staff.
- Improved access through greater pharmacy hours.
- I utilise the pharmacist better. He is available to staff, easily accessed and nothing is too much of a problem for him. He is also available to any staff in-services we feel we may require, and being a small hospital he manages to keep in close contact with ward staff and any new medications we may not be familiar with.
- More hours allocated. Wider services provided.
- Because the pharmacist is reviewing patients medication charts and providing print outs for discharge patients.
- Better imprest system. Computers have improved service. Thorough checking of medications from prescriptions. Provide easy to understand medication advice for patients/ parents.
- Increased ward stock levels and restocking procedures (imprest) have improved availability to drugs and lessened waiting time for patients.
- Production of education sheets for clients on their discharge medication. Patient are provided with a computer printout of their drug information which is good for them to look back on when they are at home. Computer generated discharge medication list.
- Due to a permanent ward based pharmacist.
- Despite financial restraint greater involvement in patient care.
- Overall improvement due to improved communication between pharmacy staff and nursing staff.
- Ward rounds. In-service lectures. Bulletins on display.
- Introduction of clinical ward pharmacist. Education.
- Less waste. Accreditation, budgeting accountability.
- Increased patient education on medication.
- More availability of stock.
- Pharmacists can regularly be contacted with drug related problems such as obtaining stock, queries with drug dosages and protocol. They check each patient's drug chart on a daily basis and monitor the suitability of drugs for each particular patient.
- More communication and more presence in the wards.
- Bedside medication lockers. Providing discharge advice and medications. Daily round to check charts and patients, providing advice on medications.
- There has been a trend amongst SOME of the pharmacy staff to focus on the customer. The pharmacy staff are more visible around the hospital which is an improvement.
- Imprest is better, more staff available. Weekend services not fantastic or after hours. Still not a lot of appropriate medications on imprest.
- They have coped with the changes and maintained their service standard with increased workload.
- Involvement of the pharmacy staff in the actual hospital. As a whole is much greater, providing education, source of info on drugs and effects, and recommendations re best drug to use on various patients thus increasing involvement with patients overall care regime.
- Excellent knowledge of pharmacist working with specialty area. Improved drug information/ education. Excellent sterile preparation.
- One pharmacist assigned to ward. Pharmacist delivering discharge medications personally to patients.
- A lot of areas are extremely good, but I feel the closing of the weekend service has been a backward step. The fact that Emergency Department doctors have to dispense discharge drugs to patients leaving the hospital is extremely disruptive to the flow of the Emergency Dept.
- Introduction of clinical pharmacy has been the most beneficial improvement. Initially, nursing staff were hesitant to have ward pharmacist (fearing usurping of another nursing duty). However, we were amazed at how helpful such a service is.

- The permanent and usually relieving pharmacist employed by this hospital over the past 6 years have all been very keen capable people, always looking for ways to improve the service and their availability to ward staff.
- More contact with pharmacist. Able to ask questions re medication, dosage, timing.
- Better communication. Streamlined dispensing process.
- The pharmacy department has definitely improved- with the weekend pharmacy, the faxing system and a ward pharmacist service.
- Our ward pharmacist is very organised and has fantastic communication with the medical and nursing staff.
- Satellite pharmacy.
- Availability of stock, ward dispensing, interaction of pharmacist with patients.
- More staff, more liaison with nursing and medical staff. More education and information for patients and staff.

Table A4.14 Reasons given by *nurses* for why the pharmacy service was *worse* (1999/2000)

- Less staff, shorter opening hours. Pharmacists often cover more than one ward. Consequently we continually run (out) of non-imprest drugs for patients. Drug charts now only have 2 carbon copies instead of 3- insufficient for ordering non-stock items when the drugs are dispensed for less than 7 days (time frame of drug chart).
- Less stock available and ward staff unable to access stock out of hours.
- Slower to dispense- less staff. Ward staff often wait until mid-afternoon for routine dispensing of patient's usual medications- most of which they should take in the morning.
- Because increased patient throughput combined with budget cuts (including staff reductions) and spiraling cost of pharmaceuticals has strained ability of pharmacy to provide an efficient service.
- Reduced funds has seen a drop in service. Pharmacists are unable to become part of a team environment due to time constraints. Very difficult to get 'face-face' contact. Supply of non-imprest and discharge medications slow. Virtually no drug education to staff or patients from hospital pharmacists.
- Insufficient staff.
- Decreased number of staff members, therefore decrease in efficiency. Due to decreased staffing, the staff that are here are pressured therefore friendliness decreases.
- Never seem to be provided with enough stock. Ward stock problems occur all the time- i.e. what is classed as ward stock and is not being replaced.
- We always seem to have problems on our ward- 1. Discharge medications take too long to dispense. 2. Stock is not always available when needed. 3. Drug trolleys are taken to stock at inappropriate times i.e. medication rounds. 4. Weekend service is very limited- No ward rounds at all.
- Staff cuts. Budget cuts.
- Because our customers are more customer service oriented and over the period of time only minimal areas have been adjusted to meet this need as a hospital- client customer service could be improved. I.e. need for 1-2 satellite pharmacies more patient centred input about pharmaceutical information.
- Less staff working. No pharmacists ever come up to the ward to explain to patient about discharge drug. No pharmacist has done any ward round or talk to patient or staff about some drugs. Difficult to get some drugs and approval. Imprest not done by pharmacist. Couriers should not be allowed to bring medications to the wards.
- ? Enough time for pharmacy staff to do all the tasks needed. Discharge medication education to patients, drug education to hospital staff, stock on ward, all worse.
- Decreased numbers of pharmacists has led to decrease in patient services, both inpatient and outpatient. Pharmacists are over worked and rarely can provide on time, accurate pharmacy services as they did in the past.
- Patients on discharge get 2 days supply of pills and then have to see close doctor. It is often impossible to get an appointment with own doctor in this time span so run out of pills. Patient too sick to make a visit.
- Reduced weekend service makes it difficult to access drugs when needed.

- Generally satisfactory department; as satisfactory as 6 years ago, except at ward pharmacist level, in regard to accurate inpatient dispensing and also in keeping an appropriately well stocked imprest-cupboard. However, I feel that these areas have deteriorated most probably because of vast increase in admissions/ discharges over the years which have stretched all departments.
- When first started at this hospital I had come from another large teaching hospital, and I felt that the standards of pharmacy services at this hospital were vastly superior, however, this has changed slowly over the last 6 years, with less monitoring at ward level, less experienced staff and actual cutting back of services e.g. preparing IV solutions at weekends.
- The reduced hour after hours and the increased delay to get medications has REALLY made ward nursing more difficult.
- Less hours are available to obtain service which is disgusting in a major hospital. We receive many out of hours calls to dispense particular drugs to other wards.
- Financial constraints: not having permanent pharmacist on ward; apprentice pharmacists take forever to do their thing (despite enthusiasm and eagerness displayed); change of head of pharmacy; lack of direction; poor communication between pharmacy and wards re: changes for pharmacy and structure.
- No weekend service. Introduction of new drugs- no in-service before things introduced as standard treatment.
- After hours and weekend service poor.
- Drug availability- no drugs in patient drawers. Not stocked on time. Sometimes takes over 24 hours to get some.
- Although they do an excellent job with the resources available, reduced funds results in reduced hours and therefore more inconvenience for nursing staff. Discharge of patients on weekend results in many problems with no pharmacy in place to dispense drugs.
- The kinds of service provided, the hours worked have largely stayed the same. The exponential increase in drug use and complexity has NOT been matched by the pharmacy service. It is therefore net worse overall. Reduction of pharmacists overall employed is also (worse/ less) and this has reduced the service. The most recent reduction in staff has caused withdrawal of the imprest service. This has become an ongoing problem.
- Budget cuts, reduced pharmacists, reduced service, difficulty in obtaining medications, less pharmacists to check drugs/ imprest, reduced discharge medications- so need LMO- over servicing, drain on Medicare.
- Due to rotation of staff member who is not sufficiently skilled in the area of specialty, who has unprofessional and inappropriate communication skills, who does not respond to urgent requests for medication appropriately and who fails to stock items of high priority despite regular requests to ensure stock is available.
- There seems to be less staff to do more work. There are more patients going through the hospital system so more discharges and admissions. Many pharmacy jobs are now nursing jobs e.g. mixing up antibiotics, making morphine infusions. Stock runs out frequently and takes days to be replaced.
- Ward imprest infrequently restocked. Drug shortages over weekend. Borrowing from other ward-imprest drugs. Time spent finding and collecting patient drugs or restocking patient drug- previously done by pharmacy.

**Table A4.15 Reasons given by nurses for why the pharmacy service stayed the same (1999/2000)**

- Pharmacy has very limited budget and staff resources limiting severely any changes/ improvements they can make to their service.
- Hours open have improved but efficiency has decreased due to poor staffing levels.
- No change.
- The pharmacy service has basically been unchanged however, the relocation and upgrade of our pharmacy department has been long awaited and much appreciated, creating greater access and much more updated department.
- Depends on individual pharmacist.
- No changes that I have noticed. We need 24 hour access over weekend for weekend admissions and discharges.

- Through budget cuts and then privatisation, pharmacy has had to make many changes and adjustments but they have maintained the quality and standard of their service.
- We had a good service, the road is rocky, it takes a little longer but the staff try really hard and that's what it's all about at the end of the day.
- Staff are dedicated, have excellent Q.I program and are committed to providing excellent client and staff education and support. Good coordination and leadership from senior pharmacists at this campus.
- I think the service has stayed the same but the pharmacists are absolutely run off their feet. They do their best in very archaic facilities and with numerous different directors the department have done their best to maintain a growing service.
- Limitations on opening hours have been offset by the introduction of ward pharmacist.
- Not enough pharmacy staff to visit ward and educate patients on medications.
- Our pharmacist has been with the hospital many years and has always provided excellent service.
- Amount of drugs stocked, pharmacy hours and availability of access to medication stocks has not changed.
- The pharmacists are part of the health care team now, as they are more accessible because they are ward based. The personal service has improved. The problem is they have improved the customer focus by ward dispensing, but now they don't restock, make up antibiotic bags or fill dosette boxes.
- Sterile manufacturing of IV drugs used to be done by pharmacy but is now done by nursing staff; therefore that aspect is worse but discharge scripts are performed more rapidly now than 6 years ago.
- Pharmacy has never been available overnight. If we need specific medications for patients we rely on the supervisor to get them for us or we borrow from other wards.
- Worked for only 2 years at this hospital. I believe that the service available is adequate for this department.
- Appears to be affected by difficulty in recruiting pharmacists suitable for acute hospital work although efforts have been made to address this. However, demands for higher levels of service due to acuity have been hard to meet.
- Seeing pharmacists on the ward more regularly. Pharmacy seems to be more concerned about their budget and profits, than the patients.



(e) Table A4.16 Individual factors *pharmacists* identified as having changed the way the pharmacy service operates at their hospital, and the effect (1999/2000)

Factors, and their effect		
Service improved	Service stayed the same	Service worse
<ul style="list-style-type: none"> <li>Ward medication profiles</li> <li>Computerisation</li> <li>More advanced computer systems Increased computer access/ terminals</li> <li>Increased role/ use of technicians</li> <li>Drug information on computer</li> <li>Formal on call service established</li> <li>Cardiac rehab program</li> <li>Clinical technicians</li> <li>Reorganisation of stores</li> <li>Clinical pharmacy training</li> <li>In-service for pharmacy staff. More pharmacist training.</li> <li>Continuing education</li> <li>More staff</li> <li>IT availability</li> <li>Amalgamation</li> <li>Clinical coordinator</li> <li>Clinical educator pharmacist.</li> <li>Clinical pharmacy training</li> <li>Staff restructure to focus on clinical service</li> <li>Reduced IV manufacturing/ sterile services</li> <li>Clinical pharmacy.</li> <li>Introduction of clinical ward pharmacy</li> <li>Clinical service expansion</li> <li>Drug usage evaluation</li> <li>Drug information.</li> <li>Drug information service</li> <li>Patient counselling aids e.g. Dosette, medilist</li> <li>Increased customer focus</li> <li>Drug utilisation program</li> <li>Introduced research pharmacist</li> <li>Using cytotoxic for oncology</li> <li>Increase number of hospitals served, economy of scale of services and resources (private hospital)</li> </ul>	<ul style="list-style-type: none"> <li>Staffing profile/ hours</li> <li>Budgetary constraint</li> <li>Decreased patient length of staff</li> <li>Network</li> <li>Hospital restructure into 'clinical service units'</li> <li>Amalgamation</li> <li>Introduction of computers for dispensing</li> <li>Budget constraints. Restrictions on budget</li> <li>Third year student IPE and APE</li> <li>Hospital accreditation</li> <li>Technicians doing imprest</li> <li>Networking service</li> <li>Less non-clinical work technicians</li> <li>Ward dispensing</li> <li>Reduced outpatient scripts</li> <li>Pharmacy premises</li> <li>Loss of key staff</li> <li>Implementing health care networks</li> <li>Cutting back management</li> <li>Bedstay shorter increased workload</li> <li>Advice on drug information queries (lack of time)</li> <li>Computer changes</li> </ul>	<ul style="list-style-type: none"> <li>Increase patient throughput. (increased workload no extra staff)</li> <li>Increased patient turnover / reduced hospital stay. Change in patient mix</li> <li>Potential privatisation</li> <li>Budgetary restraints</li> <li>Difficulty filling staff vacancies</li> <li>Funding</li> <li>Staff morale</li> <li>Budget cuts</li> <li>Changes to health insurance (private hospital)</li> <li>Changes to PBS margins(private hospital)</li> <li>Reduced staff time</li> <li>Restructuring of pharmacy service</li> <li>Loss of staff. Reduction in staff</li> <li>Workload</li> <li>Patient turnover</li> <li>Service area/ space/ facilities</li> <li>Lack of staff (professional and support)</li> <li>New computer, from word to DOS based system.</li> <li>Computer system</li> <li>Lack of leadership</li> <li>Staff cuts</li> <li>TPN made outside</li> <li>Reduced level of government funding</li> <li>Indecision of plans for redevelopment of hospital</li> <li>Lack of staff pharmacists available to employ. Difficulty attracting pharmacists to work</li> <li>Time for research</li> <li>Time for counselling</li> </ul>

Factors, and their effect		
Service improved	Service stayed the same	Service worse
<ul style="list-style-type: none"> <li>Patient counselling</li> <li>Ward pharmacy service</li> <li>Communication.</li> <li>Communication with other health professionals, and with hospital staff.</li> <li>New staff. Increased staff numbers.</li> <li>Documentation of interventions. Interventions reporting</li> <li>Time management</li> <li>Expansion of hospital</li> <li>Networking</li> <li>Communications to doctors regarding interventions</li> <li>Attending ward rounds</li> <li>Counselling patients</li> <li>Paperless claim (private hospital). New drug charts</li> <li>Barcoding of imprest cupboards</li> <li>Longer hours of service (8am to 12am)</li> <li>Ward pharmacists doing medication chart review</li> <li>Technicians for dispensing, rounds</li> <li>Introduction of comprehensive after hours service</li> <li>Improved communication between pharmacy and clinicians</li> <li>New pharmacy premises</li> <li>Better technology</li> <li>Quality assurance</li> <li>Computerised stock control</li> <li>Bedside medication</li> <li>Change in staff- better atmosphere</li> <li>Involvement in private hospitals (contracts)</li> <li>Stock control. Ordering of stock</li> <li>Documentation of clinical service</li> <li>Clinical knowledge of pharmacist</li> <li>TDM (therapeutic drug monitoring)</li> <li>Technology for communication e.g. E-mail</li> <li>Increased impresting</li> <li>Availability of stock</li> <li>Vacuum delivery system.</li> </ul>		<ul style="list-style-type: none"> <li>Time for in-servicing</li> <li>Staffing availability</li> <li>Participation in ward rounds</li> <li>Difficulty obtaining staff- especially relieving pharmacist</li> <li>Reduction in outpatient dispensing (privatisation)</li> <li>Loss of on call service</li> <li>Shortage of staff</li> <li>Drug education for hospitals staff (lack of time)</li> <li>Funding shortage</li> <li>Medical staff turnover</li> <li>Faster introduction of new drug entities</li> <li>Limited tenure executives on performance based packages</li> <li>Impending privatisation</li> <li>Lack of permanent competent staff</li> <li>APEs and IPEs</li> <li>Coalition government policies</li> <li>Hospital networks.</li> <li>Networking established</li> <li>No money for health</li> <li>Case mix</li> <li>Economic rationalism</li> <li>Change of director of pharmacy</li> <li>Pharmacy no longer reporting to medical director management</li> <li>Staff dismissals</li> <li>Inequality of staff conditions (e.g. new staff no ADO)</li> <li>Layout of pharmacy</li> <li>Lack of staff. Staff shortages. Staffing levels</li> <li>Reduced pharmacy hours</li> <li>Lack of hospital pharmacists</li> <li>Ward pharmacy service</li> <li>Pharmacy bulletin</li> <li>Lack of suitably trained staff.</li> <li>Less training of new staff</li> <li>Change of Government</li> <li>Staff recruitment difficulties</li> </ul>

Factors, and their effect		
<i>Service improved</i>	<i>Service stayed the same</i>	<i>Service worse</i>
<ul style="list-style-type: none"> <li>Pneumatic chute from/ to wards</li> <li>Network introduction.</li> <li>Networking of hospital</li> <li>Implementing more stringent sterile techniques for sterile dispensing</li> <li>Discharge counselling</li> <li>Increasing responsibility of technicians</li> <li>Dedicated research position</li> <li>Increased ward pharmacy service.</li> <li>Increase in clinical services</li> <li>Service-user survey and meetings</li> <li>Accreditation under equip</li> <li>Attendance at ward rounds</li> <li>Taking on service to private hospital</li> <li>Specialisation</li> <li>Increased stability times on chemotherapy products</li> <li>Hospital organisational structure</li> <li>Imprest review</li> <li>Attendance at clinical meetings, NUM meetings (nursing unit manager)</li> <li>New director- new directions</li> <li>Better time management (due to staff shortage)</li> <li>Better use of technicians.</li> <li>Multiskilling technicians</li> <li>Ordering of drugs</li> <li>Pharmacist stability</li> <li>Ward dispensing</li> <li>Barcoding of impost on wards</li> <li>New layout of dispensary</li> <li>Computer software</li> <li>Flexible hours between staff</li> <li>Notebook dispensing at patient bedside</li> <li>New laptops for ward dispensing</li> <li>Computer system upgraded</li> <li>Itemised costing to units</li> <li>Introduction of CMI's</li> <li>Increased patient discharge counselling</li> <li>Customer service awareness</li> <li>Marketing services</li> </ul>		<ul style="list-style-type: none"> <li>Increased management responsibilities</li> <li>Remuneration</li> <li>Budget restraint on wages</li> <li>Uncertain about future</li> <li>Lack of clear plan for hospital (frequently changing plans)</li> <li>Beds services per pharmacist increased</li> <li>Increased amount of clinical trials</li> <li>Less conference attendance</li> <li>New computer system</li> <li>Director of pharmacy</li> <li>Higher turnover of patients hence increased workload</li> <li>Off site areas to be serviced.</li> <li>Integration of other services off site e.g. finance/ stores</li> <li>Executive staff change</li> <li>Inability to attract HMO to hospital</li> <li>Expansion of health care services</li> <li>Dismissal of management</li> <li>Relocation of store due to long term construction work</li> <li>No upgrade to sterile facilities</li> <li>Privatisation of 3 floors</li> <li>Switchboard changes</li> <li>Loss of funding for Victorian Drug Information Centre</li> <li>Cuts to nursing staff</li> <li>Poor location</li> <li>No satellite pharmacy</li> <li>No improvement in pharmacy layout and facilities generally for 15 years</li> <li>Reduction in staff numbers management initiated</li> </ul>

Factors, and their effect		
<i>Service improved</i>	<i>Service stayed the same</i>	<i>Service worse</i>
<ul style="list-style-type: none"> <li>Formulary management process</li> <li>Encouragement of diversity for staff</li> <li>Clinical pharmacy trainee</li> <li>Customer service workshops</li> <li>More community talks</li> <li>More quality control projects</li> <li>Better documentation of pharmacy activities.</li> <li>Clearer job descriptions</li> <li>More regular staff meetings</li> <li>Greater representation at hospital meetings.</li> <li>Pharmacist involvement in different meetings e.g. Drug and therapeutic meetings, oncology meetings, attendance at nursing handover.</li> <li>More professional manner.</li> <li>Management change</li> <li>Increased drug level monitoring</li> <li>Quality assurance (double, triple checking)</li> <li>Acceptance of clinical pharmacy services by clinicians etc.</li> <li>Adequate, competent staff</li> <li>Better communication with management. Improved rapport with doctors and nursing staff</li> <li>ACHS standards</li> <li>Fred dispensing system</li> <li>Satellite pharmacy</li> <li>Redesign of dispensary</li> <li>Fax service for discharges, ward requisitions.</li> <li>Combined inpatient and outpatient dispensing</li> <li>Range of services</li> <li>Faxing discharges to community pharmacy</li> <li>Reduction of manufacturing focus</li> <li>Increasing role in education</li> <li>Intervention monitoring</li> <li>New medication ordering system</li> </ul>		

**Table A4.17 Individual factors doctors identified as having changed the way the pharmacy service operates at their hospital, and the effect (1999/2000)**

Factors and their effect		
Service improved	Service stayed the same	Service worse
<ul style="list-style-type: none"> <li>• More staff</li> <li>• More involvement at ward level.</li> <li>• Greater pharmacy presence on wards. More active involvement</li> <li>• Computerisation</li> <li>• Drug utilisation committee</li> <li>• Hospital in the home</li> <li>• Ward pharmacists</li> <li>• Commencement of oncology service</li> <li>• Imprest</li> <li>• Increased demand</li> <li>• After hours stock cupboard</li> <li>• Mims on cd info</li> <li>• Confidence with research and S100 drugs etc</li> <li>• Response to discharge scripts</li> <li>• Cost control</li> <li>• Participation in research and clinical trials</li> <li>• Antibiotic ; bowel prep guidelines. Therapeutic guidelines</li> <li>• Inventory management</li> <li>• Increased spectrum and availability of medications in A&amp;E department</li> <li>• Use of new (sometimes not yet approved medications ie. From Canberra) medications</li> <li>• Computer</li> <li>• Pharmacy bulletins/ newsletter</li> <li>• Pharmacy committee</li> <li>• Hospital run imprest</li> <li>• Account procedure (private hospital)</li> <li>• Energetic manager</li> <li>• Improved facilities. Relocation</li> <li>• Clinical ward pharmacy</li> <li>• Entire service always improving- number of pharmacists very high</li> <li>• Increase size and number of pharmacists</li> <li>• Outpatient services</li> </ul>	<ul style="list-style-type: none"> <li>• Reduction in discharge scripts</li> <li>• Pressure on beds</li> <li>• Reduced funding</li> <li>• Increased workload</li> <li>• Remodel drug charts</li> <li>• New pharmacy</li> <li>• Severe budget cuts</li> <li>• Outsourcing residential service</li> <li>• Amalgamation</li> <li>• Formation of network</li> <li>• Privatisation</li> <li>• New hospital management</li> <li>• Involvement in ward rounds</li> <li>• Inpatient services</li> <li>• Abolition of outpatient dispensing</li> <li>• Not open Saturdays</li> <li>• I don't believe its changed</li> <li>• Change from in-house pharmacist.</li> <li>• Change in ownership (Private hospital)</li> <li>• Outpatient fees</li> <li>• New forms</li> <li>• Lack of pharmacists</li> <li>• Computer imprest</li> <li>• New staff</li> <li>• Cost reductions</li> <li>• Cost involvement- (to) units</li> </ul>	<ul style="list-style-type: none"> <li>• Cost cutting</li> <li>• Falling morale of staff</li> <li>• New discharge summaries</li> <li>• Short supply of discharge and outpatient drugs to patients</li> <li>• Outpatient privatisation</li> <li>• Financial cuts</li> <li>• Funding restrictions. Funding cuts/ budget constraints</li> <li>• Reduced amount of discharge medications (number of days)</li> <li>• Funding restrictions in outpatient services</li> <li>• Length of stay for all conditons. Pressure to do everything in shorter time</li> <li>• Need to offer advice when not required</li> <li>• Cytotoxic preparation</li> <li>• Budget</li> <li>• Reduced budget</li> <li>• Reduced staffing</li> <li>• Increase charges</li> <li>• Ward services</li> <li>• Service on weekends.</li> <li>• Reduced weekend access</li> <li>• Service on public holidays</li> <li>• Fewer staff</li> <li>• Not dispensing to nursing home</li> <li>• Change in prescriptions</li> <li>• Reduction of imprest</li> <li>• Documentation needed for pharmaceutical benefits (private hospital)</li> <li>• Availability of pharmacist.</li> <li>• Less availability of staff</li> <li>• After hours cupboard</li> <li>• Network</li> <li>• Difficulty recruiting good pharmacist</li> <li>• Increasing workload in some clinical services</li> <li>• Increased drug costs (too many new drugs can't be accessed due</li> </ul>

Factors and their effect		
Service improved	Service stayed the same	Service worse
<ul style="list-style-type: none"> <li>• Commercial non-prescription medicines</li> <li>• Rationalisation of drug therapy</li> <li>• Medication audits</li> <li>• New medication charts</li> <li>• On-site pharmacy</li> <li>• Availability</li> <li>• Helpful advice</li> <li>• Trading hours</li> <li>• 7 day service 8am to midnight</li> <li>• Price reductions</li> <li>• Weekend services</li> <li>• Fewer meetings (drug subcommittee)</li> <li>• Rationalisation</li> <li>• Professionalisation</li> <li>• Drug monitoring</li> <li>• Drug protocols</li> <li>• Increased use of cytotoxic</li> <li>• Drug information</li> <li>• Education</li> <li>• Dedicated ward pharmacist</li> <li>• Utilisation and cost monitoring</li> <li>• Adverse drug reaction</li> <li>• Lack of dispensing PBS items to outpatients. Non dispensing of NHS drugs</li> <li>• Drug usage evaluation</li> <li>• Discharge medication counselling</li> <li>• Pharmacist on ward rounds</li> <li>• Sophistication</li> <li>• Inpatient</li> <li>• More background knowledge of clinical situation</li> <li>• More information</li> <li>• More staff</li> </ul>		<ul style="list-style-type: none"> <li>to cost- public patients denied valuable therapies available in private hospitals)</li> <li>• No outpatient dispensing</li> <li>• Reduction in hospital beds (more limited service)</li> <li>• Alteration in hospital relationship with visiting medical officers</li> <li>• Outpatient drug supplies. Decrease (reduction) in outpatient prescriptions. Outpatient services</li> <li>• Availability of outpatient medications (but I think this is OK)</li> <li>• Budget influencing dispensing and availability of drugs</li> <li>• After hours services</li> <li>• Reduced drug funding</li> <li>• One week discharge scripts</li> <li>• Financial</li> <li>• Cost to patients</li> <li>• Amounts of drugs dispensed</li> <li>• Network system</li> <li>• Decreased staffing. Cutback of pharmacists</li> <li>• Sacking of chief</li> <li>• Cost shifting to Commonwealth</li> <li>• Network control</li> <li>• Budgetary constraints on outpatient dispensing</li> <li>• Lack of funding and lack of staff</li> <li>• Morale</li> <li>• Drug information. Drug information service</li> <li>• Patient contact and education</li> <li>• Attendance at ward rounds</li> <li>• Charging by pharmacy for participation in clinical research- makes research difficult especially if unfunded</li> <li>• Cost control/ overbudget</li> <li>• Cessation of dispensing PBS medications in outpatients</li> <li>• Involvement of ward pharmacist in ward rounds</li> <li>• Closed drug info line</li> <li>• Very reduced funding</li> <li>• Introduction of new drugs</li> <li>• No money- restricted discharge dispensing, limited weekend</li> </ul>

Factors and their effect		
Service improved	Service stayed the same	Service worse
<ul style="list-style-type: none"> <li>Cost control</li> <li>Reduced funding</li> <li>Reduced staff</li> <li>Change in organisation of department/bar coding of stock</li> <li>Discharge drug sheet</li> <li>Monitoring drug charts</li> <li>Highly qualified pharmacists</li> <li>Cost containment</li> <li>Drug monitoring</li> <li>Computerisation of side effects</li> <li>Emergency department. Intensive care services (Private hospital)</li> <li>Supply of medication to emergency department</li> <li>Extended hours of service</li> <li>Large company took over the pharmacy service (private hospital)</li> <li>Communication</li> <li>Expanded imprest. New agents</li> <li>New director</li> <li>Written instructions to patient</li> <li>Feedback to RMO/ VMO</li> <li>Discharge planning</li> <li>Discharge medications</li> <li>Communication with VMOs</li> <li>Changes in individual personnel</li> <li>Enthusiasm for patient care</li> <li>Drug pharmacokinetic monitoring</li> <li>More patient focused service</li> <li>Discharge sheet</li> </ul>		<ul style="list-style-type: none"> <li>service, no PBS dispensing</li> <li>Commonwealth /State share in providing health services to Victoria including pharmaceutical-Much worse</li> <li>Research involvement</li> <li>Inpatient education</li> <li>Less visible staff</li> <li>Reluctance to prepare unusual formulations</li> <li>Dwindling resources</li> <li>Reduced morale</li> <li>Workload</li> <li>Pharmacist/ consultants meeting</li> <li>Rarer ward pharmacists</li> <li>Closure of weekend service</li> <li>Convenience for patients</li> <li>Flexibility</li> <li>Hospital cost cutting -reduced hours operating</li> <li>Loss of cytotoxic manufacture</li> <li>Loss of ward pharmacist</li> <li>The need to write more scripts compared to public hospital</li> <li>Budgets!</li> <li>Staff insecurity</li> <li>Reduced ability to prescribe</li> <li>No contact with medical staff as previously- new service</li> <li>Communications with me</li> <li>Changes in individual personnel</li> <li>Appreciation by hospital and network administration</li> <li>Drug cost monitoring.</li> <li>Drug usage evaluation</li> <li>Drug information service</li> <li>Non-computerisation</li> <li>Discharge/ advice list</li> <li>Generic substitution</li> <li>Less documentation of medication since pharmacy items not readily listed for future reference if private scripts written- probably harder to pick up any prescribing errors.</li> <li>Expense to patients, cost shifted to patients and we don't know how much medication costs the patient. Especially important with chronic diseases</li> </ul>

**Table A4.18 Individual factors nurses identified as having changed the way the pharmacy service operates at their hospital, and the effect (1999/2000)**

Factors and their effect		
Service improved	Service stayed the same	Service worse
<ul style="list-style-type: none"> <li>Better weekend coverage</li> <li>Imprest system</li> <li>Stock checked/ replenished daily</li> <li>Pharmacy manual</li> <li>Increased staff numbers</li> <li>Communication</li> <li>Improved staff presentation</li> <li>Faxing of discharge scripts</li> <li>Change to imprest</li> <li>Use of cheaper brand</li> <li>Dispensing to hospital staff</li> <li>Barcoding supplies on shelves</li> <li>discharge dispensing</li> <li>Earlier discharge</li> <li>Sicker patients/ more throughput of patients/ shorter patient stay</li> <li>Increased staff in pharmacy</li> <li>Weekend theatre lists</li> <li>Pharmacist on call/ increased after hours</li> <li>Review of medications/ histories/ charts</li> <li>Discharge summary</li> <li>Patient education</li> <li>Efficiency</li> <li>Discharge dispensing</li> <li>Drug counselling education of patients/relatives</li> <li>Ward pharmacists</li> <li>Knowledge available</li> <li>Dispensing medications at ward</li> <li>Patient medication printouts</li> <li>Bigger range of services</li> <li>Change of administration and structure of service</li> <li>Weekend hours increased</li> <li>Pharmacy hours</li> <li>Discharge medication information</li> <li>More ward involvement</li> </ul>	<ul style="list-style-type: none"> <li>More staff</li> <li>Early discharge</li> <li>Amalgamation</li> <li>Stocking imprest</li> <li>Increased throughput</li> <li>Discharge medication. Dispensing of medication</li> <li>Review of medication charts</li> <li>Less pharmacy staff with bigger workload</li> <li>Relocation</li> <li>New manager</li> <li>Pharmacy bulletin</li> <li>Paging system</li> <li>After hours service</li> <li>Imprest items/ storage now done by hospital</li> <li>Difficulty in obtaining some drugs</li> <li>No proper drug trolleys</li> <li>Reliability of the service</li> <li>Introduction of preadmission drug details</li> <li>After hours service</li> <li>Management restructure</li> <li>Hospital restructure</li> <li>Information to patients on medications</li> <li>Recruitment difficulties</li> <li>Staff education (could improve)</li> <li>Information on drug administration</li> <li>Out of hours stock cupboard</li> <li>Ward pharmacy budget</li> <li>Increased work load</li> <li>Changes in medications</li> <li>Increase in cytotoxic preparation</li> <li>Internet drug information service</li> <li>Friendly/ helpful staff</li> <li>a.m./ p.m. review of medication charts</li> <li>More drug rounds</li> </ul>	<ul style="list-style-type: none"> <li>Pharmacy staff reduction</li> <li>New ward pharmacist</li> <li>Opening hours/ altered hours</li> <li>Speed of discharge medication</li> <li>Maintaining inpatient non-imprest drug supplies to wards</li> <li>Weekend hours of operation</li> <li>On call/out of hours service</li> <li>Clinical in-services/ in-service education</li> <li>Answering phone inquiries</li> <li>Increased throughput of patients</li> <li>Poor discharge planning</li> <li>Weekend service</li> <li>Budget restrictions-decreased staffing</li> <li>Time taken to dispense inpatient medications</li> <li>Cost containment/ lower budget cuts</li> <li>Filling /checking drug trolleys</li> <li>Decrease in budget. Funding cuts</li> <li>Increase in patient load/ turnover/ throughput</li> <li>Staff reductions</li> <li>Service reductions (only dispense certain meds.- otherwise LMO)</li> <li>Staff shortages</li> <li>Discharge medications (now only 3 days worth)</li> <li>Weekend pharmacists busy +</li> <li>Reliability of service</li> <li>Imprest availability</li> <li>Communication with staff/ friendliness of staff</li> <li>Decrease in efficiency</li> <li>Lack of qualified staff</li> <li>Patient aging</li> <li>Services complexity</li> <li>Ward pharmacist</li> <li>No longer available for ward rounds</li> <li>Introduction of hospital imprest and pharmacy supply department</li> <li>Privatised</li> </ul>

Factors and their effect		
Service improved	Service stayed the same	Service worse
<ul style="list-style-type: none"> <li>Oncology unit; day surgery; cytotoxics; epidurals</li> <li>Pharmacy bulletin</li> <li>Communication with patients, nursing staff</li> <li>Longer hours</li> <li>Pharmacy control &amp; drug purchasing</li> <li>Inpatient dispensing computerisation of dispensing medication</li> <li>Cheaper drugs used</li> <li>Staff attitude/ friendlier staff</li> <li>Courier service</li> <li>Provision of chemotherapy</li> <li>Accreditation</li> </ul>	<ul style="list-style-type: none"> <li>Cutbacks (budget)</li> <li>Pharmacy staff not checking drug charts daily on the ward</li> <li>Discharge planning</li> <li>relocation</li> <li>Changing population base</li> <li>costing</li> <li>Outpatient medications</li> <li>Streamlined discharge procedure</li> <li>Staff education- new drugs</li> <li>Complexity of medication</li> <li>Availability of expensive drugs</li> <li>Efficiency of dispensing</li> <li>Patient information</li> <li>On- call pharmacists</li> <li>Discharge counselling</li> <li>More complex patients at hospital</li> </ul>	<ul style="list-style-type: none"> <li>Review of medication charts</li> <li>New computer system</li> <li>Inability to recruit/ cover wards</li> <li>No ward pharmacist.</li> <li>Ward pharmacist withdrawn</li> <li>Costing to departments</li> <li>Loss of imprest system</li> <li>Availability of qualified people to country area</li> <li>Accuracy of dispensing</li> <li>Nurse initiated drugs</li> <li>Reduced imprest. Certain medications removed from imprest items to increase pharmacy profits</li> <li>Stocking drug shelves/ trolleys</li> <li>High turnover on weekends</li> <li>Increased medical patients on ward</li> <li>Increased discharges in weekends</li> <li>Drug education to hospital staff</li> <li>Pharmacy contracted out to local community-wait longer for drugs</li> <li>Privatisation of pharmacy</li> <li>Less contact with pharmacist</li> <li>No on-call pharmacy</li> <li>Availability of IV medications after hours</li> <li>Less full-time staff, too many casuals</li> <li>Decreased range of medications</li> <li>Decrease in reliability of pharmacy</li> <li>New hospital</li> <li>Decreased hours of service (week and weekend)</li> <li>Downsizing</li> <li>Budget cuts-reduced staff numbers, too cost focused (even on changing clinical practices)</li> <li>Sharing of ward pharmacist between two clinical areas</li> <li>Budgetary constraints</li> <li>Decreased funding. Shared state and federal cost.</li> </ul>
<ul style="list-style-type: none"> <li>Improved facilities/ new location</li> <li>New drug charts</li> <li>Satellite pharmacy</li> <li>More pharmacists</li> <li>Pharmaceutical knowledge</li> <li>Pharmacist ward round participation</li> <li>Monitoring of medications</li> <li>Medications at patients bedside and stocking of same</li> <li>Increased patient services</li> <li>Management changes</li> <li>Requisition via drug chart</li> <li>Drug cost monitoring on individual wards and patients</li> <li>Pharmacy updates</li> <li>Fax scripts to pharmacy</li> <li>Drug info phone line-public and staff need for this</li> <li>Education- drug info</li> <li>Vacuum transport</li> <li>Communication with staff</li> <li>Input/ advice at ward</li> <li>Pharmacist allocated to ward</li> </ul>		

Factors and their effect		
Service improved	Service stayed the same	Service worse
<ul style="list-style-type: none"> <li>Efficiency of pharmacy service</li> <li>Imprest</li> <li>Networking</li> <li>Courier system for patient drugs</li> <li>Revision of stock medication</li> <li>Increased patient medication on discharge</li> <li>Provide ward pharmacy</li> <li>Accreditation and EQUIP</li> <li>Monitoring adverse reactions</li> <li>Out of hours drug trolley emergency department</li> <li>Computerisation</li> <li>Implementation of discharge policy</li> <li>Fax requisition of non-imprest drugs</li> <li>Discharge dispensing on ward</li> <li>Ward dispensing. Satellite pharmacy</li> <li>Larger imprest</li> <li>Discharge dispensing and advice</li> <li>Personal medication lockers/ bed side lockers for dispensing</li> <li>HITH program</li> <li>In-service education for staff</li> <li>Pharmacy advisory committee. Poly pharmacy committee</li> <li>Customer need for greater information</li> <li>Seven day a week service</li> <li>Drug information service increased</li> <li>Electronic MIMS supplied to all areas</li> <li>Education sessions</li> <li>Stock availability</li> <li>More educated public/ public influenced by media</li> <li>Sterile manufactured IV</li> <li>Medication supply to wards</li> <li>In-service for hospital staff</li> </ul>		<ul style="list-style-type: none"> <li>Narcotic monitoring</li> <li>Decreased stock supply</li> <li>Helping staff with queries</li> <li>Restructuring of service</li> <li>Staffing levels and experience</li> <li>Availability of ward pharmacist</li> <li>Governed by a network</li> <li>Reduced number of pharmacy support on the wards</li> <li>Reduced hours</li> <li>Financial restraints</li> <li>Inexperienced staff</li> <li>Weekend pharmacy, no discharge meds weekends</li> <li>Limited imprest for ward/ hospital</li> <li>Close down weekend service</li> <li>Discharge medications for inpatient to be given by emergency RMO (after hours)</li> <li>networking</li> <li>Drug presentation/ availability/ dispensing</li> <li>Insufficient stock of medications</li> <li>Ceased cytotoxic preparation</li> <li>Computer program change</li> <li>Less medication provided on discharge</li> <li>Overall cost cuts hospital wide</li> <li>Proliferation of available medications</li> <li>Lack of drugs wanted due to cost</li> <li>Reduced service</li> <li>Timely preparation of discharge medications</li> <li>Counselling</li> <li>Multiple medications</li> <li>Patient information knowledge</li> <li>Drug drawer bedside</li> <li>Relying on patient's own medications more</li> <li>Range of drugs available</li> <li>In-service for hospital staff</li> </ul>

## APPENDIX 5

Sample comments from inpatients and outpatients in 1993/1994.

and

Sample comments from inpatients and outpatients in 1999/2000.

Table A5.1 What inpatients think the pharmacist does in the ward (1993/94)

- Checks the patient's sheets to see if any changes have been made to their pharmacy requirements.
- Oversees general drug treatment of the patients and dispenses drugs
- Supply drugs and advice on drugs.
- Hands out medicines.
- Delivers medications.
- Administers and supplies required drugs and medicines.
- Check drug stocks, drug cupboards and drug charts.
- Asks questions to see if any side effects.
- Pharmacist balances the drugs and medicines used hourly in the ward, specialise, simplify, standardise, specify.
- Supply medicines to patients that are leaving hospital.
- Dispense what the doctor requests.
- Make sure patient leaving hospital has enough drugs to supply him with 1 week's medications, also the dangers of the drugs e.g. driving, sun, before/ after food.
- Looks at and notes each patients drug chart, returns to pharmacy, makes up/ obtains drugs for each patient in ward.
- See to welfare of the patient.
- The pharmacists section is an intricate service arm to the ward, providing on a day to day basis all medication required for patients-24 hour service.
- Nothing.
- Checks patient's record for drugs used.
- Checks if all drugs required by patient are in stock.
- Have never seen one in the ward.
- No idea.
- Checks patients weight and height to see if prescribed dosage of drug is applicable, advises nurses on adverse reactions to drugs if requested.
- Advises / informs patients on what their medicine is/ should do for them plus any side effects they may have.
- Checks on patients medications-getting right dose etc at right time. Checks patients reports, advise patients re ongoing medication on discharge from hospital.
- A very good job explaining to patients.
- Dispenses all drugs to patients.
- Checks drug charts and drugs ordered by doctors- orders the drugs required.
- Visits patients to gain their confidence.
- Checks and supplies medication for each patient, explains any possible adverse reaction a particular drug may have as well as the advantages to the patient
- Make sure all prescriptions are made available & on hand, administered properly.
- Deliver drugs and medicines to charge sister / nurse.
- Make sure the patient gets the appropriate medicine.
- Restock the drug trolley, give patients discharge medications and advise patients re their use.
- Monitors any changes to written orders.
- Checks patients medication on admission.
- Advise younger doctors on limitations & restrictions on some medicines.
- Ensure drugs have been administered as per doctors orders.
- Dispenses medications, checks doses, routes, compatibilities, check drug levels, check patient medication history.
- Distributes tablets.
- Discuss use of tablets.
- When leaving the hospital a pharmacist comes up to give you your medication
- Checks that supplies ordered are right and that they are being administered properly, for advise on use.

- Works with doctors and nurses to make sure the right prescriptions are administered.
- What pharmacists?
- Advise staff about drugs, make up sterile IV solutions, dispense drugs.
- Check patient history/ drug record where applicable & re-stock ward drugs.
- Helping people.
- Brings drugs to patients and tells them how to use them.
- Answer any queries staff or patients may have about medication, perhaps checks for out of date supplies.
- Attends to supply of drugs etc and correct way to administer & advise if a possible reaction to any drugs given to patients.
- Delivers any drugs & medicines prescribed by doctors to patient on discharge & advises patient of any complex instructions or dosages.
- Looks at your chart for some unknown reason & asks if you're on any medication so the don't OD you (doctors, nurses, whoever).
- Check patients supply of tablets and replenish same.
- Checks medications, gives you advice if you request it.
- To ensure that the medicines given to the patients are correct to the age and weight of each patient.
- Check charts for safety.
- Check what drugs are being prescribed and what doses are used.
- They also advise doctors on what to give patients.
- Give the nurses the drugs.
- Checks the patients charts to ensure an ongoing supply of drugs.

**Table A5.2 What inpatients asked the pharmacist related to their health needs, treatment and medicine (1993/94)**

- Why a drug /prescription issued and what the effects are likely to be.
- Who would monitor the tablets.
- What certain pain killers & vitamins do and how they effect you.
- When, how and order in which take medication-explained by pharmacist.
- Whether take medication before/ after eating.
- About patches for giving up smoking or alternatives.
- No questions, just advice given about medications received.
- Discussed recent onset diabetes and non-response to insulin.
- Insulin and needles.
- Heart, arthritis, head pains, water works etc.
- Nothing, I asked this from the doctors.
- The use of drugs.
- I just said "hello" and she introduced herself.
- Availability of drugs prescribed.
- Didn't have to ask. He explained what he was doing.
- About 'Ensure' in relation to its use.
- I just listened.
- Relationship of diet to anti-coagulant therapy.
- Question about warfarin.
- Just told the pharmacist what tablets I've been taking.
- About patients thyroid operation.
- What is the benefit of a drug being taken.
- Queried specific drug being used for immobile patients.
- About medication.
- Contraindication of drugs I was taking.
- What antibiotic I was having through an IV.

- I didn't, he came and checked patient medications and said who he is and what he does.
- Nothing, because I know what my medicine needs are.
- Drugs given for home use, what they were, how often take them.
- Enquiry with regards to the cost and supply of particular drugs.
- Regarding a cream for thrush which developed after a medicine.
- Explanation for any changes in medicine or dosage.
- What reactions the drugs/ medicines have on me.
- Regarding blood (testing) sticks.
- Explanation of treatment / drugs.
- Questions about drugs being administered.
- Information on drugs I am taking.
- A social chat only.
- Enquired what toiletries (provides), body oils, soap for sale.
- Checking drugs with trade names not found in the ward 'MIMS'.
- Need for medicine.
- The type of drug that I needed because I was running out.
- The nursing staff answer my questions.
- Why I was refused my regular medicine.
- Treatment needed.
- Information about the drugs.
- Whether use Beclofort before or after Ventolin.
- Possible side effects of drugs, discuss use of drugs with doctors.
- Pharmacist explained everything clearly, no questions needed.
- Didn't ask the pharmacist, would normally ask the doctors re this information.
- About tablets to be taken at home.
- Explanation of hormone tablets.
- Ordered the mini pill.
- Regarding medication I was on and how it related to me and my pregnancy.
- Medication for nausea discussed.
- Re allergy to penicillin and codeine to ensure none were in medication being given.
- Medications needs.
- Regarding the amount of pharmacy items that can claim from the PBS entitlement card.
- How many tablets to be taken and when; how to take drugs.
- Nothing, I didn't know that's what she was there for.
- Side effects of drugs being taken.
- Possible side effects of drugs.
- My three puffers.
- Nothing, the pharmacist advised me of the tablets dispensed.
- If could get me Panadol, the nurse did most of the work.
- Nothing, she just checked my chart and left.
- Nothing.

**Table A5.3 Inpatients' suggestions about how the pharmacy's service to them in the ward could be improved (1993/94)**

- OK. Excellent, Happy, A1, perfect.
- Increase availability, increase interaction, introduce themselves and service (pharmacist).
- None, don't know.
- Side-effects, effects, action, reactions, what drugs do -even common ones.
- Explains what taking, effects, different brands.
- Visit, talk to patients, explain.



- Ask if patients want information.
- Information leaflets/ brochures, pamphlets- for patients/ relatives.
- Don't just check chart, ask patient if want information.
- Increase speed e.g. discharge.
- No way to improve-nurses and doctors advise re medications.
- Brochure explaining services available.
- Accompany doctors on rounds.
- Improve communication with patients and more explanation of drugs administered.
- Computer link between hospital ward and pharmacy.
- Visit ward on regular basis- answer patient and nurses questions.
- Don't know what they do.
- Explain possible side effects. What is the medication actually doing for the body.
- Pharmacy service since my admission has been excellent so continue current standard.
- More visits and much speedier service. Waiting 3 hours due to communication problems and lack of staff especially weekends.
- It seems to be doctor directed in this hospital and this seems to work.
- Maybe rather than just going around checking chart they could ask the patient if there is anything they would like to know about their medicines.
- I have never seen a pharmacist in this ward.
- Don't know enough about the mechanics of the job.
- By visible presence in ward. E.g. anaesthetist and theatre staff visit patients before operation. In some cases a pharmacist visit would benefit.
- It must be OK. Every time I need a drug or ointment it is always given to me straight away.
- Perhaps- could advise patients more about their drugs.
- Introduce themselves to you and explain what they do and how they can help you.
- Should improve communication with patient and more explanation about drugs administered.
- The pharmacist should check not only with the medical charts, doctors, nurses, but also take the time with the patient.
- By asking the patient his regular medicines.
- Perhaps more independent information on drugs/ medicines (booklets etc.)
- Perhaps someone from the department could visit each patient just for 5 minutes to explain use of drugs, reactions etc.
- Information leaflet detailing the services provided by pharmacy within the hospital. Contact person and number for any patient queries.
- By giving more information (personally ) to patients and explaining possible side-effects.
- They could tell us what and why giving and effect of it.
- It doesn't need to be improved. The doctor says what medicines I need and the nurses give them to me.
- Possibly information leaflets on medicines explaining reasons for use and possible effects i.e. nausea, shakes.
- Visit and explain your drugs.
- Talk to every person to make sure they know what is going on.

Table A5.4 Inpatients' suggestions for improving the explanation about their medicines (1993/94)

- Everything is well explained; fully explained.
- Explain more.
- Tell what and why giving and effect of it.
- More personalised attention.
- Give medication on time as specified i.e. 1 hour before or after meals.
- More leaflets displayed in wards; can provide leaflets and more information.
- By specifying side effects of medicine.

- Before (administer drug), inform of use and effect.
- Seems to be adequate.
- Explanation on side effects not always given till drug has been taken, also, the reason why and what the drug does.
- I don't see anything wrong to improve.
- As far as I am concerned my Doctor does an excellent job and doubt whether the service would improve.
- Think doctors way of doing things is quite good as a rule, if I am at all puzzled I ask doctor again.
- I think they (explanation) were adequate.
- Any side effects if any.
- Happy with information.
- Just highlight what medicine is, does, how it works plus any side effects.
- Instruction given-fairly basic.
- To be explained to patients in more layman terms.
- (Leaflet/ handout) on all the prescription-about what they are for, what do/ don't do whilst taking and ? take with/ without food?
- I understand them completely.
- Explanation was quite satisfactory.
- I believe interpretation could be the biggest problem.
- Information provided to me re nature of the medicines I'm taking & means of administration-comprehensive and to my satisfaction.
- Side effects, how long need to use it, how it interacts with my body's own systems.
- Don't use so many technical terms-use layman's language.
- Explain what it does instead of just how much to take and when to take it.
- Make sure patient fully understands instructions.
- Delivered on time.
- Personal contact with pharmacist.
- Not by pamphlets-an individual tape/ video how the particular drug works, what it does.
- Medical and nursing staff explanations entirely satisfactory.
- Leave a set of written instructions- printed.
- To explain in what way the medicines help me.
- I do not know, as too much information can be as bad as not enough.
- Needs more one to one time for better explanations.
- It's my life- I want to know.
- Having the explanation written down for further reference would be good.
- Explain why and what side effects are related to the drugs given and what the drugs are supposed to achieve.
- Perhaps a little more patience sometimes when explaining.
- They could tell me more about them. I suppose I could ask more questions about them.
- Instructions written larger and plainer for persons with weak eye sight.
- Information leaflets on medicines explaining reasons for use & possible effects i.e. nausea, shakes.
- More verbal communication.
- Speed it up.
- Colour coded tablets makes it/ them easier to identify.
- Normally good explanations are given, if not- you only have to ask.
- Regular information given on the updated side effects and improvements (wrt medication).
- Explanation-excellent, but on occasions when doctors first prescribe medications explanations could be given then- at the GP visit.
- Pharmacist always helpful even when I state these are repeat scripts and have been on these tablets before.
- Give instructions more clearly.
- Better explanations- before / after foods, am or pm drugs.
- The doctor telling the patient more in-depth about the purpose and expected results medications are

- supposed to achieve.
- More honesty from nurses regarding effects and duration of medication.
- For patients already on medication could explain the difference in brand names e.g. quinate or quinoctal.
- If the patient doesn't ask the questions the staff presume you know.
- Explain what tablet is and what reason you are taking it.
- By asking more questions.
- More information.
- Reduce the workload? which isn't going to happen, you're probably on the best level can achieve given the budget.
- Pharmacist to advise briefly on medication.
- By making it hospital policy that a pharmacist is available to explain if patient desires this.
- Being more open with patient.
- If you ask questions you get results.
- Written literature; explanatory information sheets; given in writing; detailed information in brochure.
- Probably by soliciting some questions from patients ie "do you want to know the side effects of your drugs?"
- I think the pharmacist on the ward I was in is excellent, couldn't get anyone better.
- Could be told more without asking.
- Explanation by doctors and nurses in layman's terms; if I have any queries I just ask the doctor or nursing staff.
- By talking to me.
- No one explained how to use medications.
- Find better way to ensure the patient doesn't get constipated after abdominal surgery.
- It's written on the packet which I think is enough for the type of medication I'm taking.
- Use with alcohol and whether it makes you drowsy or may cause nausea/ diarrhoea.
- I would like to know what adverse effects drugs administered can cause.
- It has been fully explained, perfectly clear.
- The instructions could be written in larger print.
- Don't think we need to know.
- Better explanation here than from a public pharmacy.
- Easily available/ readable literature/ brochure should be more visible.
- A complete explanation of use and reason for having to use all medicine or tablets

Table A5.5 Reasons why outpatients use the hospital pharmacy (1993/94)

- Participant of lipid study- only place.
- Convenient.
- Availability of medication.
- Doctor within hospital.
- Doctor suggested it.
- An outpatient of the hospital.
- On methadone daily.
- Because medication is unavailable from local pharmacist.
- Liver transplant patient.
- I think I get better service at the hospital pharmacy than outside, staff very friendly and courteous.
- Because I work in the hospital (-staff member) its convenient and at a good price and good advice when needed.
- Renal transplant patient.
- Prescription written in emergency dept.
- Because I'm a pensioner & can't afford the cost at chemist and see my doctor here as well.
- Chemotherapy patient.

- To obtain interferon which isn't available at normal chemist shops.
- Can only obtain a particular medicine from a public hospital.
- Because attend outpatient clinic.
- The price is right!
- Because patient is on cyclosporin.
- Attending ante natal clinic.
- As it is attached to the IVF clinic.
- Prescription from in house specialist.
- Because scripts are written on hospital document and can't be filled outside.
- Close to home.
- Have been a patient of the hospital for many years.
- Certain medications can't be obtained through the local GP.
- It can be cheaper.
- Pharmacy staff highly efficient -check with doctor if any concerns.
- Hospital instructions.
- Sent over from dental hospital.
- Handy to see doctor in the hospital and then have script filled in same place.
- I believe in public hospitals.
- Common sense.
- For medications.
- Have a blood condition that requires frequent checking and medication.

Table A5.6 Outpatients' suggestions for improving the pharmacy service to them (1993/94)

- Providing some indication of how long script will take-perhaps a number above the dispensary; a numbered card system.
- Reduce waiting time, quicker service.
- Preferred it when all outpatient scripts were supplied by the hospital pharmacy.
- Information brochures/pamphlets on general pharmaceutical topics.
- More personal.
- More staff.
- Allow hospital pharmacy to dispense all drugs required by patients.
- Maybe TV or music while you wait.
- New facilities; bigger working area (for pharmacy); new department with space to serve; area too congested.
- Employ more staff to reduce waiting time from 30-45 minutes to 15 minutes.
- More staff on busy days.
- More people servicing patients.
- Mailing in prescriptions and collecting and paying for these on a nominated date.
- Some staff put patients through "third degree".
- Waited longer for medicines than for doctor.
- More private area when collecting scripts.
- A water cooler for thirsty patients, a coffee & tea maker, reading papers.
- More seating in waiting area.
- Longer hours-after hours, more quick parking facilities.
- Make waiting area friendlier-plants, magazines, light.
- More friendly staff.
- If they stopped talking & walking around doing nothing-it wouldn't take so long for prescriptions. Employees to move faster than a snail.
- They change the rules very often.
- Given financial constraints of present times I believe the service to be adequate.
- If it were possible to wait less time. Realise it's a busy department and economic climate stops greater

numbers (of staff).

**Table A5.7 What inpatients think the pharmacist does in the ward (1999/2000)**

- Checks the patient's medicine with both doctor and patient. Answers questions patient may ask and explains dosage.
- Checks patients drug charts daily so the correct drugs are administered.
- Checks and distributes appropriate medication.
- No idea.
- Ensures medication is available as per doctor's requests and that supplies are checked regularly.
- Restock stores. Deliver patient stock. Discuss drug properties/ side-effects etc. Answer staff queries.
- Makes sure daily that correct medication is given and organise discharge medications and explains how to take the safe doses at home. Also they read what doctors cease or increase on medication charts.
- Supply drugs prescribed by the doctor or each patient in the ward. Liaise between patients, doctors and nursing staff regarding each patient's medication. Educate patient and/ or explain the use of any prescribed medication, answer patient queries re medication.
- The pharmacist checks on the drugs you are taking and explains what they are for and new ones the doctors prescribe.
- Checks drug sheets, supplies medications, explain use of drugs if necessary, answers questions if any.
- Keeps track of medications written up by doctors.
- To see patient's tablets are correct.
- Checks to make sure medication brought in and supplied is correctly listed and correct doses are given. Ensures patients medication is correct when leaving hospital.
- Checks charts. Enlightens me about medications.
- Nothing.
- Medication- checks what patients are taking- current and home medicines.
- Supplies medication for patient during hospital stay and for discharge. Checks on medication list- noting for any drug interactions. Gives advice when necessary to patients and staff.
- Make up scripts.
- Fills prescriptions written by hospital doctors; examines, unasked, medication already held by patients, with a view to selling more of the same, if supply is not sufficient for some weeks.
- Meets new patient and answers any relevant question re medication effects and reasons for the prescribed medication also the proper way to take them.

**Table A5.8 What inpatients asked the pharmacist related to their health needs, treatment and medicine (1999/2000)**

- What the medicine was, what effect it had, why I have to have it.
- Possible side-effects of one of the drugs I have been prescribed.
- Why I was taking certain medication and the effect on my medical condition.
- Nothing.
- Never spoke to pharmacist at any time.
- Didn't need to ask. He volunteered required information.
- Side effects of drugs.
- Nothing, because I am familiar with all my medications and how to take them.
- No questions at this stage as new medication has usually been explained by doctor.
- Type of medication to help with lazy bowels combined with health eating while being in hospital and not active.
- Have had no need to question the pharmacist- as doctor or nurse have conveyed any information.
- How the drug was to be taken and when.
- No time to ask anything, in and out.
- Had conversation about my need for pain/ nausea relief.

- Just said hello.
- I asked how to take medication and whether I should drink and drive.
- Related to sinus problem, what I could take when pregnant.
- As I have confidence in the abilities in the hospital. I have never had the reason to inquire.
- How long do I have to take them for.
- Would this medication be good for me?
- Long term effects of the medication I am taking and the correct timing in relation to meals etc.
- To clarify the "puffers" I am using and any other precautions I need to be aware of i.e. mouth rinsing and to use spacer on mouth.
- The pharmacist explained what the medication was for. Helped with the times to take it. Left a sheet showing the samples of medication and sheets telling all about the medication.
- Medication options. With particular reference to pain killers and with the possible exception of panadol I suggest that the patient should have some say to the options available and should not be forced for example to take regular doses of panadeine forte or tramadol. Full details of tramadol actions which was a new drug to me.
- A couple of the tablets were a different name to the ones I'm used to taking, but I was assured they were the same- different brand name.

**Table A5.9 Services or information that inpatients want from the hospital pharmacy (1999/2000)**

- Info on how to take medicines, inhalers, and how to use volumatics and when. What one should do if there are unexpected side effects.
- As much as he is able to supply.
- The same as have been getting since I have been a patient at this hospital.
- Compliance in provision of drugs to me, as prescribed by my doctor.
- I would like to have explained to me what the medication is and does for me and what reactions if any I could experience.
- Could maybe have advised about medication but appeared to be very busy.
- Nothing. None.
- What I have been getting plus what ever else might come up.
- The right drugs when needed.
- Education on drugs, supply drugs, advice on side-effects, alternatives to mainstream medications.
- The pharmacist supplied the medicines at the request of the medical staff. That is all I require.
- To explain medicines in more detail.
- Advice on when and how to take prescribed medications. What to watch for in health side effects of medications. Care of medications. Fully review all medications being taken in case of substance and affects conflicting.
- I have a good knowledge of all my medications and therefore didn't feel I needed any more information or assistance.
- Up to date knowledge of medications.
- The waiting time for medications on discharge.
- More of the same. As a frequent long term patient, I am very satisfied with the ward pharmacist's manner in the way she fulfills her duties.
- Good information. Total service.
- The doctor tells me or nurses what the medications are for.
- Provide me with the relevant medication. Complete sheet of all the medications.
- Reasons for change of medication previously prescribed by local GP prior to hospitalisation.
- To let everybody know they are available.
- Just to be able to check out tablets and make sure we have all the information right. As we get older we tend to forget so have to double check.
- Just to know what happens in ward.
- Better discharge service!! Left hospital- got home- checked medication- half not dispensed, half left in ward, personal medication brought in- not returned! Had to make arrangements to pick up same (inconvenience!).

- Explanation on medication- different names for same medication and explanation of what medication is for in laymens terms.
- Better service, too long for medication to get to ward (2 days).
- For the pharmacist to introduce him or herself and explain what is his/ her job and what he/ she can offer to the patient. Perhaps print a brochure on the pharmacy at this hospital.
- Everything has been exceptional.
- The service that I want , and that I currently receive, from the pharmacy at this hospital are the provision of drugs/ medications required to treat my particular ailments and advice related to taking these medications and contraindications for the various drugs.
- Explanation of the drugs, their benefits and their side- effects.
- I didn't even know there was a pharmacy, so I guess I'd like to know hat they do deliver.
- None, the nursing staff always make sure patients are aware of information regarding medication, especially on day of discharge.
- To introduce themselves. To know what medication I'm on. What medications are for- tablets and injections.
- Speaking to a pharmacist in the ward would be extremely helpful. Access would be great too.

**Table A5.10 Inpatients suggestions/ thoughts about how the pharmacy's service to them in the ward could be improved (1999/2000)**

- Discharge medication could be sped up instead of waiting.
- I don't think it needs improving
- To explain to patients clearly and make sure that they understand what is being told to them.
- By making themselves known to the patients.
- More time- very busy.
- I really have not had much opportunity to observe the service in action, but I feel any attempt to clarify medications and the reasons for taking them would be helpful.
- Make patients more aware of the services/ benefits of the pharmacy.
- Not all the pharmacists provide the same level of friendly, efficient service as the pharmacist I have written about, so training could be provided in customer service to ensure consistency.
- The communication between ward doctor and pharmacist could be better. I was only just admitted when the pharmacist was under the impression that I was being discharged!
- If patient could be supplied a list of their medications and what they're for on say a piece of paper to help not only the patient but their families and time table. That all medication be ready immediately on discharge to avoid patient aggravation and potential adding to patient condition and subsequent readmission.
- Don't know enough about the service and what it provides.
- Spend more time with patients, nurse and doctors don't have much time.
- By explaining the effects of the drugs, so that the limited knowledge of the patient can be assessed.
- Reviewing patients and drug charts. Explain medications new and old.
- To reinforce information about your medications. Reassurance that none of your existing medications will interact with current medications commenced while hospitalised.
- Basically more information regarding medication should be provided. This could be done by a short leaflet.
- By regular visits to ward by pharmacist.
- I have been I her twice now, and find their services excellent. I don't think there is a lot of room for improvement.
- Have no suggestions as find the availability and help of the pharmacist to be good.
- Quicker supply of medication to patient on arrival. Patients such as myself, can get distressed if home medication is not given when required. Not enough medication to patient if long term inpatient (2 weeks or more).
- Hiring a pharmacist to visit wards and stop putting money before patients.
- There's no pharmacy service in the ward at this hospital.
- As I am quite satisfied with the operation of the hospital pharmacy in general and the ward's

- pharmacist in particular, I have no comments regarding improvements to these services at this time.
- Introduce themselves to each new patient and explain what they do. Have fliers around the ward/ hospital explaining pharmacy services.
- Top service already.
- For him or her to go and introduce themselves and help people understand what their medication is, especially people of other languages and countries.
- I didn't realise there was a problem with it.
- It's already excellent. The use of simpler language to help me understand better.

**Table A5.11 Inpatients' suggestions for improving the explanation about their medicines (1999/2000)**

- When put on a new one what it does for me and what it is for.
- Good as is.
- I think the pharmacists should come to see you and explain as best they can, (which should be their best if they are experienced pharmacists), so that you know what it is? What it does?, and how long you need to take it? And of course the effects.
- By supplying literature detailing the specific actions of and complications that may develop during its use. The optimum time of ingestion- time before or after meals etc., compatibility with other drugs taken.
- I think it is fine as is, it just depends on the staff as individuals and what their knowledge is.
- Written information could be provided with the medication but would not expect this with everything. Alternatively, the nurse or pharmacist could point out salient details from information provided by the manufacturer.
- Time for questions.
- Have a clear set of descriptive statements: 1. What the medication is. 2. When/ how much should be taken. 3. What are the side effects.
- Satisfied. No improvements. Can't be it's very well explained.
- By using layman's terms.
- Doctor and pharmacist should explain purpose and caveats, instead of purchaser having to read small print on insert, if any.
- Clearer, print too small.
- The explanation regarding my medications have been thoroughly discussed with me by my specialist and nursing staff on this floor.
- More information on effect of drugs.
- To explain what it's for and how to use and when to use.
- I do not easily read and write, therefore instruction and explanations should be clear and simple- more pictures,- different shaped bottles (or coloured) to identify different tablets,- clear verbal explanation.
- More detailed.
- Simply by explaining to the patients, when, how, with what, with not and any side effects, and time between doses.

**Table A5.12 Reasons why outpatients use the hospital pharmacy (1999/2000)**

- The medication is only available from the hospital pharmacy.
- Regular outpatient.
- Husband took part in Aricept trial.
- Always attended this hospital for medical consultation and treatments. Pharmacy was conveniently located.
- It is quick, friendly, always seek to help and very handy- after seeing doctor it is easy to call in and have script made up before leaving hospital- better than having to call in at some shopping centre. Always has stock. (Private hospital)
- Medication is not available from regular pharmacy.

- My child's medication is more affordable at this pharmacy. Also their professionalism is second to none.
- To get Frisium through hospital pharmacy because not on government free list, otherwise couldn't afford cost.
- Convenience after seeing hospital's doctors.
- Neoral- only available through hospital pharmacy.
- Medication is cheaper and avoided the necessity to get authorisation from Canberra to dispense elsewhere. Well that's what the doctor said.
- I need the hospital pharmacy for I am a Renal Transplant patient and can only get Neoral and others from hospital pharmacy. Not available at outside pharmacies.
- I am a staff member and I find it convenient time wise if I attend one of the hospital clinics, to then use the hospital pharmacy to fill my prescription if I have been given one.
- I was in casualty and required some medication from the hospital. I have been there before, it was late at night. I had medication on that occasion.
- No longer use this pharmacy- go to local chemist.
- I have had surgery here.
- I only use when I have been in hospital. I use my own chemist otherwise.

**Table A5.13 Outpatients' requirements from the hospital pharmacy (1999/2000)**

- Prompt filling of prescription from stock.
- Want them to fill scripts like a normal pharmacy. Patients who are weak terminal diseases need to organise visits to GP's to get a secondary script for medication that the specialist has prescribed.
- Details about medicine and side effects other than that I think they provide a good service.
- Advice on the use of the medication.
- No other information or services required.
- Provision of medication. Drug information. "User friendly" hours of opening. Staff friendliness.
- Overall I am happy. Perhaps the pharmacy could tell me more about side effects of medication.
- The service provided is great, the information in regards to medication dispensed is OK.
- As is.
- When I ring and order a script at 10 am and someone goes in to pick up the script at 1pm, I'd like it to be ready.
- Filling of scripts. How safe (or otherwise) are my drugs to take.
- Am happy with everything except the time factor. Dropping in a prescription takes TOO long.
- Quick service, accurate dispensing, friendly staff.
- Prescriptions, information, friendliness.
- Information about a certain new drug- side effects to you as a user of the drug and written information.
- Its fine how it is.
- Answers about medication- if needed.
- General information about medication and side effects.
- Warnings or recommended ways of taking medication on all occasions-including new information.

**Table A5.14 Outpatients' suggestions for improving the pharmacy service to them (1999/2000)**

- To make filling of prescription faster. This time varies dramatically (which is understandable but frustrating) and perhaps a board to indicate when a prescription is ready if you miss your call to collect.
- Faster service.
- Don't know.
- Service provided to date is excellent.
- That they stress the importance of friendliness and better customer service practices- particularly on a Sunday!

- Make sure they are stocked with items. I went twice and both times they had to order my prescriptions in.
- Increased operating hours.
- Advice on medication, waiting time on medication.
- It should not take 15minutes to just put your prescription in, therefore there should be 2 staff members at the window to process your prescription. The waiting time is ridiculous.
- I am quite happy with the present set up.
- Service good.
- Parking is dreadful, carpark is always full etc. Access from car park is hard.
- Service for dispensing medication is excellent. Eftpos is available which is great. Children toys to play whilst waiting for script filling. Longer hours. Parking is a problem, especially when you have a baby and toddler).
- I find most staff very helpful and cooperative. There is really no services that could be improved except may be the waiting time

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