

Hazelwood

HEALTH STUDY

Hazelwood Health Study

Annual Report 1

13th November 2015

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1 Abbreviations

| | |
|--------|---|
| ABS | Australian Bureau of Statistics |
| ACD | Australian Cancer Database |
| AIHW | Australian Institute of Health and Welfare |
| AV | Ambulance Victoria |
| BMI | Body Mass Index |
| CAC | Community Advisory Committee |
| CATI | Computer Assisted Telephone Interview |
| CAWI | Computer Assisted Web-based Interview |
| CCV | Cancer Council Victoria |
| CoRRC | Centre of Research for Resilient Communities |
| CRG | Clinical Reference Group |
| CRP | C-reactive protein |
| DET | Department of Education and Training |
| DHHS | Department of Health and Human Services |
| ECG | Electro-cardiography |
| ED | Emergency Department |
| ELF | The Latrobe Early Life Follow-up (formerly Child Health and Development Stream) |
| EPA | Environment Protection Authority |
| ePCR | Electronic Patient Care Record |
| FedUni | Federation University Australia Gippsland |
| FMNHS | Faculty of Medicine Nursing and Health Science |
| FOT | Forced Oscillation Technique |
| GPs | General Practitioners |
| HHS | Hazelwood Health Study |

| | |
|--------|---|
| HREC | Human Research Ethics Committee |
| HRF | Hunter Research Foundation |
| LCC | Latrobe City Council |
| LCHS | Latrobe Community Health Service |
| LRH | Latrobe Regional Hospital |
| MBW | Multiple Breath Washout |
| MUDRIH | Monash University Department of Rural and Indigenous Health |
| MUHREC | Monash University Human Research Ethics Committee |
| NAPLAN | National Assessment Program – Literacy and Numeracy |
| NEAF | National Ethics Application Form |
| NDI | National Death Index |
| OHCA | Out-of- Hospital Cardiac Arrest |
| PARC | Positive Ageing Reference Committee |
| PBS | Pharmaceutical Benefits Scheme |
| PMG | Project Management Group |
| PSC | Project Steering Committee |
| SDQ | Strengths and Difficulties Questionnaire |
| SEIFA | Socio Economic Indices For Areas |
| SRG | Scientific Reference Group |
| SRH | School of Rural Health |
| SPHPM | School of Public Health and Preventive Medicine |
| THREC | Tasmanian Human Research Ethics Committee |
| VAED | Victorian Admitted Episodes Dataset |
| VACAR | Victorian Ambulance Cardiac Arrest Registry |

| | |
|-------|---|
| VACIS | Victorian Ambulance Clinical Information System |
| VC | Videoconferencing |
| VCR | Victorian Cancer Registry |
| VDL | Victorian Data Linkages Unit |
| VEMD | Victorian Emergency Minimum Dataset |

2 Executive Summary

1. This annual report summarises progress in the Hazelwood Health Study (HHS) since the project commenced in November 2014. Other contractual [milestones](#) completed to the satisfaction of the Department of Health & Human Services (DHHS) are: the Community and Stakeholder Engagement Strategy, organisational agreements with sub-contractors, research ethics submissions, establishment of Advisory Groups, an Outline of the Ageing Policy Review, the first Interim Report and annual community briefings.
2. The [Community and Stakeholder Engagement Strategy](#) comprised information on community and stakeholder identification, communication and management, including a summary of the key engagement issues, an engagement and commitment process and key milestones.
3. Subcontracts have been signed by CSIRO Oceans and Atmosphere Flagship, Federation University Australia, University of Adelaide and University of Tasmania for work to be completed as part of the HHS.
4. Human Research Ethics approval has been obtained for the Adult Survey (including Hazelinks), Schools Study, the Impacts on Older People and Policy review, the Latrobe Early Life Follow-up (ELF) study (formerly the Child Health and Development stream) and Community Wellbeing stream.
5. The Community Advisory Committee (CAC), Scientific Reference Group (SRG) and Clinical Reference Group (CRG) have all met and further meetings are scheduled. The governance structure for the project was accepted by DHHS.
6. All core [staff](#) have now been appointed: including the senior project manager, recruitment coordinator, biostatistician, data linkage (Hazelinks) and psychology research officers and research assistants.
7. Monash Strategic Communications & Media have been working closely with media advisors from the DHHS and partner organisations to support the project team with regards to the processes in communicating messages related to the HHS to the community and media personnel. A [Media Protocol](#) has been developed. An independent study website has been successfully launched and is kept up to date at www.hazelwoodhealthstudy.org.au
8. The [Risk Management](#) Framework, accepted by DHHS, has been further updated. Some of the main issues resolved include: sample sizes in Morwell and Sale have been refined, and how to respond in the event of bushfires. Further exposure modelling is being undertaken by CSIRO to estimate absolute levels of particulate matter. There has been good community buy in, particularly through the advisory groups. Deputy study leads have been identified in both School of Public Health and Preventive Medicine (SPHPM) and School of Rural Health (SRH).
9. The [Quality Assurance Framework](#) accepted as part of the project plan has now been used on a number of occasions. Examples include the development of the Adult Survey questionnaire, a recruitment think tank, adoption of the study logo, the Latrobe ELF stream meeting and stream coordination retreat.
10. The [Adult Survey](#) (formerly the Baseline Survey) aims to: determine the health status of the adult population exposed to the mine fire smoke (Morwell) and an adult population minimally exposed to the mine fire smoke; provide lifestyle risk factors for different health conditions; and provide

information needed for follow up studies and development of exposure metrics. Eligible household lists have been developed utilising data from the Census (MapData services), Latrobe City Council and Wellington Shire Council. Discussions with the Victorian Electoral Commission to access the electoral roll are ongoing.

11. A multiphase approach to participant recruitment is planned through the use of email, telephone, mail, and/or door-to-door contact to engage residents to be involved in the Adult Survey. Participants will be sent a pack which includes an invitation letter, an information sheet providing an explanation of what taking part involves, a link to the Computer Assisted Web-based Interview (CAWI), a consent form and diagrams to assist during the Computer Assisted Telephone Interview (CATI). The questionnaire will collect information on the following major topics: socio-demographic details, work history, wellbeing, pre-existing medical conditions, other lifestyle risk factors and other persons living in the dwelling.
12. The overall aim of the [Latrobe ELF](#) stream is to investigate the potential impacts of exposure to smoke from the mine fire, during pregnancy or infancy, on subsequent health and development of children in the Latrobe Valley. The stream is establishing a cohort of 500 children born between 1 March 2012 and 31 December 2015. This stream will survey eligible parents, link to routinely collected health datasets, monitor the frequency of minor childhood illnesses and conduct measurements of cardiovascular and respiratory health. These measurements will be conducted three times over the 10 year study and will involve attendance at the Latrobe Regional Hospital using simple non-invasive techniques appropriate for young children. Additionally, an anonymous Victoria-wide data extraction will be established for children born between 2000 and 2015. These data will investigate differences in perinatal outcomes associated with smoke events over a longer timeframe.
13. The [Latrobe ELF](#) study has appointed a project manager, research assistant, public health trainee and postdoctoral fellow. Other developments include: refinement of the questionnaire and child health diary, engagement with community members to pilot the questionnaire, development of study protocols and associated plain language summaries, participant recruitment materials including invitation letter, information sheet and consent form, refinement of recruitment strategies, liaising with other study streams regarding shared methods and development of contacts with data custodians and the local Maternal Child Health Unit.
14. The aim of the [Psychological Impacts](#) stream is to determine whether exposure to smoke from the Hazelwood coal mine fire is associated with psychological trauma and distress. The psychological component of the Adult Survey will include an assessment of the impact of the event, level of distress, as well as previous exposure to traumatic situations. The Schools Study will compare Morwell schools which were most impacted by the smoke event with children from other schools in the Latrobe Valley. Children in years 3, 5, 7 and 9 will be asked to complete a brief survey, along with their parents and teachers, with a random sample of children asked to participate in interviews. The recruitment of children commenced in August and will continue until December 2015. Ethics approval for the study has been obtained from the Department of Education and Early Childhood Development and the Catholic Education Office. Twenty two schools from across the Latrobe Valley, including all Morwell schools and a sample of public and private schools in other communities, are included in the study. Up to 600 students are expected to be involved in the Schools Study.

15. The roll out of the Schools Study has involved close collaboration between the stream members and school administrations across the Latrobe Valley. Within the school materials there are five separate survey packages: a brief package for year 3 and year 5 children and a longer version for year 7 and 9 students, as well as brief questionnaires for the parents and teachers.
16. The aim of the [Older People](#) stream is to assess the impact of the smoke event on older people, focusing particularly on a review of the policy decisions made during the event. An overview of the stream activities providing more detail on the proposed approach and the work completed to date was accepted by DHHS, with some minor comments. The initial round of focus groups has now been completed, with a further round targeting existing community groups being planned prior to a series of interviews with key stakeholders.
17. The [Community Wellbeing](#) stream will provide narrative evidence of the perceived impact of the Hazelwood mine fire smoke event in Morwell and surrounding communities. It utilises a qualitative, interpretive research design with two main components: The community-engaged component will conduct focus group discussions and individual interviews. The media analysis component will collect and analyse archival sources of relevant newspapers, online news and social media postings. We will also interview key local media professionals and social media practitioners.
18. [Hazelinks](#): Identified data linkage will be undertaken to investigate the potential long term health effects from the Hazelwood coal mine fire by linking consenting participants' information from the Adult Survey to relevant health databases. These linkages will identify members of the cohort who subsequently die, develop respiratory or cardiovascular conditions or develop cancer.
19. Anonymised data extracts from relevant health databases will be requested to investigate the short, medium and longer term health effects of exposure from the mine fire smoke. Data extracts for the period 1 January 2013 to the most recent data available (not provisional) for the East of Victoria (Hume, Eastern Metropolitan and Gippsland) for all ages have been requested from Ambulance Victoria (AV) and DHHS Victorian Data Linkage Unit (VDLU). To date, we have received the Ambulance Victoria data extract. The NDI data extraction will likely take place in 2017, as it usually takes two to three years for cause of death data to be updated.
20. [Comparison community](#): To help identify which Gippsland communities had negligible exposure to smoke from the mine fire, the CSIRO Oceans and Atmospheric Flagship conducted air quality modelling across the region to investigate smoke exposure from the Hazelwood open cut mine fire. It was apparent from this modelling that other towns within the Latrobe Valley had a substantial number of days of high exposure to the smoke plume and so were excluded from further consideration.
21. Socio-demographic data including the Socio Economic Indices For Areas (SEIFA) for major Gippsland towns outside the Latrobe Valley were obtained from the Australian Bureau of Statistics (ABS) 2011 census data. Sixteen statistical areas within Sale with SEIFA rankings resulting in a sample with roughly comparable median age, household size and population stability as Morwell were selected. This comparison population has now been endorsed by the Project Steering Committee (PSC) and the CAC. A call has been conducted for an expression of interest for members of the Sale community to take part in the CAC.
22. A tender has been let by Monash University to the Hunter Research Foundation (HRF) to conduct the CATI and CAWI. Once the sampling frame is finalised, HRF can set up the database and system

for the CATI and CAWI, train interviewers and commence the Latrobe ELF Study and the Adult Survey.

23. An updated [statistical analysis plan](#) is appended to this report and more detailed plans will be created for each separate study.

3 Introduction

This is the first Annual Report to be submitted to the DHHS as part of the milestones for the Hazelwood Mine Fire Health Study, henceforth referred to by the shortened name of Hazelwood Health Study (HHS). This report includes a summary of all the progress that has been made since the project plan was submitted in December 2014, and gives an update on the developments that are expected to occur over the next few months until the next milestones, the report on recruitment status 15 March 2016, and the Interim Report 2 15 June 2016..

4 Completed milestones since the Interim Report

Since the signing of the contract with DHHS (30th October 2014), and prior to the submission of the Interim Report 1 (15 June 2015), six contractual milestones had been completed. Those milestones with their due, and completed, dates are presented in Table 1.

Table 1 Contractual Milestones completed prior to the Interim Report

| | Contractual milestone | Due | Completed |
|---|--|------------------|------------------|
| 1 | Project plan | 17 December 2014 | 17 December 2014 |
| 2 | Community and stakeholder engagement strategy | 17 December 2014 | 17 December 2014 |
| 3 | Organisational agreements with sub-contractors | 9 February 2015 | 9 February 2015 |
| 4 | Research ethics submission | 9 February 2015 | 9 February 2015 |
| 5 | Advisory groups established | 10 March 2015 | 10 March 2015 |
| 6 | Outline of Ageing Policy Review | 14 May 2015 | 8 May 2015 |

The first Interim Report and annual community briefings comprise the 7th and 8th contractual milestones, respectively, and those are summarised below.

4.1 Interim Report 1

The first Interim Report was submitted to DHHS on the 15 June 2015 in fulfilment of the 7th contractual milestone. This document included a summary of completed milestones and updates on governance, staffing, communication and media. An outline of risk management and quality assurance strategies was provided. Progress to date was also provided for all study streams, with associated plans for statistical analyses. The first Interim Report also described considerations in regard to selection of the comparison population.

4.2 Annual Community Briefings

The Community and Stakeholder Engagement Strategy was initially submitted to DHHS on 17 December 2014 along with the Project Plan. This document included information on community and stakeholder identification, communication and management, a summary of the key engagement issues, an engagement and commitment process, and key milestones.

The strong local connection within the research program, including key roles of the Monash SRH and the Federation University Australia Gippsland (FedUni) campus, the establishment of a local study base at the SRH clinical training site at the Latrobe Regional Hospital (LRH), and employment of local personnel, are all strategies to ensure the community has a sense of ownership of the study.

Engagement with the community and key stakeholders is critical to the successful running of this large, complex, long-term project. Early engagement with key stakeholders started during development of the research plan and was outlined in the tender response. Initial media following the announcement on 4 November 2014 highlighted the need to work closely with the community, and with local groups making it clear that the community has expectations of ongoing input into the study directions and being kept aware of outcomes.

The 8th contractual milestone to conduct annual community briefings, due 16 October 2015, was met through community briefings conducted in Morwell and Sale in August 2015. Two community briefings in Morwell took place on 11 August 2015, one at 2pm until 4pm and a second at 6pm until 8pm. Presentations were given by all of the study streams and subcontractors, including CSIRO, as well as announcing that Sale has been selected as the comparison community, which was received very well. A further Community Briefing in Sale took place on 24 August to discuss Sale as the comparison community and to advertise the Adult Survey in Sale.

Interactions with key stakeholders and community groups are recorded in a stakeholder engagement register. A summary of the key activities to date is provided in [Appendix 1](#) Key Stakeholder Engagement Activities.

5 Project Governance

The governance structure of the project was presented to, and accepted by, DHHS as part of the project plan. This document explains the relationship between the advisory groups (CAC, CRG and SRG), the PSC, the Project Management Group (PMG) the Finance sub- committee, exposure sub-committee and the study streams. This document also contained membership and the terms of reference for each of these groups.

As the study evolves the governance structure will be continuously monitored and updated to ensure maximum efficiency. The most recently updated version of the Project Governance structure is attached at [Appendix 2](#).

The project's governance structure comprises a Community Advisory Committee, Project Steering Committee, Scientific Reference Group and Clinical Reference Group (Figure 1).

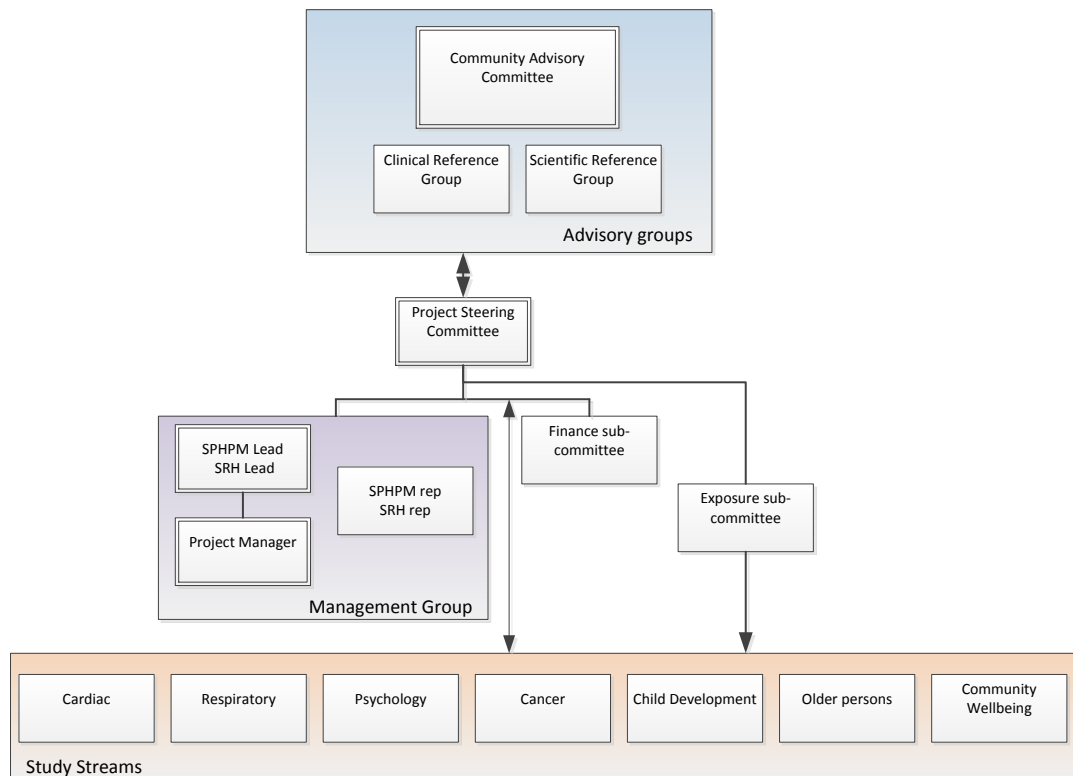


Figure 1 Hazelwood Mine Fire health study governance structure. Double-ended arrows depict communication lines, solid lines depict reporting.

6 Staffing

Team members who play an integral role into the day to day running of the study have been actively recruited since the beginning of 2015. All of these staff members play supporting roles in the study.

6.1 Senior Project Manager

Dr Jill Blackman commenced as Senior Project Manager on 5 October 2015, replacing Ms Gillian Ormond who commenced as project manager 9 March 2015. Dr Blackman has 20 years of experience working on large epidemiological studies. Dr Blackman is based in the SPHPM and reports to both Prof Abramson and Prof Walker. Dr Blackman provides high level co-ordination of all aspects of the study especially monitoring implementation of the contractual deliverables, study plan, support for the study committees and reference groups and study promotion.

6.2 Recruitment and Engagement Coordinator

Ms Susan Denny commenced as the study recruitment and engagement coordinator on 19 October 2015, replacing Mr David O’Keeffe who commenced as the study recruitment coordinator 1 April 2015. Ms Denny is based in the SRH at the LRH and reports to Dr Carroll and Dr Blackman. Ms Denny’s primary role is to recruit participants into the studies and coordinate community engagement and study promotion activities to maximise recruitment across this program of research.

6.3 Data Manager

Several data managers have been employed on an as-needed basis as the program of research has progressed. The data managers' main roles include database development for capture of health and exposure data, assistance with data linkage to external datasets, and tracking participants through the different stages of recruitment.

6.4 Biostatistician

Dr Lahn Straney commenced as the study biostatistician 5 May 2015. Dr Straney is currently employed at 0.4 EFT for 2015, with his hours to increase in 2016 and beyond. Dr Straney is based in SPHPM and primarily reports to Prof Rory Wolfe. Dr Straney's main roles are to create the statistical analysis plans for each of the study streams, to undertake data analysis and provide biostatistical support for all quantitative data collected throughout the study. Dr Straney will also be responsible for documenting analysis programs and undertaking quality checking of results for reports and scientific papers.

6.5 Hazelinks (Formerly Ethics and Data Linkage) Research Officer

Ms Christina Dimitriadis commenced as the Hazelinks research officer on 27 April 2015. Ms Dimitriadis is employed at 0.6 FTE, is based at the SPHPM and reports to Prof Sim and Dr Dennekamp. Ms Dimitriadis is responsible for ethics applications and other approvals from data custodians for data linkage and de-identified data extraction.

6.6 Psychology Research Officer

Dr Emily Berger commenced as the psychology research officer on a casual basis from November 2014 with her appointment converted to a fixed-term position on 11 May 2015. Dr Berger is employed at 0.5 FTE, is based at the SRH–MUDRIH site in Moe/Newborough. Dr Berger reports to Prof Darryl Maybery and Dr Carroll and is responsible for overseeing the adult psychology sub-study and the Schools Study.

6.7 Research Assistant Psychological Impacts Stream

Ms Cathy Ward commenced as the research assistant for the Psychological Impacts stream on 1 July 2015. Miss Ward is employed at 0.5FTE. Based in the SRH MUDRIH, Miss Ward reports to Prof Darryl Maybery and Dr Carroll. Miss Ward is responsible for assisting with the roll out of the Schools Study.

6.8 Research Assistant Adult Survey

Ms Kristen Benke commenced as a research assistant on July 1st 2015. Kristen is employed at 0.8FTE. Based in SPHPM, Ms Benke reports to Prof Michael Abramson and Dr Jill Blackman. Ms Benke is responsible for assisting with the research methods of the Adult Survey and reporting to Ethics Committees. Ms Benke is currently coordinating piloting of the Adult Survey.

7 Communications and Media

7.1 Community and Stakeholder Engagement

7.1.1 Engagement Plan

The submission of the Community and Stakeholder Engagement Strategy was one of the early milestones of the study and accepted by DHHS (Table 1). The strategy maps out the plans to build and maintain the connection with the local community; including the establishment of the CAC and the CRG which both feature local community members. The Community and Stakeholder Engagement Strategy is a living document, subject to ongoing monitoring, review and evaluation throughout the life of the study.

A review and update of the Community and Stakeholder Engagement Strategy was completed in October as a result of the identification of Sale as the comparison community for the Adult Survey and to take into consideration the outcomes of engagement activities in the first year of the study. The most recently updated version is attached as [Appendix 3](#). It includes:

- Community and stakeholder identification (including Sale)
- Community and stakeholder communication and management
 - Summary of key engagement issues
 - Engagement and commitment process
 - Major events

7.1.2 Engagement Activities to Date

A summary of the key activities which have focused on engaging with the local community is presented in [Appendix 1](#).

7.1.3 Media Protocol

Monash University has recognised the importance of the HHS and senior media personnel from Monash Strategic Communications & Media have been working closely with media advisors from the DHHS to support the project team with processes in communicating messages related to the HHS to the community and media personnel.

The project involves considerable engagement with stakeholders in the community. Key to this engagement are the leaders of each of the research streams, who make up the PSC. It is to be expected that PSC members and other researchers will release information about study activities and findings through the media. The current study media protocol can be found in [Appendix 4](#). It is expected that this will be a living document which will develop as the study progresses.

It is important that a coordinated approach to media interactions is undertaken, with oversight by the PMG and input from Monash Media and Communications prior to any media release and media interviews resulting from those press releases.

7.1.4 Commissioning of an independent study website

An interim website was established as part of the Monash FMNHS website to provide an overview of the study aims, research streams, operations, and activities to date. An independent digital communications company with a strong track record in building collaborative research webpages and a social enterprise focus, LCubed, was commissioned to design the main study website which is standalone. In addition to providing information about the study and opportunities for people to participate, the new website provides a portal to disseminate study findings. The new website went live on 1 June 2015 and is available at <http://www.hazelwoodhealthstudy.org.au>. Google analytics, which tracks and reports website traffic, is being used to monitor how successful the website is in terms of disseminating study activities and outcomes.

7.1.5 Hazelwood Mine Fire Inquiry

The Principal Investigator Professor Michael Abramson was invited to appear before the Inquiry. He submitted a statement of evidence and was cross-examined by counsel assisting and counsels for other parties. He outlined the aims of the Hazelwood Health Long Term Health Study. He explained that, unfortunately, within the timeframe of the Inquiry, it would not be possible to address short term health effects such as mortality during the fire. The investigators have subsequently responded to a number of further questions from the Inquiry, including possible inclusion of emergency responders and the governance structure of the study.

8 Risk Management

The HHS is a very complex study that requires a detailed risk management plan. A Risk Management Framework has previously been submitted to DHHS as part of the project plan. The Senior Project Manager meets six-monthly with the Monash University Risk and Compliance Unit to review this document. Updates are also made as more/new risks are identified throughout the progression of the study. The most recent version of the Risk Management Framework can be found at [Appendix 5](#).

Examples of issues and resolutions include:

1. Community Engagement, especially by the study team in SRH, is paramount to the study's success. The efforts of the team to continuously engage the community and promote the HHS will contribute to the uptake in recruitment. This is particularly evident with the buy-in by the

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locals to the study, particularly those on the advisory groups who will provide guidance to the study team on behalf of the communities.

2. Deputy Leads for the study in SPHPM and SRH have been identified as Dr Dennekamp and Dr Carroll. As Dr Carroll and Dr Dennekamp have both been involved in the study since its conception and commencement, this will ensure study continuity throughout the latter years of the study.
3. Fire/smoke exposure event which might affect participants' responses to health and exposure questions: the researchers will use CSIRO forecasted air quality data to identify periods of smoke exposure which can then be adjusted for in statistical analysis. In the event of extreme smoke exposure, the PMG will meet to decide whether or not to cease data collection for the duration of that event.

9 Quality Assurance

The quality assurance framework was presented as part of the project plan, and a summary is presented in Figure 2. This process has already been used on a number of occasions, with key examples outlined below:

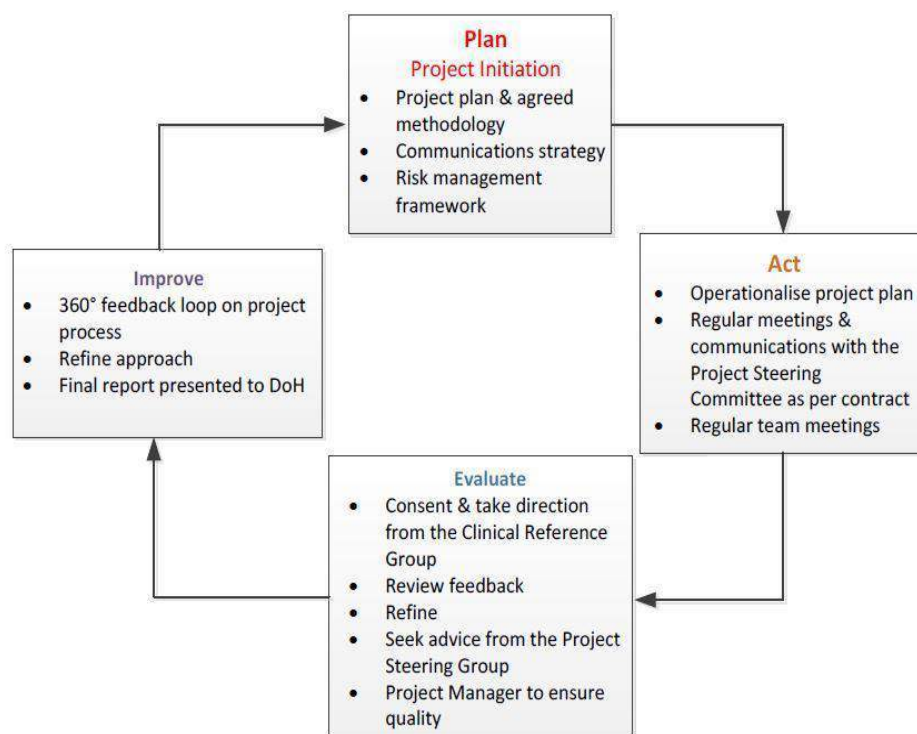


Figure 2 Quality Assurance Cycle used in the Hazelwood Health Study

9.1 Example 1: Development of the Adult Survey

Plan: The plan is to create a survey to capture the level of exposure to smoke during the mine fire, examine the health of the population at the time of the fire and to look at the individual risk and

lifestyle factors for health conditions as well as seek permission to link existing administrative health datasets.

Act: Validated items, scales and questionnaires were collated by the Adult Survey working group for inclusion in the survey to assist with capturing this information. Demographic information and information to assist with determining the levels of exposure were also included. Several versions of this survey were produced and developed by the adult survey working group in order to create a survey that was logical and succinct and captured the correct information necessary to inform the study team about the Morwell (and Sale) population.

Evaluate: The version of the Adult Survey that was deemed acceptable by the Adult Survey working group was presented to all members of the CAC at a meeting on the 1 April 2015. The CAC members were invited to complete the survey during the session, noting how long the survey took to complete, and provide any comments or feedback they may have on the survey. The CAC provided considerable input which was summarised in a report provided to the Adult Survey working group.

Improve: The Adult Survey working group reviewed all the comments and suggestions made by the CAC, many of which were incorporated into the next version of the survey.

This same process was observed with the questionnaire for the Latrobe ELF study.

9.2 Example 2: Recruitment Think Tank

The Recruitment Think Tank was organised by the recruitment coordinator on 5 May 2015 with key local community members. The aim of this meeting was to invite local members of the community, including members of the CAC, to review the proposed recruitment strategies and provide suggestions re identifying particular segments of the community and utilising different research streams in order to maximise recruitment rates.

9.3 Example 3: Study Logo

A graphic designer was employed to develop a range of options regarding the study logo, with the remit of designing something that evoked the smoke event and the community, but not in a way that generated any additional distress. In total, ten potential logos were provided which were assessed through an iterative voting process. The PMG and PSC reviewed the logos in turn, reducing the number under consideration to four possibilities. These four logos were then presented to the CAC members and they were asked to vote on their preferred logo. It was decided by all three groups that the following logo (Figure 3) was the preferred option. This has been created in colour and black and white, vertical and horizontal formats.



Figure 3 Study Logo in colour and black and white

9.4 Example 4: Latrobe ELF Study Stream Meeting

A team meeting was held at SRH-MUDRIH on the 31 March 2015 and 1 April 2015 with most of the Latrobe ELF study team in attendance. The meeting allowed for a team discussion on recruitment strategies, data collection tools, community engagement strategies and other related business. Additionally, the meeting provided opportunities for the team to meet with members of the Psychological Impacts stream and Adult Survey stream, familiarisation with the study offices at LRH and attendance at an informative tour of the Hazelwood mine site.

9.5 Example 5: Stream Coordination Retreat

A stream coordination retreat was held at SRH-MUDRIH on 1 and 2 June 2015 which incorporated members of the Adult Survey (including Hazelinks), Psychological Impacts, Latrobe ELF study, Older People and Community Wellbeing Streams. This retreat was used to introduce team members from each of the study streams and to ensure that all team members obtained a broader overview of each of the study streams, such as when each of the recruitment phases would commence and any overlap that may occur in the streams such as in survey design. This event also included discussion on study protocols and survey design as well as the best method to track participants.

As a number of new key staff have recently commenced employment on the study, it has been proposed that a further Stream Coordination Retreat be conducted later this year.

10 Study Stream Updates

As this is a complex study with many different research streams, it was decided that a study diagram needed to be developed to include an overview of the timing of the stream activities. The timeline depicted in Figure 4 commences with the smoke event in February 2014, followed by the initial research activities prior to the commencement of the HHS in November 2014 and continues for the first three years of the study.

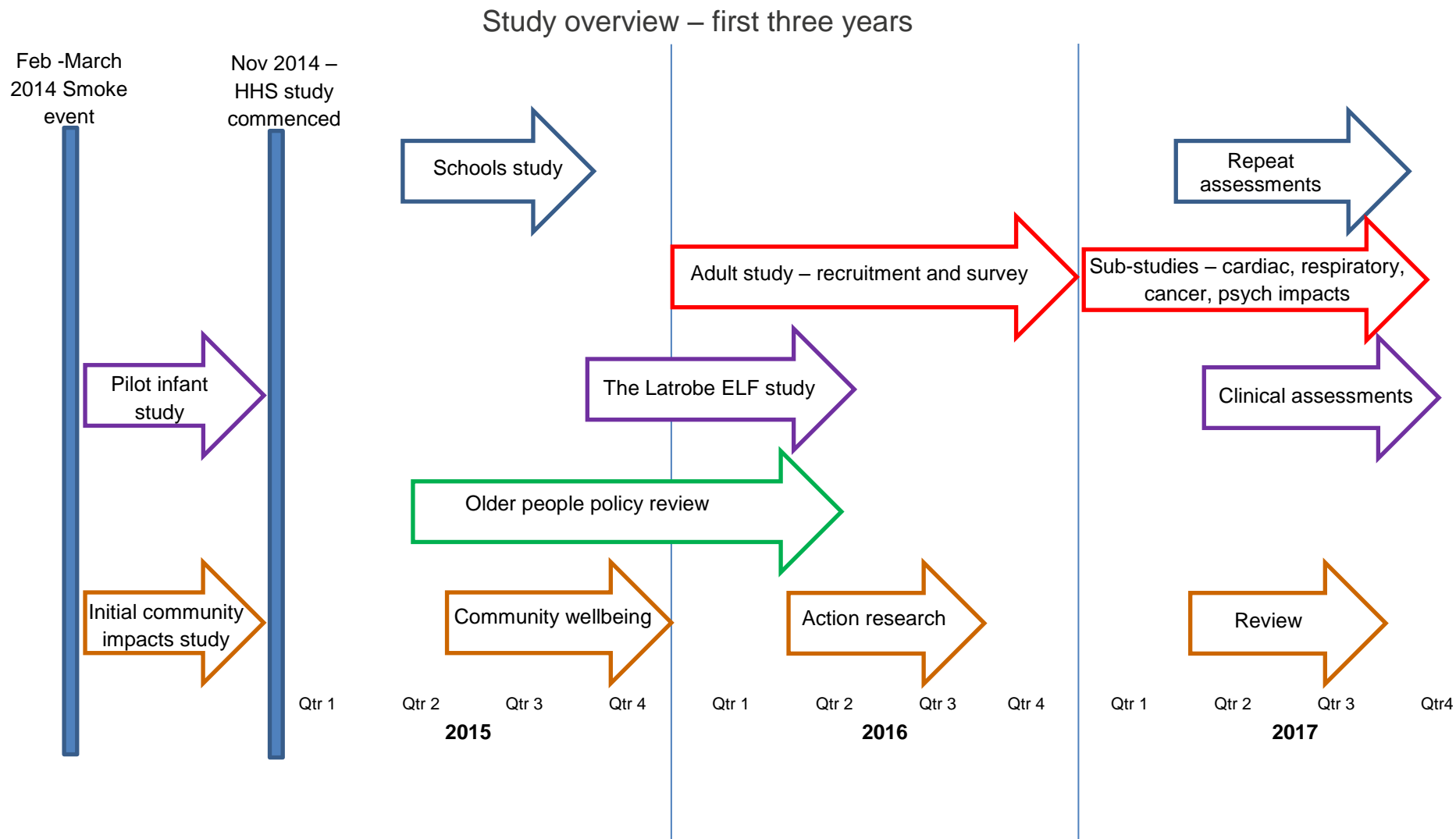


Figure 4 Study overview with stream timelines for the first three years of the study

10.1 Adult Survey (formerly the Baseline Survey)

10.1.1 Aims

1. Cross-sectionally investigate the health status of the adult study population of the exposed and comparison populations;
2. Compare the incidence rates of long term health outcomes by linking to administrative health datasets in exposed versus the control populations;
3. Investigate the association between exposure level and risk of long term health outcomes by linking to administrative health datasets using fine resolution exposure metrics developed by CSIRO.

10.1.2 Study population

Exposed (study) group

The exposed study group is defined as people who lived in Morwell, and were 18 years or older, on the 9th of February 2014. For the purpose of the study, Morwell is defined as the area within the township boundary.

Comparison group

A detailed discussion of the main considerations in regard to the selection of the comparison group, and the supporting data applied, has been provided at section 11.

In brief, the eligible comparison group are people aged 18 years or older on the 9th of February 2014, who live within one of 16 selected statistical areas within Sale which have comparable median age, household size, SEIFA and population stability as Morwell. Sale was determined, via CSIRO modelling, to have had little exposure to smoke during the Mine Fire event.

Databases from which to source eligible participant list

The preferred source of data from which to identify study group and comparison group adults, eligible for participation in the Adult Survey, is the electoral roll held by the Victorian Electoral Commission (VEC). This VEC data is expected to be relatively current due to the recent timing of the last Federal Election in September 2013. Permission from the VEC to access the names and addresses of eligible participants is currently under negotiation.

In the event that VEC data cannot be obtained there are additional data sources which could be used to identify eligible participants or, at least, eligible households. These include:

Electronic White Pages: determined to list surnames and addresses for approximately 72% of Morwell residences.

MapData: uses data from the Geocoded National Address File (G-NAF). G-NAF is the authoritative database for physical addresses used for address verification and geocoding. G-NAF uses existing and recognised address sources including the Government land records, as well as address data from Australia Post and the Australian Electoral Commission. Mapdata will provide the information in an

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excel spreadsheet and all addresses will be geocoded. However, Mapdata does not have information on the use of the land, i.e. residential, aged care facility, business, school etc.

Council-held addresses: these include details as to whether a property address is residential, business, school, aged care facility etc.

10.1.3 Study contact and recruitment in study area

A similar approach to contact and recruitment will be taken for the Morwell and Sale communities. This will commence with a substantial media campaign to alert eligible participants that recruitment is soon to commence and to expect invitation packages to arrive in the mail. Eligible study and comparison group members will then be sent a study pack which includes an invitation letter, an explanation around participation, diagrams to assist during the CATI and a link to do the survey online.

In those cases where telephone numbers are already known to the researchers, the study and comparison group members will be contacted by the Hunter Research Foundation to take part if they have not already completed the survey online. In those cases where telephone numbers are not already known to the researchers, the study and comparison group members will be invited to provide their telephone contact details. A free call 1800 number and a web-site have been set up for potential participants to communicate with the researchers.

To engage those study and comparison group members for whom we do not have telephone numbers and who do not respond to the preliminary mailed contact, a multiphase approach is planned, including use of reminder mail, telephone, email and door-to-door contact. This will be supplemented by the ongoing and extensive marketing campaign that will target the local media, community groups, local events, press releases and news events to ensure awareness of the study.

10.1.4 Adult questionnaire and modes of administration

The Adult Survey questionnaire will collect information on the following major topics:

- Socio-demographic details, such as full name, date of birth, gender, full address details and details of household structure
- Details of residence during the fire
- Work history calendar
- Details of work location during the fire
- Psychological wellbeing
- Pre-existing medical conditions
- Current respiratory conditions and symptoms
- Health risk factors, such as smoking and alcohol consumption
- Other persons living in the dwelling

The questionnaire has undergone numerous revisions upon consultation with CSIRO, the Scientific Reference Group and CAC. A shorter questionnaire has been created for the comparison group in Sale. The Sale questionnaire is based on the Morwell questionnaire with the removal of the majority of the exposure questions. The recruitment methods and questionnaire are currently undergoing piloting before the Adult Survey is launched.

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The preferred modes of questionnaire administration will be via CATI and CAWI, however self-report paper-based questionnaires and face-to-face interview methods may also be used.

10.1.5 Update on recent Adult Survey progress

- The Adult Survey working group meets fortnightly.
- The original ethics application was submitted to MUHREC and approval was obtained on 21 May 2015.
- An amendment was submitted and approved on 4 August 2015 for the selection of Sale as the comparison community and for anonymised data extraction.
- A further amendment was submitted and approved on 15 September 2015 for the Adult survey piloting documents.
- The protocol has been reviewed by the Scientific Reference Group.
- The consent form, explanatory statement and questionnaires are being piloted in the nearby communities of Moe and Newborough on 23 November 2015.
- A tender for a research organisation to undertake the CATI and CAWI components of the Adult Survey data collection, was advertised in July. A Review Panel evaluated two applicants, and the tender was awarded to the Hunter Research Foundation. This subcontract commenced on 1 November 2015

10.2 The Latrobe Early Life Follow Up (ELF) Study

10.2.1 Aims of Stream:

The overall aim is to investigate the potential impacts of exposure to smoke from the Hazelwood coal mine fire during pregnancy or infancy on subsequent health and development of children in the Latrobe Valley.

10.2.2 Specific objectives include:

- To compare perinatal outcomes, particularly fetal growth and maturity, of those exposed and those not exposed, or minimally exposed, to smoke from the Hazelwood mine fire
- To compare the frequency of parental reports of minor illnesses in infants over a three year period of those exposed and those not exposed, or minimally exposed to smoke from the Hazelwood mine fire
- To compare respiratory and vascular function in children from 3 to 12 years of age of those exposed and those not exposed, or minimally exposed, to smoke from the Hazelwood mine fire
- To assess long-term indicators of health and development using a de-identified data extraction study comparing those areas exposed and those not exposed, or minimally exposed, to smoke from the Hazelwood mine fire

To achieve the objectives, a cohort of 500 children born between 1 March 2012 and 31 December 2015 in the Latrobe Valley will be established. This cohort will be recruited from a population of

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4,000 infants and children within that age range who will be initially contacted by the Latrobe City Council (LCC) and given the opportunity to opt-out from being contacted by the research team. Council will draw this nominal roll from a database maintained by their Maternal and Child Health Service.

The Health Services Commissioner has been contacted by the research team and has provided a letter of support for Council to release names and addresses of those not opting out to the Latrobe ELF Study research team.

Individual consent will be obtained to:

- a) conduct a survey of child health, family history, and environmental exposures.
- b) link information collected in the survey to routinely collected health and educational datasets,
- c) link information to Medicare and PBS information,
- d) monitor the frequency of minor childhood illnesses via a simple electronic diary, and
- e) conduct non-invasive physical measurements of cardiovascular and respiratory health. These cardiovascular and respiratory measurements will be conducted three times over the 10 year study and will involve attendance at the LRH for measurement of height, weight, lung function and vascular function using simple non-invasive techniques appropriate for young children.

Additionally, an anonymous Victoria-wide data extraction study of children born between 2000 and 2015 will be established. A de-identified linkage study of this nature is useful as it allows the complete cohort to be followed, avoids the introduction of bias due to self-selection or recall and enables the direct comparison of results with state-wide data. It will also allow for investigation of differences in perinatal outcomes associated with other smoke events (bushfire etc.) over a longer timeframe.

10.2.3 Updates on the ELF study stream:

Staff Appointments:

Ms Marita Dalton commenced as the Project Manager of the Latrobe ELF Study on 1/5/15. Ms Dalton is based in Melbourne in the SPHPM. Dr Shannon Melody joined the project team for one year full time as part of her training in public health medicine. She is funded externally to the project. Dr Grant Williamson is an in kind contribution from the University of Tasmania team. He has collaborated with CSIRO to produce the first modelled exposure estimates for air quality in the Latrobe valley during the fire. Ms Melanie Reeves will join the team at 0.2 FTE in November 2015, increasing to 0.8 FTE from January 2016. She will be based in the Latrobe Valley and assist with local promotional events, recruitment and follow-up of participants and study documentation. In later years she will assist with organisation of clinical assessments. Two PhD students will commence in January 2016. Both will be involved with the clinical studies, with one also working on the data looking at perinatal outcomes.

Stream Meetings:

A team meeting was held at SRH-MUDRIH on the 31 March - 1 April 2015 with the majority of the Latrobe ELF study team in attendance. Members of the team also attended the Stream Coordination Retreat 1-2 June 2015.

Additionally, regular teleconferences have been held with all members of the stream team on a bimonthly basis. Smaller meetings have been held with subsets of the team, including a recent all-day meeting to further discuss recruitment and data-collection methodology. A working group consisting of Dr Johnstone, Ms Dalton and Dr Melody have held weekly teleconferences.

Developments since the project plan:

A number of developments have occurred since the project plan including:

- UTAS HREC approval received for the anonymous Victoria-wide data linkage study
- Reciprocal approvals for the identified cohort study as well as the anonymous Victoria-wide data linkage study received from Monash University, Melbourne University and Edith Cowan University
- Refinement of the baseline questionnaire and child health diary
- Development of a tracking database
- Engagement with community members, including parents attending two playgroups to pilot the refined questionnaire
- Development of the study protocols related to the cardiovascular and respiratory measures and associated plain language summaries
- Purchase of equipment required for clinical assessments
- Development of participant recruitment materials including invitation letter, information sheet, consent form and flyer
- Refinement of recruitment strategies including the outline of specific recruitment phases.
- Liaising with other study streams regarding shared methodologies (e.g. CATI)
- Development of contacts within the Victorian Data Linkage Unit, Victorian Perinatal Data Collection Unit, the Victoria Registry of Births, Deaths and Marriages and the Latrobe City Council Maternal Child Health Unit.
- Meetings held with the Victorian Data Linkage Unit (VDLU) and the Australian Institute for Health and Welfare (AIHW).
- Development of data linkage protocol
- Consent form approved from five data custodians
- Application made to all data custodians for anonymised data linkage and identified data extraction

Related research:

The pilot Latrobe Infant Health Study is being wound up and transitioning into the longer term follow up of the Latrobe ELF study. One aspect of the pilot study is continuing, although not funded by the HHS. This is the collection and analysis of soil and dust samples from participants' homes with the aim of identifying an objective marker of exposure to coal fire smoke.

Community Engagement:

Team members of the Latrobe City Council Maternal Child Health Unit have been consulted in regard to assistance in study recruitment efforts. Ms Dalton attended the Hazelwood Health Study Community Briefing held in Morwell on the 11th of August and gave a short presentation on the Latrobe ELF Study. The pilot studies have included members of the CAC who have children, and also parents attending two local playgroups.

Presentations/Publications:

Dr Johnston provided an update to GPs in the Latrobe region on the health impacts of severe smoke events. This was done in collaboration with the psychological impacts stream. Co-presenters included Prof Alexander MacFarlane, Prof Mayberry and Dr Carroll.

10.3 Psychological Impacts

10.3.1 Aims:

The aim of the psychology research stream is to determine whether exposure to smoke from the fire is associated with psychological trauma and distress. Given that the study is commencing more than a year after the smoke event, it is also important to examine recovery and resilience. The psychology research stream is targeting both adults and school-aged children.

10.3.2 The specific objectives include:

1. Investigate the extent of trauma and distress symptoms in adults and school-aged children exposed to the mine fire event
2. Examine the role of individual, family and social factors on recovery and wellbeing outcomes
3. Explore the qualitative perceptions of children and adolescents regarding the fire and the ensuing circumstances.

The psychological component within the Adult Survey will include an assessment of the impact of the event, level of distress, as well as previous exposure to traumatic situations. This information will be used to identify a group of people from each community to complete follow up surveys and interviews and determine how people have responded to the event. The psychology research team have been actively involved in the Adult Survey Working Group, so have contributed to the refinement of the Adult Survey instruments and protocols.

The primary focus for the reporting period has been on the establishment of the Schools Study component examining the impacts on school-aged children, which is actively collecting data. The team have been working closely with local schools to engage them in the study, with all schools in Morwell and the majority of schools in the Latrobe Valley invited to participate. Children in years 3, 5, 7 and 9 have been asked to complete a survey, along with their parents and teachers, with a random sample of children in Morwell to be asked to participate in interviews. In addition to psychological impacts, the Schools study is also examining educational and wellbeing outcomes, and making use of existing data such as NAPLAN result and school attendance.

10.3.3 Updates on the Psychological Impacts study stream:

Staff Appointments:

As previously noted ([Section 6.16](#)) Dr Emily Berger has been appointed as the Psychology Stream Research Fellow and is overseeing the adult and Schools sub-studies. Dr Berger has a PhD in Educational and Developmental Psychology and considerable experience working with school children.

Ms Cathy Ward has now been appointed as the Psychology Stream Research Assistant for the first year of data collection to provide support in communicating with schools, distributing study materials, arranging payments for administrative support and teacher relief for each school, and overseeing data collection rounds in schools.

Ms Helen Chambers has been appointed as the acting Schools Study Data Manager, creating an Access database to record consent forms, generating participant lists, and merging completed online and paper surveys.

Stream Meetings:

The Psychology stream meets weekly and includes the two lead researchers (Prof Maybery and Dr Carroll), Dr Berger and Ms Ward. Other Hazelwood study personnel (e.g. Dr Johnston, lead researcher for the Latrobe ELF study, Prof McFarlane, recruitment coordinator, database manager and statistician) attend meetings as required to ensure there is a coordinated approach to recruitment across the study streams. The stream leads also participate in the monthly Steering Committee meetings and in study retreats, such as the one held in June and the one planned for later in 2015.

Developments since the project plan:

The Psychology stream team have been involved in the development of the psychological health components of the Adult Survey instruments and procedures. The majority of work in the past year has been focused on the Schools Study, with the following developments:

- Development of the study protocol
- Monash HREC approval

- Department of Education and Early Childhood Development and Catholic Education Office approval
- NAPLAN data linkage approval received from the Victorian Curriculum and Assessment Authority
- Development and refinement of the survey for parents, children (3 versions for years 3, 5, and 7+9 combined) and teachers including information and consent materials
- Development of participant recruitment materials including invitation letter, information sheet, consent form, flyer, and draft newsletter items and letters from principals
- Development of online consent form and surveys for all participant groups
- Conduct of an internal SRH pilot involving staff with appropriately aged children to review the information sheet, consent form, and both paper and online versions of the survey
- Engagement with St Pauls Anglican Grammar school to conduct a rolling pilot of the refined survey materials and procedure for implementing in schools
- Development and implementation of a media strategy to widely advertise the project, including a paid Facebook advertisement
- Engagement and collaboration with the local department and schools across the Latrobe Valley with regards to the main data collection round
- Development of a tracking database to monitor consents, produce class lists etc
- Refinement of recruitment strategies including the outline of specific recruitment phases
- Implementation of the study is now underway within all 22 schools agreeing to participate

The recruitment procedure in each school occurs on a rolling basis which takes over 6 weeks to complete (i.e. initial notice to parents via schools, information sheet and consent form sent out to parents, multiple reminders to parents through schools, collation of completed consent forms, two or more data collection rounds with students, collation of parent surveys, collation of teacher surveys).

The main data collection round commenced in Term 3, based on strong advice from schools to avoid the reporting periods in terms 2 and 4, with schools commencing in a staggered order to spread the study workload. The Schools Study is on track to complete quantitative data collection by the end of November and to complete qualitative data collection by end of the 2015 school year.

A total of 28 schools were approached to participate in the Schools study, which represents the majority (83%) of schools in the Valley and provides coverage across the major towns and the smaller localities. All eight Morwell schools were approached and have agreed to participate whilst 14 of the 20 schools in the wider Valley, have agreed to participate.

Once the survey data rounds are completed a random sample of 68 students in Morwell will be invited to participate in qualitative interviews to explore the impact of the smoke event in more detail. This will occur in November/December 2015. The surveys and interviews will be repeated every two years to track change over time.

Community Engagement:

Engagement with the education sector and the broader community is critical to the success of the schools component. Early engagement activities focused on key contacts within the education sector, all of whom have been strongly supportive of the research activities. The stream team have held a number of meetings with key education stakeholders, including:

- 15/12/14 - John Allman (Director) and Dean Mann (Deputy Director), South Eastern Victoria Region, DET
- 3/2/15 – Mark Anderson, Senior Advisor Regional Performance and Planning, South Eastern Victoria Region, Victorian DET Regional Office - Moe
- 23/2/15 - Kris Arcaro (Director) and Caitlin Greenwell, Student Inclusion and Engagement Division, and Dr Jenny Proimos (Chief Medical Advisor) at the DET Head Office.
- 13/4/15 - Meeting with Latrobe Valley School Principals, at the Victorian DET Regional Office - Moe

This study stream has focused on more general school and community engagement in recent months, including:

- 11/8/2015 – Professor Maybery and Dr Carroll participated in the community briefing in Morwell
- 19/8/2015 – Dr Carroll interviewed on Gippsland FM regarding the Schools Study and older people stream activities
- 1/9/2015 – Dr Carroll interviewed by WinTV regarding the Schools Study along with a local school principal – a copy of the interview has been placed on the Schools Study page of the Hazelwood Health Study website (<http://hazelwoodhealthstudy.org.au/schools-study/>) and was forwarded to schools to distribute to parents
- 1/9/2015 – Ms Ward attended a school assembly at a Government school in Moe
- 8/09/2015 – Dr Carroll attended a school assembly at an Independent School in Traralgon
- 17 and 18/9/2015 – Dr Carroll and Ms Ward attended parent teacher sessions at the Kurnai College Morwell and Kurnai College Churchill.
- 16/10/15 – Ms Ward spoke to years 3 and 5 students at a Morwell primary school

Presentations/Publications:

As noted in the Interim Report, the Psychology stream members participated at an education event organised for local GPs and allied health workers by the Gippsland Medicare Local on 19 February 2015. The stream leads also participated in the study Community Briefing in Morwell on 11 August.

10.4 Policy Review of the Impact on Older People

10.4.1 Aims and Objectives of Stream:

The aim of this component of the study is to assess the impact of the smoke event on older people, focusing particularly on a review of the policy decisions made with respect to older people during the event. The objective of this work is to inform best practice for future emergency events. This work will be completed by August 2016.

10.4.2 Updates on study stream:

Staff Appointments

There are no separate staffing arrangements for the older people stream, with the research activities to be undertaken by the lead researchers Prof Walker and Dr Carroll. It is expected that other key personnel will provide some support to the stream, including input from the Psychology and Community Wellbeing streams and from the Senior Project Manager and Recruitment and Engagement Coordinator.

Ms Marita Chisholm, doctoral researcher and research assistant within the School of Rural Health with extensive research experience in ageing-related topics has been appointed on a casual basis to transcribe the focus group recordings.

Stream Meetings

The stream leaders have met regularly to progress the stream activities as well as participating in Steering Committee meetings and retreats.

Developments since the project plan

There have been considerable developments within this stream since the Interim Report, with seven focus groups having been scheduled to date. The focus groups have been targeting three different groups: community dwelling older people; older people in receipt of Home and Community Care (HACC) services, and families and carers of older people. By the completion of the 3rd focus group it was apparent that it was challenging to recruit participants to attend the sessions being held at the Morwell Senior Citizens in the South of Morwell and the decision was made to run sessions through an alternative site at the Morwell Neighbourhood House in the North East of Morwell. While there was some initial success, it again proved difficult to recruit people to sessions at the Neighbourhood House.

As a result of presenting to the Latrobe City Community Groups Forum on 22 July, the team was invited to speak with the Greek Community Group so an informal discussion group was held on 6 October with over 20 older Greek residents participating. While it was challenging to undertake a formal focus group with so many participants, particularly given that most spoke in Greek and their responses were translated by the group leader, it was apparent that recruiting through an existing group and running the sessions as part of an existing activity is likely to result in a larger number of participants compared to advertising general community sessions. The stream leads are in the process of identifying key community groups to be approached (e.g. University of the Third Age,

Senior Citizens, Planned Activity Groups) and establishing an appropriate process. As using a group basis differs from the procedures outlined in the original ethics application, it is likely that an amendment will need to be submitted to MUHREC before commencing this round of activities. In addition, a focus group with residents from the St Hillarys BapCare residential aged care facility which was evacuated during the fires is being arranged.

At the completion of the focus group sessions the transcribed with a view to informing the interviews with key stakeholders and services providers in the next stage of the stream.

Community Engagement

The aims of the older people stream have been highlighted in all community engagement activities to date, including the community briefing on 11 August, and meetings with key organisations such as the local council and community health service. A brief overview has also been given to the LCC Positive Ageing Reference Committee (PARC), which is expected to provide support in terms of publicising the focus group sessions, interpreting the findings, and disseminating the outcomes.

Study personnel were invited to participate in the LCC Community Groups Forum in Morwell which was held on 22 July and involved representatives from approximately 50 community groups. The older people was highlighted at this forum, resulting in an invitation to speak to the Greek community group and for the stream lead to speak on local community radio on a session run by the University of the Third Age. Dr Carroll also spoke on Gippsland FM community radio regarding the older people stream activities on 19 August.

10.5 Impact on Community Wellbeing

10.5.1 Aims and Objectives of Stream:

The first part of this study will provide narrative evidence of the perceived impact of the Hazelwood mine fire smoke event in Morwell and surrounding communities on community wellbeing. Specific objectives are:

- To identify community perceptions of the impact of the smoke event on community wellbeing
- To identify community perceptions of the effectiveness of community rebuilding activities
- To identify community perceptions of effective communication during and after the smoke event

To achieve these aims and objectives, we are using a qualitative, interpretive research design with two main components. In the community-engaged component, we are conducting focus group discussions and individual interviews. Focus groups allow us to gather perceptions of the effect on vulnerable groups in the Morwell community, and on surrounding communities. Individual interviews with people who organised, supported or participated in community rebuilding activities provide us with perceptions of the effectiveness of these activities and people's views of recovery. In the media analysis component of the study, we are collecting and analysing archival sources of relevant local and state newspapers, online news media and social media postings. We are also

interviewing key local media professionals and social media practitioners. These methods allow us to create a broad narrative evidence-base of community perceptions of the impact of the smoke event on community wellbeing. This narrative evidence will form the basis of the second part of this study comprising action research in 2016 to support further community resilience building, followed by a review in 2017.

10.5.2 Updates on Study Stream

Staff Appointments:

This stream is led by FedUni's Centre of Research for Resilient Communities (CoRRC). The team, led by A/Prof Pamela Wood, comprises Dr Michelle Duffy, Dr Sue Yell and Dr Belinda Morrissey from Federation University Australia, and Prof Walker, Prof Maybery and Dr Carroll from the Monash SRH.

Dr Sue Whyte was appointed earlier this year as the Research Assistant for the community-engaged research aspect of the study. A second research assistant, Dr Larissa Walker, has now been appointed. Dr Walker will contribute to the media analysis component of the study.

Stream Meetings:

Monthly stream meetings are held with the full study team. In addition, FedUni team members have frequent discussions on study progress.

Study Developments:

The initial summary literature review related to natural disasters of similar duration, community wellbeing and community resilience, which was prepared earlier this year, has been updated and has further informed the direction of the community-engaged research component of the study. The two general focus groups planned for communities surrounding Morwell were offered in Traralgon and Moe but it is clear that the strategy for our second cluster of focus groups which target groups related to vulnerable people in the community is more effective as they can offer key perspectives. Using this strategy we have conducted one focus group and have arranged a second. A third one planned with key informants in agencies related to homelessness was changed to two individual key informant interviews. In total, thirteen key informants have been interviewed in relation to community rebuilding and recovery.

The media analysis component of the study is also progressing. The analysis of social media is being completed and thumbnails created of three significant social media groups. Analysis of data from print media is progressing. A database has been created to enable systematic mapping of data from print and social media and online news sources to track key issues and their chronology.

The targeted focus groups, key informant interviews and community engagement activities have enabled us to identify three potential groups for the action research planned for Year 2 of this study. It is crucial to build relationships with potential groups this year to enable effective action research next year. Initial discussions with these groups have proved very positive.

Community Engagement:

- A/Prof Wood and Dr Whyte attended the CAC meeting at LRH on 17 June 2015.

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- A/Prof Wood, Dr Duffy, Dr Yell, Dr Whyte, Dr Carroll, Prof Maybery and Prof Walker attended the two Community Briefing sessions held in Morwell on 11 August.
- A/Prof Wood presented an overview of the study to senior delegates from the University of the Highlands and Islands (UK) on 23 September.
- Dr Yell and Dr Carroll attended and distributed material about the study at the Living with Bushfire Conference in Gippsland, 9-10 October.

10.6 Hazelinks

There are two components of Hazelinks: The identified data linkage study and the anonymised data extraction study.

10.6.1 Identified linkage with consent:

Identified data linkage will be undertaken to investigate the potential long term health effects from the Hazelwood coal mine fire by linking participant information from the Adult Survey (Morwell and Sale) to relevant health databases. These include routinely collected data from Ambulance Victoria (AV), Medicare and Pharmaceutical Benefits Scheme (PBS), hospital data, cancer and death registries. This linkage will identify members of the cohort who subsequently die, develop respiratory or cardiovascular conditions or develop cancer. This identified linkage will commence once the Adult Survey is completed.

10.6.2 Anonymised data extraction:

Anonymised data extracts from relevant health databases will be used to investigate the short, medium and longer term health effects of exposure from the mine fire smoke. Data extracts will be requested for the period 1 January 2013 to the most recent data available (not provisional) for the East of Victoria (Hume, Eastern Metropolitan and Gippsland) for all ages from AV, hospitals, and death registries. We have received the data extract from AV, and are awaiting the hospital data extract from DHHS. The data extraction from the NDI will likely take place in 2017, as it usually takes two to three years for cause of death data to be updated.

10.6.3 Datasets for identified linkage and data extraction

The identified linkage will be undertaken for all the datasets below (1-6), and the anonymised data extraction will be undertaken for ambulance, hospital and mortality datasets (1-3). As the NDI cause of death data is delayed by 2-3 years, linkage and data extraction to Births, Deaths and Marriages (Victoria) will also be explored. The feasibility of also doing an anonymised cancer data extraction for the period up to the time of the fire will be investigated with the Victorian Cancer Registry (VCR).

1. Hospital admission and emergency presentation data from the VAED and VEMD respectively
2. Ambulance data using VACIS and VACAR. VACIS contains all patient information recorded by the paramedic at point of care and VACAR has detailed information on all the out-of-hospital cardiac arrests that are attended to ambulance personnel
3. Mortality data from the NDI

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4. Medicare data (GP, specialist and consultant attendances)
5. Medication use from the PBS data
6. Cancer incidence from the VCR and the Australian Cancer Database (ACD) held by the Australian Institute of Health and Welfare (AIHW).

Identified data linkage and data extraction will be repeated approximately every 2-3 years for the duration of the project. The data will be linked to daily modelled air quality data from the CSIRO using geocoded data or postcode (if available).

10.6.4 Progress to date:

Several meetings have taken place with the data custodians to clarify procedures. The following applications have been submitted:

1. Application to access VAED and VEMD data held by the Victorian Data Linkage Unit at DHHS (identified linkage and data extraction)
2. Application to access VACAR and VACIS data held by Ambulance Victoria (identified linkage and data extraction)
3. Application to access ACD and NDI data held by AIHW (identified linkage only)
4. Application to access VCR data (identified linkage only)

The following applications have been approved:

- Ambulance Victoria access to VACAR and VACIS (identified linkage and data extraction)

The following data sets have been received:

- Ambulance Victoria (VACIS and VACAR) data extraction

A chart showing the proposed flow of data for Hazelinks is shown at Figure 5

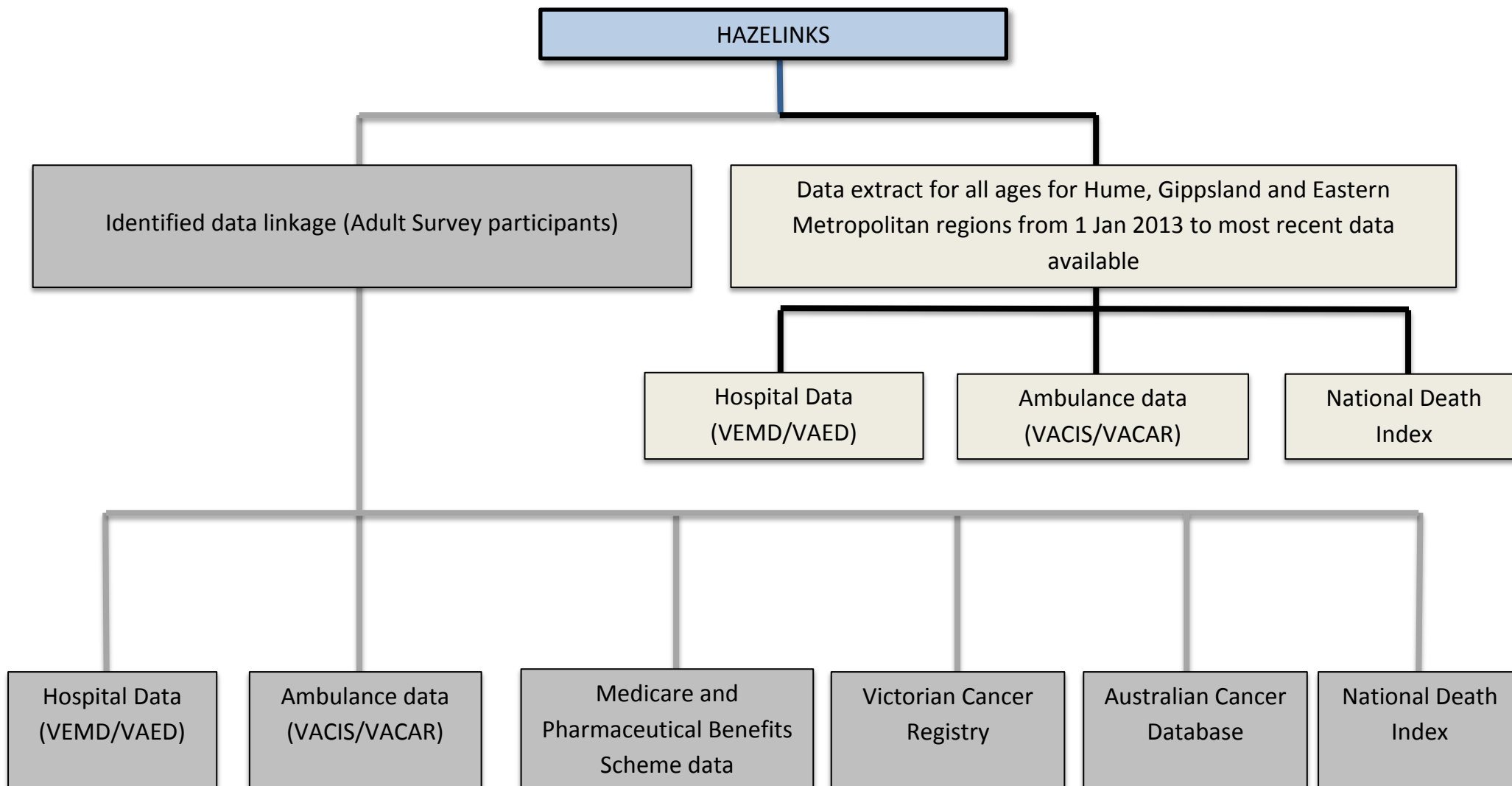


Figure 5 Hazelinks (Data Linkage and Data extraction Studies) flow chart

10.7 Exposure Assessment

10.7.1 Initial modelling to assist in identifying the control population for the Adult Survey

As part of the Project Plan, CSIRO Oceans and Atmospheric flagship have assisted with the identification of a control population. A lay summary of this report was created by CSIRO with input from study members. This information will be made available on the study website.

The air quality team at CSIRO has made preliminary estimates of how the smoke travelled in the air using weather data such as wind direction, speed and temperature, and computer models. The team investigated how far the smoke travelled and how often the smoke passed over different towns in the Latrobe Valley and the broader Gippsland region for the duration of the fire (Figure 5).

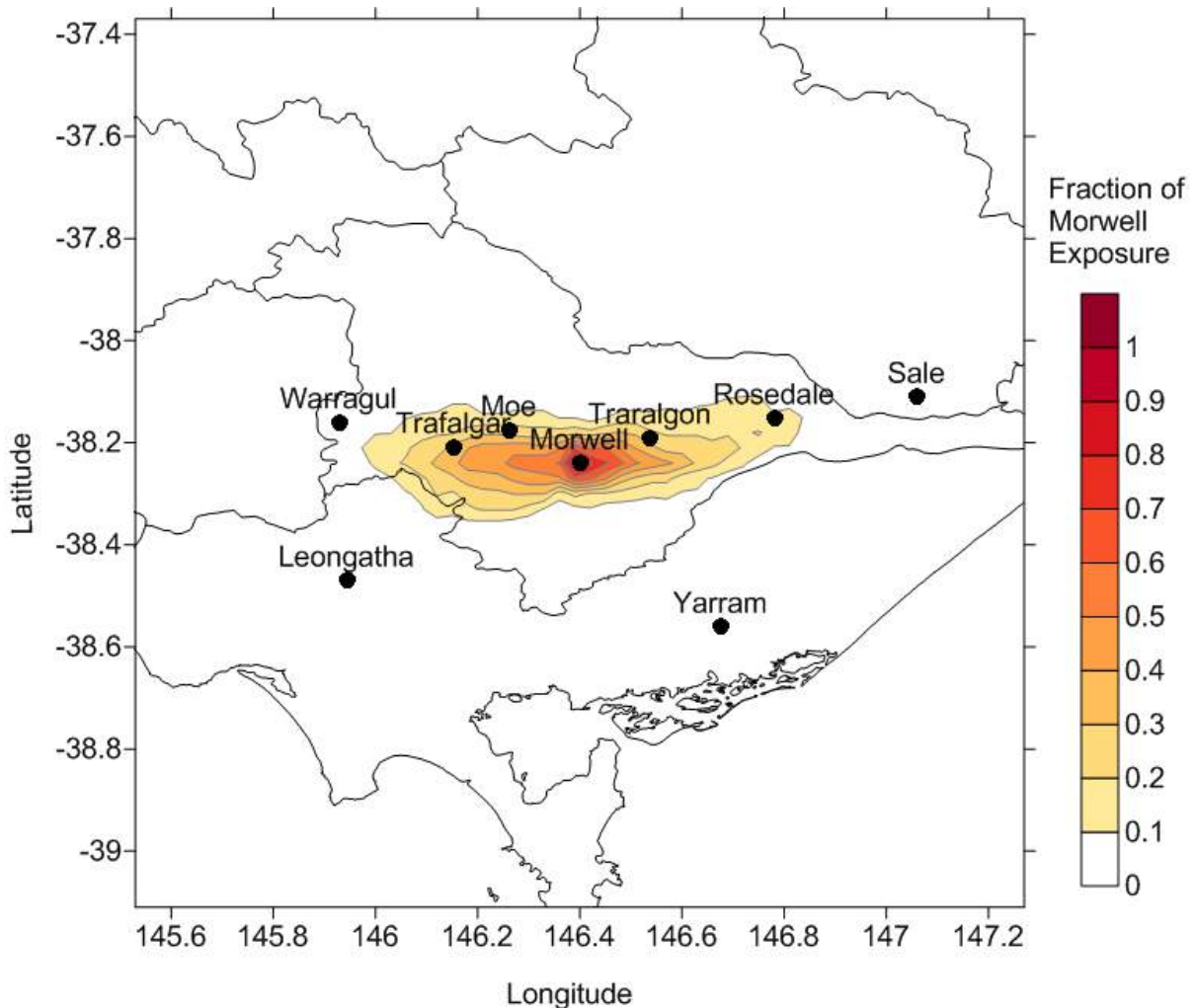


Figure 6 The variation in smoke exposure (relative to the exposure experienced across Morwell) in the Latrobe Valley, as estimated by the CSIRO model.

Smoke is measured as the weight of particles smaller than 2.5 thousandths of a millimetre in size in a volume of air (referred to as $PM_{2.5}$). There is an advisory quality standard for these particles which is 25 micrograms (millionths of a gram) per cubic metre as a 24 hour average. Observations showed that Morwell and Traralgon experienced the highest levels of smoke. Towns such as Rosedale, Warragul and Sale received lower levels of smoke. This information assisted in the

identification of an appropriate comparison population to the Adult Survey, as discussed further in Section 11.

10.7.2 Air Quality Assessment during the mine fire

During the mine fire, EPA conducted a range of ambient air quality measurements, including continuous measurements of PM_{2.5}, CO, NO₂, SO₂ and O₃ as well as measurements of volatile organic compounds (VOCs) from 24-hour high smoke event samples and PM₁₀ composition from 24-hour filter samples. CSIRO also assisted EPA Victoria in characterising the smoke from the Hazelwood open-cut coal mine fire. A suite of instruments were deployed at a site in Morwell South in March 2014 to measure the concentrations and the size resolved chemical composition of atmospheric particles, the concentrations of VOCs, carbonyls, elemental mercury (Hg), dioxins, furans and polycyclic aromatic hydrocarbons (PAHs).

CSIRO has now conducted an in-depth analysis of the existing air quality data sets which includes:

- Identification of key pollutants relevant to health impacts.
- Statistical analysis of differences in pollutant concentrations measured at Morwell during smoke-impacted and non-smoke impacted periods (e.g. background ambient air quality in the Latrobe Valley).
- Comparison of pollutant concentrations measured at Morwell relative to other urban sites within Australia, and assessment of the impact of the mine fire on ambient air quality.

Summary of the results:

Analysis of the air quality data set showed that concentrations of PM_{2.5} and carbon monoxide were especially high exceeding air quality guidelines. The smoke impact was more pronounced in Morwell South compared to Morwell East and Traralgon. Smoke levels were highly variable during the day and over the sampling period. High pollution events in Morwell South were strongly associated with south-westerly winds. Targeted monitoring of VOCs, PAHs, dioxins and metals started on 26 February when smoke levels had already subsided. With the exception of benzene, concentrations of VOCs remained within air quality guidelines.

10.7.3 Modelling of air quality during the mine fire and thereafter

The final model will be a combination of a high resolution Lagrangian particle model, a regional chemical transport model, and available air pollution observations (also surrogates such as ground-based and aerial smoke photography) which will be used to generate optimal (in terms of accuracy) daily exposure fields for the mine fire period.

The air quality assessment (as discussed in section 10.7.2) will inform the modelling of emissions from the mine fire which will drive the chemical transport model assessment of exposures. CSIRO has begun calculating the emissions needed for the modelling.

11 Comparison Community

In deciding upon a suitable comparison population there were four main considerations:

- A rural location

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- The need to have a similar socio-demographic composition to the town of Morwell
- Negligible exposure to smoke from the Hazelwood coal mine fire
- The population to be of a suitable size

In deciding upon a suitable rural location, a comparison population in Gippsland would have considerable advantages over one from other rural parts of Victoria. One logistical advantage was the capacity to capitalise on the existing facilities and community connections of the SRH, which has sites across Gippsland, which would increase study efficiency. Another advantage was expected higher recruitment rates in this area because of the salience of the mine fire event. As a result it was decided to limit the selection of the comparison population to the Gippsland region.

To help identify which Gippsland communities had negligible exposure to smoke from the mine fire, the CSIRO Oceans and Atmospheric Flagship conducted air quality modelling across the region which was designed to investigate smoke exposure from the Hazelwood open cut mine fire in February and March 2014 (See section [10.7.3](#)). It was apparent from this modelling that the towns within the Latrobe Valley (Trafalgar, Churchill, Moe-Newborough and Traralgon) had a substantial number of days of high exposure to the smoke plume and so were excluded from further consideration.

Socio-demographic data including the SEIFA for major Gippsland towns outside the Latrobe Valley were obtained from the ABS for the 2011 census. When these towns were compared, it was immediately apparent that Morwell was one of the most disadvantaged towns in Victoria. None of the potential comparison populations were as disadvantaged. Drouin and Warragul to the West and Sale to the East were identified as potential comparison communities, having had less exposure and being of sufficient size and relative proximity to Morwell.

More detailed socio-demographic data from the 2011 census were then obtained from the ABS. Warragul, Drouin and Maffra were found to have higher overall SEIFA rankings than Sale, which was higher than Morwell. However, selecting the 13 statistical areas with the lowest SEIFA rankings resulted in a sample within Sale with comparable median age, household size and population stability as Morwell. Including a further three statistical areas resulted in a slightly larger sample that was not quite as well matched for SEIFA ranking. This comparison population of 16 statistical areas within Sale has now been endorsed by the Project Steering Committee.

12 Statistical Analysis Plan

A statistical analysis plan is required for all studies so that the questions posed at the beginning of the study can be answered. An overall plan for the study can be found in [Appendix 6](#).

The plan first clarifies the available datasets that will be used and gives some indication to their structure and contents. Then the broad classes of analyses will be outlined with direction provided on specific analysis methods to be employed. The ability of these analyses to answer the research questions utilising the datasets available will be clarified when discussing the outline of the analytical approaches.

Dr Straney’s plan for the coming months is to put together a statistical analysis plan for each of the separate studies that make up the HHS.

13 Contingency Plan for the Study

The HHS Contingency Plan uses the standard [Prevention, Preparedness, Response and Recovery \(PPRR\)](#) framework. Each of the four key elements is represented by a part in the study continuity planning process.

Prevention

Risk management planning has been undertaken to identify and manage the likelihood of, or effects of risk associated with the study ([Appendix 5](#)).

Preparedness

Impact analysis, incorporating identification and prioritisation of key study activities that may be adversely affected by disruptions, is being undertaken as part of the risk management and quality assurance processes.

Response

Response planning outlining actions to be taken to contain, control and minimise impacts is included in the risk management and quality assurance processes.

Recovery

Recovery planning elements outline actions to be taken to minimise disruption and recovery times.

14 Future Developments

14.1 Ongoing Community Engagement

Community Engagement is ongoing, with the addition of engagement with the identified comparison community of Sale to ensure successful recruitment into the study.

14.2 Statistical Analysis Plans

Statistical analysis plans are being created for each of the separate studies.

14.3 Adult Survey

Piloting of the questionnaire (administered both face-to-face and over-the-phone) and recruitment procedures will likely continue until the end of 2015.

The results of the piloting will be evaluated and procedures and instruments adjusted where necessary. Amendments will be submitted to MUHREC for approval.

Final versions of the questionnaires will be sent to HRF for programming in to a CATI and CAWI.

MapData, Council data, Electronic White Pages and, if available, VEC data will be merged to create a list of potentially eligible participants or households,

Master copies of the study invitation materials will be prepared and printed for mailing to potentially eligible participants or households.

An extensive marketing campaign will take place shortly before recruitment commences; potentially including media releases, newspaper advertising and letter-box flyers.

It is envisaged that recruitment will commence in early 2016 with a formal re-evaluation of all procedures and instruments after 10, and again after 50, participants have been recruited.

14.4 Schools Study

The Schools Study is aiming to complete the main round of data collection from all participating schools across the Latrobe Valley before the end of 2015, including completion of the student, parent and teacher surveys and the student interviews.

Early in 2016 the additional data collected by the Department of Education and Training and Victorian Curriculum and Assessment Authority (including NAPLAN, attendance, and other records) will be requested and merged with the study data.

The analysis of the quantitative and qualitative analysis will be completed in 2016 to look at the extent of trauma and distress symptoms in school-aged children in the Valley and the role of individual, family and social factors on recovery and wellbeing outcomes. This will include transcription of all interviews and identification of key themes.

Summary reporting from the first round of data collection will be provided to all participating schools as well as to the Department of Education and Training and the Catholic Education Office, with a view to informing policy and practice locally and more broadly.

14.5 Older people

The focus groups with older people and their families and carers will be concluded shortly, after which the sessions will be transcribed with a view to informing the interviews with key stakeholders and services providers which will take place early in 2016. A review of the relevant research and policy literature will then be conducted to inform interpretation of the findings. A summary report will be provided to the Department of Health and Human Services by the August 2016 deadline, with recommendations for consideration by policy and service providers.

14.6 Exposure Assessment

In the next 6 months the combined model (as explained in 10.7.3) will be developed and exposure fields for PM_{2.5} will be available for the period of the mine fire for the greater Latrobe Valley region.

Across the Morwell region, the exposure fields will be generated at a resolution of 100 m to 1000 m (with the final resolution selected to be sufficient to resolve any observed large spatial gradients in pollutant concentrations). For the greater Latrobe Valley region (including Sale), exposure fields will be generated at a resolution of 1000 m to 3000 m.

The total ambient exposure experienced by the residents in Morwell and beyond will be the sum of the exposure calculated by the high resolution and regional exposure models. Errors in these exposure fields will be minimised by blending the model results with observations of each air pollutant and/or air pollutant surrogate.

14.7 Hazelinks

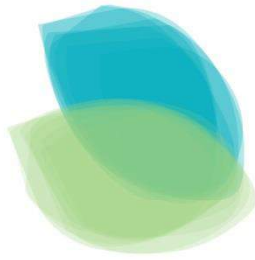
The emergency presentations and hospital admissions data extracts from DHHS should be received within the next few months. We have already received the Ambulance Victoria data extract. By June 2016 the exposure fields during the mine fire will be available which means analysis on this part of the study will take place in the second half of next year with the first results expected by the end of next year.

14.8 Community Wellbeing Study

Preliminary discussions will continue with potential community groups who could engage in the action research component of the study in 2016.

15 Appendices

Appendix 1 Key Stakeholder Engagement Activities



Hazelwood

HEALTH STUDY

Key Stakeholder Engagement Activities

| Date | Activity | Details |
|-------------|--------------------|--|
| 6/11/2014 | Interview | Latrobe Valley Express interview with Co-Principal Investigator Prof Walker and key community contacts regarding the announcement of the establishment of the HHS |
| 24/11/2014 | Media release | Notice of the establishment of the CAC and call for expression of interests. |
| 17/12/2014 | Meeting | Meeting with key personnel from LCC |
| 8/01/2014 | Meeting | Meeting with the Hazelwood Community Recovery Committee in Morwell |
| 21/01/2015 | Meeting | Key team members met with representatives from Voices of the Valley regarding the study aims and operations |
| 27/01/2015 | Local study office | The community were invited to attend the public opening of the local study office at the SRH Latrobe Valley, LRH to meet with key team members |
| 10/02/2015 | Meeting | Study team members met with Tracie Lund from the Morwell Neighbourhood House. |
| 19/02/2015 | Group presentation | Members of the Latrobe ELF study and psychological impacts streams gave a presentation at an education event organised for local GP's and allied health workers by the Gippsland Medicare Local on 19 February 2015. |
| 25/02/2015 | Presentation | Study team members gave a presentation at the Morwell Club which was open to the community and organised by the Advance Morwell Group |
| 26/02/2015 | Group meeting | First meeting of the CAC, held at the local study offices at LRH |
| 11/03/2015 | Meeting | Key team members met with Gary Van Driel, new CEO of LCC |
| 19/03/2015 | Group meeting | First meeting of the CRG including local health personnel, held at the local study offices |
| 19/03/2015 | Presentation | Study team members gave a presentation to the Central Gippsland Branch of the Royal Victorian Association of Honorary Justices |

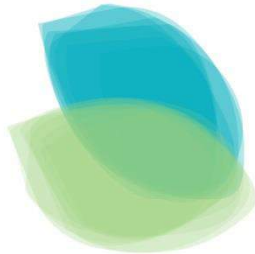
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| 23/03/2015 | Phone Call | Study team members talked with Darren Chester, Federal Member for Gippsland |
| 30/03/2015 | Group meeting | Study team members gave a briefing to a meeting of the Latrobe City Councillors and executive team |
| 31/03/2015 | Meeting | Study team members met with Russell Northe, Member for Morwell |
| 31/03/2015 | Group meeting | Study team members gave a briefing to the LCHS Board |
| 1/04/2015 | Group meeting | Second meeting of the CAC |
| 9/04/2015 | Creation of Twitter Account | Creation of a Twitter account to engage community members with study, link in with other community groups to spread the word. @HazelwoodHealthStudy #HazelwoodHealth |
| 11/04/2015 | Phone Call | Study team member spoke with Rosalea Monacella coordinator of RMIT's ReActivate Morwell campaign |
| 13/04/2015 | Group meeting | Members of the psychological impacts stream met with local school principals and executives at the Moe office of the Department of Education and Training |
| 15/04/2015 | 1800 number created | 1800 number allows community members to contact the study and ask questions. Also gives them another avenue by which to access the study |
| 15/04/2015 | Group Meeting | Meeting with member of Voices of the Valley member Ron Ipsen to create a good working relationship and to promote the study |
| 16/04/2015 | Group Meeting | GDF Suez Community Liaison/Media staff member Lauren Carey - Beneficial in developing a contact with the Hazelwood mine and their media and community links |
| 21/04/2015 | Phone Call | David Roberts from Gippsport –large network into the sporting and Indigenous community |
| 28/04/2015 | Phone Call | Jac Francis-Kelly of LCHS to see how LCHS can help promote the study |
| 30/04/2015 | Phone Call | Carolyn Boothman, CAC member, to discuss engagement of the community |
| 30/04/2015 | Group Meeting | Team member attended ReActivate Morwell launch-engaged with several local business and community |

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| | | leaders and community members |
| 5/05/2015 | Meeting | Meeting with Gar Van Driel CEO of LCC to discuss the nominal roll |
| 5/05/2015 | Group meeting | Key community contacts were invited to participate in a recruitment think tank to discuss strategies to target key groups and communication streams |
| 11/05/2015 | Meeting | Meeting with Carlyne Boothman Review of study forms, ability to quiz her on community leaders, politics of the region etc |
| 12/05/2015 | Meeting | Tracie Lund, CAC member, at Morwell Neighbourhood House, met disadvantaged people in the area, discussed issues around disability, unemployment and drug use |
| 18/05/2015 | Community Event | International Day Against Homophobia and Transphobia at Morwell LCHS met with community members and discussed the study, including Ben Leigh CEO of LCHS, Jacqueline Eddy from LCHS |
| 18/05/2015 | Meeting | Meeting with Andrew Wood, CAC representative to discuss the Adult Survey and the Latrobe ELF study survey. Discussion on the impact of the fire on his area of Morwell |
| 20/05/2015 | Meeting | Meeting with Tim Owen, CAC representative, at DHHS office in Traralgon to discuss the Adult Survey and the Latrobe ELF Study Survey |
| 26/05/2015 | Media Event | Members of the team participated in the official launch of the reopening of the Hazelwood Mine Fire Inquiry |
| 28/05/2015 | Meeting | Meeting With Carlyne Boothman from the CAC re study progress |
| 01/06/2015 | Meeting | Members of the Latrobe ELF study team met with the LCC contacts to discuss the ELF study activities |
| 04/06/2015 | Media Attention | Prof Walker and Dr Carroll were interviewed by various sources regarding the new study website |
| 09/06/2015 | Meeting | Meeting with Russell Broadbent, MP Federal Member for McMillan |
| 09/06/2015 | Meeting | Meeting with the LCC working group to progress connections between the council and the study particularly with gaining access to information for the |

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| | | nominal roll |
| 17/6/15 | Group meeting | Community Advisory Committee (CAC) meeting number 3 |
| 25/6/15 | Meetings | Team members held initial meetings in Sale re the possibility of Sale being selected as the comparison community - including meeting with Wellington Shire Council, a representative from Rotary, a local paediatrician, and the head of the health service |
| 2/7/15 | Meeting | Team members participated in a meeting of the Hazelwood Community Recovery Committee |
| 7/7/15 | Meeting | Team members met with members of Voices of the Valley |
| 13/7/15 | Mail out | Mail out of information packs commenced for the Schools Study with approximately 2500 packs sent to parents across the Latrobe Valley. The explanatory included information on the broader study including Adult and ELF streams. |
| 16/7/15 | Group meeting | Team members gave a briefing to the PROBUS Club in Morwell (approximately 90 people in attendance) |
| 20/7/15 | Meeting | Interagency community engagement and communications meeting (with representatives from key departments engaged in supporting the community following the smoke event |
| 22/7/15 | Group meeting | Latrobe City Council (LCC) Community Groups Forum in Morwell with approximately 50 groups represented |
| 29/7/15 | Meetings | Second round of meetings in Sale – local member, general practitioner, Wellington Shire Council |
| 30/7/2015 | Keynote presentation | Monash University Disaster Resilience Initiative Forum, <i>Advancing Community-led Resilience</i> Title of keynote: <i>Community Resilience – a rural perspective</i> (Prof Judi Walker) |
| 7/8/15 | Group meeting | International Women’s Group – Morwell with approximately 20 people in attendance |
| 11/8/15 | Media release | A notice was released providing details of the community briefings and key announcements such as the selection of the comparison – resulting in multiple interviews |
| 11/8/15 | Community briefings Morwell | Community Briefings held in Morwell |
| 17/8/15 | Media release | A notice was released providing details of the upcoming community briefings in Sale |

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| 19/8/15 | Interview | Dr Carroll interviewed by Gippsland FM re Older People and Schools Study activities |
| 24/8/15 | Community briefings Sale | Community Briefing held in Sale |
| 1/9/15 | Interview | Dr Carroll interviewed by WinTV re Schools Study |
| 1/9/15 | Group meeting | Schools Study team member attended a school assembly at a Government school in Moe |
| 4/9/15 | Online advertising | Schools Study released a paid Facebook advertisement over a 2 week period targeting adults within 20km of Morwell to alert them to the Schools Study and the website. The ad reached an audience of over 33,000 and resulted in 508 clicks to the study website. |
| 8/9/15 | Meeting | Study team members met with Russell Northe, Member for Morwell |
| 8/9/15 | Group meeting | Schools Study team member attended a school assembly at an Independent School in Traralgon |
| 16/9/15 | Group meeting | CAC meeting number 4 |
| 30/9/15 | Community FM Radio | Professor Walker interviewed for 1 hour 3UA radio program |
| 17-1//9/15 | Group meetings | Schools Study team member attended parent teacher sessions at the Kurnai College Morwell and Kurnai College Churchill |
| 6/10/15 | Group meeting | Dr Carroll was invited to give a study overview to members of the Greek community in Morwell as well as involve them in a group discussion as part of the Older People stream with 23 people in attendance |
| 7/10/15 | Group meeting | LCC Community Groups Forum in Churchill with approximately 15 groups represented |
| 9-10/10/15 | Community conference | Living With Bushfire Conference – Churchill – a display booth was established at the community conference to provide details on study activities |
| 12/10/15 | Group meeting | Meeting with Latrobe City Council – councillors and lead executives |
| 16/10/15 | Group meeting | Schools Study team member spoke to years 3 and 5 students at a Morwell primary school |

Appendix 2 Project Governance Structure



Hazelwood

HEALTH STUDY

Project Governance Structure

● **Background**

Monash University has been contracted by the Victorian Department of Health (now Department of Health and Human Services) to undertake a comprehensive study of the long-term health of residents of Morwell and the wider Latrobe Valley following exposure to the smoke from the Hazelwood coal mine fire. Researchers from the School of Public Health and Preventive Medicine (SPHPM) and School of Rural Health (SRH) will lead the project, in collaboration with researchers from elsewhere in Monash as well as Federation University, University of Tasmania, University of Adelaide, and CSIRO.

The project’s governance structure comprises a Community Advisory Committee, Project Steering Committee, Scientific Reference Group and Clinical Reference Group (**Figure 1**).

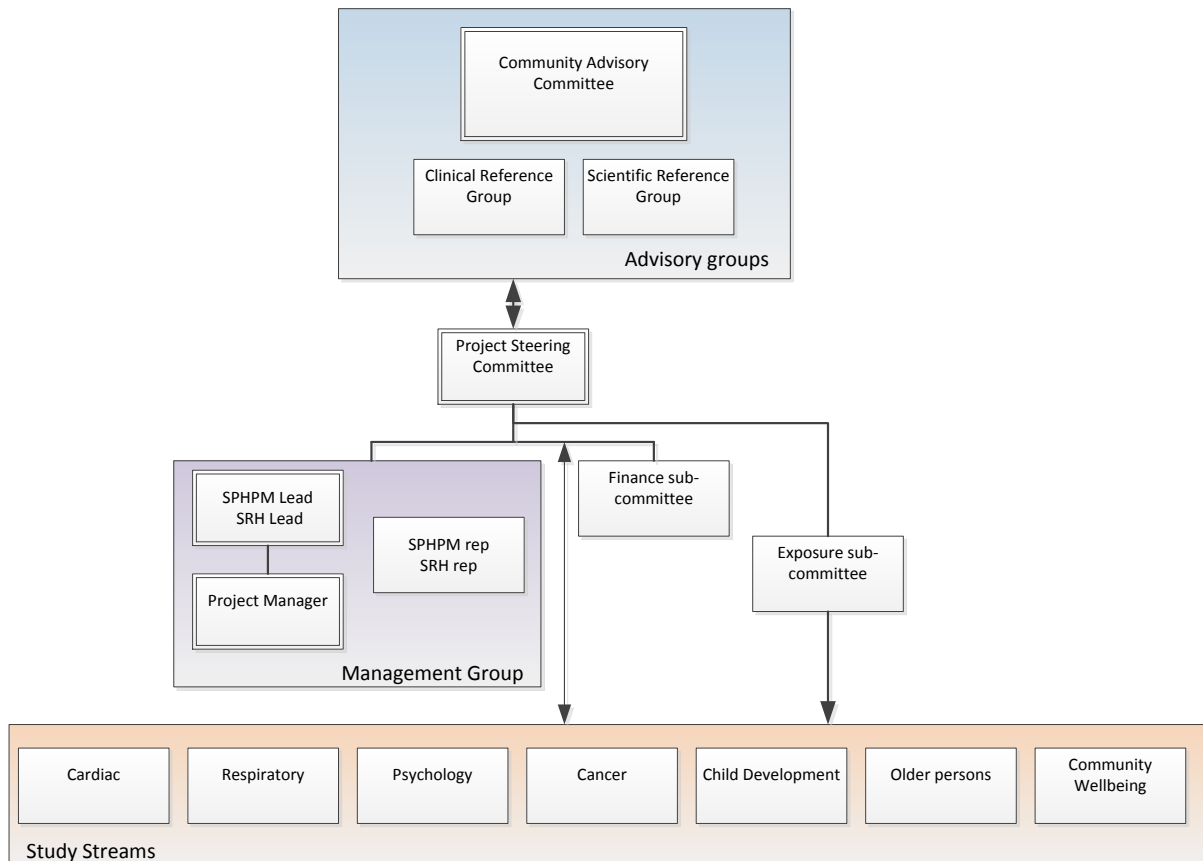


Figure 7: Hazelwood Mine Fire health study governance structure. Double-ended arrows depict communication lines, solid lines depict reporting.

● **Community Advisory Committee**

Preamble

The Community Advisory Committee (CAC) is the project's primary advisory body.

The purpose of the CAC is to ensure that the study hears directly from and works in partnership with Latrobe Valley community members, health and community service providers and local government in undertaking the research program and ultimately to improve health services and health outcomes for the local community. In 2015 Sale was identified as the comparison community leading to the need to broaden the CAC to include Sale residents and organisational representatives.

Meetings and Membership

Meeting on a quarterly basis from 2015, the Committee started with 10 members reflecting the diversity of stakeholder groups. In September 2015 an additional two organisational representatives were added from Sale. The CAC will always convene in the Latrobe Valley. Meetings will be minuted.

Membership of the CAC includes three community members selected through a call for Expressions of Interest (EOI) through the auspices of the Latrobe Valley Express. Selection was at the discretion of the Co-Principal Investigators to ensure equitable membership across the CAC including gender balance. The same process will be used to identify two community members from Sale.

Membership of the CAC is:

1. Three community members from Morwell
2. A representative of Latrobe City Council
3. A representative of Federation University (Gippsland campus)
4. A representative of the Latrobe Regional Hospital Board
5. A representative of the Latrobe Community Health Service Ltd Board
6. Two community members from Sale (process under way)
7. A representative from the Central Gippsland Health Service Board
8. A representative of Wellington Shire Council
9. Principal Investigator, Monash University
10. Principal Co-Investigator (Gippsland), Monash University (interim Chair)
11. Victorian Chief Health Officer

The Senior Project Manager, Monash University will act as Secretary to the CAC.

Terms of Reference

The specific roles of the CAC are to:

1. Discuss and advise on community perspectives in proposed new research/clinical/engagement

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activities, plans and projects as presented by the study's academic leads.

2. Ensure the study is widely known to people in its catchment.
3. Provide advice to the Project Steering Committee and Management Group on engagement and communication issues including the optimal communications plan.
4. Monitor the effectiveness of communication processes.
5. Provide feedback on the study's proposed recruitment protocols, and thus maximise the enrolment of study participants to the Project Steering Committee and Management Group.
6. Participate in evaluating the impact of the study in the region.
7. Be involved in education and training of field staff and clients when requested by the project's academic leads.
8. Undertake any other activities that contribute to the realisation of the study objectives.

Membership of the CAC will be for the duration of 12 months in the first instance. These Terms of Reference will be revised and updated annually.

Anyone who expresses an interest in the study as part of the EOI process is encouraged to become part of an extensive community database being compiled for the purpose of communication dissemination as part of an effort to directly communicate with concerned community members.

● **Clinical Reference Group**

Preamble

The Clinical Reference Group (CRG) comprises key clinicians who will provide input into the clinical operations of the project, oversight of individual abnormal results and a key dissemination outlet to professional organisations.

Meetings and Membership

Meeting at least once a year, by tele-/video-conferencing or face-to-face, the CRG will be Chaired by A/Prof Joseph Tam. Meetings will be minuted.

The CRG comprises:

1. A/Prof Joseph Tam, Director School of Rural Health Latrobe Valley Monash University / Director Department of Paediatrics, Latrobe Regional Hospital
2. Ms Angela Scully, Head of Child & Maternal Health Services, Latrobe Regional Hospital
3. Clinical Associate Professor Alistair Wright, Consultant Physician (Latrobe Regional Hospital) and Clinical Dean, School of Rural Health
4. Dr Fred Edwards, Latrobe Valley general practitioner
5. Dr Ian Webb, Latrobe Valley general practitioner
6. Associate Professor Paul Lee, Consultant Psychiatrist, Latrobe Regional Hospital
7. Dr Jo McCubbin, Paediatrician, Sale
8. Prof Andrew Tonkin, School of Public Health & Preventive Medicine, Monash University
9. Dr Ryan Hoy, School of Public Health & Preventive Medicine, Monash University

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Terms of Reference

The specific roles of the CRG are to:

1. Advise on clinical fieldwork for the project.
2. Provide guidance on linkage of relevant local healthcare data.
3. Establish a process for dealing with abnormal results for individual participants.
4. Disseminate the findings to professional organisations.

These ToR were confirmed at the first meeting.

● **Scientific Reference Group**

Preamble

The Scientific Reference Group (SRG) comprises scientific experts in the various scientific disciplines contributing to the study who will provide input into the study directions. These include, but are not limited to: toxicology, psychiatry, sociodemography, biostatistics etc.

Meetings and Membership

Meeting at least twice a year, by tele-/video-conferencing or face-to-face, the SRG will be initially Chaired by Professor Michael Abramson. Meetings will be minuted.

The SRG comprises:

1. Professor Michael Abramson (Chair), Monash University – Principal Investigator
2. Professor Judi Walker, Monash University – Principal Co-Investigator (Gippsland)
3. Professor Ross Coppel, Deputy Dean Research, FMNHS, Monash University
4. Professor Brian Priestly, Australian Centre for Human Health Risk Assessment
5. Professor Alexander McFarlane, University of Adelaide
6. Associate Professor Christine Roberts, Kolling Institute, University of Sydney
7. Dr Rebecca Kippen, Melbourne School of Population and Global Health, University of Melbourne
8. Professor Rory Wolfe, School of Public Health & Preventive Medicine, Monash University
9. Professor John McNeil, School of Public Health & Preventive Medicine, Monash University
10. Michael Keating, Medical Scientist
11. Dr Melita Keywood, CSIRO
12. Professor Dennis Moore, Director, Krongold Centre, Faculty of Education, Monash University
13. Dr Jillian Blackman, Senior Project Manager, Monash University

Other members may be co-opted onto the group as the study progresses.

Terms of Reference

The specific roles of the SRG are to:

1. Assist the academic leads and stream leaders develop their research plans
2. Monitor the progress of the study's research activities
3. Provide the academic leads and stream leaders with ongoing advice

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4. Review protocols and adherence
5. Function as a data monitoring and safety board in the event of adverse responses or complaints
6. Consider proposals for new research activities or streams
7. Identify potential new collaborations and recruits
8. Provide guidance on the annual review of research activity, and consider and endorse the review report.

These ToR were confirmed at the first meeting.

- **Project Steering Committee (PSC)**

1 Function of the Project Steering Committee

The function of the PSC is to take responsibility for the research issues associated with the HHS. The PSC is also responsible for approving budgetary strategy, defining and realising benefits, and monitoring risks, quality and timeliness.

2 Role of the Project Steering Committee

The role of the PSC is to:

- take on responsibility for the study's feasibility, research streams and achievement of outcomes
- provide overall strategic guidance for the study
- ensure probity
- ensure the study's scope aligns with the requirements of the stakeholder groups
- provide those directly involved in the study with guidance on research issues
- ensure effort and expenditure are appropriate to stakeholder expectations
- address any issue or risk that has major implications for the study
- keep the study scope under control as emergent issues force changes to be considered
- reconcile differences in opinion and approach, and resolve disputes arising from them
- endorse the project plan and major documents relating to the study
- endorse major equipment requests where the value exceeds \$10,000
- sign off on the completion of each phase of the study including the deliverables
- provide advice on the communication of information about the study
- take on responsibility for any 'political' issues associated with the study.

3 Role of Individual Committee members

The role of the individual PSC member includes:

- understanding the strategic and political implications and outcomes of the study.
- appreciating the significance of the subject matter for all stakeholders and represent their

interests.

- being genuinely interested in the study.
- being an advocate for the study's outcomes.
- having a broad understanding of project management issues and the approach being adopted.
- being committed to, and actively involved in pursuing the study's outcomes.

In reality, this means that PSC members:

- ensure the requirements of stakeholders are met
- help balance conflicting priorities and resources
- provide guidance to Principal Investigator and Principal Co-Investigator
- consider ideas and issues raised
- review the progress of the study
- check adherence of study activities to standards of best practice.

4 General

Membership

Principal Investigator

Principal Co-Investigator (Gippsland)

Lead, Adult Study

Lead, Cardiovascular research stream

Lead, Alfred / Gippsland liaison

Lead, Cancer research stream

Lead, Respiratory research stream

Lead, Psychological impacts research stream

Lead, Early Life Follow-up research stream

Lead, Community Wellbeing research stream

Lead, Older Persons Policy Review

Project Manager

Executive Assistant (Minutes)

Chair

The Chair, the Principal Investigator shall convene the PSC meetings.

If the designated Chair is not available, then the Principal Co-Investigator (Gippsland) will be responsible for convening and conducting that meeting.

Agenda Items

All PSC agenda items must be forwarded to the Project Manager by C.O.B. 5 working days prior to the next scheduled meeting.

The PSC agenda, with attached meeting papers will be distributed at least 2 working days prior to the next scheduled meeting.

The Chair has the right to refuse to list an item on the formal agenda, but members may raise an item under 'Other Business' if necessary and as time permits.

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Minutes & Meeting Papers

The minutes of each PSC meeting will be prepared by the Project Manager.

Full copies of the Minutes, including attachments, shall be provided to all PSC members no later than 5 working days following each meeting.

By agreement of the Committee, out-of-session decisions will be deemed acceptable. Where agreed, all out-of-session decisions shall be recorded in the minutes of the next scheduled PSC meeting.

The Minutes of PSC meeting will be monitored and maintained by the Senior Project Manager as a complete record as required under provisions of the *Archives Act 1983*.

Frequency of Meetings

The PSC shall meet monthly by video/tele-conferencing and at least twice yearly face to face.

Proxies to Meetings

Members of the PSC shall nominate a proxy to attend a meeting if the member is unable to attend.

The Chair will be informed of the substitution at least 2 working days prior to the scheduled nominated meeting.

The nominated proxy shall have voting rights at the attended meeting. The nominated proxy shall provide relevant comments/feedback of the PSC member they are representing to the attended meeting.

Quorum Requirements

A minimum of 6 of PSC members is required for the meeting to be recognised as an authorised meeting for the recommendations or resolutions to be valid.

Review Timetable

Effectiveness of the Committee and its membership will be reviewed annually in November.

Dispute Resolution

If any dispute arises all parties agree to advise Principal Investigator and the Principal Co-Investigator (Gippsland) and to negotiate in good faith to resolve the dispute.

Any dispute that is not able to be resolved will be referred to the FMNHS, Deputy Dean Research. If required, the Dean FMNHS will be the final arbiter in any dispute.

- **Project Management Group (PMG)**

1 Function of the PMG

The function of the PMG is to support the Senior Project Manager in the operationalisation of the Project Plan and management of the project for the successful delivery of project outputs.

2 Role of the Project Management Group

The role of the PMG is to:

- provide guidance to the Project Manager for smooth day to day running of the study
- facilitate relations between the Gippsland and Alfred components of the study
- ensure continuity and balance between all elements of the study
- monitor the Project Plan and make recommendations about change and further development
- monitor the Project Risk Register and make recommendations as required
- endorse small equipment requests where the value is less than \$10,000
- manage and coordinate key activities occurring across the lifetime of the project including:
 - the recruitment of project staff
 - the program of stakeholder engagement, both internal and external
 - articulation of issues to be considered by the CAC and Project Reference Groups
 - relationships with the sub-contractors
 - communications (e.g. web site, recruitment materials, reports, media releases)
 - events
- report to the Project Steering Committee and Department of Health and Human Services monthly.

3 Role of individual members

The **Senior Project Manager** is responsible for organising the project into one or more sub-projects, managing the day-to-day aspects of the project, developing the Project Plan, resolving planning and implementation issues, and monitoring progress and budget.

The **Principal Investigator** and **Principal Co-Investigator**, as sponsors of the project, will provide research leadership and direction at every stage of the project and report on the study's progress to those responsible at a high level. The **SHPM and SRH senior researchers** will provide research content and context to ensure a coordinated approach to the study and provide mentorship and support to junior research staff.

4 General

Membership

Senior Project Manager

Principal Investigator

Principal Co-Investigator (Gippsland)

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SRH Senior Researcher
SPHPM Senior Researcher
Executive Assistant (minutes)

Chair

The Chair, the Senior Project Manager, shall convene the PMG meetings.

Agenda Items

The Senior Project Manager will determine agenda items.

The PMG agenda, with attached meeting papers will be distributed at least 1 working day prior to the next scheduled meeting.

Minutes & Meeting Papers

Full copies of the Minutes, including attachments, shall be provided to all PMG members no later than 5 working days following each meeting.

The Minutes of PMG meeting will be monitored and maintained by the Senior Project Manager as a complete record as required under provisions of the *Archives Act 1983*.

Frequency of Meetings

The PMG shall meet up to twice a month by video/tele-conferencing.

Proxies to Meetings

Members of the PMG shall not nominate a proxy to attend a meeting if the member is unable to attend.

Quorum Requirements

A minimum of 2 PMG members (one from each School) and the Senior Project Manager is required for the meeting to be recognised as an authorised meeting for the recommendations or resolutions to be valid.

Review Timetable

Effectiveness of the PMG will be reviewed annually in November.

Dispute Resolution

If any dispute arises all parties agree to advise Principal Investigator and the Principal Co-Investigator (Gippsland) and to negotiate in good faith to resolve the dispute.

Any dispute that is not able to be resolved will be referred to the FMNHS, Deputy Dean Research. If required, the Dean FMNHS will be the final arbiter in any dispute.

● **Finance sub-Committee**

Preamble

The Finance sub-committee advises the PSC and PMG on all financial and budgetary matters related to the Project. It comprises representatives from the Faculty Office, School of Public Health and Preventive Medicine, School of Rural Health and Research & Revenue Hub.

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Meetings and Membership

Meeting twice a year by video/teleconferencing, the finance sub-committee will be Chaired by the Senior Project Manager. The sub-committee's membership is:

1. Senior Project Manager (Chair)
2. SPHPM nominee
3. SRH nominee
4. Deputy Manager, Research Revenue Accounting Service, Monash University

Terms of Reference

1. To advise the PSC and Management Group on the financial performance against the project's approved annual budget.
2. To assist the Principal Investigators, Project Manager and Management Group revise the annual budget and approve variations within the budget.
3. To assist the Project Manager develop a policy on claiming expenses as defined by the DoH and in monitoring this budgetary item.
4. To assist the Project Manager with financial reporting (internal and external).

These ToR were confirmed at the first meeting.

● **Exposure assessment sub-Committee**

Preamble

The function of the exposure assessment sub-committee is to bring together all the people who will be involved with the exposure assessment aspect of this study. This sub-committee will discuss study progress and direction and will report to the project steering committee.

Meetings and Membership

Meeting as required, by video/online/tele-conferencing.

The Exposure sub-committee will be Chaired by Dr Martine Dennekamp. Meetings will be minuted.

The sub-committee's membership is:

1. Dr Martine Dennekamp (Chair, Monash University)
2. Professor Malcolm Sim (Monash University)
3. Dr Martin Cope (CSIRO)
4. Dr Fabienne Reisen (CSIRO)
5. Dr Kathryn Emmerson (CSIRO)
6. Dr Fay Johnston (University of Tasmania)

Terms of Reference

1. To collect all available exposure data at the time of the mine fire
2. To develop, plan and monitor all aspects related to exposure assessment
3. Report to the Project Steering Committee
4. To ultimately develop metrics for individual exposures of each participant in the study.

Quorum requirements

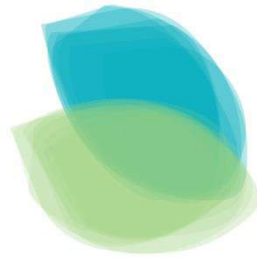
A minimum of four members is required for the meeting to be recognised as an authorised meeting for the recommendations or resolutions to be valid.

Appendix 3 Community and Stakeholder Engagement Strategy

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MONASH University
Medicine, Nursing and Health Sciences



Hazelwood
HEALTH STUDY

**Community and
Stakeholder
Engagement Strategy**

Stage 2 Year 2

- **1 Background**

The Hazelwood Health Study (previously known by the longer title Hazelwood Mine Fire Health Study) has been established in response to the concerns of the local community. A key measure of the study's success will be that community voices have been heard.

Engagement with the community and key stakeholders is critical to the successful running of this large, complex, long-term project. Early engagement with key stakeholders took place during the development of the research plan and was outlined in the tender response. Initial media following the announcement on 4 November 2014 highlighted the need to work closely with the community, with local groups making it clear that the community has expectations of ongoing input into the study's directions and being kept aware of outcomes.

The strong local connection within the research program, including key roles of the Monash School of Rural Health and Federation University Gippsland campus, the establishment of a local study base at the School of Rural Health's clinical education premises at the Latrobe Regional Hospital, and employment of local personnel, are strategies to ensure that the community has a sense of ownership of the study.

Under the terms of the Contract with the Victorian Department of Health, Monash University has established a **Community Advisory Committee (CAC)** as the study's peak advisory body. Its purpose is to ensure that the study hears directly from and works in partnership with Latrobe Valley community members, health and community service providers and local government in undertaking the research program and ultimately to improve health services and health outcomes for the local community.

Initial consultation with key community groups and individuals has informed the membership and terms of reference, with the latter having been updated in light of feedback from members (see project governance structure).

A **Clinical Reference Group (CRG)** of key local clinicians provides input and advice to the clinical operations of the project, oversight of individual abnormal results, and act as a key dissemination outlet to professional organisations.

Broad local representation through the CAC and the CRG, identification of key stakeholders and a two way communication process should ensure that community input is incorporated into the study's operations at all levels. It should also ensure that information arising from the study is disseminated broadly and taken up in the operations of local health and community service agencies.

CAC and CRG members are invited to participate in community briefing sessions and have input into study newsletters, website content, social media approaches, survey instruments and related materials to ensure that dissemination strategies are appropriately targeted and that the study instruments address the concerns of the community.

The Project Team is working closely with the recently established **Centre of Research for Resilient Communities (CoRRC)** at Federation University. CoRRC and Monash School of Rural Health researchers conducted a narrative analysis of the initial impacts of the smoke event which sheds light on the impact of different information delivery approaches and the timing of messages. This work will inform future risk communication strategies with the affected community and more broadly.

The Community and Stakeholder Engagement Strategy is a work in progress and will be subject to ongoing monitoring, review and evaluation throughout the life of the study. It includes:

- Community and stakeholder identification
- Community and stakeholder communication and management
 - Summary of key engagement issues
 - Engagement and commitment process
 - Major Events

The Hazelwood Health Study's Media Protocol is closely aligned to the Community and Stakeholder Engagement Strategy.

2 Stakeholder Identification

Table 1: Hazelwood Health Study Stakeholder Groups

| Group | Stakeholders | Study Components |
|--------|--|---|
| Audit | <p>Victorian Department of Health and Human Services</p> <p>Monash Human Research Ethics Committee</p> <p>Office of the General Counsel (OGC)</p> | <p>All</p> <p>Adult Survey, other streams and sub-studies</p> <p>Contract</p> |
| Review | <p>Local Government</p> <p>Latrobe City Council</p> <ul style="list-style-type: none"> - Emergency response team - Community rebuilding team - Positive Ageing Reference Committee <p>Wellington Shire Council</p> <ul style="list-style-type: none"> - Community and Culture - Emergency Management <p>Hospital and Health Services</p> <p>Latrobe Regional Hospital</p> <p>Central Gippsland Health Service</p> <p>Latrobe Community Health Services</p> <p>Local GPs</p> <p>Local Pharmacies</p> <p>Gippsland Primary Health Network</p> <p>Gippsland Womens Health Service</p> <p>Ramahyuck Aboriginal Medical Service (Morwell Clinic)</p> <p>Department of Health and Human Services Regional Office</p> <p>Aged Care</p> <p>Aged Care facilities and Carers networks including St Hilary's Aged Care</p> <p>Heritage Manor</p> <p>Community Groups (specific concern)</p> <p>Reactivate Latrobe (Transitioning cities)</p> <p>Voices of the Valley</p> <p>Advance Morwell</p> <p>Morwell and District Community Recovery Committee</p> <p>Gippsland Asbestos Related disease Support Group</p> | <p>Ongoing engagement and dissemination strategies, Ageing policy, community well-being study, exposure assessment, recruitment (Adult Survey and other streams), dissemination of findings, CAC</p> <p>Ongoing engagement and dissemination strategies, CAC, CRG, recruitment (Adult Survey and other streams), sub-studies, dissemination of findings</p> <p>Ongoing engagement and dissemination strategies, Ageing policy, recruitment (Adult Survey and other streams), sub-studies, dissemination of findings</p> <p>Ongoing engagement and dissemination strategies, CAC, recruitment (Adult Survey and other streams), sub-studies, dissemination of findings</p> |

| Group | Stakeholders | Study Components |
|------------------|--|--|
| | <p>Latrobe City community Groups Network</p> <p>Community and Service Organisations</p> <p>Neighbourhood House (Morwell and Sale)</p> <p>Gippsland Multicultural Services</p> <p>Gippsland Trades and Labour Council</p> <p>Local Real Estate Agents</p> <p>Sporting clubs (several of which have grounds in close proximity to the mine)</p> <p>Senior Citizens (Morwell and Sale)</p> <p>Gippsland Employment Skills Training</p> <p>Probus, Rotary, Lions Clubs</p> <p>Lifeline</p> <p>Schools and pre-schools</p> <p>Local Schools – public and private</p> <p>Childcare early learning centres and pre-schools</p> <p>Department of Education and Early Childhood Development Regional Office</p> <p>Emergency Services</p> <p>Country Fire Authority</p> <p>Victoria Police</p> <p>Ambulance Victoria</p> <p>Environmental monitoring</p> <p>Environmental Protection Agency (EPA)</p> <p>Department of Environment, Land, Water & Planning (DELWP)</p> <p>Politicians – sitting members</p> <p>Russell Northe (Morwell, Nat Party)</p> <p>Darren Chester (Federal, Nat Party)</p> <p>Danny O’Brien (Gippsland Sth, Nat Party)</p> <p>Harriet Shing (Eastern Victoria, ALP)</p> <p>Local Media</p> <p>ABC Local</p> <p>WIN TV</p> <p>Latrobe Valley Express</p> <p>Gippsland Times</p> <p>FM Community Radio</p> | <p>Ongoing engagement and dissemination strategies, CAC, recruitment (Adult Survey and other streams), sub-studies, dissemination of findings</p> <p>Schools and community well-being studies as well as a critical connect point</p> <p>Ongoing engagement and dissemination strategies, CAC, recruitment (Adult Survey and other streams), sub-studies, dissemination of findings</p> <p>Recruitment (Adult Survey and other streams), sub-studies, dissemination of findings</p> <p>Recruitment (Adult Survey and other streams), sub-studies, dissemination of findings</p> <p>Recruitment (Adult Survey and other streams), sub-studies, community announcements, dissemination of findings</p> |
| Related Projects | <p>Centre of Research for Resilient Communities (CoRRC) – narrative analysis study</p> <p>University of Tasmania – infant health</p> | <p>Ongoing engagement and dissemination strategies, Adult Survey and other streams, community well-being study</p> <p>Adult Survey, ELF study</p> |

| Group | Stakeholders | Study Components |
|---------------------|---|--|
| | <p>study</p> <p>Monash School of Public Health – planned burns study</p> <p>University of Tasmania - Latrobe Residential House Dust Study</p> <p>Hazelwood Mine Fire Inquiry</p> | <p>Adult Survey, sub-studies</p> <p>All components</p> |
| Outcome Impacted | <p>Residents of Morwell and the wider Latrobe Valley</p> <p>Morwell and Latrobe Valley business community</p> <p>Individuals in Morwell and the Valley at the time of the mine fire</p> | <p>Ongoing engagement and dissemination strategies, CAC, recruitment (Adult Survey and other streams), sub-studies, dissemination of findings</p> |
| Provider | <p>CSIRO</p> <p>University of Tasmania</p> <p>University of Adelaide</p> <p>Federation University (Gippsland)</p> <p>Community Advisory Committee</p> <p>Clinical Reference Group</p> <p>Scientific Reference Group</p> | <p>Adult Survey and sub-studies</p> <p>Adult Survey and ELF study</p> <p>Adult Survey and psychology stream</p> <p>Adult Survey and community wellbeing stream</p> <p>Ongoing engagement and dissemination strategies</p> <p>Adult Survey and other streams, sub-studies, dissemination of findings</p> <p>Adult Survey and sub-studies, dissemination of findings</p> |
| Output Delivery | <p>Project Management Group</p> <p>Project Steering Committee</p> <p>Researchers and research administration staff at Monash and research collaborating organisations</p> | <p>Dissemination of findings</p> |
| Output Utilisation | <p>Monash University</p> <p>Victorian Department of Health and Human Services</p> <p>Collaborating research organisations</p> | <p>Dissemination of findings</p> |
| Outcome Accountable | <p>Faculty Medicine, Nursing and Health Sciences Office</p> <p>School of Public Health and Preventive Medicine</p> <p>School of Rural Health</p> <p>Collaborating research organisations</p> | <p>All</p> |

3 Community and Stakeholder Communication and Management

Domains

Local Community

- Local Government
- Hospital and health services
- Aged care facilities
- Community groups (specific concern)
- Community and service organisations
- Emergency services
- Environmental Protection Agency
- Schools, childcare early learning centres and pre-schools
- Politicians
- Media

Victorian Department of Health and Human Services

- State Office
- Gippsland Regional Office

Monash University

- Human Research Ethics Committee
- Office of General Counsel
- University Council
- Vice Chancellor and Senior Management Team
- Monash Media and Communications
- Faculty of Medicine Nursing and Health Sciences Office
- School of Public Health and Preventive Medicine
- School of Rural Health

Collaborating research organisations

- University of Tasmania
- University of Adelaide
- Federation University

Project Governance

- Community Advisory Committee
- Clinical Reference Group
- Scientific Reference Group
- Project Steering committee
- Stream leadership teams including the Adult Survey Working Group
- Finance sub-committee
- Project Management Group

Academic and scientific audiences

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Key Issues

- Membership of the CAC already includes three community representatives from the Latrobe Valley and two Sale representatives are being selected through a call for Expressions of Interest.
- Selection of community members will be at the discretion of the Principal Co-Investigators to ensure equitable membership across the CAC including gender balance.
- Ongoing compilation of an extensive community database for the purpose of communication dissemination as part of an effort to directly communicate with concerned community members.
- Key roles for specific study personnel.
- Rate of recruitment to study streams and response rates.
- Engagement of local health professionals and health service providers.
- Uptake of the study's findings into the knowledge base.

Approaches

- Use of diverse means of two-way communication including interactive web-site, social media, quarterly community briefings, open office sessions, door knocking, presentations at meetings
- Information presented regularly at key stages in the project
- Community involvement throughout the project eg. community database, EOI for membership of the CAC, piloting questionnaires.
- Local presence with dedicated Study HQ at Monash School of Rural Health – Latrobe Valley site.
- Direct and regular contact with key local media, availability for interviews, roll out of regular updates.
- Provide key media contacts with Study contact details / spokesperson details.

Table 2: Stakeholder Communication and Management

| DOMAIN | NATURE OF STAKEHOLDING | KEY ISSUES FOR STUDY | ENGAGEMENT APPROACH AND COMMITMENT PROCESS | KEY MESSAGES AND CRUCIAL INFORMATION TO BR EXCHANGED |
|--|--|--|--|---|
| <p>Local Community</p> <ul style="list-style-type: none"> - Local Government - Hospital and health services - Aged care facilities - Community groups (specific concern) - Community and service organisations - Emergency services - Schools and pre-schools - Politicians - Media | <p>Study is a deeply sensitive issue and local community needs to feel it is being prioritised in all aspects of information dissemination</p> <p>The community especially local media and active members and groups will feel disenfranchised and less likely to engage in the process if dissemination of information is promoted in a way that first aims to target government or the university</p> <p>Maximum participation in the Adult Survey and other streams and sub-studies is required</p> | <p>Recruitment rate</p> <p>Attrition rate</p> <p>Credibility</p> <p>Poor engagement will compromise the study processes and outcomes</p> | <p>Extensive, proactive, ongoing two way communication:</p> <ul style="list-style-type: none"> - quarterly community briefings - Interactive web site - social media - flyers - door knocking - open house - meetings with groups & individuals <p>Start-up communications e.g. call for EOIs for membership of CAC; announcement of Clinical Reference Group; Study Launch etc</p> <p>Direct and regular contact with key local media, availability for interviews, roll out of regular updates</p> <p>Simple and clear messages</p> <p>Regular communiques to study participants thanking them for their contribution</p> | <p>Study aims to address valid community concerns</p> <p>Independent and international renowned research team with strong local connection</p> <p>Confidentiality assured Participation is appreciated</p> <p>The higher the participation rate in the Adult Survey, other streams and sub-studies, the better opportunity there will be for long-term outcomes for the Morwell community</p> <p>Outcomes will be disseminated as they are known</p> <p>Outcomes will be translated into policy and practice for the future</p> |

| | | | | |
|--|--|--|---|--|
| | | | <p>Targeted approaches e.g. to local aged care and assisted living facilities; maternal and child health services; schools</p> <p>Local presence with dedicated Study HQ</p> | |
| <p>Victorian Department of Health and Human Services</p> <ul style="list-style-type: none"> - State Office - Regional Office | <p>Commissioned the study funded from the public purse</p> <p>Legal obligation to ensure Contract obligations (reporting and milestones) are met by Monash</p> <p>Regional office the conduit for local public health responsibilities</p> | <p>Project could be delayed if milestones are not met</p> | <p>Project deliverables</p> <p>Interim reports</p> <p>Annual reports</p> | <p>Monash delivers on all contractual obligations in a timely and professional manner</p> |
| <p>Monash University</p> <ul style="list-style-type: none"> - HREC - Office of General Counsel - University Council - Vice Chancellor and Senior Management Team - FMNHS Office - Monash Media & Communications - School of Public Health and Preventive Medicine - School of Rural Health | <p>Monash University's reputation as the leading research institution in Australia</p> | <p>Shared understanding with Monash Media Unit of the role of the Morwell community in the study</p> | <p>Ethics applications and annual reports</p> <p>Instructions for legal matters</p> <p>Regular briefings to University Council, VC and SMT</p> <p>Regular briefings to Dean and Faculty Executive</p> <p>Media releases only through Monash Media Unit</p> <p>Inter-schools agreement</p> | <p>This is a very important and complex study</p> <p>Local community engagement underpins the success of the project</p> <p>The research team is highly qualified and professional</p> <p>SPHPM and SRH work collegially, respectfully and productively together</p> |

| | | | | |
|---|---|---|---|--|
| <p>Sub-contractors</p> <ul style="list-style-type: none"> - University of Tasmania - University of Adelaide - Federation University - CSIRO | <p>Contracted by Monash University for specific components of the study</p> | <p>Timely input within budget</p> <p>Clear relationship defined in sub contract including conflict resolution mechanism</p> <p>All media must be endorsed by the Project Management Group</p> | <p>Project Steering Committee</p> | <p>Contribution is important to the ongoing success of the project</p> <p>Monash is the study lead</p> |
| <p>Project Governance</p> <ul style="list-style-type: none"> - Community Advisory Committee - Clinical Reference Group - Scientific Reference Group - Project Steering committee - Finance sub-committee - Management Group | <p>Contractual requirement</p> <p>Community participation in the study</p> <p>Expert review and contribution</p> <p>Engagement of study leads at all stages of the study</p> <p>Budgetary and financial accountability</p> <p>High level project management of a long and complex study</p> | <p>Project could be compromised if governance structure is not robust and adhered to</p> | <p>Minutes of meetings</p> | |
| <p>Academic and scientific audiences</p> | <p>Access to peer review and expertise</p> <p>Uptake of study findings into the knowledge base</p> | <p>Time to prepare publications</p> <p>Credibility of study methods and translation of study findings</p> | <p>Publications</p> <p>Participation in national and international symposia</p> | <p>High quality world leading research across a wide range of health outcome areas</p> <p>Longitudinal health impact study</p> |

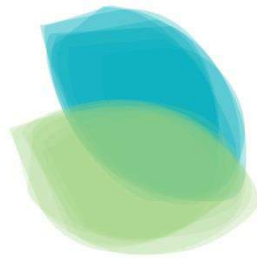
4 Major Events

Table 3: Community and Stakeholder Milestones

| Major Events Year 2 2015/2016 |
|--|
| Adult Survey 3 Phase Pilot in Moe/Newborough, Morwell and Sale |
| Launch of ELF study stream |
| Launch of Adult Survey |
| Completion of Stage 1 Schools Study Stream |
| Community Advisory Committee meetings |
| Clinical and Scientific Reference Group meetings |
| Completion of Older Persons Review |
| Completion of Community Wellbeing Action Research stage |
| Interim Report 2 |
| Annual Report 2 |
| Community Briefings in Morwell and Sale |

Appendix 4 Media Protocol

| | | |
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Hazelwood

HEALTH STUDY

Media Protocol

- **Background**

Monash University has been contracted by the Victorian Department of Health and Human Services (Vic DHHS) to undertake a comprehensive study of the long-term health of residents following exposure to the smoke from the Hazelwood coal mine fire.

The project involves considerable engagement with stakeholders in the community, as outlined in the Community Stakeholder and Engagement Strategy. Key to this engagement are the leaders of each of the research streams, who make up the Project Steering Committee (PSC). It is expected that PSC members and other researchers will be required to release information about study activities and findings through the media.

- **Media protocol**

It is important that there is a coordinated approach to media interactions through the Project Management Group (PMG) and Monash Media and Communications prior to response to media enquiries, media releases and media interviews.

The DHHS (Senior Media Adviser) and the Monash Faculty of Medicine, Nursing and Health Sciences (MFMNHS) - Deputy Dean, External Relations must be kept informed of all major study media activities.

In the case of media alerts expected to have wide distribution, the MFMNHS media advisor may be involved.

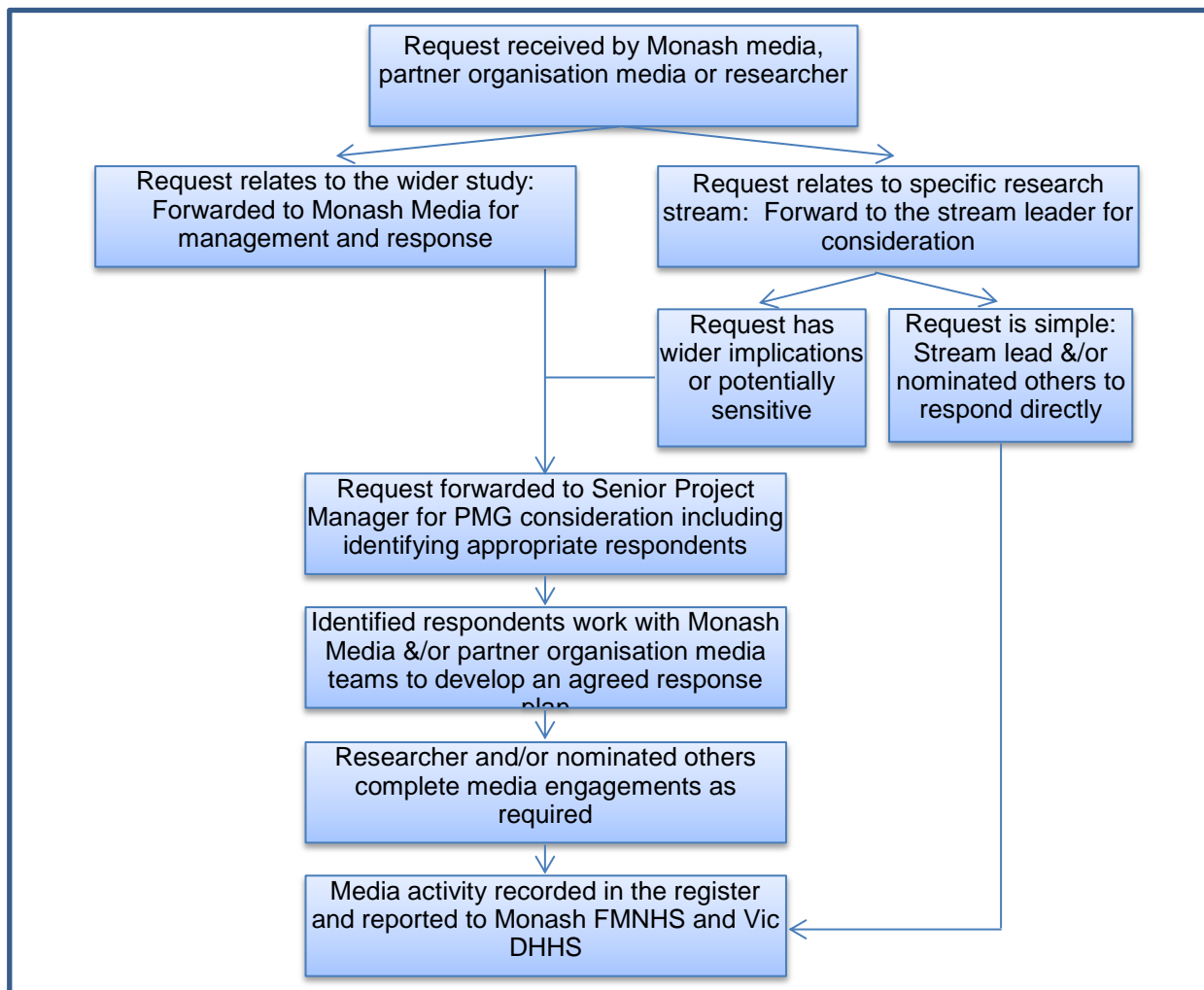
The outcomes of all media interactions, including the release and any subsequent interviews must be tracked on the project media database maintained by Monash Media and Communications.

The following flowcharts outline the basic steps that are required in all media interactions, starting with the research stream leaders or team members receiving a media enquiry, drafting a media release and a question and answer sheet, if an interview is likely to result.

All team members, including those from sub-contracted organisations, are required to follow this protocol.

Caveat - While the aim of this protocol is to ensure a coordinated approach in which all major media activities are undertaken in consultation with Monash Media and Communications, it is recognised that in some cases, research stream leaders may be approached for immediate comment on study-related matters. The research stream leaders are the designated spokespeople for their streams and so are able to make general comments about stream operations. Stream leaders will need to use their judgement regarding the seriousness, contentiousness and urgency of the request for comment, as anything with wider implications for the study must be processed through the protocol below. It is expected that ad hoc urgent requests from the media will be very rare, as most requests will be in response to communications from the study, including media releases, publications, or information on the website or social media.

16 Media enquiry flowchart



17 Media release flowchart

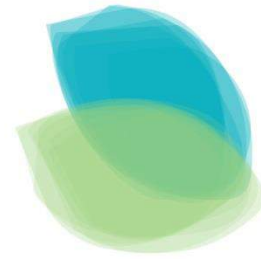


- **Case study – launch of the official Hazelwood Health Study website**

The following example relates to media activity related to the launch of the study website which highlights the responsiveness of the above protocol, with a media release developed and interviews completed within 1 day of media requests being received.

- Day 1 - the new study website went live with the intention of a public announcement being made once final checks were completed and team personnel were provided with training on how to manage the site.
- Day 2 - the existence of the site was identified on social media, generating some discussion.
- Day 3 – team members received requests for comment from multiple media agencies. These requests were forwarded to Monash Media and Communications which, in consultation with the Project Management Group, drafted up a media release which was forwarded to the faculty, DHHS, and media teams from the collaborating universities.
- Day 4 – designated study team members were interviewed for radio, print, and television regarding the new website, resulting in considerable positive exposure for the study.

Appendix 5 Risk Management Framework



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Risk Management Framework

| | | |
|--|---------------------------|----------------|
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| Risk area | Risk description | Likelihood | Impact | Risk Rating | Mitigation | Assigned to | Due | Status |
|------------------|--|------------|--------|-------------|---|---|----------|---|
| Research quality | Inability to recruit sufficient sized cohorts which would impact on the statistical power of the study and/or biased cohorts, which could result in biased estimates | Possible | Major | High | Our team has extensive experience working in environmental health and community engagement and have knowledge and skills in assembling cohorts and appropriate contact and recruitment strategies. We will ensure a realistic timeline in the project plan for developing the roll of eligible subjects and contact and recruitment strategies to ensure that an appropriate number of participants who are representative of the community take part in the study. | J. Blackman; S. Denny; M. Abramson; D. Maybery; F. Johnston; R. Wolfe | Dec 2015 | Continuous community engagement in Morwell has been highlighted as one of the best methods to increase recruitment. There have been community briefings, media releases and meeting with several community groups. The same approach will be taken to recruiting participants from Sale. Two organisational members from Sale have been appointed to the Community Advisory Committee (CAC) to ensure there is engagement with the Sale community. An expression of interest for the CAC has also been let for two community members from Sale. These participants will be appointed shortly. |
| Financial risk | The cost of undertaking the project could | Likely | Major | High | Regular surveillance and budget review and ongoing negotiation with DHHS. | J. Blackman & Monash R&R hub | Feb 2015 | A Finance sub-committee has been set up to monitor all study finances. This committee meets bi-monthly. |

| Risk area | Risk description | Likelihood | Impact | Risk Rating | Mitigation | Assigned to | Due | Status |
|---------------|---|------------|--------|-------------|--|------------------------------------|-----------|---|
| | exceed the income, particularly in the optional years of the project when there is more uncertainty in financial variables. | | | | | | | At present the budget is under spent. |
| Environmental | Disruption of project activities in the Latrobe Valley as a result of a major fire event | Possible | Low | Low | <p>The SRH has multiple sites in the region, providing alternative locations should the need arise. Monash and Federation University have strong connections to local emergency agencies so will be kept well abreast of all emergency situations and have detailed plans in place to ensure the safety of all personnel.</p> <p>One of the intended outputs of the study will be the development of an optimal communication plan for responding to communities during disaster situations - this should assist the study and the local service agencies keep the local</p> | CAC; J.Walker; M. Carroll; P. Wood | June 2015 | There have been no disruptions to date. The SRH continues to work closely with Federation University and key agencies so is well prepared to respond to any emergency situations. |

| Risk area | Risk description | Likelihood | Impact | Risk Rating | Mitigation | Assigned to | Due | Status |
|------------------|--|------------|--------|-------------|--|--|-----------|---|
| | | | | | community aware of the emergency situation and any health impacts ¹ . | | | |
| Research Quality | A fire event resulting in smoke exposure across the study group or comparison group communities could affect responses to questions about health and exposure. | Possible | Major | High | The researchers have a number of ways in which this risk can be mitigated. Newly developed forecasting capability within CSIRO will allow the researchers to identify, up to 3 days in advance, days when air quality is expected to be poor. On those days there will be the option to cease data collection, or to continue data collection and to later correct for the smoke exposure through statistical analysis methods. The decision to cease data collection would be made by the PMG with the endorsement of the PSC. The PMG have the capability to respond | M.Abramson M.Dennekamp F.Johnston M.Dalton J. Walker | Sept 2015 | The Project Steering Committee has reviewed this risk. In general, it is agreed that Study Streams will continue data collection, and statistically adjust for periods of smoke exposure that occur during the data collection period, unless a major smoke exposure event occurs. In the case of a major smoke exposure event, the PMG will meet to decide whether data collection should, or should not, continue. The PMGs decision will be passed on to the Stream Leaders via the PSC. |

¹ Having the study team in operation during a possible future event will mean that there is expertise in place to make rapid risk assessments to assist the emergency response.

| Risk area | Risk description | Likelihood | Impact | Risk Rating | Mitigation | Assigned to | Due | Status |
|------------------|---|------------|--------|-------------|---|---|-----------|--|
| | | | | | <p>immediately to a poor air quality forecast and to implement a decision within 24 hours.</p> <p>The researchers are also reviewing the Study Stream questionnaires to ensure that it is “the mine fire” event which is referred to, and not a generic “fire event” that may be misunderstood as meaning a more recent fire.</p> | | | |
| Research Quality | <p>Inability or a delay in creating a list of eligible residents in Morwell and Sale for the Adult Survey.</p> <p>The best source of data with which to establish this list is the electoral roll held by the Victorian Electoral Commission (VEC).</p> | Likely | Major | High | <p>The researchers will draw upon their experience and also their contacts to maximise the success of an application to the VEC.</p> <p>In the event that data cannot be obtained from the VEC, the researchers have identified databases from which a list of eligible residents in Morwell and Sale might be drawn; these include the Electronic White Pages, Council-held addresses for residentially zoned properties, MapData Services address</p> | <p>M.Abramson</p> <p>M.Dennekamp</p> <p>F.Johnston</p> <p>M.Dalton</p> <p>J. Walker</p> | Sept 2015 | <p>An application was submitted to the VEC in July 2015. After submitting further information in August, upon the request of the VEC, the application has recently been opposed. The researchers have responded to the Electoral Commissioners concerns and have requested a face-to-face meeting to discuss the Study further</p> <p>The DHHS have been notified that obtaining VEC data has been delayed. The researchers have also started to meet with local</p> |

| Risk area | Risk description | Likelihood | Impact | Risk Rating | Mitigation | Assigned to | Due | Status |
|------------------|--|------------|----------|---------------|--|---|----------|--|
| | | | | | databases | | | politicians to advance the lobbying of this. |
| Research quality | Gaps in the available air monitoring dataset from the EPA | Likely | Moderate | Medium | CSIRO have been subcontracted to undertake air quality modelling. | M. Dennekamp | Aug 2015 | The air quality modelling completed to date has provided an understanding of the relative exposure levels of local communities, confirming that exposure levels increased in proximity to Morwell. This information was sufficient to make the decision regarding the comparison community. Further work is needed to better understand the absolute level of exposure to particulate matter in each location. |
| Research quality | Inability to maintain sufficiently sized cohorts over time in both study areas, due to attrition, death etc. | Unlikely | Moderate | Medium | Regular follow up of cohorts. Contact details of next of kin are collected on the questionnaires. Once recruited in to different study streams, ongoing contact with participants will be necessary. | J. Blackman; Recruitment Coordinator | Dec 2015 | Community engagement is a major aspect of the project. Prof Walker and Dr Carroll have ensured that different groups in the community are being engaged and informed about the study. The recruitment coordinator is maintaining a program of ongoing community |

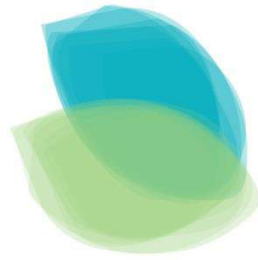
| Risk area | Risk description | Likelihood | Impact | Risk Rating | Mitigation | Assigned to | Due | Status |
|------------------|--|------------|----------|---------------|---|---|------------|--|
| | | | | | | | | engagement. |
| Research quality | Inability to capture information on residents who have left the community as a result of the fire event. | Possible | Minor | Medium | Efforts will be made to identify residents who have departed since the fire event through comparison of electoral rolls pre and post the event (if available), consultation with local government registers, and via consultation with the community. While this is expected to be a small number, it is important to identify these people and follow them up via linkage and sub-cohort measures. | M. Abramson; Recruitment Coordinator; J. Blackman | Dec 2015 | This has been discussed during the adult survey group meetings, in the stream coordination retreat and has been raised as part of community engagement activities and in discussions with local council etc. Each of the streams will be addressing this as part of their recruitment protocols. |
| Human resources | Inability to recruit support staff identified in budget | Unlikely | Moderate | Medium | It is expected that the fieldwork staff will be recruited from the local area. The SRH, along with colleagues from the Federation University campus in Churchill, have very strong local connections with the local health and education sectors from which staff will be sourced. As there is a high turnover of staff it should be necessary to see what | J.Walker; M.Abramson | March 2015 | All support staff had been recruited to the study. However, there is a new Senior Project Manager and a new Recruitment Coordinator. As not all staff are employed at the fraction their position were budgeted for or at the proposed start date, there is the possibility to recruit extra support staff. An extra staff member has already been brought on board to assist with the |

| Risk area | Risk description | Likelihood | Impact | Risk Rating | Mitigation | Assigned to | Due | Status |
|-----------------|---|------------|----------|---------------|---|------------------------------|-----------|--|
| | | | | | changes can be made to address this. | | | Adult Survey for six months. |
| Human resources | Departure of researchers or collaborating organisations from project in the first three years of the project. | Possible | Minor | Medium | The Principal Investigators will identify researchers with matching skills and experience who could replace departing academic project team staff. A handover process will also be developed to facilitate rapid integration of replacement researchers. | M.Abramson; J.Walker; PSC | Dec 2015 | As we are still in the establishment phase, there has been little need to address this issue as yet. However, all current staff are involved in the development of detailed protocols for each area which will be invaluable in the event of staff turnover. |
| Human resources | Departure of researchers or collaborating organisations from project in the optional years of the project, after the first three years. | Possible | Moderate | Medium | Deputy leads have been identified for each project area. The project team have access to extensive expertise within their respective units with succession plans in place as well as contingency plans to deal with short term staff loss. We will provide adequate opportunities for open communication between project staff regarding staff transitions and will seek replacement personnel or | M.Abramson; J.Walker | June 2016 | The Deputy Leads for the study have been identified as Dr Carroll from SRH and Dr Dennekamp from SPHPM. Deputy leads are being identified for each of the research streams. |

| Risk area | Risk description | Likelihood | Impact | Risk Rating | Mitigation | Assigned to | Due | Status |
|----------------------|--|------------|----------|---------------|--|----------------------------------|----------|--|
| | | | | | collaborating organisations early. | | | |
| Community engagement | External bodies do not buy-in, including partners and stakeholders | Possible | Moderate | Medium | <p>The CAC will play a key role in this engagement and will involve representatives from key local organisations and community groups, who will disseminate project activities and findings.</p> <p>The SRH has excellent standing in the Valley and will work closely with the new Centre of Research for Resilient Communities (CoRRC) at Federation University.</p> <p>One of the core activities will be the development of an optimal communication strategy with input from the community.</p> | CAC; J.Walker; M.Carroll, P.Wood | Apr 2015 | The CAC are very involved in the study and have assisted with the quality assurance aspect of the project, including reviewing survey materials. They have also assisted with identifying groups that need to be targeted through community engagement. As Sale has been identified as the comparison community, two organisational members from Sale have been appointed to the Community Advisory Committee (CAC) to ensure there is engagement with the Sale community. An expression of interest for the CAC has also been let for two community members from Sale. This will assist with informing the team of the best recruitment methods for the Sale community. |
| Financial | Funds/budget is not spent | Unlikely | Major | Medium | Finance subcommittee to oversee the management of the funds for | PSC; Finance sub- | Dec 2014 | The finance subcommittee and members of the SRH and SPHPM |

| Risk area | Risk description | Likelihood | Impact | Risk Rating | Mitigation | Assigned to | Due | Status |
|---------------------|--|------------|--------|-------------|---|------------------------|----------|--|
| | appropriately by the project | | | | the project. Research and Revenue to provide regular reporting on financial status. | committee | | teams meet and regularly discuss the finances in order to ensure the funds are spent appropriately by the project. |
| Physical facilities | Physical facilities not available when required. | Unlikely | Minor | Low | The fieldwork collection sites will be based within existing SRH sites in Newborough and at the LRH. If needed, there is additional capacity at the Churchill campus as well as the possibility to utilise other space within the local health sector with which we have close relationships. | J.Walker; M.Carroll | Feb 2015 | Headquarters for the study have been set up at LRH, with the psychology stream based at SRH-MUDRIH in Moe/Newborough. The SRH also has a clinical training site at Sale Hospital which will be used as the base fieldwork collection sites for that community. |

Appendix 6 Statistical Analysis Plan



Hazelwood

HEALTH STUDY

1.

Statistical Analysis Plan

1. Introduction:

The plan first clarifies the available datasets and gives some indication to their structure and contents. Then the broad classes of analyses will be outlined with direction provided on specific analysis methods to be employed. The ability of these analyses to answer the research questions utilising the datasets available will be clarified when discussing the outline of the analytical approaches.

2. Data sources

This section outlines the main datasets that will be created from data collection activities under the broad Hazelwood Health Study (HSS).

2.1. Adult Survey

The Adult survey will enrol adults from the 'exposed' study group and the 'unexposed' comparison group populations. The exposed population will include adults aged 18 years and above whose usual residence, at the time of the fire, was in Morwell. The comparison population will be drawn from the town of Sale; with a particular sampling focus on those regions of Sale with similar socio-demographic characteristics to Morwell. The Adult survey will: a) ascertain the health status of the population at the time of the fire, b) identify individual risk and lifestyle factors for different conditions of interest, c) provide the information needed for the linkage studies, and d) provide the information needed for the development of exposure metrics.

2.1.1. Cardiovascular subclinical study

The information collected at the Adult Survey will be used to identify a 'sub-cohort' that will be recruited to investigate possible long term health effects of the fire on cardiovascular health. Health assessments of the participants from this sub-cohort will be undertaken in years 3, 6 and 9. The following measures will be performed: height and weight, waist and hip measurements, blood pressure, electro-cardiography (ECG), endothelial function measured by finger plethysmography and peripheral artery tonometry, venous blood tests to measure blood glucose and lipids, and markers of inflammation and coagulation such as full blood examination (including total and differential white cell counts, platelet count), fibrinogen and C-reactive protein (CRP).

2.1.2. Respiratory subclinical study

The information collected at the Adult Survey will be used to identify a 'sub-cohort' for the study of respiratory health. Data and measures from the participants in this sub-cohort include: 1) The European Community Respiratory Health Survey questionnaire, 2) The Asthma Control Questionnaire in subjects with asthma, 3) Lung function tests before and after bronchodilator (spirometry), 4) Lung inflammation test using an NiOx MINO which measures exhaled nitric oxide (eNO) a simple, non-invasive and reproducible measure of airway inflammation, 5) Transfer factor for carbon monoxide (T_{lco}) which is a simple measure of the gas exchange properties of the lung, 6) Multi breath nitrogen washout (MBW) which is also a well-established technique to measure the function of the small airways, 7) Forced oscillation technique (FOT) for measuring lung stiffness in children.

2.2.Schools Study

School-aged children will be recruited through the targeted schools in Morwell and the wider Latrobe Valley, with the permission of parents and children and the assistance of the Department of Education and Catholic Education Office, schools and class teachers. Children at each of the four grade levels will be asked to complete the child version of the Impact of Events Scale - Revised (IES-R), which has been validated for use with children from ages 8 and up. This will enable comparison with the psychology adult stream with regards to markers of post-traumatic stress. In addition, class teachers will be asked to complete the teacher version of the Strengths and Difficulties Questionnaire (SDQ) for each participating child. The SDQ is a measure of psychological wellbeing which has been used extensively in Australia. These measures will be repeated in study years 3, 5, 7 and 9.

In addition to brief validated psychological measures, we have approval to access National Assessment Plan- Literacy and Numeracy (NAPLAN) data for child participants. NAPLAN testing takes place every two years, which means that we will be able to access individual results from 2013 prior to the smoke event, enabling an analysis of the educational impacts of the fire exposure and the relationship with the other study measures.

2.3.Exposure data

Environment Protection Authority (EPA) collected air quality information including visibility and PM_{2.5} at several locations near the Hazelwood coal mine during the fire. Traralgon was the only location in Gippsland where the EPA was routinely monitoring air quality and where measurements were available from the start of the fire. Sophisticated air quality modelling by CSIRO provides spatial and time estimates of exposure prior to, during and after the fire. This approach will be used to generate exposure fields for PM_{2.5}. Across Morwell, the exposure fields will be generated at a resolution of 100m to 1000m. For the greater Latrobe Valley region, exposure fields will be generated at a resolution of 1000m to 3000m.

2.3.1. Individual exposure

Information collected in the Adult Survey on movements during the time of the fire will be used to estimate each individual's location and duration of exposure to the air pollutants during the mine fire. This information will be linked to the space-time estimates of pollutant concentration to provide estimates of an individual's exposure over time.

2.4.The Latrobe early life follow-up (ELF) study

The geographic region for this infant cohort includes the entire Latrobe City region in Victoria, encompassing the towns of Morwell, Moe, Traralgon, Newborough, Churchill and Yallourn North and other localities. Families whose primary residential address was in this region during the fire are eligible to enrol their children. Children who were born from 1 March 2012 until 31 December 2015 are eligible to participate.

The sampling frame is all live-born infants in the Latrobe Regional Hospital from 1 March 2012 until 31 December 2015. A nominal roll of eligible infants within the study area will be developed to define the eligible cohort. The total available cohort in the Latrobe Valley is 4000 infants. The aim is to recruit a total of 500 infants, comprising 150 who were potentially exposed pre-natally, 200 who were potentially exposed in the first two years of life, and 150 who were potentially not exposed to airborne smoke.

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2.4.1. Baseline data

Parents and/or guardians of the study child will be asked to complete a “baseline” questionnaire which collects a number of demographic, health and exposure variables. Information gathered from the baseline questionnaire will be linked with the Victorian perinatal data collection. Primary outcomes of interest will be gestational age at delivery (maturity) and growth restriction as determined by birthweight for gestational age.

2.4.2. Minor illness data

All participants will be invited to participate in ongoing data collection via an automated monthly SMS and link to an online data collection form. This will collect the monthly incidence of common skin, respiratory and ear health symptoms, health care attendances, medication use and diagnoses. The primary outcomes will be upper respiratory infections, health care attendances, diagnosis of wheeze or asthma, and use of an asthma inhaler. These data will be triangulated through linkage of Medical Benefits Scheme (MBS) and Pharmaceutical Benefit Scheme (PBS) databases, as well as Victorian Admitted Episodes Database (VAED) and Victorian Emergency Minimum Dataset (VEMD).

2.4.3. Respiratory and vascular function

Participants will also be invited to participate in simple non-invasive testing of lung and vascular function, commencing in year three of the study. Repeat assessments are also planned for years six and nine of the study. The children will have their height and weight measured. Lung function will be assessed through techniques including FOT, MBW and spirometry. These measures will provide information about the stiffness of the lung, inhomogeneity of ventilation and lung function, which detect changes evident very early in the progression of lung disease. Vascular function will be assessed by non-invasive ultrasound imaging of the aorta and carotid arteries and arm and thigh blood pressure measurements to determine pulse wave velocity. This measure is an indicator of the rigidity of the vascular tree, an early marker of the development of vascular disease.

2.5. Victorian Ambulance Cardiac Arrest Registry (VACAR)

The VACAR contains information from ambulance records for all patients in Victoria who suffer a cardiac arrest and have ambulance attend. Cases are identified via an electronic data filter and via a manual sort of ambulance paper patient care records. The registry is based on internationally recognised data variables and definitions. Clinical and operational data are extracted from patient care records (for ambulance and associated first-responders) and from ambulance operational databases (e.g. computer-aided dispatch generated response times, latitude and longitude of events). Pre-hospital data are supplemented with hospital discharge data (date and diagnosis) and discharge destination (home, nursing home or rehabilitation). The Victorian Registry of Births, Deaths and Marriages will be searched for death information within 12-months of cardiac arrest survivors being discharged from hospitals. The VACAR has also commenced a 12-month quality of life follow-up for patients discharged from hospital from January 2010 onwards.

2.6. Victorian Ambulance Clinical Information System (VACIS)

VACIS is an in-field electronic data capture system and linked clinical database which allows paramedics to record patient information electronically at the point of care on a tablet PC. The primary output of VACIS is an electronic Patient Care Record (ePCR). Data from completed ePCRs are uploaded to a database via wireless transmission, before being integrated into a Data Warehouse for reporting and analysis. Key areas of data collection via VACIS include event details, patient details,

attending teams, patient pre-existing conditions, the cause of the event, vital signs and symptoms, management, paramedic diagnosis and patient outcome.

2.7. The Victorian Emergency Minimum Dataset (VEMD)

The VEMD includes de-identified demographic, administrative and clinical data detailing presentations at Victorian hospitals with designated Emergency Departments (EDs). These data are based on standard definitions and protocols, to ensure comparability over time.

2.8. The Victorian Admitted Episodes Data Set (VAED)

All Victorian public and private hospitals report a minimum set of data for each admitted patient episode. These data are compiled by the Victorian Data Linkage unit within the State DHHS. The VAED provides a comprehensive data set of the causes, effects and nature of illness, and the utilisation of health services in Victoria.

2.9. Cancer Registry Data

The incidence of cancer in our study populations will be determined using the Victorian Cancer Registry (VCR) held by the Cancer Council Victoria (CCV) and the Australian Cancer Database (ACD) held by the Australian Institute of Health and Welfare (AIHW). The VCR is a population-based cancer registry aiming to provide comprehensive, accurate and timely information for cancer control. It records all invasive cancers, in-situ carcinomas, benign tumours and tumours of uncertain behaviour. The ACD is a data collection of all primary, malignant cancers diagnosed in Australia since 1982. The ACD is compiled at the AIHW from cancer data provided by all state and territory registries through the Australasian Association of Cancer Registries. These cancer incidence data will be supplemented by cancer mortality data obtained during the regular National Death Index (NDI) searches for cardiovascular and other non-malignant causes of death in other streams of this study.

2.10. Other sources of data

The studies will also make use of existing data from the Australian Bureau of Statistics (ABS), such as socio-economic, education, employment and other demographic data. Temperature and humidity data will be sourced from the EPA Victoria. MBS data will be used to quantify the use of medical services in Morwell and Sale, this data can be used to assess the rate of medical visits as well as the frequency of extended consultations. Data from the PBS can be used to assess rates of prescribing and dispensing different classes of drugs, for example, the rate of dispensing of combination inhalers.

3. Sample Size calculations for Adult survey

Given the sample size likely to be recruited, the study will be powered to detect differences in the incidence and mortality rates which vary depending on the baseline rate in the community. Figure 1 (below) gives an indication of the detectable relative risk given a sample size of 7500 adults in Morwell and 4000 adults in the comparison community, Sale, at varying levels of baseline risk of death. If the baseline cumulative mortality for a disease was 1.5%, then the study would be powered to detect a relative risk of 1.5 or greater.

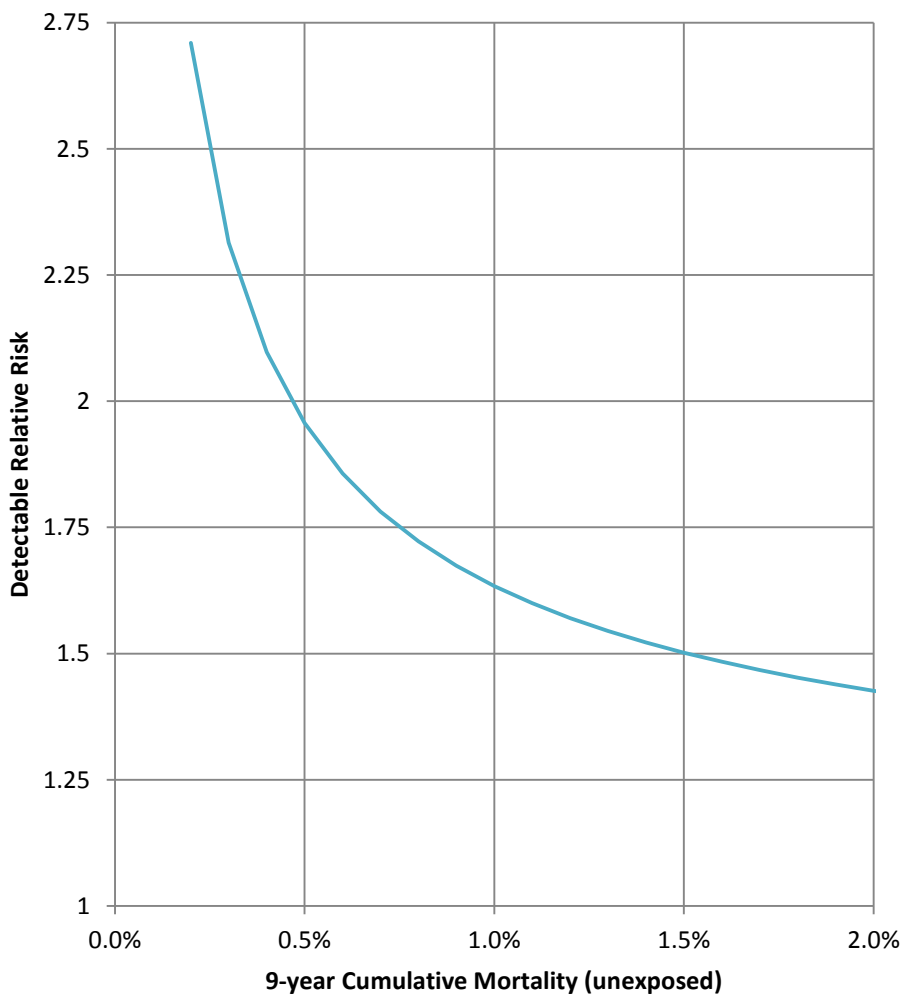


Figure 1: Sample Size Calculation - Mortality

The detectable risk ratio for symptom or disease prevalence is likely to be smaller given a higher prevalence in the control group. Figure 2 illustrates the detectable risk ratio (y-axis) for different recruitment scenarios given different prevalence (x-axis) in the control community.

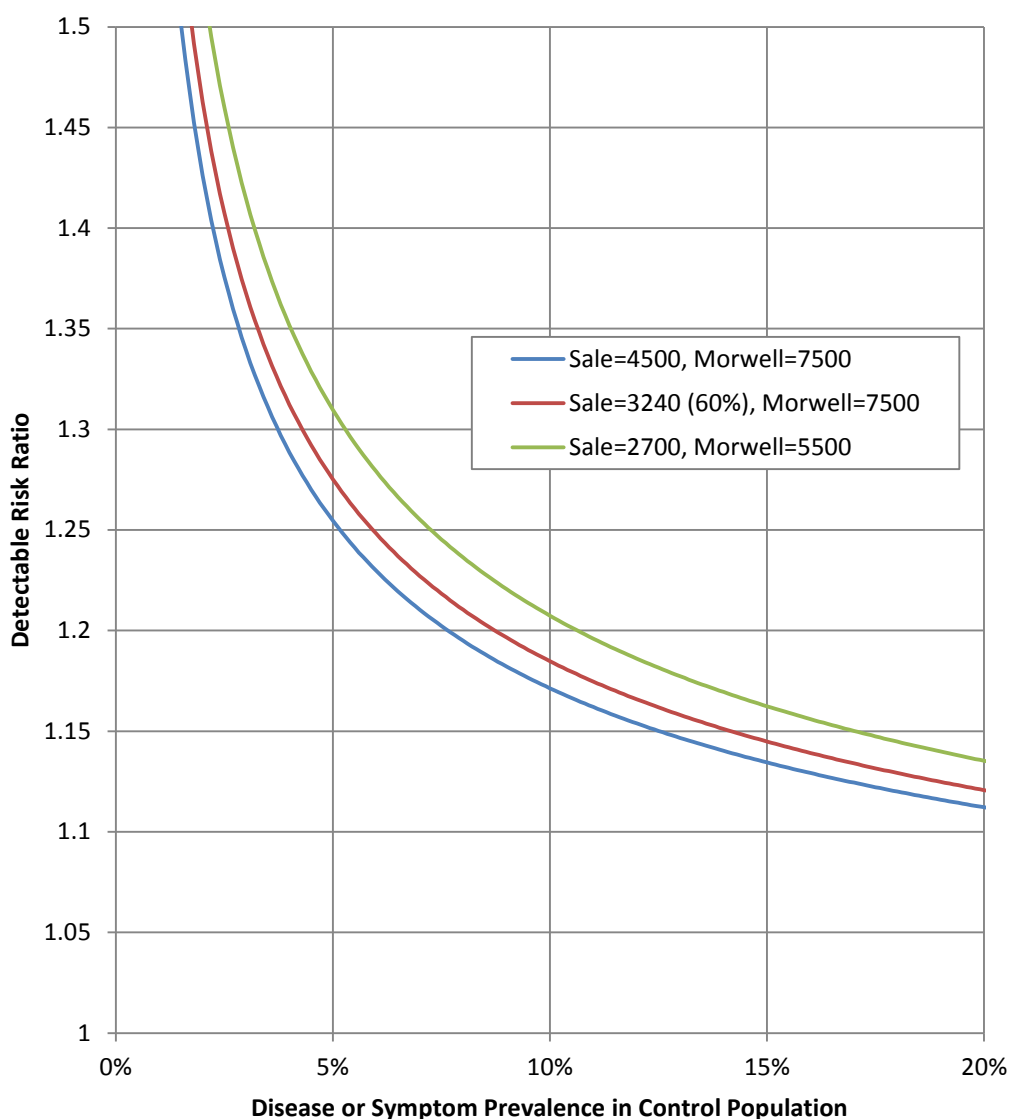


Figure 2: Sample Size Calculation – Disease and symptom prevalence

Some indication of what prevalence of symptoms and respiratory conditions might be expected in Sale can be gained from our previous research in Melbourne and elsewhere, summarised in the Table below.

| Symptom / Condition | Young adults (20-44yo) ¹ | Middle aged and older adults (45-70yo) ² | Adults > 40yo ³ |
|---------------------------------|-------------------------------------|---|----------------------------|
| Wheeze | 28.1% | 20.5% | 30% |
| Nocturnal chest tightness | 20.5% | 14.2% | |
| Asthma | 17.4%* | 12.5% † | 18.0%‡ |
| Current asthma | 9.7% | 6.7% | |
| Asthma medications | 9.4% | 8.2% | |
| Chronic bronchitis | | 12.0% | 7.4% |
| Chronic bronchitis or emphysema | | 12.4% | |
| COPD GOLD Stage II+ | | 6.8% | 7.5% |

* ECRHS definition † Wheeze + BHR ‡ Asthma ever

4. Analysis

Four broad classes of analysis will be conducted to examine the impact of the coal mine fire on health outcomes:

4.1. Epidemiological (descriptive)

4.1.1. What is the underlying health status of the Morwell population?

The Adult Survey will be used to report the health status of the Morwell population. Descriptive statistical techniques will be used to profile the socio-demographic and health characteristics of the recruited population and make comparisons to the Victorian and Australian populations where data are available.

4.2. Outcomes in exposed versus non-exposed populations

This broad class of analysis will compare the levels of health measures, the relative risk of outcomes and incidence rates of disease in exposed (Morwell) versus the comparison populations. In so doing these analyses will give estimates of the cross-sectional impact of exposure to the coal mine fire smoke on a variety of outcomes of interest. The key instances of this type of analysis are outlined in subsections below. In these analyses, exposure will be considered initially as a binary variable with persons residing in Morwell at the time of fire considered as exposed. An exposure-response effect can be evaluated by classifying the exposed individuals into lower and higher levels of exposure. The exact nature of this classification will be determined using the individual exposure data.

4.2.1. Is exposure associated with increased risk of premature birth or low gestational birth weight?

Data from the Latrobe ELF study will be used to estimate the association between prenatal exposure and risk of premature birth and low gestational birthweight. Binary outcome differences will be evaluated using log binomial regression controlling for important confounders including socio-economic status, and maternal smoking. In addition, differences in the mean birthweight can be assessed using birthweight as a continuous outcome controlling for additional confounders associated with high birthweight such as gestational diabetes.

4.2.2. Are exposed infants at greater risk of respiratory infections?

The main infant health outcomes will be the annual frequency of common respiratory infections such as otitis media and upper respiratory tract infections. These health outcomes will be analysed using Poisson regression models adjusted for important confounders, and over-dispersion if required. Similar analyses will be conducted of annual counts of health service attendances, and PBS prescriptions. The main clinical outcomes are respiratory (respiratory resistance and reactance) and cardiovascular (vascular thickness and vascular elasticity). These are continuous variables, appropriate transformations will be used to approximate Normal distributions, and the transformed outcomes will be analysed using linear regression models adjusted for important confounders including age, sex, height, socio-economic status, and maternal smoking.

4.2.3. Does exposure impact cardiovascular health?

Linear regression will be used to compare the mean systolic blood pressure between exposed and unexposed populations while controlling for variables related to blood pressure and differing by exposure status and hence possibly having a confounding effect. Important confounders are likely to

include sex and age, smoking status, and baseline measures of waist circumference or Body Mass Index (BMI) and anti-hypertensive medication.

Differences in the crude prevalence of abnormal ECG will be examined using an exact binomial test. Multivariable binomial regression will be used to ascertain if there are differences in the prevalence after controlling for known confounders including family history, smoking, obesity, serum cholesterol and glucose concentrations.

Endothelial function will be examined using multivariable regression controlling for confounders. The Reactive Hyperemia Index is a continuous measure, which can be used to categorise individuals into normal and abnormal endothelial function. The index will be examined both as a continuous outcome and as a dichotomous outcome. The relationship between exposure and the log-transformed index will be examined using linear regression, and the categorised outcome will be examined using logistic regression.

The impact of exposure on levels of inflammatory markers, such as CRP will be examined using multivariable regression. Appropriate transformations of the outcome data will be undertaken to satisfy distributional assumptions.

4.2.4. Is exposure associated with increased risk of developing respiratory conditions?

Differences in the crude prevalence of respiratory symptoms between the exposed and comparison populations will be examined using an exact binomial test. Multivariable binomial regression will be used to ascertain if there are differences in the prevalence after controlling for known confounders such as age, sex and smoking.

The Asthma Control Questionnaire will be used to evaluate differences in the control of asthma symptoms among those individuals recruited with an asthma diagnosis. Logistic regression will be used to evaluate the relative odds of having adequately controlled asthma in exposed versus the control population. The regression models will adjust for potential confounders such as age, sex, smoking, asthma medication etc.

Differences in lung function will be assessed between the exposed and comparison populations. Multivariable linear regression will be used to assess differences in function while controlling for age, sex, height and other potential confounders such as smoking.

4.2.5. Is exposure associated with increased risk of cancer?

The incidence of cancer in our study population will be determined using the VCR and the ACD. The entire Victorian population will serve as the control population. The unadjusted relative risk will be calculated as the ratio of the cumulative incidences in the exposed and unexposed populations over 9 years.

Important confounders for developing cancer include smoking status, sex, age, diet, alcohol consumption and other lifestyle factors. Adjusted estimates of the relative risk will be calculated using Poisson regression models and controlling for smoking status, sex, age and using socio-economic status (SEIFA) as a proxy for other confounders. Incidence and mortality can be examined in the same manner, and will be further analysed by cancer-type if there are sufficient cases.

4.2.6. What is the prevalence of psychological distress in the exposed population?

Data from the Adult Survey will be used to compare prevalence of psychological distress in the exposed population to that in our control population. Log-binomial models will be used to estimate the prevalence ratio after adjusting for known confounders. Additionally, the outcome can be analysed as continuous outcome to measure the relative difference in mean score after adjusting for confounders. Important confounders are likely to include socio-economic status, employment status, marital status, sex and age.

4.2.7. Is exposure associated with psychological trauma and distress in school-aged children?

Data from the Schools study will be used to compare prevalence of psychological distress in the exposed population to that in control schools. Log-binomial models will be used to estimate the prevalence ratio after adjusting for known confounders including family socioeconomic status.

4.2.8. Does exposure impact academic performance in school-aged children?

Data from Schools study will be used to estimate the association between exposure and academic outcomes. National Assessment Program – Literacy and Numeracy (NAPLAN) scores will be compared among multivariable regression controlling for prior NAPLAN performance and other important confounders including socio-economic status. Analyses will be stratified by age.

4.3. Association between exposure level and risk of outcomes

Further analyses will use estimates of the hourly and daily exposure levels to examine the impact of the level of exposure on the risk of acute events or hospital presentations. A counterfactual exposure can be thought of as the exposure distribution that would have occurred if the coal mine fire did not occur. This can be estimated using exposure patterns prior to the fire event. Counterfactual exposure distributions will be used to estimate the excess number of events or presentations that can be attributed to higher exposure levels seen during the fire event.

4.3.1. To what extent does the exposure level increase the risk of emergency presentation?

Using daily exposure estimates derived from the modelled CSIRO data, we will examine the relationship between air pollution levels and the number of presentations to EDs using Poisson regression models.

Weekly patterns in presentation will be controlled for by modelling the day of the week in the model. Important confounders include temperature (max and mean) and humidity. The impact of exposure can be examined by using a lagged exposure, eg. mean exposure in the preceding 12, 24 or 48 hours. Models can be fitted to specific conditions, for example, respiratory presentations as well as to all presentations.

4.4. Case-cross over analyses for acute outcomes

4.4.1. Does increased personal exposure increase an individual's risk of cardiac arrest?

Using the VACAR data, a case-crossover analysis will be used to evaluate the association between PM_{2.5} levels and the risk of out-of-hospital cardiac arrest (OHCA). Each person will serve as their own control with their case exposure being any hour in which an OHCA occurred and their control exposures being the same hours of the day on the same day of the week within the same month as the case hours.

OHCA will be the binary outcome (dependent) variable in the analysis. The exposure variables will be calculated using the hourly average pollutant concentrations. Analyses will be completed for lagged exposure levels as well as lagged averages. To assess differential impact by age and sex, we will undertake further analyses stratified by both sex and age group (35-64, 65-74, 75 years and over). Temperature and relative humidity will be included as potential confounders.

References

1. Abramson M, Kutin J, Czarny D, Walters EH. The prevalence of asthma and respiratory symptoms among young adults: is it increasing in Australia? *J Asthma*. 1996;**33**(3):189-96.
2. Abramson MJ. Respiratory symptoms and lung function in older people with asthma or chronic obstructive pulmonary disease. *Med J Aust*. 2005;**183**(1 Suppl):S23-5.
3. Toelle BG, Xuan W, Bird TE, Abramson MJ, Atkinson DN, Burton DL, et al. Respiratory symptoms and illness in older Australians: the Burden of Obstructive Lung Disease (BOLD) study. *Med J Aust*. 2013;**198**(3):144-8.

Document History Table

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