



Hazelwood Health Study

Annual Report 2

15th November 2016

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# Abbreviations

ACD	Australian Cancer Database
AIHW	Australian Institute of Health and Wellbeing
CAC	Community Advisory Committee
CATI	Computer Assisted telephone Interview
CAWI	Computer Assisted Web Interview
CCAM	Conformal Cubic Atmospheric Model
CO	carbon monoxide
CoRRC	Centre of Research for Resilient Communities, Federation University
CRG	Clinical Reference Group
CRP	C-Reactive Protein
CRIES	Children’s Revised Impact of Event Scale
CSIRO	Commonwealth Scientific and Industrial Research Organisation
CTM	Chemical Transport Model
DHHS	Victorian Government Department of Health and Human Services
DHS	Commonwealth Government Department of Human Services
ECG	Electrocardiographs
ELF	Latrobe Early Life Follow Up stream
EREC	External Request Evaluation Committee
G-NAF	Geocoded National Address File
HACC	Home and Community Care
HHS	Hazelwood Health Study
HRF	Hunter Research Foundation
LCC	Latrobe City Council
LRH	Latrobe Regional Hospital
MBS	Medicare Benefits Schedule
MUHREC	Monash University Human Research Ethics Committee
NAPLAN	National Assessment Program – Literacy and Numeracy
NDI	National Death Index
NMD	National Mortality Database
NO <sub>2</sub>	nitrogen dioxide
O <sub>3</sub>	ozone
PAH	polycyclic aromatic hydrocarbon
PBS	Pharmaceutical Benefits Scheme

PM <sub>2.5</sub>	particulate matter with an aerodynamic diameter of 2.5 micrometres
PM <sub>10</sub>	particulate matter with an aerodynamic diameter of 10 micrometres
PMG	Project Management Group
PSC	Project Steering Committee
SA	Statistical Area
SO <sub>2</sub>	sulphur dioxide
SPHPM	Monash University School of Public Health and Preventive Medicine
SRG	Scientific Reference Group
SRH	Monash School of Rural Health
TAPM	The Air Pollution Model
UDRH	University Department of Rural Health
VACAR	Victorian Ambulance Cardiac Arrest Registry
VAED	Victorian Emergency Minimum Dataset
VCOSS	Victorian Council of Social Service
VCR	Victorian Cancer Registry
VEC	Victorian Electoral Commission
VOC	volatile organic compound

# 1 Executive Summary

The Hazelwood Health Study is emerging from an intense year, dominated by recruitment into the Adult Survey and the release of preliminary results from other streams. A number of contractual milestones have been delivered, including a recruitment report and 2<sup>nd</sup> year Interim Report. The Ageing Population Policy Review and the Annual Community Briefing will both be delivered by the end of November 2016, in fulfilment of the contractual milestones for year 2. The [governance structure](#) has been revised, particularly the membership and terms of reference for the [Community Advisory Committee](#). An independent chair has been elected by the Community Advisory Committee.

The [Project Steering Committee](#) and [Management Group](#) members have worked to assist Deloitte Access Economics, which was contracted by the Victorian Government Department of Health and Human Services to undertake a review of the governance and scope of the Hazelwood Health Study in response to the Mine Fire Inquiry 2015/2016 recommendations. The Principal Investigator and the Principal Co-Investigator (Gippsland) provided the Government with a response to the Review report.

As part of the Hazelwood Health Study's ongoing improvement of risk management and quality, the Project Management Group are undertaking an extensive [Privacy Impact Assessment](#) and [Data Security Risk Assessment](#). Monash University's School of Public Health and Preventive Medicine Research Governance Committee has also undertaken an [audit](#) of the Adult Survey protocol, to ensure this stream's compliance with accepted procedures that meet ethical principles of good quality research practice. A number of staff have undertaken updated [Ethics and Good Research Practice](#) training.

The Latrobe [Early Life Follow-up](#) stream has almost completed its recruitment of young children who were exposed, or not exposed, to smoke from the Hazelwood mine fire, with 511 parents interviewed. Approval has been obtained for anonymised state-wide perinatal data extraction to examine outcomes including birthweight and prematurity, and for an ongoing anonymised data linkage study based on the Victorian birth cohort of March 2012 - December 2015.

The Schools Study component of the [Psychological Impacts](#) stream has completed collection of student and parent data from 20 schools across the Latrobe Valley. The participation rate of 15.1% was less than hoped, but consistent with other research on children following a major event. A total of 323 children filled out questionnaires and a further 69 participated in interviews. In interviews, the children reported how the smoke impacted on both their physical and psychological health. Some also outlined how they experienced breathing difficulties, frustration, worry during the event and poorer sleep. They also suggested that getting information and knowledge about what was happening, and positive self-talk helped them to cope.

Preliminary analysis has commenced of the primary outcome measure, the Children's Revised Impact of Event Scale. On average, children scored at a modest level with Morwell students scoring higher than

non-Morwell children and younger children more highly than older children. Overall the findings show differences between Morwell and non-Morwell school children in terms of the impact of the event, but the impact is mediated by age, with younger children scoring more highly than their older counterparts. Educational data including National Assessment Program – Literacy and Numeracy data, have been requested to assess the impact on learning outcomes

The [Impact on Older People](#) stream recruited 91 individuals from the Morwell community who participated in focus groups. In addition, 15 stakeholder interviews were completed from community health, the Department of Health and Human Services, Latrobe City Council, residential aged care, the Neighbourhood House and Multicultural Services. A thorough thematic analysis of the focus group discussions and interviews was undertaken. The interim report was submitted in mid August 2016. A workshop to inform the final report was held in late September 2016 with community members, services providers, and decision makers. The final report and a policy brief are on track for submission at the end of November 2016.

The [Community Wellbeing](#) stream is working with community organisations and their members on a project to foster community recovery and wellbeing. Thematic analysis is currently underway of the individual and focus group interviews that were conducted in 2015. The focus is to identify community views of the perceived impact of the fire, key elements for future community wellbeing, and the requirements of an optimal communication framework. The media analysis component is progressing and exploring ideas about trust and authority. The team have conducted interviews with traditional and social media practitioners to address the effectiveness of media coverage during and after the smoke event.

The [Adult Survey](#) commenced in Morwell, and in the comparison community of Sale, following an extensive marketing campaign. Approval was obtained from the Victorian Electoral Commission to access the electoral roll, subject to standard conditions around the privacy and confidentiality of the data. The letters of invitation, information sheets and questionnaires have been extensively piloted. To proactively address expected challenges in recruitment, it was decided to reimburse participants for their time and inconvenience with gift vouchers redeemable at local businesses. A detailed contact and recruitment tracking database has been developed along with a survey instrument which can be completed over-the-phone, online or on paper questionnaire.

Recruitment into the Adult Survey is now nearing a close, with the end date determined to be 31 January 2017. To date, 29% of invited Morwell residents and 19% of invited Sale residents have participated in the Adult Survey. Numerous promotional activities have taken place throughout the year in an effort to engage with the community and improve recruitment rates. These include letter box drops of promotional flyers, posters, monthly media releases, public recruitment events, print and radio advertising, roadside banners, website updates, presence at community events and use of social media.



The [Hazelinks](#) stream comprises both identified data linkage and anonymised data extraction. Identified linkages with cancer, hospital, ambulance and death data will occur once the Adult Survey has been completed. Anonymised ambulance, hospital, cancer, Medicare/Pharmaceutical and death data will be analysed for all ages for the main exposed areas that were affected by the smoke, as well as areas that were minimally exposed (for the purpose of comparison). These areas include the East of Victoria (Hume, Gippsland and Eastern Metropolitan regions), and a small part of the Southern Metropolitan region (Cardinia). Approvals have been obtained from Ambulance Victoria, the Victorian Department of Health and Human Services, the Victorian Cancer Registry, and the Australian Institute of Health & Welfare. Final approvals are awaited from the Commonwealth Department of Human Services.

In relation to [exposure assessment](#), the air quality team at the Commonwealth Scientific and Industrial Research Organisation Oceans & Atmosphere has provided two reports summarising: (i) the air quality measurements made during the Hazelwood mine fire by various organisations, and (ii) complex air quality modelling providing hourly air exposure estimates in the Latrobe Valley. Many pollutants were measured, for example particulate matter with an aerodynamic diameter of 2.5 µm (PM<sub>2.5</sub>), carbon monoxide, ozone, polycyclic aromatic hydrocarbons, volatile organic compounds and metals. In particular, concentrations of PM<sub>2.5</sub>, carbon monoxide and benzene exceeded air quality standards and guidelines during the smoke event. Overall, Morwell was exposed to the greatest number of breaches of the 24 hour air quality standard for PM<sub>2.5</sub>, exceeding the 25 µg m<sup>-3</sup> limit on 27 days. Concentrations of benzo(a)pyrene were also elevated and resulted in the yearly averaged concentrations exceeding air quality guidelines. Concentrations of air pollutants were primarily elevated in February 2014 with a significant decrease observed in March 2014 for all pollutants measured. There were no breaches of air quality standards predicted at Sale during the mine fire.

There has been extensive [community engagement and media](#) over the past year. These recognise the key role the local community played in the Victorian Government's decision to fund the long term health study, and continues to play. The development of community engagement strategies builds upon advice from the Community Advisory Committee and the invaluable relationships that have been developed with individual members and member organisations' communications personnel. Strategies are predicated on the study reaching out to the community and engaging in community activation initiatives. Gippsland based media consultants, Wordwise Communications have been engaged to facilitate appropriate messages.

The [Hazelwood Health Study website](#) has developed into a dynamic and interactive communication mechanism. Promotional activities have included radio, newspaper and social media advertisements, flyers delivered to letter boxes, posters, roadside banners and exhibits at community events. Monthly media releases have been informed by our ongoing monitoring of community feedback, and the Study has received extensive coverage by print, radio and TV media outlets. Community engagement continues to form a vital part of the Hazelwood Health Study which will continue throughout the life of the project.

## 2 Introduction

This is the second Annual Report to be submitted to the Department of Health and Human Services (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 progress made since the first Annual Report was submitted in November 2015, and gives an update on the developments that are expected to occur over the next few months.

A copy of the first Annual Report can be found at [hazelwoodhealthstudy.org.au/reports](http://hazelwoodhealthstudy.org.au/reports).

## 3 Contractual milestones

Since the signing of the contract with DHHS (30<sup>th</sup> October 2014), and prior to the submission of this 2<sup>nd</sup> Annual Report (15<sup>th</sup> November 2016), twelve contractual milestones have been completed. Those milestones, with their delivery dates, are presented in Table 1.

**Table 1 Contractual Milestones completed prior to this 2nd Annual Report**

	<b>Contractual milestone</b>	<b>Delivered</b>
1	Project plan	17 December 2014
2	Community and stakeholder engagement strategy	17 December 2014
3	Organisational agreements with sub-contractors	9 February 2015
4	Research ethics submission	9 February 2015
5	Advisory groups established	10 March 2015
6	Outline of Ageing Policy Review	8 May 2015
7	Interim Report 1	15 June 2015
8	Annual Community Briefings	August 2015
9	Annual Report 1	13 November 2015
10	Recruitment Report	15 March 2016
11	Interim Report 2	15 June 2016
12	Ageing Population Policy Review (interim Report)	15 August 2016

### 3.1 Ageing Population Policy review - final report

The policy review on the impacts of the Hazelwood mine fire on older people has taken longer to complete than originally expected because considerably more qualitative data was collected than anticipated. In the original Project Plan we proposed that we would conduct up to seven focus groups with community members and 10 interviews with service providers or decision makers. In contrast, by the end of data collection we had run 13 separate focus group sessions as well as a round of one-on-one interviews with residents of an aged care facility yielding a total of 91 participants plus a further 15 stakeholder interviews. The considerable time required to transcribe and analyse this volume of rich, detailed data meant that the report could not be finalised by its August 2016 due date. Instead, with the agreement of the DHHS, we submitted an extensive interim report in August 2016, which included a review of the literature, an overview of the policy framework at the time, chronology of the key events related to the mine fire, along with an initial analysis of the data.

Following submission of the interim report, a workshop was conducted with key informants from the research process (community members, service provider representatives, and decision makers). The final report and a short policy brief will be submitted to the DHHS by the end of November 2016.

### 3.2 Annual Community Briefing

The researchers have scheduled an Annual Community Briefing to take place on Tuesday 29 November 2016 at the Morwell Bowling Club. Advertising for the Annual Community Briefing will be via media release and paid advertisements in print and social media. The Briefing will include presentations on the status of each of the HHS streams. After this event, the presentation will be made available on the HHS website.

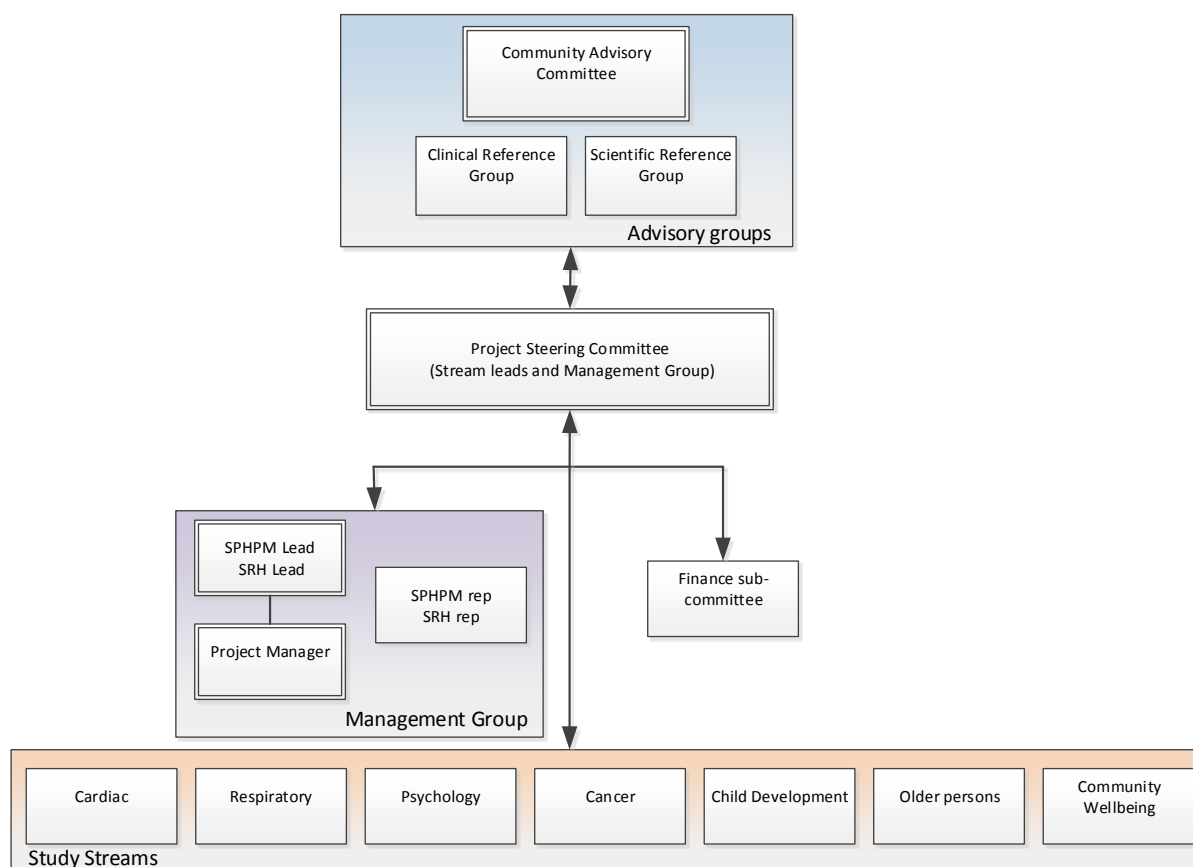
In addition to the Annual Community Briefing, the researchers are committed to connecting with the community via numerous avenues including meetings with community groups, attending community events and running our own recruitment events where we provide participants with updates on study progress. We also regularly provide updates via media releases which have been picked up by local print, radio and TV outlets. Numerous such community engagement activities have been carried out throughout year 2 and many of these are described in section 10.1 and Appendix 5.

## 4 Project Governance

### 4.1 Governance structure

The HHS governance structure is documented and reviewed on a regular basis to ensure it is fit for purpose in regard to meeting study and community requirements. The most recent version 2.0 of the Project Governance Structure document can be found in Appendix 1.

Figure 1 demonstrates the project governance structure, which has been adjusted since the 1<sup>st</sup> Annual Report to better show the relationship between the Advisory and Reference Committees/Groups and the Project Steering Committee.



**Figure 1: Hazelwood Health Study governance structure**

The most substantial revision to the HHS Project Governance document has been in regard to the membership and Terms of Reference of the Community Advisory Committee (CAC), as described further in section 4.2.

## 4.2 Community Advisory Committee

The Community Advisory Committee (CAC) continues to meet quarterly. Meetings held in the period since the 1<sup>st</sup> Annual Report were on 2 December 2015, 16 March, 29 June and 14 September 2016. CAC members also receive HHS Monthly Status Reports to keep them abreast of interim activities. Agenda items focus particularly on community concerns, how best to engage with the community and how to promote community involvement in the various HHS streams.

At the beginning of the year all member organisations of the CAC confirmed that their nominated representatives would serve in 2016, with the exception of Latrobe Regional Hospital (LRH) Board. The Board Deputy Chair, Ian Gibson has replaced the Board Chair, Kellie O'Callaghan. Community members of the CAC received invitations to continue (staggered terms of 12 or 24 months). All community members confirmed their intention to continue, with the exception of a Sale community member, Marilyn Mathieson, who resigned due to travel commitments. Expressions of interest, for this Sale community member position, were called for via the Gippsland Times and Dr Iain Nicholson was appointed as the second Sale community member.

At the first CAC meeting in 2016, members determined a process for the appointment of an independent Chair in the context of the recommendations of the Mine Fire Inquiry 2015/2016 Report (Vol 3). CAC members resolved to appoint a Chair and specified that the Chair be 'independent of Monash, the research team and government representatives'. A consensus was reached that it would be in the Committee's best interest if the Chair was elected from the CAC community members, nominated by any member of the Committee. A sub committee was formed to refine the position description and implement an election process. Two nominations were received and an election held. Ms Tracie Lund was elected Chair of the HHS Community Advisory Committee.

The CAC Terms of Reference have subsequently been revised and endorsed by the Committee, and these are shown in Appendix 1.

With the HHS now starting to release findings, CAC members have been actively involved in developing the *Guidelines for the Dissemination of Findings to the Community from the Long Term Hazelwood Health Study*. The committee provided feedback on the draft guidelines in the June 2016 meeting and reviewed and endorsed the final guidelines as part of the September 2016 meeting. The first opportunity to review early study findings took place in June when Dr Sue Yell, from the Community Wellbeing stream, gave a presentation on social media use during the mine fire event, receiving feedback from members on presentation and interpretation of the findings. More recently, members were consulted in late August, out of session, regarding the release of initial findings from the analysis of ambulance call out data (see 7.4 for more detail). Members provided comment on the presentation and interpretation of

the findings, including suggestions regarding the content of a conference poster, an associated Fact Sheet and dissemination plan.

The process associated with the dissemination of the ambulance call out data was a major topic of discussion at the September CAC meeting. Members indicated that they were pleased to see the early data and satisfied with the review process including the opportunity to review the conference poster, the fact sheet summary of the findings, and the dissemination plan. Members were also provided with a copy of the media release, ensuring that they are aware of public announcements related to the study.

The September meeting also featured an extensive discussion regarding the Deloitte Access Economics Review recommendations regarding the governance arrangements of the study, including the proposal to merge the CAC and the Clinical Reference Group (CRG) and establish an independent board with a ministerially appointed chair. The same discussion topic was included in the September 2016 CRG meeting (outlined in the next section) with a combined response from both groups forwarded to the DHHS so that it could be considered as part of deliberations regarding the review recommendations. Members of both groups were supportive of the resultant decision to establish an independent HHS Ministerial Advisory Committee to ensure independent oversight of the study, working with the existing CAC and CRG arrangements and with the newly established Latrobe Health Assembly.

## 4.3 Clinical Reference Group

Three meetings of the Clinical Reference Group (CRG) have been held in the period since the 1<sup>st</sup> Annual Report, on 12 November 2015, 9 June 2016 and 13 September 2016. At the November 2015 meeting members resolved not to lock in regular meeting dates considering it better to wait until there were study matters identified that require clinical advice. To ensure that CRG members are kept up to date, they receive the HHS Status Report each month.

The feature item at the November 2015 meeting was a presentation from Dr Martine Dennekamp about the Hazelinks research stream. The CRG members provided advice regarding access to General Practice data, including how such data are stored. Members discussed linkage to a new research project aimed at improving communication between different components of the health system and its relationship with the HHS.

The June 2016 meeting was convened to enable discussion and advice about disseminating study results to the community and professional organisations in line with the Group's Terms of Reference. Members also discussed the significance of the Recommendations from the Mine fire Inquiry 2015/2016 in terms of their relation to the HHS, particularly findings from the study. CRG Chair, Associate Professor

Joseph Tam announced that Dr David Monash, Principal of a large General Practice in Sale was joining the CRG.

The September 2016 meeting focused on the process of disseminating study findings, with the Group reviewing the final version of the *Dissemination Guidelines*, providing commentary on the early findings from the Hazelinks analysis of ambulance call out data, and feedback on the review process. This included detailed discussion regarding the interpretation and implications of the ambulance data findings and suggestions regarding future analyses. Members of the CRG also met with the Psychological Impacts stream to consider preliminary findings based on the Children's Revised Impact of Event Scale (CRIES). An urgent meeting has been called to develop a clinical pathway for these children.

As outlined in the preceding section, the CRG members worked with the CAC members to provide a combined response to the Deloitte Access Economics review recommendations regarding the HHS governance arrangements.

## 4.4 Scientific Reference Group

One meeting of the Scientific Reference Group (SRG) has been held in the period since the 1<sup>st</sup> Annual Report, on 24 March 2016. The SRG were presented with an overview of the status of the study streams and challenges faced by each. Examples of issues discussed include: the age at which ELF stream participants might be suitable to undertake spirometry assessments of their lung function in future years; strategies to address likely response bias in the Schools Study findings; and the complexity assumed by the Adult Survey protocol if it were to pursue hard-copy consent for identified Medicare linkage. The SRG also reviewed the report prepared by Commonwealth Scientific and Industrial Research Organisation (CSIRO) Oceans & Atmosphere, on air quality measurements (see section 9.1 for more details) and the implications of the Mine Fire Inquiry 2015/2016 in regard to the scope of the HHS and the possible inclusion of emergency responders.

## 4.5 Project Steering Committee

The Project Steering Committee (PSC) meets monthly and provides overall strategic guidance for the Hazelwood Health Study. Its membership comprises each of the stream leads and the project management team. Full terms of reference are provided in Appendix 1.

At each meeting, stream leads provide a status update for their stream, present any issues requiring resolution and share expertise relevant to the other streams.

As several streams progress toward the release of their first findings, important agenda items for the PSC have included the stream analysis plans, revision of the HHS *Publication Policy and Procedures* in

regard to scientific presentations and publications (see section 10.2), finalisation of the *Guidelines for the Dissemination of Findings to the Community from the Long Term Hazelwood Health Study* (see section 10.3), review of the first poster and Fact Sheet arising from Hazelinks and first presentations arising from the Community and Wellbeing stream.

The PSC is also responsible for approving the study budget. An important budgetary decision, reviewed by the PSC in the reporting period, has been the inclusion of a monetary reimbursement for Adult Survey participants.

The PSC also responded to enquiries from Deloitte Access Economics which was contracted by the DHHS to undertake a review of the governance and scope of the HHS in response to the Mine Fire Inquiry 2015/2016 recommendations.

## 4.6 Project Management Group

The Project Management Group (PMG) has continued to meet fortnightly, providing oversight to the operationalisation of the Project Plan, reviewing study progress, monitoring the budget, ensuring adherence to good research practice standards and the successful delivery of contractual milestones.

As per the PSC, the PMG responded to enquiries from Deloitte Access Economics in regard to the review of the governance and scope of the HHS.

In year 2 the PMG has also undertaken an extensive Privacy Impact Assessment and a detailed Data Security Risk Assessment (see section 6.3).

## 5 Staff update

### 5.1 Stream leader, Community and Wellbeing stream

With the retirement of Associate Professor Pamela Wood from Federation University in December 2015, Dr Michelle Duffy has been promoted to stream leader for the Impact on Community Wellbeing stream. In that capacity, Dr Duffy also joins the membership of the PSC. Dr Duffy is the Director of Federation University's Centre of Research for Resilient Communities (CoRRC), which focuses on understanding community resilience, health and wellbeing, ethical leadership for resilient communities, and resilience at the nature/society interface.



## 5.2 Stream leader, Cardiovascular stream

Dr Martine Dennekamp, lead for the Cardiovascular and Exposure Assessment streams, has taken a 12 month period of leave, only retaining a 0.1 FTE fraction on the HHS. Prof Danny Liew will take Dr Dennekamp's place as lead for the Cardiovascular stream. Prof Liew rejoined the School of Public Health and Preventive Medicine (SPHPM) in November 2015 as Professor of Clinical Outcomes Research and Co-Director of the Centre of Cardiovascular Research and Education. He is also a consultant physician at the Alfred Hospital in Clinical Pharmacology and General Medicine.

## 5.3 Senior Administrator Hazelwood Health Study

Dr Sharon Harrison was appointed Senior Administrator to the HHS in February 2016. Dr Harrison has a PhD in history and a background in research management at the University of Melbourne. Dr Harrison is based at Monash University's School of Public Health and Preventive Medicine (SPHPM) and reports to Professor Abramson. Dr Harrison's roles include high level administrative support to the Project Management Group, Project Steering Committee, Scientific Reference Group and Finance sub-committee.

## 5.4 Senior Data Manager Hazelwood Health Study

Mr Anthony Del Monaco was appointed Senior Data Manager to the HHS in December 2015. Mr Del Monaco has been based in SPHPM since 2003, providing high level data management for numerous research projects investigating cancer and mortality in occupational cohorts such as the aluminium industry, oil and petroleum industry, lead workers, agricultural workers and firefighters. He has also worked on projects investigating occupational respiratory health, as well as the health effects of environmental air pollution.

Mr Del Monaco's primary roles are to create a secure, robust database back-end to store data for the Hazelwood Health Study, and develop front end applications for users in the research team to access data as required. This also includes establishing data security protocols, operational procedures and quality control and assurance roles over data- and file-storage for the project.

## 5.5 Geo-spatial analyst - Adult Survey

Ms Amanda Johnson has been employed as a geo-spatial analyst responsible for geocoding locations and developing the exposure metrics for the Adult Survey participants. Ms Johnson has also started a full-time PhD which focuses on the spatial association between public health and biomass and coal mine fire smoke.

## **5.6 Research Assistant - Adult Survey**

Ms Kristen Benke, who was employed as a part-time Research Assistant on the Adult Survey since July 2015, vacated that position at the end of June 2016.

Mr Tom O'Dwyer commenced a part-time Research Assistant position in July 2016, administering the recruitment tracking and mailout components of the Adult Survey. Mr O'Dwyer has also commenced a full-time PhD on the cardiovascular stream which will include Adult Survey participants.

## **5.7 Assistant to the Recruitment and Community Engagement Coordinator**

Ms Shona Anderson was appointed on a 0.8 FTE basis from mid-September to mid-November 2016 to provide support with the Adult Survey recruitment and community engagement activities. She was sourced via a local labour supply agency and had extensive administrative experience, most recently with a community legal service. She completed training in confidentiality and privacy prior to taking study phone calls and accessing the recruitment database. She is a Sale resident and provided valuable insights regarding connecting to that community as part of the Adult Survey recruitment activities. In addition to supporting recruitment activities, Shona assisted with arrangements for the CAC and CRG meetings and with the Hazelwood Health Study's online presence including the website and social media.

## **5.8 Project Officer, Early Life Followup stream**

Ms Melanie Reeves was appointed as the Early Life Followup stream (ELF) Project Officer in 2016. She is responsible for the mail-outs and responding to queries from participants and the general community. Ms Reeves is also providing assistance with the community engagement aspects of the broader HHS, including supporting the CAC and CRG meetings. She is located at the LRH in Traralgon.

## **5.9 Research Administrator, Psychological Impacts stream**

Stream Research Fellow Dr Emily Berger will be taking up a Lecturer academic appointment with Monash University Faculty of Education at the start of 2016. Dr Berger will remain as a member of the research team, working on data analysis, dissemination of findings and design of future work. However she will no longer be responsible for the day to day operations or be funded from the study. Ms Sarah Lee will be appointed as the stream Research Assistant and Administrator for the next year of the study. Ms Lee has a Master of Research in Psychology from the University of Manchester. To assist with the transition, Ms Lee has been working with the study on a casual basis for some months, including participating in weekly meetings.

## 5.10 Research Assistant, Psychological Impacts stream

Having completed the majority of the data collection period for the Schools Study component of the Psychological Impacts stream, Research Assistant, Ms Cathy Ward, has taken a new role outside Monash. Ms Julie Irvine, from Monash University Department of Rural Health, took over as the Schools Study Research Assistant in early 2016 after completing extensive handover and training in November-December 2015. Ms Irvine provided support to the stream until July 2016 when she retired.

## 5.11 Students

Universities have an important role in providing graduate students with high quality research and learning opportunities. In this regard, the HHS streams have provided sought after development opportunities for a number of post-graduate students.

As referred to above, Ms Amanda Johnson has commenced a PhD at Monash which focuses on the spatial association between public health and biomass and coal mine fire smoke within the Adult Survey.

Also mentioned above, Mr Tom O'Dwyer has commenced a PhD on the Cardiovascular stream which will include Adult Survey participants.

In the ELF stream, two PhD students commenced at the University of Tasmania in January 2016. Jingyi Shao and Bing Zhao will both be involved with the clinical studies, with one also working on perinatal outcomes data.

The Psychological Impacts stream have engaged four Graduate Diploma in Professional Psychology students in 2016 with each working on a discrete area of research to be written up as part of their course requirements. Four Monash University students, participating in the Summer Scholarships scheme, worked with the Psychological Impacts stream for a three week period. In addition, a Masters of Social Work student completed a longer research placement with that stream. Their roles are described further in section 7.2.2.

Ms Judy Clayton commenced a PhD in late 2015 on aspects of the impact of the HHS in Gippsland. Due to family commitments she is currently on intermission.

## **6 Risk management and quality assurance**

A copy of our extensive Risk Management Framework, and a description of our Quality Assurance Framework, were provided in the 1<sup>st</sup> Annual Report.

### **6.1 SPHPM Research Governance Committee Audit**

Since the 1<sup>st</sup> Annual Report, and as part of the Monash University SPHPM's internal monitoring of the quality of research carried out within the School, the HHS Adult Survey was audited by the SPHPM Research Governance Committee in November-December 2015. The audit assessed the Adult Survey's compliance with accepted procedures that meet ethical principles of good research practice.

### **6.2 Ethics and Good Research Practice training**

As part of the ongoing professional development of staff involved in the HHS, eleven team members, from both SPHPM and Monash University's School of Rural Health (SRH), attended a one-day Monash University training session in Ethics and Good Research Practice in November 2015 or March 2016.

### **6.3 Privacy impact and data security risk assessment**

The Hazelwood Health Study completed a Privacy Impact Assessment (PIA) and, on August 25<sup>th</sup>, met with the Commissioner for Privacy and Data Protection in order to develop a sustained approach to information privacy and data security best practice over the course of the Study. The PIA examined data management and security, transborder data flows, data quality, the process for de-identification and identification of linked data and records management and has drawn on external expertise in the area of data linkage. A Security Risk Assessment (SRA) is also underway.

### **6.4 Stream coordination retreat**

The project's second stream coordination retreat was held at SPHPM, The Alfred, in December 2015, comprising members of the Adult Survey, Psychological Impacts, Latrobe ELF study, Older People and Community Wellbeing Streams, and also overarching project staff (see Figure 2). This retreat was used to introduce new team members, such as the Senior Project Manager and Senior Data Manager, and to

ensure that all team members obtained a broader overview of each of the study streams and shared ideas and insights.

The Agenda included progress updates on each stream, including recruitment rates, methodological challenges faced and discussion of strategies employed to meet them, and plans moving forward. Feedback from the Advisory Committees/Groups was also detailed. Finally, the progress of the Mine Fire Inquiry 2015/2016 and possible implications for the HHS were evaluated.



**Figure 2 Hazelwood Health Study staff at the stream coordination retreat December 2015**

## 7 Year 2 study stream updates

### 7.1 The Latrobe Early Life Follow Up (ELF) Study

#### 7.1.1 Aims and Objectives of the ELF Study 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.

Specific objectives include:

- To compare perinatal outcomes, particularly foetal 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 an anonymised data linkage study comparing those areas exposed and those not exposed, or minimally exposed, to smoke from the Hazelwood mine fire.

#### 7.1.2 Year 2 update on the ELF Study stream:

##### Developments since the 1<sup>st</sup> Annual Report

###### *The Latrobe ELF Identified Cohort Study*

- Participant documents have been finalised and submitted to the relevant ethics committees as an amendment;
- The Computer Assisted Telephone Interview (CATI) and Computer Assisted Web Interview (CAWI) for ELF have been developed, tested and piloted in collaboration with the Hunter Research Foundation (HRF);
- An application to enable online completion of a monthly health diary (for enrolled participants) has been developed and is in use;
- Initial approach letters have been sent by Latrobe City Council (LCC) to all mothers/guardians of relevant aged children listed on their Maternal & Child Health Service database;
- The nominal roll of eligible children was received from LCC after a four week active opt-out period had expired;

- The research team have subsequently mailed invitation packages to over 1,900 parents/guardians;
- We have received permission from LRH for the Victorian Data Linkage Unit (VDLU) to provide perinatal data about participants who gave birth at this hospital. This only concerns participants who provide written consent for their perinatal data to be shared with the research team.

#### *The Latrobe ELF anonymised state-wide data linkage study*

- With approval from the Ethics Committee of the Australian Institute for Health and Welfare (AIHW), all required ethical approvals for the anonymised state-wide data linkage study have now been completed;
- We continue to work with the VDLU to coordinate linkage of datasets including Victorian Emergency Minimum Dataset, Victorian Admitted Episodes Dataset, Victorian Perinatal Data Collection, NAPLAN, Victorian Cancer Registry data, Medicare Benefits Schedule Pharmaceutical Benefits Scheme data, Australian Early Development Census, and the NDI. The first perinatal data extraction is scheduled for late 2016.
- An extract of Victorian Birth Registry data has been supplied to the VDLU, which will use it to match child's details with mother's details contained in the Victorian Perinatal Data Collection.

## **Recruitment**

HRF is now finalising interviews, with 511 surveys completed to date; 160 of these (31%) have been completed online. In an effort to boost recruitment numbers in the Morwell area, the study team carried out a door-knocking "blitz" where almost 300 households, who had not responded to contact attempts, were visited and invited to complete the online or paper survey on the spot with assistance. This resulted in 10% of households completing a survey at the time, and some others undertaking to complete and return a paper version at a later date.


To date, 42% of the recruited cohort are residents of Morwell, with 58% being from other towns in the Latrobe Valley. Thirty-six percent of the cohort are in the "maternal exposure" group, 34% were exposed as infants, while 30% had neither maternal nor infant exposure; ie. those born in 2015.

## **Community Engagement:**

Latrobe ELF Study 'postcards' (shown in Figure 3), promoting the study and describing eligibility, were distributed to child care centres and relevant businesses in the Latrobe Valley in December 2015.

Along with members of the Adult Survey stream, the ELF team manned a promotional exhibit at the Latrobe Valley Health & Wellbeing Expo in November 2015.





**Do you live in the  
Latrobe Valley?**

**Was your child born  
after March 2012?**

**Would you like to help  
the next generation?**

**Join the  
Latrobe Early  
Life Follow-up  
(ELF) study.**

## **We are looking at the long-term health of young children in the Latrobe Valley.**

If you live anywhere in the Valley, and have a child born between March 2012 and December 2015, we would love you to be involved.

Joining the study involves completing a survey about your child. You can also choose to provide soil and dust samples from your home, or to enrol your child for more detailed follow-ups of their heart and lung health.

**The Latrobe ELF Study is a part of the Hazelwood Mine Fire Health Study.**

For more information, contact us at [latrobe.elf@utas.edu.au](mailto:latrobe.elf@utas.edu.au) or call 1800 322 102.



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MELBOURNE



**Figure 3 Latrobe ELF Study postcards**



Furthermore, the ELF stream has been referred to in Adult Survey promotional resources including the Adult Survey Explanatory Statement, website FAQs and a radio ad which ran on TRFM in September – October 2016.

## **Analysis Plan**

*Exposure:* We will compare all outcomes according to (1) timing of exposure (pre-natal, and post-natal with no exposure; and (2) intensity of exposure using a variety of spatially resolved exposure metrics including: empirical air quality data, modelled air quality data, and empirical markers of exposure in house dust (subject to securing funding).

*Perinatal outcomes:* 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 changed birthweight such as gestational diabetes or maternal smoking.

*Health and Developmental outcomes:* The annual frequency of common respiratory infections such as otitis media and upper respiratory tract infections will be prospectively counted by parental monthly report. Annual counts of health service attendances and Pharmaceutical Benefits Scheme prescriptions will be obtained from health records. These count outcomes will be analysed using Poisson regression models adjusted for important confounders, and over-dispersion if required.

*Clinical outcomes:* At three yearly intervals during the first 10 years we will measure respiratory (respiratory resistance and reactance) and cardiovascular (vascular thickness and vascular elasticity) endpoints. 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.

## **Variation from Project Plan**

A nominal roll of all children born between 1/3/2012 and 31/12/2015, and registered with Latrobe City Council's Maternal and Child Health Services program, was used to obtain contact details for eligible participants, rather than these being obtained from Births, Deaths and Marriages. This was an early refinement to the project plan. Also, family details of eligible children were not sought from the HHS Adult Study stream as originally proposed.

A data extraction of perinatal data, rather than linkage with other datasets, will take place in 2016.

Initially it was planned that data would be collected on minor illnesses in infants from the time of study enrolment until the end of 2017, however this was refined to include data for three years after enrolment.

Originally it was planned to survey a representative sample of 1,000 children and select a nested cohort of 400 for clinical studies. Further refinement to the study design added a parallel linkage study, then changed the recruitment number to 500 with all of this cohort being selected for clinical studies. It was considered that this was a more robust approach and would eliminate any problem with sampling or recall bias. This was an early amendment approved by the relevant Ethics Committees.

The initial recruitment proposal contained a step for dissemination of paper-based surveys to those who had not responded to attempted contact by HRF or had not completed an online survey. It was decided that a personal approach (door-knocking) to the Morwell-based members of this group had a better chance of response and would be a better use of resources. Paper surveys were distributed to those households who specifically requested them.

### **7.1.3 Future plans for the ELF Study stream**

Health diary data will be collected on a monthly basis for a three-year period.

Packages to collect soil and dust samples from homes will be sent to consenting parents/guardians.

An extract of anonymised data held by the Victorian Perinatal Data Collection, for all births in Victoria between 2000 - 2015, will be received late in 2016, as well as identified data for consenting study participants. Linkage of datasets identified as part of *The Latrobe ELF anonymised state-wide data linkage study* will be carried out in 2018.

Cardiovascular and respiratory clinical data collection will commence in the first half of 2017. Measures of pulse wave velocity, aortic and carotid intima-media thickness, abdominal aorta intima-media thickness and carotid IMT will be carried out on all participants with relevant consent. Forced oscillation technique (FOT) will also be performed on this group to measure respiratory resistance and reactance.

## 7.2 Psychological Impacts

### 7.2.1 Aims and Objectives of the Psychological Impacts stream:

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 commenced 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.

#### 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 adults and school-aged children regarding the fire and the ensuing circumstances.

The psychological component within the Adult Survey includes 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 primary focus for the reporting period has been completion of the first year of data collection for the Schools Study component which examines the impacts of the smoke event on school-aged children. 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 completed a survey, along with their parents and teachers. A random sample of participating children, drawn primarily from Morwell, have also completed qualitative interviews. In addition to psychological impacts, the Schools Study is also examining educational and wellbeing outcomes and making use of existing data such as National Assessment Program – Literacy and Numeracy (NAPLAN) results and school attendance.

### 7.2.2 Year 2 update on the Psychological Impacts stream:

#### Developments since the 1<sup>st</sup> Annual Report

The majority of work in the psychology area has focused upon the Schools Study, with the following developments:

- the first round of student, parent and teacher survey data collection is now complete;

- qualitative interviews have been completed with 69 students, drawn primarily from Morwell, to maximise understanding of the impacts of the smoke event on more highly exposed children. All interviews have been transcribed and initial thematic analysis is underway;
- a meeting with Hazelwood Health Study Project Management team members and the study biostatistician Lahn Straney took place in May to discuss the Schools Study recruitment rates, analysis plan and future data collection plans, followed by the development of an analysis plan which has been approved by the Project Steering Committee;
- the student survey data have been compiled and cleaned and exploratory data analysis has commenced on the primary measure - the Children's Revised Impact of Event Scale (CRIES). More work needs to be done before any clear findings can be drawn;
- a briefing document based on the above discussions and an extensive review of the literature was provided to the DHHS as background to a discussion at the Contract Committee meeting on 24 May;
- mixed methods analyses have been undertaken, analysing the transcripts of the subsample of students who participated in the interviews and those who scored higher on the CRIES measure, providing corroborating evidence that the CRIES measure is able to detect psychological impacts of the Hazelwood mine fire event;
- discussions have taken place with members of the CRG, Prof Sandy McFarlane from the SRG, and local DHHS personnel regarding the interpretation of the preliminary findings;
- further work has been completed asking schools to provide feedback on the Schools Study process to date. This includes any feedback the schools may have received from parents, contacted during the recruitment phase, regarding barriers to participation. This will inform the next stage of data collection in 2017;
- four Postgraduate Diploma in Professional Psychology students have been working with the School Study team to complete the research components of their diplomas;
- the students conducted interviews with staff at a Morwell specialist school as part of a pilot study focused on school personnel. Students undertook qualitative analysis of this data along with other child data as part of their research reports. The methodology used with this school will be rolled out to at least two other Morwell schools next year;
- an agreement has been finalised between the Victorian Curriculum and Assessment Authority and Monash in regard to access to NAPLAN data for consenting students. The NAPLAN data set for those children has been received.
- the data on other educational outcomes including school reporting, attendance, and wellbeing outcomes has been requested from the Victorian Department of Education and Training;
- a discussion has taken place with HHS Data Manager Anthony Del Monaco and others regarding the data management needs of the study, including ways to manage the student, parent, and teacher data sets and track participants across rounds in order to simplify the recruitment process;

- discussions are underway regarding plans for the next round of data collection in 2017, including the possibility of approaching parents of students from the 2015 year 5 cohort to confirm their consent to participate again in 2017, as the transition from primary to secondary schools in the Latrobe Valley is complicated.

## Recruitment

A total of 323 student surveys have been completed by students from 20 schools across the Valley. The overall participation rate was 15.1% with 25% of Morwell children responding and 12% of those from outside Morwell. While the overall response rate was below the lower estimate of 20% suggested in the study protocol, it should be noted that recruitment rates within Morwell schools and within the earlier school years was within the expected range. It was challenging to recruit students outside Morwell and the older students, particularly those in year 9. If secondary students were excluded the response rate rose to 22.2% overall and to 31.3% within and 17% outside Morwell. It is notable that the total participation rate was consistent with other research on children following a major event. The full complement of 69 interviews were completed, providing rich and extensive qualitative data and a large enough cohort to follow over time.

The pilot study targeting school personnel aimed to recruit eight personnel from across the school (representing half the staffing complement). This target was reached.

## Findings

The initial findings from the qualitative analyses of 69 interviews suggest that the event induced anxiety and worry along with multiple coping responses and factors that appeared to contribute to or evoke resilience in children. From a family perspective, parents and children indicated that they were worried about each other. Some parents decided not to talk to their children, possibly to keep their children from worrying. Parents demonstrated their concern by keeping their children from attending school, ensuring that they remained inside, instructing their children to wear masks, and distracting them with games. It is unclear if this increased the anxiety of children, however some children indicated that engaging in family activities actually improved family relationships. For some children the event led them to have more responsibility in the family.

Children talked about the impact of the event on the health of their parents and family, which for some impacted their school attendance and eventual relocation to another school. Other children commented that it was difficult to care for each other during the event for logistical reasons, and that family relationships suffered because of increasing frustration and worry about the event, as well as poorer sleep and fatigue. Some children reported that their parents were still worried about the impact of the event, while others noted no changes to family life during or after the event.

Notably, the interviews with children also highlighted the physical impact of the event on children and other family members. Regularly children suggested that they or others experienced trouble breathing and health concerns such as asthma as a result of the smoke. Some children spoke about the impact that the smoke and school relocation had on their education and engagement in school activities during the event. Children also reported on the psychological impacts of the event, including trouble concentrating and sleeping, and intrusive thoughts and dreams about the event.

Finally, the child interviewees also indicated that, as they gained greater knowledge and understanding of the event and their circumstances, this helped to alleviate fears. Relationships with family and friends also provided support. Some children also used personal coping strategies (i.e. positive self-talk, engagement in activities) to manage their circumstances and feelings.

The findings from the qualitative analyses of the staff interviews completed by one of the PG Dip students indicated that the close proximity of the specialist school to the mine fire meant that staff and students were inundated with plumes of smoke and ash which impacted on teachers' capacity to teach, breathe and engage with students, as well as resulting in additional duties and logistical considerations. For example, staff spoke about the impact that the relocation had on the students and staff, including loss of access to books and worksheets, reduced internet access, added transportation, unpacking, repacking and cleaning duties, and loss of workshop facilities. Staff also spoke about the reduction in teaching time and increase in student absences due to the relocation, as well as the increase in student work refusal and disruptive behaviour due to disruption of their schooling.

In terms of quantitative data, a preliminary analysis of the study's primary measure, the Childhood Revised Impact of Events Scale (CRIES) scale has recently been undertaken. The CRIES was employed to answer the following research question:

*Is there evidence that people in general and susceptible sub-populations in particular (including children) who were exposed to emissions from the Hazelwood fire, compared with otherwise similar people who were not exposed to emissions from the fire, have a higher prevalence and persistence of psychological distress?*

Table 2 shows a comparison of CRIES scores for Morwell and Non-Morwell children<sup>1</sup> according to year level on the total and three subscales of the CRIES scale. Over all, the children scored at a moderate level on the trauma measure.

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<sup>1</sup> At the time of writing, data were not available from other data sources (e.g. NAPLAN scores).

**Table 2: Comparison of CRIES scores for Morwell and Non-Morwell children.**

Description of Event	Sample		Total Mean (SD)	Intrusion Mean (SD)	Avoidance Mean (SD)	Arousal Mean (SD)
Compares 126 students in Morwell with 197 students outside Morwell in terms of the impact of the Hazelwood smoke event.	Morwell	Year 3 (n=58)	2.12 (1.28)	2.03 (1.50)	2.41 (1.68)	1.95 (1.37)
		Year 5 (n=47)	1.70 (1.27)	1.58 (1.48)	2.11 (1.68)	1.47 (1.42)
		Year 7 (n=16)	0.79 (0.69)	0.61 (0.66)	0.70 (1.08)	1.05 (1.22)
		Year 9 (n=5)	1.25 (1.07)	1.00 (1.36)	0.45 (0.41)	2.08 (1.55)
		<b>Total (n=126)</b>	<b>1.76 (0.11)</b>	<b>1.64 (0.13)</b>	<b>2.00 (0.15)</b>	<b>1.66 (0.12)</b>
	Non-Morwell	Year 3 (n=55)	1.96 (1.18)	1.93 (1.45)	2.60 (1.53)	1.45 (1.28)
		Year 5 (n=43)	1.21 (1.08)	1.01 (1.25)	1.29 (1.44)	1.26 (1.18)
		Year 7 (n=68)	0.80 (0.93)	0.71 (1.06)	0.80 (1.16)	0.94 (1.11)
		Year 9 (n=31)	0.66 (0.95)	0.57 (1.09)	0.56 (1.15)	0.84 (1.03)
		<b>Total (n=197)</b>	<b>1.20 (0.08)</b>	<b>1.10 (0.10)</b>	<b>1.39 (0.11)</b>	<b>1.13 (0.09)</b>
	CRIES scaling: Not at all = 0, Rarely = 1, Sometimes = 3, Often = 5					

The analysis also shows that Morwell students scored significantly higher than Non-Morwell children on the total CRIES ( $t=4.1$ ,  $p < 0.05$ ), as well as significantly higher on the intrusion, avoidance and arousal subscales<sup>2</sup>. Further analyses revealed a strong age effect with younger students scoring more highly than their older counterparts. With one anomaly (a small sample from Year 9 in Morwell), the older the children - the lower the CRIES score. For example, Year 3 children in both regions scored mid-way between *rarely* and *sometimes* on impact of event items whereas Year 7 students scored less than rarely (i.e. between 0 and 1). When age was included in the analysis with location (Morwell vs non-Morwell) the impact of location was no longer significant for the *intrusion* and *avoidance* subscales or for the total score, but remained significant for the *arousal* subscale ( $t=2.45$ ,  $p < 0.05$ ).

The scores for Morwell are comparable to other studies that have used the CRIES or other comparable impact of event measures, such as Pfefferbaum et al. (2000)<sup>3</sup>. The latter study assessed students two years after a non-lethal event (students living 100 miles from the Oklahoma bombing) and found that they had IES-R scores between 1.76 and 1.84 (depending on gender).

In consultation with the CRG and CAC we are in the process of creating a Fact Sheet, to describe these preliminary findings, which will be disseminated to participating families, schools, school nurses, General

<sup>2</sup> t statistics not shown

<sup>3</sup> Betty Pfefferbaum, Carol S. North, Debby E. Doughty, Rose L. Pfefferbaum, Cedric E. Dumont, Robert S. Pynoos, Robin H. Gurwitsch & David Ndeti (2006) Trauma, Grief and Depression in Nairobi Children After the 1998 Bombing of the American Embassy, *Death Studies*, 30:6, 561-577, doi: 10.1080/07481180600742566

Practitioners and the wider Latrobe Valley community. The CRG are also assisting to identify a Clinical Pathway for any higher scoring children.

## **Dissemination plan including presentations and publications**

The analysis of the first round of data has recently commenced and the team has not had the opportunity to present any findings. There is work still to be completed before such presentations can take place including integration of data from other sources (e.g. NAPLAN). Discussions have also taken place with CRG and SRG members and DHHS personnel regarding the interpretation of the study data and these discussions will continue as the analysis progresses. A dissemination plan will be developed in consultation with the PSC, CAC and CRG.

The four Postgraduate Diploma of Professional Psychology students have presented on their respective research proposals at a student research forum earlier in the year. All four were assessed by a review panel and their proposals were accepted without need for major changes. The panel remarked on the quality of the presentations and the importance of the project.

## **Community Engagement:**

The team has had an ongoing focus on building research capacity in the Latrobe Valley by providing opportunities for research students to engage with the study. This includes:

- Four Monash University students, participating in the Monash Summer Scholarships scheme, worked with the study for a three week period. In addition, a Masters of Social Work student completed a longer research placement with the study. They were given training in qualitative interviewing and completed the bulk of the interviews required for the first year of data collection as well as participating in other administrative tasks.
- Four Graduate Diploma in Professional Psychology students commenced working on the study in 2016 with each working on a discrete area of research to be written up as part of their course requirements. All four completed qualitative interview training and two have now completed their individual research report and literature review. All four also presented on their research plans as part of a two day student research forum at the Monash Clayton campus.

## **Analysis Plan:**

The Schools Study stream met with HHS Project Management members and the study biostatistician Lahn Straney on 2 May to discuss the study recruitment rates, analysis plan and future data collection plans. It was agreed that cross-sectional analysis will be able to be completed on the current cohort of students, but that additional students will need to be recruited to enable longitudinal comparisons.



Initial analyses have commenced on the primary study measure, the CRIES, however more work is required before any firm conclusions can be drawn. This includes comparing the sample of participants with the rest of their school year in terms of key demographics (age, sex), as well as existing learning and wellbeing measures to assess whether there is any sample bias and, if so, compensate for it in the analyses.

The assessment of sample bias will be done by comparing students in the participant cohort with their school grade peers in terms of existing data collected prior to the Hazelwood event including NAPLAN, Strengths and Difficulties Questionnaire results collected at entry to the schooling system, attendance records, and school assessment grades. Once this is done, we can conduct a number of analyses including:

- comparing relocated schools with those which did not relocate;
- looking at the relationship between the CRIES and the other outcome measures such as the Strengths and Difficulties Questionnaire, and the influence of mediating factors such as family functioning and attitude to school;
- looking at the impact of the smoke exposure on learning outcomes, as assessed through existing educational data including NAPLAN data.

In addition to completing the first round of quantitative data analysis, we intend to complete the thematic analysis of the qualitative interviews, building on the work done by PG Dip students. Combining the quantitative and qualitative components of the study will provide a much more nuanced understanding of the impacts of the event.

## **Variation from Project Plan**

The collection of survey and qualitative data was conducted in line with the project plan, with the exception that we involved students through the Monash Summer Scholarship and PG Dip programs to assist us with data collection and, in the first instance, administration. Their involvement has added greatly to the study and provided a source of significant capacity building because the majority came from the local region.

Because of the lower than expected response rate to the Schools Study student survey, considerable work is being done to assess sample bias. Once this assessment has been completed, we will be able to determine what analyses can be completed with the existing cohort and if, and how, it should be supplemented.

The targeted mixed methods case studies completed with students scoring higher on the CRIES measure who also had completed an interview was not part of our initial analysis plan but is in line with the mixed methods approach and provided a very informative way of understanding the responses to the

scale measure. The CRG and SRG members found that combining the data in this way made it easier to interpret the data.

The pilot qualitative study targeting personnel in one of the Morwell schools was not in the original plan, but came about because of feedback from school personnel that they made considerable efforts to support students during the event. The pilot study yielded very interesting results so we are keen to extend this in 2017.

### **7.2.3 Future plans for the Psychological Impacts stream**

The data analysis will continue, with support from Lahn Straney and the PSC.

Discussions have also taken place regarding ways to improve recruitment so that we can supplement the participant cohort in the next round of data collection. This includes the use of a reimbursement voucher in line with the Adult Survey. This will be piloted in 2017 with the next round of data collection. This will include a second round of surveys and interviews for existing participants, providing an important opportunity to see if the impact of the event has changed in the intervening two years.

A mixed methods study targeting school personnel in at least two other schools in Morwell will be completed in 2017, including collection of details on the programs that were put in place in response to the fire event, school attendance, enrolments etc. coupled with qualitative interviews with key school personnel.

In the first instance, we conducted interviews with staff from a Morwell specialist school who support students who have become disengaged from the mainstream schooling system. This school was among those relocated during the smoke event so faced considerable challenges. Given the unique nature of this school, there was the potential to learn much that could benefit mainstream schools. This work was completed in 2016 and involved the four PG Dip students, one of whom took responsibility for writing up the study for his research report. This student, along with one other PG Dip student from 2016, has agreed to continue working on the project and refine their analyses of the data in early 2017.

By starting with a single school, we were able to pilot the approach, recruitment and interview procedures which will inform the proposed rollout of the interviews to other mainstream schools in Morwell. More importantly, we can assess the quality of the information gained and determine whether there is sufficient need to include other schools in 2017. While the plan for this next stage is not yet finalised, at this point we are keen to focus on the two mainstream schools which were relocated during the event. The aim would be to complete the interviews in these two schools later next year after the second round of data collection with students is completed.

Finally, the Schools Study team is looking at undertaking a de-identified data extract of educational outcome data for a broad geographical area similar to the health data extracts planned for the Adult and ELF streams. This would include NAPLAN and other school-related data, such as results from the School Entrant Health Questionnaire, attendance records, sociodemographic details etc. This would enable us to compare data from the years leading up to the smoke event and the years following, without the need for individual consent. This would also allow us to compare the schools more impacted by the fire with those further away, as well as comparisons within Morwell (including those schools which were and were not relocated). These analyses could be repeated in later years to look at changes over time.

While the focus is currently on the Schools Study, the Adult Survey is expected to be completed by early 2017. The team will work with the rest of the Adult Survey Working Group to monitor recruitment rates and conduct preliminary analyses on the key psychological variables, including the Impact of Event Scale - Revised (the adult version of the CRIES scale used in the Schools Study), the Kessler Distress Scale, previous trauma and mental health history, and alcohol use. A sub-cohort will then be drawn from the Adult Survey cohort for further assessment via surveys and interviews.

## 7.3 Policy Review of the Impact on Older People

### 7.3.1 Aims and Objectives of the Impact on Older People 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.

### 7.3.2 Updates on the Impact on Older People stream:

#### Developments since the 1<sup>st</sup> Annual Report

- As noted in the 1<sup>st</sup> Annual report, the older people stream was finding it difficult to attract participants to open community-based sessions at times and locations determined by the researchers with a total of 14 people attending the sessions made available in two different community locations.
- As a result, the decision was made to recruit via existing community groups by asking them to host focus group discussions at their regular meetings and venues. An ethics committee amendment to change the recruitment approach was submitted to and approved by MUHREC in January 2016.
- This approach has proven to be very successful with five group sessions completed in 2016 yielding a further 63 participants from different facets of the Morwell community. In addition, we completed one on one interviews with 6 older people in a residential aged care facility, and a focus group discussion with eight older volunteers from a community service group. This provided a suitably large and diverse group of 91 participants in total and, as no further information was forthcoming in the latter sessions, the community-based discussions were brought to a close.
- These sessions were transcribed and thematically analysed to inform the second phase of the research.
- This included conducting interviews with 15 key stakeholders (eight service provider organisations and seven decision makers at the local and state levels).
- We are confident that we have included a suitably large and diverse sample and that no further information was emerging and stakeholder interviews were brought to a close in May 2016.
- Transcriptions and a rigorous systematic thematic analysis have been completed. A review of relevant literature and policy documentation has also been completed to complement the information received through the focus groups and interviews.
- The numbers of participants recruited exceeded expectations and the quantity and quality of the data are far greater than anticipated. In order to do justice to the Ageing Population Policy Review it was agreed that the stream researchers would submit an extensive interim report to

meet the August milestone requirements. That detailed working paper was submitted on 15 August 2016.

- A workshop with key informants, primarily community members and local service providers, was undertaken in September 2016 to inform the final report.

The final report will be submitted to the DHHS in late November 2016, prior to being released publically, along with a policy brief. Academic publications will follow.

## **Recruitment**

As noted above, recruitment through public announcements of sessions being run at key local venues proved to be challenging and we needed to modify our approach to target existing groups at their existing meetings and venues. Once this change was made we had no difficulty reaching the target number of groups. In fact, we ended up speaking with more people than originally planned providing a much richer dataset. We made considerable efforts to speak to a variety of groups, including both healthy older people and those with more significant health needs.

The original plan had been to recruit families and carers of older people but this proved to be extremely challenging as there is no way to target this group. As a result, we abandoned this component of the work. Similarly, we had planned to conduct a focus group with Home and Community Care (HACC) service recipients as we were aware that they had received considerable support during the mine fire event, however, efforts to recruit from this cohort were unsuccessful – which is likely a reflection of the less mobile nature of this group of people making it hard for them to attend meetings. While we were unable to recruit family members and HACC recipients, we are very confident that the large and diverse group of older people gave us a strong understanding of the impacts of the Hazelwood event on older people.

## **Findings**

The findings from the older people stream will not be finalised until end November 2016, however, we are able to provide some of the key themes extracted from the research to date.

- The experience of event was diverse, with some older people reporting a wide array of symptoms at the time and since the event and others reporting little impact. What was clear was that those already receiving health and social services were better supported during the event.
- The event was seen as being unique by almost all participants, and beyond the scope of existing policies, which is at odds with the fact that the region and the mines are prone to fire events.
- There was evidence that policy decisions had to be developed on the run and that this presented challenges to policy makers and service providers and created confusion for the community, particularly for older people.

- Failures of communication emerged as the key issue, including the challenges of engaging with a diverse community, how to target at risk groups without labelling older people as vulnerable, and how to provide concrete “doable” advice for people with diverse needs and capacities.

## **Dissemination plan including presentations/publications**

The focus has been on completing the community focus groups and stakeholder interviews so there has been little opportunity to present on the stream’s activities. However, we presented an overview of the study at the International Federation on Ageing conference in Brisbane in June 2016. Once the final report is completed a dissemination plan will be developed in line with the Guidelines. The findings will be disseminated to community, stakeholder and academic audiences. Relevant publications will be identified and manuscripts prepared.

## **Community Engagement**

The qualitative research methodology used is built on a community engagement approach, with the focus groups targeting key community groups and the interviews targeting key community stakeholders. This required considerable interaction with individuals and groups to explain the study aims and invite them or their group to participate. Feedback from participants has indicated that they valued the opportunity to talk about their experiences during the mine fire event.

## **Analysis Plan**

The qualitative data from the community focus groups have been transcribed and imported into the NVivo qualitative analysis package. An initial thematic analysis of the text was undertaken to identify recurring themes which informed the final question schedules for the interviews with key stakeholder organisations. A systematic thematic analysis of the focus groups and interviews has now been completed. A review of the research and policy literature informed the interpretation of the findings which are being verified and extended through further discussion with key community and organisational contacts.

## **Variation from Project Plan**

As noted above, we modified the recruitment strategy to target older people in existing groups. This variation enabled us to recruit a large and diverse group of participants. In addition, we were unable to recruit family members and HACC service recipients, but we are confident that the broad-based strategy provided us with a representative sample to draw from.

The other change to the project plan was the timing, with the initial plan being to complete the stream activities by August 2016. Our revised recruitment strategy was so successful that we ended up running more sessions with more participants than originally planned. Similarly, we were able to interview more stakeholders than planned. This meant that we had a much larger qualitative data set to analyse, taking considerably more time to complete. In addition, the research stream lead has had significant health issues which have delayed the final stages of the work. The work will be completed by the end of November 2016.

### **7.3.3 Future plans for the Impact on Older People stream**

Unlike the other HHS streams, this component has a short time frame because the focus is on the experiences at the time of the event and a review of the policy decisions made, with a view to influencing future policy and practice.

There will be ongoing research on the impacts of the smoke event on older people through the Adult Survey and Psychological Impacts streams, both of which will include analyses targeting older people. In addition, the work of the Community Wellbeing stream may look at topics of relevance to older people. It is expected that research proposals will be developed building on the stream findings, with funding to be sought via multiple sources including competitive grant schemes and government consultancies. The first such proposal for seed funding for a disaster communication program of work has already been developed in collaboration with the Community Wellbeing stream and colleagues from the Monash Faculty of Arts (detailed under 7.4 Community Wellbeing below).

## 7.4 Impact on Community Wellbeing

### 7.4.1 Aims and Objectives of the Community Wellbeing stream:

The first part of this stream's focus (Year 1, 2015) provides 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:

1. In the community-engaged component, we are conducting focus group discussions and individual interviews.
2. 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.

The second part of the stream's focus (Year 2, 2016) engages with community groups in participatory action research, focusing on strengthening identified aspects of community wellbeing, as described below, under *Developments since the 1<sup>st</sup> Annual Report*.

### 7.4.2 Year 2 update on the Community Wellbeing stream:

#### Staff Appointments

Associate Professor Penny Cash (Faculty of Health, Federation University) joined the stream in early 2016. However, due to a difficult workload, Penny Cash discontinued her work on the project in September. Ainsley James, a lecturer in nursing in the Faculty of Health at FedUni Gippsland has joined the team. She is specifically working on the participatory action research component of the Community Wellbeing Stream's project. The team, led by Dr Michelle Duffy, now comprises Dr Sue Yell, Ms Ainsley James and Dr Belinda Morrissey from Federation University Australia, and Prof Judi Walker, Prof Darryl Maybery and Dr Matthew Carroll from the Monash School of Rural Health.

In 2015 Dr Sue Whyte was appointed as the Research Assistant for the community-engaged research aspect of the study, and Dr Larissa Walker was appointed to contribute to the media analysis component



of the study. Dr Haydie Gooder was appointed in 2016 for 6 months to continue the media analysis work while Larissa was on maternity leave (Larissa returned from maternity leave in October 2016).

## **Developments since the 1<sup>st</sup> Annual Report**

This year, we commenced work with community organisations and their members, for example, the Morwell Neighbourhood House, on a project to foster community recovery and wellbeing. This component of the project investigates what people like about living in Morwell, what needs to change and their hopes for the future of the Morwell community and town. The exact nature of the project has been developed through partnership between the community participants and the researchers. It is expected that this community-engaged research process will support community groups in their development of strategies to strengthen community resilience.

Human Research Ethics approval has been granted for this research, and we commenced working with community members in late July 2016. The participatory action research projects are progressing but these take a significant amount of time to develop the relationships of trust between the groups and the research team, as well as ensuring that the projects do reflect the concerns and direction the communities wish to take. After working intensely with Morwell Neighbourhood House, as well as the Morwell Rose Garden Group, we have refined the focus by asking participating communities to reflect upon what membership of that community means to the individual, and how this membership may (or may not) be important during events like the Hazelwood Mine fire. This focus has resonated strongly with our participating communities. Michelle, Sue Whyte and new team member Ainsley James, plan to undertake participatory action research with between 10-12 community groups in Morwell in the next 7-8 months. We are particularly interested in working with youth communities, as this is a cohort that has been difficult to access for the overall project.

Sue Whyte has conducted eight interviews with 11 community stakeholders about recovery activities, which is in addition to the 12 interviews with 14 community stakeholders conducted in 2015. The media analysis component of the study is progressing. We are currently exploring ideas about trust and authority. The team has conducted interviews with media and social media practitioners to address the use and effectiveness of media and social media coverage during and after the smoke event. We are creating a database to enable systematic mapping of data from print and social media and online news sources to track key issues and their chronology.

Michelle Duffy, Sue Yell, Matthew Carroll and Judi Walker submitted a Monash MedArts research grant application with Dr Deb Anderson and Dr Aneta Podkalicka (both located in the School of Media, Film and Journalism), with a focus on emergencies and communication. Unfortunately the application was not successful.

In progress:

- Analysis of the relationship between social media activity, mainstream media news reports, and emergency organisations' information releases, to determine the accuracy and direction of information flows regarding the mine fire.
- More detailed analysis of categories of information source linked to by social media users during the Hazelwood mine fire, to determine the levels of trust and authoritativeness of official, mainstream and alternative sources.
- Tracking of themes of trust /mistrust through the social media, to determine how trust is bestowed, and whether trust is increased or decreased in particular groups within the social media space during a crisis.

## Recruitment

As noted above, the participatory action research projects are progressing, but these can take a significant amount of time to develop the relationships of trust between the groups and the research team, as well as ensuring that the projects do reflect the concerns and direction the communities wish to take. With Ainsley joining the research team, we aim to work with 10-12 community groups over the next 7-8 months.

## Findings

Our study is about people's perceptions of recovery from the mine fire and perceptions of community wellbeing at points in the recovery process. It is not an evaluation of the recovery process, but a presentation of people's *perceptions*. It is also about how some of those perceptions, whether positive or negative, can impact or influence the recovery process and people's satisfaction with the process. Recovery is an ongoing and evolving process and our study gauges people's perceptions at particular moments in that process.

Our initial interviews and focus groups were conducted in 2015. In these interviews and focus groups, we wanted to explore people's perceptions of the effectiveness of community rebuilding or recovery activities based on their involvement in recovery activities. We also wanted to explore people's perceptions of the impact of the smoke event on community wellbeing. At this time, when people in the community were asked about recovery events and initiatives a common their responses indicated a lack of awareness about such activities. This was not necessarily the case but the perception was that little had happened. To examine why community members gave this response, the focus of the interviews was broadened so individuals could talk more generally about community recovery and what this may mean. For example, what they perceived had happened in terms of recovery; their sense of how the

community was travelling; and what they thought still needed to happen. Given the perception that no recovery activities had taken place, we approached representatives of community organisations that had run such events, were involved in the recovery more generally, or who could represent the views of different sectors of the community.

The analysis and findings from these interviews and focus groups represent perceptions at a particular stage or moment in the recovery process – and it should be noted these interviews were conducted prior to a number of actions and responses arising out of the Hazelwood Mine Fire, i.e. prior to:

- the release of the Second Hazelwood Mine Fire Inquiry and the government's response;
- Worksafe's and the EPA's decisions to fine and/or prosecute the owners of the mine (GDF Suez – now Engie);
- the establishment of the Health Innovation Zone.

The story of recovery from the mine fire event is multi-faceted and complex, and it is not unexpected that there are multiple and different perceptions and processes of recovery within a community as diverse as Morwell. Hence there is no one version of recovery for the Morwell community.

The interviews and focus groups present a perception in the broad community that not much has happened in terms of recovery and that generally their concerns and issues have not been adequately addressed. There was also the perception that there has been a lack of community engagement and that the recovery process has not been a community-engaged or community-led process. Other important themes identified from analysis of the interviews and focus groups include:

- the impact of the event on community trust in government, agencies and authorities and wanting accountability (and this corresponds to our media analysis findings);
- the impact of ongoing economic and social disadvantage on both the impacts of the event and recovery from the event and the need for a long-term intervention;
- wanting a plan or vision for the future of Morwell and the Latrobe Valley, particularly in relation to the need to transition from a reliance on the coal industry; and
- a sense the emergency planning was inadequate, was and is not community-engaged and needs to be based on capacity building.

Understanding and accepting that these interviews and focus groups were conducted prior to some significant recovery milestones, supplementary interviews have been conducted that have targeted particular recovery initiatives and the work of several community organisations and government bodies, these include: the Morwell neighbourhood House, Voices of the Valley, EPA and VicHealth. What has

emerged from these interviews (and ongoing conversations with community members) is that recovery is no longer only framed in relation to the mine fire event, but is talked about as also needing to address the ongoing impacts of the privatisation of the power industry in the late 1980s and early 1990s. There is a need to have a plan for the future of Morwell and the Latrobe Valley as it transitions away for reliance on the coal industry.

During the course of interviews conducted this year as part of our participatory action research, one community group in particular, the Morwell Neighbourhood House, clearly has been important to helping with community recovery. In particular, there is a sense that the Neighbourhood House has the capacity to help build capacity in community resilience. This example of resilience and leadership from within Morwell's communities is an important aspect as to how well individuals and communities respond during and after complex emergencies.

Initial findings on the uses of social media during the Hazelwood mine fire have found that there are significant issues around which organisations and information sources are trusted, and how authority is recognised, by community-initiated social media (Facebook). Social media sites can have positive and negative impacts on a community's relations with one another and with the authorities responding to the crisis. During a crisis, social media occupy an important space in communities as they fill the gap between face-to-face communication and mass media. Social media are viewed as a space where community members can post their own accounts of what is occurring, in the form of local knowledge and eyewitness accounts. This role becomes particularly important when official sources of information are perceived as inadequate. Hence social media can become a space of conflict – and in the case of the Hazelwood mine fire, this was often exacerbated when apparently conflicting messages were posted or information was misinterpreted. This confusion, as well as what was interpreted as silence from authorities on important matters, fuelled suspicion and lack of trust due to questioning of the accuracy of information provided through official channels. Rather than relying predominantly on the mainstream local and national media, or on government authorities involved directly in the management of the emergency, social media users turned to a wide range of online sources. Yet many of these information sources, like the eyewitness accounts of community members provided via social media, are not subject to the forms of gatekeeping which exist in professional mainstream media and can therefore be inaccurate, thus confounding an already confusing information space.

Social media can fulfil a 'watchdog' function, holding government, private companies, and other organisations to account, for example on matters of public safety. Community groups can form and organise themselves using social media, and take on an advocacy role on behalf of the community. They can also assist with rebuilding efforts by promoting positive initiatives and providing a space for considering 'the way forward'. However, disagreements can occur over who can speak for the community, and whose experiences are 'real', 'true' and representative. During and after the Hazelwood

mine fire, some community members questioned whether those voices emerging strongly via social media could speak for the community. The mainstream media play an important role as gatekeepers who determine who is an 'authorised' spokesperson for the community, but this assessment is not necessarily shared by the wider community.

As with any set of social processes, the formation of an online community is not without its challenges. Our analysis of the use of social media during the Hazelwood smoke event exposed divisions between members of the broader Latrobe Valley community. Conflict occurred over who was genuinely affected by the event, and disagreement arose over whether or not it was legitimate to complain and criticise the emergency response by authorities. Social media exacerbated these divisions, but didn't create them.

Our initial findings suggest that social media play a complex role during a crisis such as the Hazelwood mine fire. Positive impacts depend on the development of a relation of trust within the group participating in the social media site, and with the wider community; provision of accurate, trustworthy information (or links to sources which provide this); follow-up action which gains results; and offline relationships and partnership building among key participants. The interviews also made it clear that social media cannot replace face-to-face communication – and this is necessary for rebuilding the fabric of a community. Both the disaster communications literature and our interviewees for this study stress the importance of multiple communication mediums and channels to communicate accurate and timely information during a crisis.

## **Dissemination plan, including presentations and publications**

Dr Susan Yell has prepared a presentation co-written with Dr Michelle Duffy, 'Communities, authority and trust in the Fifth Estate: Social media use during the Hazelwood coalmine fire'. This was delivered at the 2016 Australia and New Zealand Communication Association Conference on *Creating Space in the Fifth Estate*, Newcastle, 6-8 July.

Sue and Michelle are finalising a short video that summarises the key findings from the social media analysis. This will be placed on the HHS website after it has been sent to the Project Steering Committee for comment.

Drs Carroll and Duffy presented an overview of the project's goals and framework at the September 23 VURRN (The Victorian Universities Regional Research Network) meeting, held at Federation University, Gippsland on Friday 23 September.

Dr Duffy has met with the senior curator of the Latrobe Art Gallery and discussed the possibility of holding an exhibition of material arising from the participatory action research work. The Latrobe Art Gallery is very supportive of our project and can provide excellent support, including curatorial input.

Michelle has submitted an application to the Gallery for an exhibition, however given the scheduling plans of the Gallery, the earliest this exhibition might be held is December 2017. We are currently waiting for the gallery's response to this proposal.

The team has scheduled a planning day in January 2017 to discuss potential research publications and dissemination of findings.

### **Community Engagement:**

- In February, Dr Michelle Duffy, Dr Sue Whyte and Assoc Prof Penny Cash met with the Morwell Neighbourhood House and the Victorian Council of Social Service (VCOSS), to invite participation in the participatory action research to be conducted this year.
- Dr Susan Yell attended the Voices of the Valley community meeting at the Morwell Bowls Club along with Judi Walker, Matthew Carroll, Susan Denny and Jill Blackman on April 21. This meeting was held by Voices of the Valley so as to inform members of the public about the Report of the Hazelwood Mine Fire Inquiry 2015/2016, Volumes II and III (the Deaths and Health Improvements Reports).

### **Analysis Plan:**

#### **Stakeholder and focus group interviews:**

Thematic analysis is currently underway of the individual and focus group interview material that was collected in 2015. Our focus is to identify community views of the perceived impact of the fire, key elements for future community wellbeing, and the elements required in an optimal communication framework.

Similar analysis is planned for interviews conducted during the participatory action research outlined above.

#### **Media analysis:**

- A media analysis (including news and social media) to identify publicly expressed concerns about community wellbeing and perceptions of effective communication.
- Media archives of local newspapers and those with wider circulation, online news media and social media postings searched and material analysed to identify themes.
- Selection of relevant media was informed by CoRRC's 2014 study on the perceived initial impact of the fire on community wellbeing, which included media analysis of a limited range of news and social media within a limited time period.

### **7.4.3 Future plans for the Community Wellbeing stream**

We will continue with the analysis of the interview and media materials collected in Years 1 and 2.

We plan to hold an exhibition around the participatory action research them of *Living in Morwell* that will be developed in conjunction with Morwell communities.

A small number of interviews will be conducted in 2017, revisiting past participants to gauge whether community perceptions about the adequacy and degree of recovery have changed.

## 7.5 Adult Survey

### 7.5.1 Aims and Objectives of the Adult Survey stream:

The Adult Survey aims to:

1. cross-sectionally investigate the health status of an exposed versus comparison adult population;
2. compare the incidence rates of long term health outcomes by linking to administrative health datasets in exposed versus comparison 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.

### 7.5.2 Year 2 update on the Adult Survey stream:

As the largest, and most complex of the HHS streams, the Adult Survey has taken the longest to roll out. The main areas of development in the past year include the following:

#### **Establishing the list (nominal roll) of eligible adults**

At the time of the 1<sup>st</sup> Annual Report (November 2015), the Adult Survey was still awaiting permission from the Victorian Electoral Commission (VEC) to access the names and addresses of adults who were listed on the electoral roll as living in Morwell, or the targeted areas of Sale, at the time of the Hazelwood mine fire in February and March 2014. The VEC data was considered the best sampling frame from which to identify the names and contact addresses of eligible adults. The application to the VEC had been initially submitted by the Adult Survey team in July 2015.

In December 2015, the HHS Principal Investigators, Profs Michael Abramson and Judi Walker, and the Cancer research stream lead Prof Malcolm Sim met with the Victorian Electoral Commissioner, Warwick Gately AM, to discuss the Commission's concerns about providing access to the Victorian Electoral Roll. Further correspondence was then sent to the Commission to address additional questions. Subsequently, the Victorian Electoral Commissioner forwarded the Adult Survey application to the Privacy and Data Protection Commission.

The Privacy and Data Protection Commission's determination that the Adult Survey passed the public interest test was received in February 2016. This was followed by approval from the VEC subject to a number of conditions in regard to the privacy and confidentiality of the data, and organisational liability for breaches of the *Privacy Act 1988*. These conditions applied not only to Monash University, but also to the Hunter Research Foundation (HRF; who had been engaged to undertake the telephone- and online-interviewing for the Adult Survey), and any mailing house engaged to undertake the recruitment



mailouts. Several mailing houses were vetted by the researchers, before Melbourne Mailing Pty Ltd was identified as being able to meet the VEC's rigorous privacy and confidentiality requirements.

After substantial negotiations between the VEC, Monash University's Office of General Counsel, the HRF and Melbourne Mailing Pty Ltd, a formal Agreement was executed on 20 April 2016 and the relevant VEC data were released to the Adult Survey researchers on 22 April 2016.

The VEC's conditions included the requirement that all Monash University staff, who would handle the VEC data for the Adult Survey, would have completed the Ethics and Good Research Practice training course run by Monash University's SPHPM, within the last two years. Applicable Monash University staff attended this training course on 3 March 2016. Relevant HRF and Melbourne Mailing staff have also undertaken additional privacy training.

To assess the completeness of the VEC dataset, in terms of coverage of all potentially eligible households in Morwell and the targeted areas of Sale, comprehensive address data including land use description (i.e. residential, business, school, aged care facility etc) were obtained from Wellington Shire Council for Sale and from Latrobe City Council for Morwell. Geocoded National Address File (G-NAF) data were also obtained. These databases were merged to identify all residential household addresses within the town boundary of Morwell and within the selected areas of Sale.

## **Identified linkage to health databases**

Described in greater detail in section 7.6, the Adult Survey seeks participants' consent for the researchers to access their data recorded in a number of health databases. Because the Adult Survey's primary method of data collection was by over-the-phone interview, the researchers sought data custodian approval to obtain verbal consent from participants, as opposed to the more usual hard-copy written consent.

At the time of the 1<sup>st</sup> Annual Report, the Adult Survey had received approval for identified linkage to the Victorian Ambulance Clinical Integration System (VACIS) and the Victorian Ambulance Cardiac Arrest Registry (VACAR) held by Ambulance Victoria (AV).

Since the 1<sup>st</sup> Annual Report the Adult Survey has received approval to access the following datasets for identified linkage:

- Victorian Emergency Minimum Dataset (VAED) and the Victorian Admitted Episodes Dataset (VEMD) held by the Victorian Data Linkage Unit at DHHS.
- National Death Index (NDI) for mortality data and the Australian Cancer Database (ACD) for the national cancer incidence data held by the AIHW.

- Victorian Cancer Registry (VCR) for Victorian cancer incidence data held by the Victorian Cancer Registry.

Note: The verbal consent protocol has been approved by the above mentioned data custodians (AV, DHHS, AIHW, VCR).

An application for identified linkage to Medicare Benefits Schedule (MBS) and Pharmaceutical Benefits Scheme (PBS) was submitted to the Australian Government Department of Human Services (DHS) in December 2015. Substantial negotiation ensued with this data custodian. In February 2016, the DHS approved identified linkage to the MBS and PBS databases, however the DHS did not approve the verbal consent protocol. Instead, the DHS required that consent be obtained in writing with the use of a detailed hard-copy consent form.

The researchers evaluated the feasibility of adding hard-copy consent for MBS and PBS data to the Adult Survey protocol. This included an assessment of the additional administrative burden to researchers, the additional responder-burden on potential participants, and the likely response rate. The researchers determined that obtaining hard-copy written consent for identified MBS and PBS data was not feasible and therefore, this data linkage was removed from the Adult Survey protocol.

## **Pilot Studies**

Kristen Benke and Susan Denny conducted phase one of piloting in Moe on Monday 23<sup>rd</sup> November. The purpose of this was to assess participant feedback on the wording of the Adult Survey Explanatory Statement, Consent Statement and questionnaire. There were 17 participants (7 aged 25-64, 10 aged ≥ 65 years).

Phase 2 of piloting, facilitated by Kristen Benke, Susan Denny and a Summer School student Alice Mizrahi, involved testing the questionnaire when administered over the phone. Thirteen interviews (8 Morwell, 5 Sale) were conducted in December 2015.

## **Protocol development**

The efficacy of the recruitment methods, including wording of the invitation letters and Information Sheets, and data collection methods, including questionnaires, was evaluated based on feedback from the Pilot Studies, the SRG, CSIRO and the HRF.

Substantial refinement was made to all recruitment documents and questionnaire items to ensure their best fitness for purpose. This included simplifying the wording of invitation materials to maximise readability, and enhancing the questionnaire to focus on the most important research questions whilst also reducing participant burden.

An important addition to the Adult Survey protocol was the introduction of a \$20 voucher offered to participants as reimbursement for their time. With potentially thousands of participants involved, it was considered extremely important that these funds be kept within the local region. For this reason, the Latrobe City Gift Card, which could only be used at businesses in the Latrobe Valley, was identified as the most appropriate reimbursement for Morwell-based participants. Similarly, the Shop-In-Sale E-voucher, which could be used at businesses in Sale, was identified as the most appropriate reimbursement for Sale-based participants. This addition, of the voucher reimbursement, to the Adult Survey protocol was approved by the CAC and the PSC. A vendor in Morwell has agreed to be the distribution point for the Latrobe City Gift Cards, whereas the Shop-In-Sale E-vouchers are being distributed to participants by email.

Final updates to the Adult Survey protocol could not be made until the Agreement had been negotiated with the VEC and a decision had been received from the DHS about identified linkage to MBS and PBS data. Subsequently, the final updates to the Adult Survey protocol were submitted to, and approved by, MUHREC.

The invitation letters and Information Sheet for eligible Adult Survey participants, approved by MUHREC, are shown in Appendix 2.

## **Database development for recruitment and data collection**

With the Adult Survey protocol finally determined, development of the databases for recruitment and data collection could then commence.

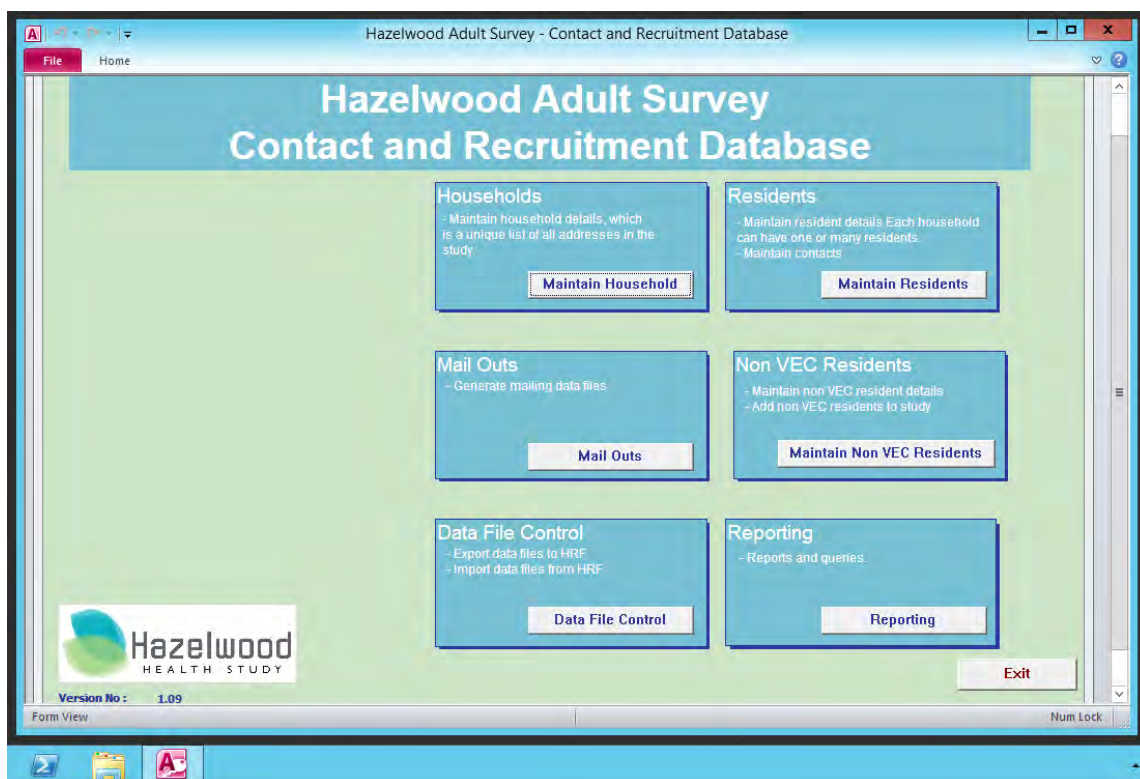
HRF commenced the programming of the CATI and CAWI which included incorporation of the verbal consent protocol for both the questionnaire and the identified data linkage, and programming for more than 800 variables collected within the questionnaire. Monash Adult Survey staff have been involved in considerable testing of the CATI and CAWI throughout their development. The HRF programming also identified those residents who have participated and were eligible to receive the Latrobe City, or Shop-In-Sale, reimbursement vouchers.

Upon receipt of the VEC data, HRF also commenced matching those data to databases which hold publicly listed telephone numbers. The purpose of this was so that HRF interviewers could use the phone numbers to attempt contact with eligible Adult Survey participants who did not pro-actively contact the study team to participate.

The Monash researchers have met with the Newcastle-based HRF team on two occasions, to run through all aspects of the recruitment and interviewing protocol and to assist with the training of the HRF interviewers for this project.

Anthony Del Monaco has commenced programming the detailed recruitment tracking database (see Figure 4). This system holds the contact details for the ~ 13,900 eligible Morwell and Sale residents identified by the VEC. The database's numerous functions include:

- tracking the status of each eligible resident's participant status; including identifying whether a resident has been mailed an invitation pack and reminders, whether a resident has participated or opted out, not responded, been identified as deceased, unavailable for participation or no longer at a given address;
- generating datasets of residents to be included in each of the six, monthly, mail-outs of invitation packs, 1<sup>st</sup> reminder postcards or final reminder packs – taking in to consideration those residents who have already participated, opted out or identified as no longer at a given address;
- facility to record all contacts made with residents about the Adult Survey, including incoming calls and emails to the research team, with “flags” to identify calls/emails pertaining to HHS eligibility, consent, death notifications, complaints, updates to address and/or phone details etc;
- facility to update address, phone and/or email addresses with a tracking function that ensures previous contact information remains stored;
- reporting functions that show recruitment rates by sub-group (e.g. Morwell versus Sale; CATI versus CAWI; residents with phone numbers versus residents without);
- facility to track participants eligible for the gift cards in Morwell or E-vouchers in Sale.



**Figure 4 Screenshot of Adult Survey Contact and Recruitment Database**

## Community Engagement and Marketing

Considerable effort has gone in to developing an effective marketing campaign with the dual aims of informing the Morwell and Sale communities of the launch of the Adult Survey, and maximising participation.

The marketing plan for the Adult Survey has been refined with input from Wordwise Communications. A key messages document has been developed for the Adult Survey, which is used as the basis for local media releases, radio advertisements etc. Revised media releases have been prepared for each month of the Adult Survey recruitment period. Media releases and associated print articles promoting the Adult Survey, for the period January – November 2016, are shown in Appendix 3.

A meeting of key communications personnel from local health and service agencies has also been held, to develop a partnership approach to promote the Adult Survey over the recruitment period; particular through the use of social media outlets.

Ms Susan Denny, the HHS Recruitment and Community Engagement Coordinator, has been working closely with Latrobe City and Wellington Shire Councils and the Reactivate Latrobe initiative to identify and attend community events where the HHS can be represented and the Adult Survey promoted. Examples include the monthly Morwell 50 Mile Farmers Market; see Figure 5, and the Morwell Pop-Up Park in April 2016; see Figure 6.



**Figure 5 Susan Denny at the Morwell 50 mile Farmers Market, June 2016.**





**Figure 6 HHS promotional stand at Morwell Pop-Up Park in April 2016**

Study team members were invited by Voices of the Valley to participate in a community discussion on 21 April, which included representatives from other key stakeholders and provided an opportunity to answer questions about the study, particularly the Adult Survey.

Numerous promotional materials have been developed throughout the year to ensure that the study has high visibility within the community. These include a flyer/fridge magnet which was delivered to eligible households in the week prior to their invitation packs being mailed. The flyers were location specific, featuring photos of key community supporters of the Study in Morwell and Sale; see Figure 8 and Figure 9 respectively.

An application to Vic Roads permits was granted to install large banners at five major entrances to Sale and Morwell. These promoted the HHS and reminded residents to complete the Adult Survey (Figure 7).



**Figure 7 Roadside banners installed at major entrances to Morwell and Sale**

Adult Survey A3 and A4 posters have been printed and delivered to local shop businesses, sporting venues, health organisations and educational organisations. Additional marketing materials which have been developed including study balloons, fleet vehicle signage, print media advertisements and associated event flyers (for example see Figure 10) notifying the community of upcoming events.

Two recruitment events were held in Mid Valley Shopping Centre, in September and October 2016, where residents were invited to meet the researchers and be assisted to complete the Adult Survey. Val Morgan advertising was used to promote the event on all large screens in the complex, maximising visual exposure. A local franchise was used to offer free tea/coffee and muffins to participants completing the survey.

An additional recruitment event was held at Tribes indoor play centre in Morwell in September 2016, where parents/grandparents/carers were invited to meet the researchers and be assisted to complete the Adult Survey, while their children played/ate for free.

To provide further support to community members wanting further information, or assistance to complete the Adult Survey, a study team member is attending the Sale and Morwell library every Tuesday. Residents attending will be assisted to complete the Adult Survey online or by paper survey.

A further recent initiative, to promote participation in the Adult Survey, has been the preparation of 'community packs' which have been placed in public venues such as libraries, council offices, medical clinics, sports clubs and community centres. These packs contain explanatory material, a paper questionnaire and a Reply Paid envelope. Promotional posters (for example, see Figure 11) have been produced to advertise the community packs in these venues





The Hazelwood Health Study  
is a large, independent  
study which is underway  
in Gippsland.

A major survey of adults  
has commenced and we  
are asking for your help.

Study supporters in Morwell



Top row from left: Shaun Mallia, Stuart Simmie, Laurie Marks.

Middle row from left: Susan Denny, Dr Matthew Carroll.

Front row from left: Dr Ian Webb, John Guy, Raymond Burgess,  
Prof Judi Walker, Tracie Lund, John Bellerby, Lisa Sinha.

To learn about why we are  
surveying Morwell adults,  
see overleaf.



In response to community concerns,  
the Hazelwood Health Study is investigating  
the long-term health effects of smoke  
from the Hazelwood mine fire  
in February and March 2014.

The Adult Survey component of the study  
is being led by Monash University  
and targets health concerns identified  
as important to the community.

Over the next few weeks, eligible adults in this area  
of Morwell will be mailed an invitation package  
asking them to participate in the Adult Survey.

In order to understand the severity and spread  
of any health impacts of the smoke it is essential  
that as many adults as possible complete  
the survey, whether they are young or old,  
well or unwell.

**For further information go to  
[www.hazelwoodhealthstudy.org.au](http://www.hazelwoodhealthstudy.org.au)**

**or free call 1800 985 899**

**or email**

**[recruitment@hazelwoodhealthstudy.org.au](mailto:recruitment@hazelwoodhealthstudy.org.au)**

**Figure 8 Adult Survey fridge magnet/flyer for Morwell residents**





The Hazelwood Health Study  
is a large, independent  
study which is underway  
in Gippsland.

A major survey of adults  
has commenced and we  
are asking for your help.

Study supporters in Sale



Back row from left: Dr Iain Nicolson, Prof Judi Walker, Marylyn Mathieson,  
Alda Dunlop, Ruth Churchill, Susan Denny.

Front row from left: Trevor Watt, Dr Matthew Carroll, Cr Darren McCubbin.

To learn about why we are  
surveying Sale adults,  
see overleaf.



The Hazelwood Health Study is investigating  
the long-term health effects of smoke from  
the Hazelwood mine fire in February and March 2014.

The Adult Survey component of the study  
is being led by Monash University and targets health  
concerns identified as important to the community.

In order to understand the severity and spread  
of any health impacts of the smoke, it is important  
to compare Morwell to another less exposed  
local community - with Sale being selected  
as the comparison community.

In addition to understanding the impacts of the fire,  
having two communities in Gippsland will provide  
valuable information on the health and health service  
usage of adults in both regions. This will inform future  
health planning in Gippsland.

Over the next few weeks, eligible adults in this area of  
Sale will be mailed an invitation package asking them  
to participate in the Adult Survey. It is essential that  
as many adults as possible complete the survey,  
whether they are young or old, well or unwell.

**For further information go to  
[www.hazelwoodhealthstudy.org.au](http://www.hazelwoodhealthstudy.org.au)  
or free call 1800 985 899**

**or email  
[recruitment@hazelwoodhealthstudy.org.au](mailto:recruitment@hazelwoodhealthstudy.org.au)**

**Figure 9 Adult Survey fridge magnet/flyer for Sale residents**





Have you received an invitation, but not completed the Adult Survey yet?

You are invited to chat to the researchers and complete the survey while you enjoy a free tea / coffee and muffin



**Where:**  
Mid Valley Shopping Centre  
(opposite Muffin Break, Centre Court)

**When:**  
10am-2pm,  
Saturday 10th September and  
Thursday 13th October

All eligible adults who complete the survey also receive a **\$20** Shop Latrobe City gift card





**Free Event for Parents & Grandparents\***  
by registration only

Explore! Fun! Wow!

Complete the survey while the kids play & eat for FREE!

Limited to 4 children per family\*

**Sunday 18th Sept 11.30-2.30**

\*To be eligible you must have lived in Morwell during the mine fires and have been over 18 years old

**where? TRIBES**  
EAT PLAY LAUGH  
107-111 Crinigan Rd  
MORWELL  
get your gift card on the day!

To register phone 1800 985 899 or e: [RECRUITMENT@hazelwoodhealthstudy.org.au](mailto:RECRUITMENT@hazelwoodhealthstudy.org.au)

# Hazelwood

HEALTH STUDY

## HAVE YOU COMPLETED THE ADULT SURVEY YET?



### The Hazelwood Health Study

is an important program of research measuring the health of children, adults and the elderly across the Latrobe Valley and parts of Gippsland.

Right now, the researchers are inviting adults who lived in Morwell during the Hazelwood Mine Fire to participate in the Adult Survey and Health Record Linkage Study.

The Adult Survey is being led by an independent team of researchers from the School of Public Health and Preventive Medicine, and the School of Rural Health at Monash University.

The study aims to address community concern about the long term health impacts of the mine fire and also to inform health service planning for the region.

This brochure provides information about how to participate, answers to some Frequently Asked Questions and invitations to some upcoming events.

For more information go to [hazelwoodhealthstudy.org.au](http://hazelwoodhealthstudy.org.au)

### How to Participate

If you have received a mailed invitation, you can complete the Adult Survey:

**OVER-THE-PHONE**  
by calling 1800 082 238  
Please quote your name, the unique ID shown on your invitation letter, and a return telephone number.

**ONLINE**  
at [www.hazelwoodhealthstudy.org.au](http://www.hazelwoodhealthstudy.org.au)  
click on the link under the heading "COMPLETE THE ADULT SURVEY ONLINE" and enter your unique ID shown on your invitation letter.

**ON PAPER**  
by completing the paper questionnaire which you may have received in the mail, or you can request one by calling 1800 985 899

**IN PERSON**  
at one of three upcoming events  
(see overleaf for full details):

**Saturday 10th September 10am – 2pm or Thursday 13th October 10am – 2pm**  
**Mid Valley Shopping Centre.**  
Free tea/coffee and muffin while you complete the Adult Survey

**Sunday 18th September 11.30 - 2.30pm Tribes Play Centre**  
Children eat and play for free while carers complete the Adult Survey.  
Registration essential on 1800 985 899

*If you think you are eligible for the Adult Survey, but have not received a mailed invitation, please call 1800 985 899*

### Frequently Asked Questions

**Who is included in the Adult Survey?**  
All adults who lived in Morwell, or selected parts of Sale, at the time of the Hazelwood mine fire.

**Should I participate if I wasn't affected by the smoke?**  
Yes, all eligible adults should participate, even if not affected by the mine fire smoke.

**What does Health Record Linkage mean?**  
This involves the researchers accessing some information about your health that is recorded by hospitals, ambulance services and the national cancer and death registries. This does not include any personal notes written about you by a doctor, or test results. You do not have to agree to Health Record Linkage to participate in the Adult Survey.

**How private is my information when I complete the survey?**  
Your privacy is of utmost concern to the researchers who are bound by the Privacy and Data Protection Act 2014 and the Health Records Act 2001. Your name and contact details are removed from your health information. Findings from the Adult Survey will be presented in a way which ensures that participants cannot be identified.

**What's in it for me and my community?**  
All participants receive a \$20 voucher that can only be used in Latrobe Valley or Sale businesses to directly support the local economy. The study findings will inform health service planning for Gippsland, now and for future generations.

Figure 10 Tri-fold flyer for the Adult Survey in Morwell





# Did you live in MORWELL during the Hazelwood MINE fire?

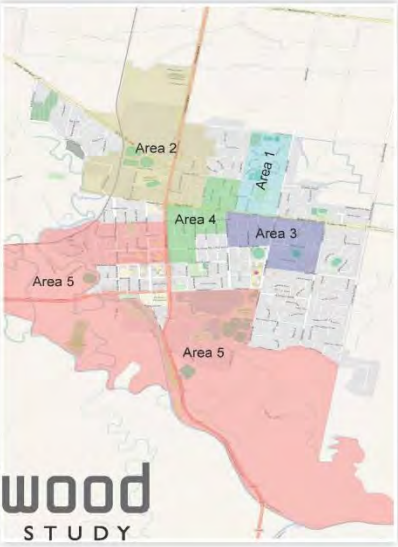

Have you completed the Adult Survey yet?

You can collect an Adult Survey Pack here today or ask your health provider about the Survey.




**1800 985 899** [www.hazelwoodhealthstudy.org.au](http://www.hazelwoodhealthstudy.org.au)

Did you live in one of the COLOURED parts of this Sale Map during the Hazelwood MINE fire?

Collect an Adult Survey pack here today or ask your health provider about the Adult Survey.

**1800 985 899**  
[www.hazelwoodhealthstudy.org.au](http://www.hazelwoodhealthstudy.org.au)



Have you completed the Adult Survey yet?

Figure 11 Examples of posters promoting Adult Survey community packs in Morwell or Sale

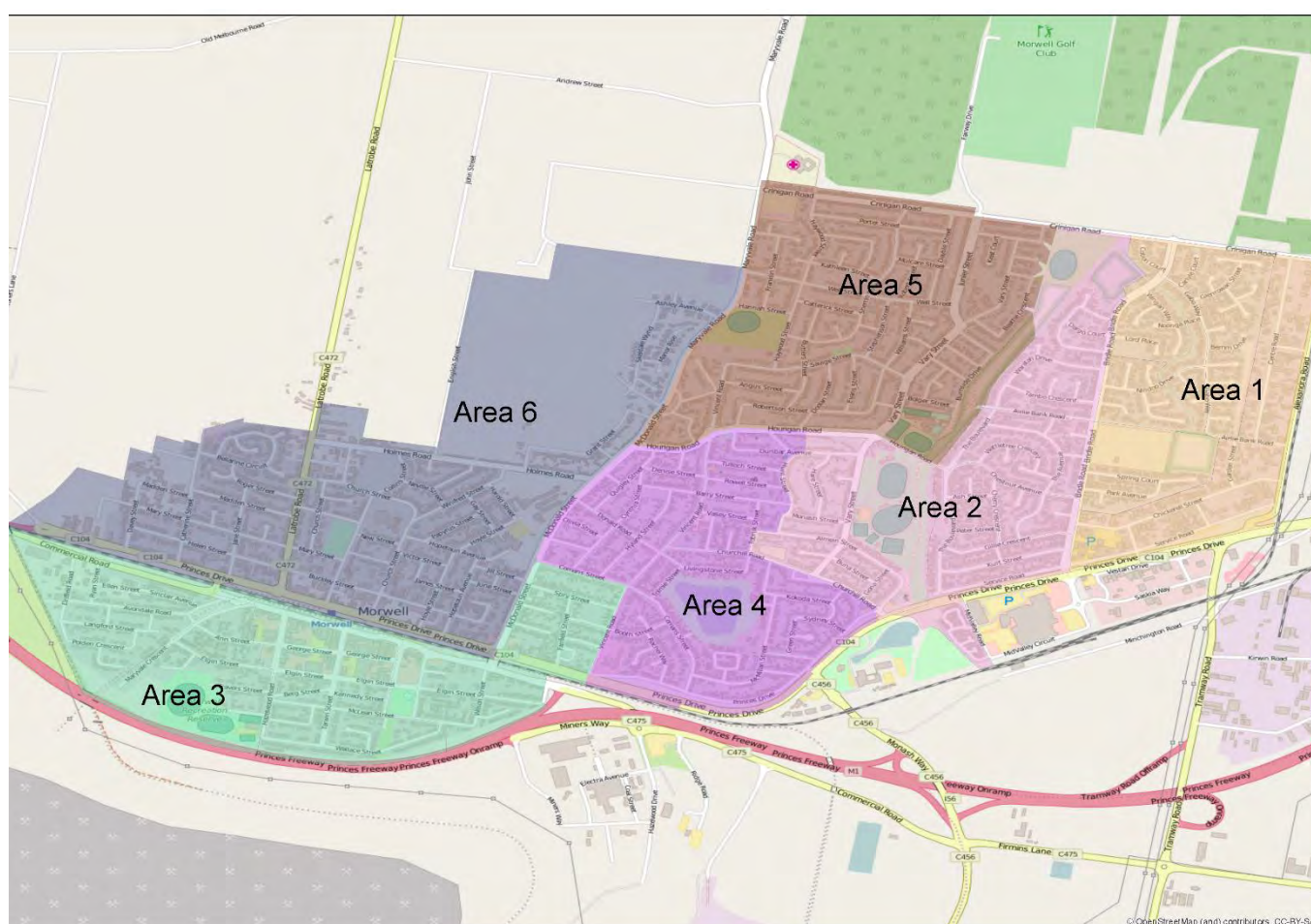


## Adult Survey launch

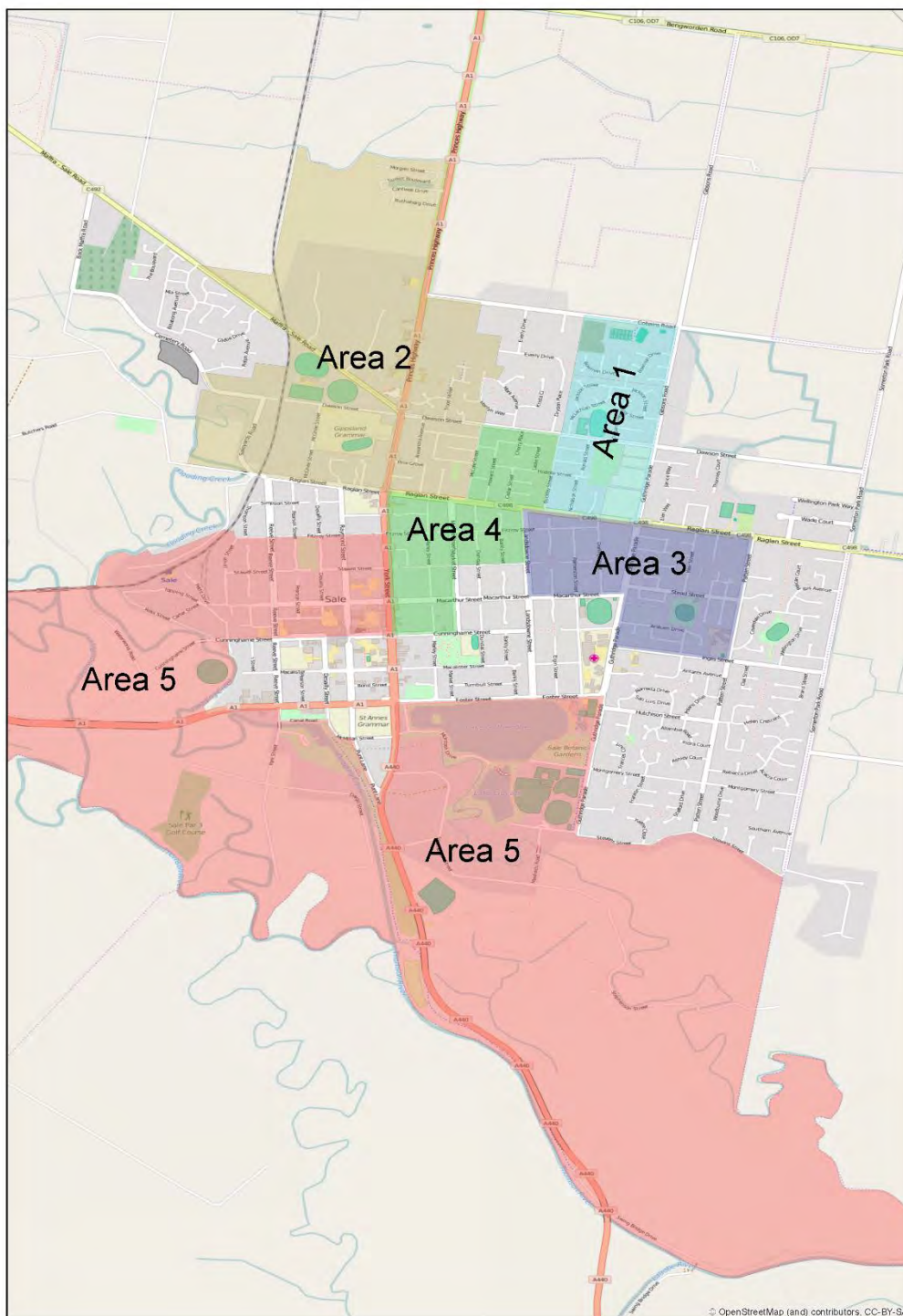
Recruitment in to the Adult Survey launched in Morwell in May 2016 and in Sale in June 2016.

Morwell was divided in to six areas (shown in Figure 12) that were targeted sequentially over a six month recruitment period; with Area 1 mailed invitation packs in May 2016, Area 2 in June 2016, Area 3 in July 2016 and so on until Area 6 was mailed invitation packs in October 2016.

Sale was divided in to five areas (shown in Figure 13) that were targeted sequentially over a five month recruitment period; with Area 1 mailed invitation packs in June 2016, Area 2 in July 2016 and so on until Area 5 was mailed invitation packs in October 2016.



**Figure 12 Map of Morwell demonstrating the Areas that were approached sequentially over a six month recruitment period.**



**Figure 13 Map of Sale demonstrating the Areas that were approached sequentially over a five month recruitment period.**

As recruitment progressed, the researchers monitored feedback from residents via public events, calls and emails to the Recruitment Coordinator, the HRF interviewers, the CAC and Wordwise Communications. These various sources of feedback were used to identify barriers to participation and common areas of misunderstanding about the Adult Survey. Based on this feedback, monthly media releases were refined, updates were made to the Frequently Asked Questions (FAQ) section of the study website (<http://hazelwoodhealthstudy.org.au/research-areas/adult-survey/adult-survey-faqs/>), HRF



interview personnel were briefed on appropriate responses, “Instructions for participation” and “FAQ” inserts were added to the mailed invitation and reminder packs, as were inserts clarifying the gift cards/E-vouchers (see Figure 14).

 <h3>Instructions for participation in the Adult Survey &amp; Health Record Linkage Study</h3> <p><b>First</b>, please read the enclosed Information Sheet to make an informed decision about whether or not you wish to participate.</p> <p><b>If you wish to participate</b></p> <p>You can complete the questionnaire over-the-phone by calling <b>1800 082 238</b>. An interviewer may be available to administer the questionnaire immediately, alternatively please leave a clear message with your phone number so that the interview team can return your call.</p> <p>OR</p> <p>You can complete the questionnaire online by going to <a href="http://www.hazelwoodhealthstudy.org.au">www.hazelwoodhealthstudy.org.au</a> and clicking on the link under the heading “COMPLETE THE ADULT SURVEY ONLINE”. Where a Survey Access Code is requested, please enter your <b>unique ID</b> shown on the letter that accompanied these instructions.</p> <p>OR</p> <p>If you prefer to complete a hardcopy paper questionnaire, please request one from the Recruitment Coordinator on <b>1800 985 899</b>.</p> <p><b>If you do not wish to participate</b></p> <p>You can decline participation by calling the Recruitment Coordinator on <b>1800 985 899</b>. Please quote your full name, address and the unique ID shown on the letter that accompanied these instructions</p> <p>OR</p> <p>You can decline participation by emailing the Recruitment Coordinator at <a href="mailto:recruitment@hazelwoodhealthstudy.org.au">recruitment@hazelwoodhealthstudy.org.au</a>. Please type “Adult Survey opt out” in the subject header. In the body of your email, please type your name, address and the unique ID shown on the cover letter that accompanied this Information Sheet.</p> <p>SEE OVER PAGE FOR FREQUENTLY ASKED QUESTIONS</p>	 <h3>Frequently asked questions about the Adult Survey &amp; Health Record Linkage Study</h3> <p><b>Who is included in the Adult Survey?</b></p> <p>All adults who were registered on the Victorian Electoral Roll as living in Morwell, or selected regions of Sale, at the time of the Hazelwood mine fire.</p> <p><b>Should I participate if I wasn't affected by the smoke?</b></p> <p>Yes. In addition to adults who were impacted by the smoke, it is critical that the study includes adults with little or no exposure to the smoke, and adults who were exposed to the smoke but whose health was not affected. In this way the study can evaluate the true extent of the impact of the mine fire event and determine what factors protected some members of the community whilst others remained vulnerable.</p> <p><b>What's in it for me and my community?</b></p> <p>As reimbursement for your time, all adults who complete the questionnaire receive a \$20 voucher that can only be used in Latrobe Valley or Sale businesses. This directly supports the local economy. In addition, this study will provide direct evidence of the impact of the mine fire event, which will inform health service delivery across Gippsland now and for future generations.</p> <p><b>What does the questionnaire include?</b></p> <p>The Adult Survey questionnaire includes questions about your health and wellbeing, where you were during the fire and the type of house you lived in.</p> <p><b>What does Health Record Linkage include?</b></p> <p>Health records that we might obtain with your consent include dates of hospital admission or ambulance use, and categories of diagnosis (eg. 'cardiac failure' or 'stroke'). We will <b>not</b> have access to personal notes that a doctor may have written about you or your test results.</p> <p>For further information call 1800 985 899 or go to <a href="http://hazelwoodhealthstudy.org.au/research-areas/adult-survey">hazelwoodhealthstudy.org.au/research-areas/adult-survey</a></p> <p>SEE OVER PAGE FOR INSTRUCTIONS FOR ADULT SURVEY PARTICIPATION</p>		
 <p>SAMPLE ONLY</p>	<p>Adult Survey participants, who lived in Morwell at the time of the Hazelwood mine fire and who complete the questionnaire, will be eligible to collect a \$20 Shop Latrobe City gift card from a central location in Morwell. The card can then be used at more than 80 businesses across the Latrobe Valley.</p>	 <p>SAMPLE ONLY</p>	<p>Adult Survey participants, who lived in Sale at the time of the Hazelwood mine fire and who complete the questionnaire, will be eligible to receive a \$20 Shop in Sale E-voucher by email. The voucher can then be used at more than 50 businesses in Sale.</p>

**Figure 14 “Instructions for participation”, “Frequently asked questions”, “Morwell Gift Card” and “Sale E-voucher” inserts added to the mailed invitation and reminder packs**

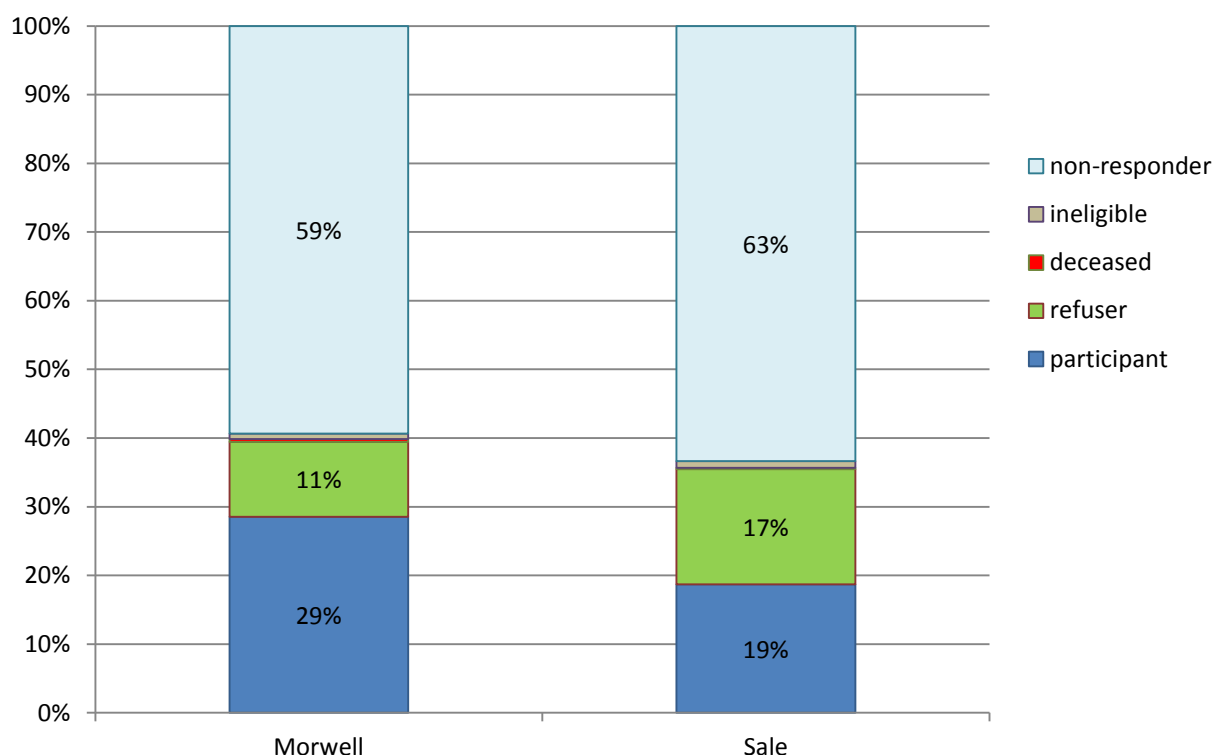
## Recruitment

The VEC identified 9,457 adults registered on the electoral roll as residents of Morwell at the time of the Hazelwood mine fire in February 2014. Of those, the VEC identified 281 to be deceased, and the HHS mailed Adult Survey invitation packs to the remaining 9,176 residents.

At the time of this report, 2,616 (29%) of Morwell residents had participated in the Adult Survey. As shown in Figure 15, 11% had refused participation, less than 1% were determined to be ineligible or deceased, and the majority (59%) had not responded to the contact attempts.

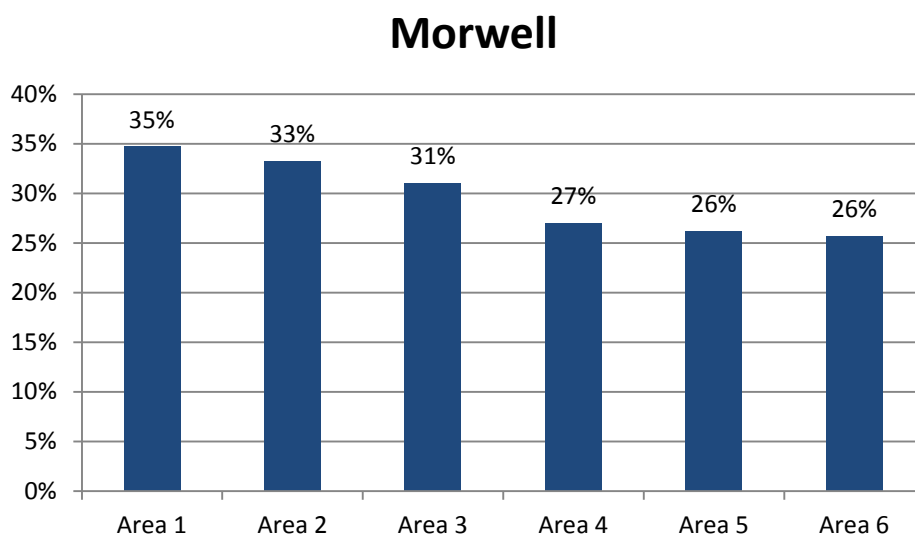
The VEC identified 4,444 adults registered on the electoral roll as residents of the targeted areas of Sale in February 2014. Of those, the VEC identified 163 as deceased, and the HHS mailed Adult Survey invitation packs to the remaining 4,281 Sale residents.

At the time of this report, 801 (19%) of targeted Sale residents had participated in the Adult Survey. As shown in Figure 15, 17% had refused participation, less than 1% were identified as ineligible or deceased, and the large majority (63%) had not responded to the contact attempts.

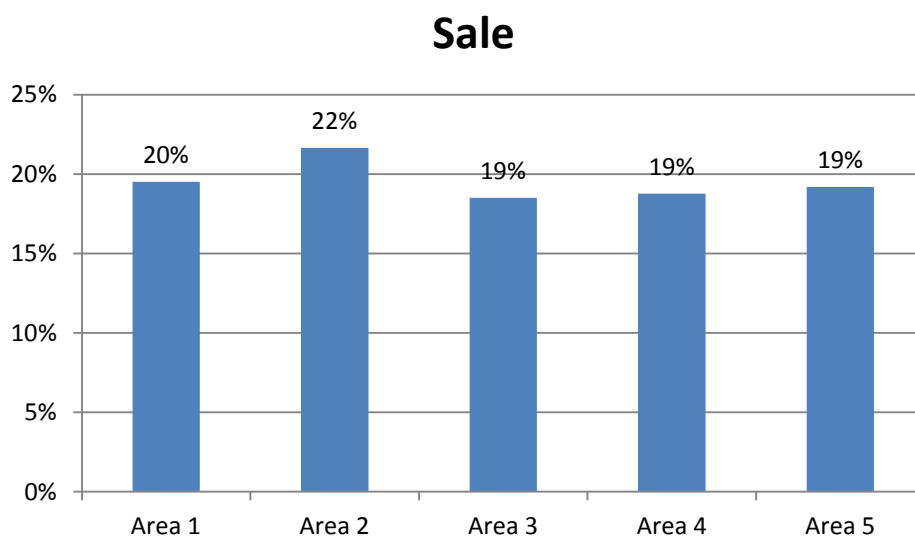


**Figure 15 Adult Survey recruitment rates by town; 9 November 2016**

Figure 16 shows the recruitment rates in Morwell for each of the Areas 1 to 6 (as shown in Figure 12) which were approached on a monthly basis. Area 1 was approached first, in May 2016. Residents in Area 1 have since received a reminder postcard and a reminder pack containing a paper questionnaire. They have potentially been exposed to six, monthly media releases, flyers/ads promoting recruitment events at Tribes and Mid Valley Shopping Centre, advertisements on TRFM radio, roadside banners and exhibits at community events. The researchers believe that the recruitment of 35% of residents in Area 1 is unlikely to rise further. It is hoped however, that the recruitment rates in the remaining Morwell Areas 2 to 6, will gradually increase to match that in Area 1.



**Figure 16 Adult Survey recruitment rate by Area in Morwell**



**Figure 17 Adult Survey recruitment rate by Area in Sale**



In each of the Areas approached in Sale, about one in five residents have participated in the Adult Survey. Community recruitment events, such as those offered to Morwell residents at Mid Valley and Tribes, are about to be run in Sale. Hopefully those events, along with weekly public sessions at the library, ongoing media releases, roadside banners and promotion of the Community Packs in public venues, will increase recruitment in this comparison community.

## **Analysis Plan**

The Adult survey enrolls adults from an 'exposed' study group and 'unexposed' comparison group populations. The exposed population includes adults aged 18 years and above whose usual residence, at the time of the fire, was in Morwell. The comparison population has been drawn from the town of Sale; with a particular sampling focus on those regions of Sale with similar socio-demographic characteristics to Morwell.

Descriptive statistical techniques will be used to profile the socio-demographic and health characteristics of the recruited Morwell and Sale populations and, where data are available, make comparisons to the Victorian and Australian populations.

Exposure will be considered initially as a binary variable with persons residing in Morwell at the time of fire considered as exposed. Differences in the prevalence of health outcomes in the exposed (Morwell) versus the comparison populations will initially be presented as risk ratios (RR). This a measure of the risk of the health outcome happening in one group compared to the risk of the health outcome happening in the other group.

Differences in the crude prevalences 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.

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

The next level of analyses will involve more sophisticated exposure assessment. Air quality modelling by CSIRO has provided spatial and time estimates of exposure prior to, during and after the fire. Information

collected in the Adult Survey, about participant movements during the time of the fire, will be used to estimate each individual's location and likely 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. Measurement of any exposure-response trends in symptom/outcome prevalence can then 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.

## **Variation from Project Plan**

The Project Plan forecast that the Adult Survey contact and recruitment phase would span a period of about 15 months, commencing in the last quarter of 2015 and closing at the end of 2016. However, the researchers did not anticipate the 10 month delay in receiving the VEC data for this stream, resulting in an April 2016 launch to the Adult Survey contact and recruitment. The researchers and HRF, however, have worked successfully to reduce the recruitment period for the Adult Survey, and recruitment will now close at the end of January 2017, only one month later than planned.

An important addition to the Adult Survey protocol has been the participant reimbursement (\$20 gift vouchers) which was not included in the Project Plan or budget. Based on the recruitment challenges experienced by the Schools Study, Community and Wellbeing stream and Older Persons stream in 2015, the HHS Project Steering Committee saw the need to proactively workshop strategies to enhance Adult Survey recruitment. Substantial research went in to participant reimbursement options and the \$20 Latrobe City Gift cards and Shop in Sale E-vouchers were determined to be excellent options which effectively returned the funds to the local community.

In the Project Plan, it was also proposed that we might undertake door-knocking in an effort to engage with non-responders. There are a number of reasons why this has not been pursued, including:

- The Victorian Electoral Commissioner was opposed to this strategy on the basis that it was intrusive.
- Door knocking was assessed as unlikely to be cost effective, on the basis that considerable staffing would be required over an extended duration to cover such a large area as Morwell and Sale, particularly considering that numerous visits to any one household might be needed before a resident is found to be home. The ELF stream was only able to engage one in ten targeted households using a door knocking methodology.
- The Adult Survey budget did not include funds for project staff to undertake door knocking.
- Options to use local volunteers, to do door knocking, were discarded on the basis of participant confidentiality, privacy, liability and safety.

- The VEC imposed substantial conditions upon the HHS staff who would have access to the names and addresses of the Adult Survey participants, which would likely have applied to all staff engaged to undertake door knocking.

As described above, the Adult Survey intended to request that participants consent to identified MBS and PBS data linkage. However Medicare did not approve a verbal consent protocol and, on that basis, the researchers determined that this linkage was not feasible. An anonymous extraction of MBS and PBS data, however is instead being requested as part of the Hazelinks stream.

### **7.5.3 Future plans for the Adult Survey stream**

As Adult Survey recruitment concludes over the coming weeks, the researchers will be turning their attention to data cleaning, coding, scoring and data analysis tasks.

An early priority, in regard to data analyses, is to start looking at the completeness and complexity of the address data provided by participants in regard to their movements during the mine fire period. The geospatial linkage specialist will commence the process of assigning exposures to the participants by geocoding their residential addresses, work addresses, and additional addresses that they might have relocated to.

In parallel with the data analyses, the Adult Survey stream will be working with the PSC, CAC and CRG in regard to the most appropriate methods for disseminating its findings to the community.

## 7.6 Hazelinks

There are two components of Hazelinks: the identified data linkage study and the anonymised data extraction study. A chart showing the proposed flow of data for Hazelinks is presented in Figure 19.

### 7.6.1 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, hospital, cancer and death registries (see section 7.6.3). This linkage will identify members of the cohort who subsequently develop respiratory or cardiovascular conditions, develop cancer, and/or die. This identified linkage will commence once the Adult Survey is completed.

### 7.6.2 Anonymised data extraction

Anonymised data extracts from relevant health registries will be used to investigate the short, medium and longer term health effects of exposure from the mine fire smoke. The registries that will be used for data extraction include ambulance, hospital, cancer and death registries (see section 7.6.3). MBS and PBS data will also be used. Data extracts will be requested for all ages for the period 1 January 2009 to the most recent data available (not provisional) for areas that were most affected by the smoke as well as areas that were minimally exposed (for the purpose of comparison). These areas include the East of Victoria (Hume, Gippsland and Eastern Metropolitan regions), and a small part of the Southern Metropolitan region (Cardinia). Extraction of ambulance and hospital data has been received. MBS and PBS data requests have been submitted and extraction will occur when the relevant approvals have been obtained. Extraction of death data will likely take place in 2017, as it usually takes two to three years for cause of death data to be updated.

### 7.6.3 Datasets for identified linkage and data extraction

The identified linkage will be undertaken with datasets 1-5 below, and the anonymised data extraction will be undertaken for datasets 2-7 below.

1. National cancer incidence data from the Australian Cancer Database (ACD) held by the AIHW.
2. Victorian cancer incidence data held by the Victorian Cancer Registry (VCR).
3. Hospital admissions and emergency presentations data from the Victorian Emergency Minimum Dataset (VAED) and the Victorian Admitted Episodes Dataset (VEMD) respectively, held by the Victorian DHHS.

4. Ambulance data from the Victorian Ambulance Clinical Integration System (VACIS) and the Victorian Ambulance Cardiac Arrest Registry (VACAR) held by Ambulance Victoria.
5. Mortality data from the National Death Index (NDI) held by AIHW.
6. Mortality data from the National Mortality Database (NMD) held by AIHW.
7. MBS data (GP, specialist and consultant attendances) and PBS data for medication use, held by the Commonwealth DHS.

Identified data linkage and data extraction will be repeated approximately every 2-3 years for the duration of the project. Each dataset provided will include a measure of geographical location for each unit record (geocodes, Statistical Area (SA)1s, SA2s, SA3 or postcodes) which will be linked to air quality data.

## **7.6.4 Year 2 update on the Hazelinks stream**

### **Developments since the 1<sup>st</sup> Annual Report**

At the time of the previous annual report we had received approval from Ambulance Victoria to access VACAR and VACIS data for identified linkage and data extraction. Since then, the following applications have been approved:

1. Application to access to VAED and VEMD data (identified linkage and data extraction).
2. Application to access VCR data (identified linkage and data extraction).
3. Application to access ACD and NDI data (identified linkage only).
4. Application to access the NDI and NMD (data extraction only).

An application to access MBS and PBS data for identified linkage was considered at the External Request Evaluation Committee (EREC) meeting on the 18th of February 2016. As previously discussed in section 7.5.2, identified linkage to the MBS and PBS databases was approved, however the proposed verbal consent protocol was not. Instead, the data custodians required that consent be obtained in writing with the use of a detailed hard-copy consent form. The researchers determined that obtaining hard-copy written consent for identified MBS and PBS data was not feasible. Therefore, identified data linkage to MBS and PBS has been removed from the Hazelinks protocol and replaced with anonymous data extraction.

To access MBS and PBS data extracts held by the DHS, the following applications have been submitted:

1. Application to access MBS data; considered by EREC on the 27<sup>th</sup> of October 2016, awaiting approval.

2. Application to access PBS data submitted to technical team. Once application is approved by technical team it will be considered by the External Request Evaluation Committee (EREC).

The following data sets have now been received:

1. VACIS and VACAR (data extraction).  
VAED and VEMD data (data extraction).

## Findings

Preliminary analyses have been undertaken using deidentified ambulance data. The findings were presented as a poster at the *International Society for Environmental Epidemiology conference 2016* in September 2016; shown in Appendix 4. The aim of presenting these results at a conference was to receive feedback from international experts on the analytical approaches used in these preliminary analyses. However, to keep the community up to date with progress, the researchers produced a Fact Sheet (see Figure 18) and accompanying media release.

## Variation from Project Plan

In the original project plan we proposed to undertake identified linkage with Medicare and PBS data. However this has proven not to be feasible for the reasons discussed in 7.5.2. Therefore we have now replaced the identified linkage for Medicare and PBS data with data extraction.

A further variation is that we have expanded Hazelinks to include anonymised data extraction of ambulance, hospital, cancer and death data.



### **Hazelwood Health Study Fact Sheet 1**

#### **Smoke exposure during the Hazelwood mine fire was associated with increased ambulance call out for respiratory and cardiac events**

The Hazelwood Health Study researchers have completed some preliminary data analysis which suggests an association between Hazelwood mine fire smoke exposure and an increase in ambulance attendance for cardiac and respiratory conditions in the Latrobe Valley.

This research uses smoke exposure levels estimated by the CSIRO along with Ambulance Victoria attendance data for medical conditions which were assessed, by the paramedics, as being cardiac or respiratory-related.

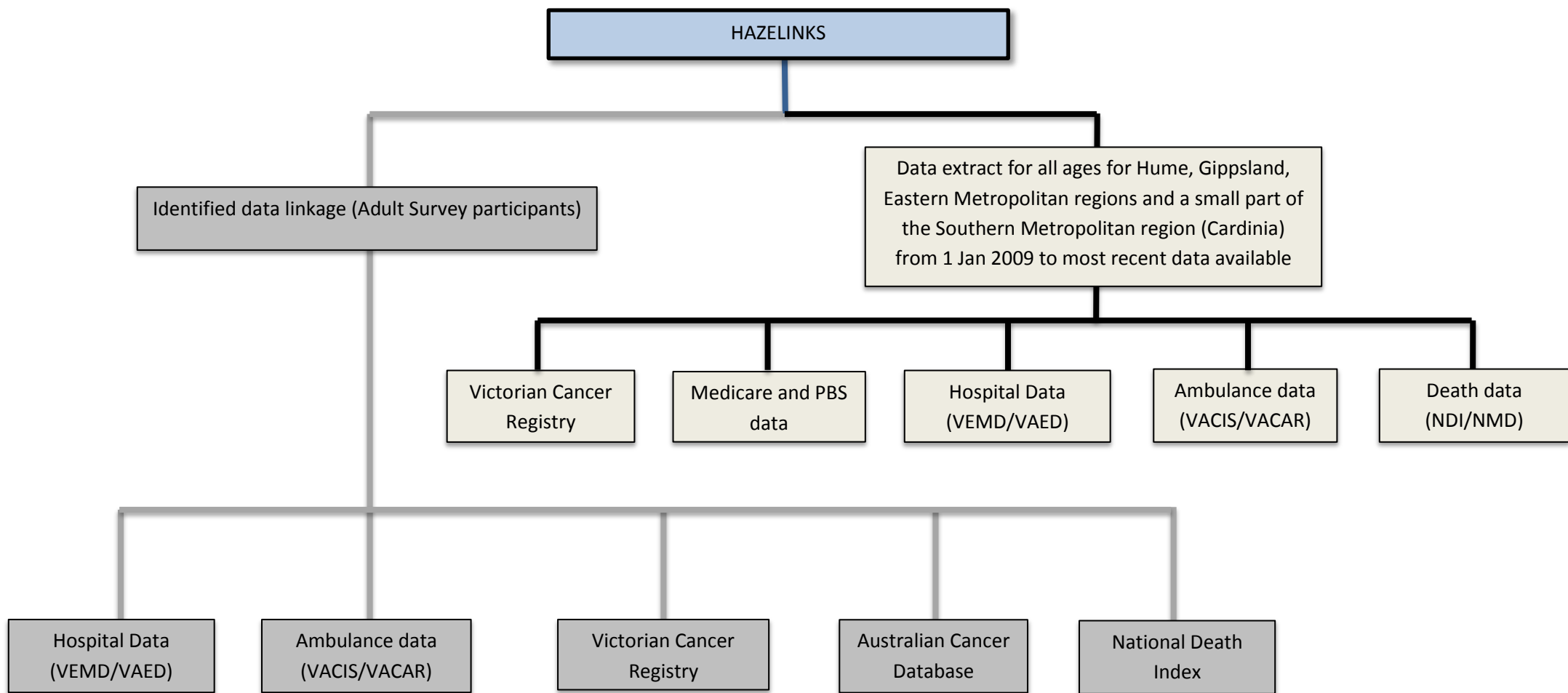
The findings show that ambulance call outs for cough, asthma, heart attack and heart failure, during February and March 2014, were elevated in the areas of the Latrobe Valley with higher levels of smoke exposure.

The researchers took in to consideration ambulance attendance data from January 2011 to December 2014 to ensure that seasonal and temperature changes were not an alternative explanation for the increase in ambulance attendance during the mine fire period. Because of heightened health sensitivities during the period of the fire, the researchers concede that some people may have been more likely to call an ambulance when they might not have otherwise; however this is unlikely to explain all of the increase in ambulance attendance.

The findings, which are considered preliminary while the researchers further refine the smoke exposure models, will be presented as a poster at the International Society for Environmental Epidemiology conference in Rome, Italy on 3 September 2016. The purpose of the presentation to international experts is to facilitate early discussion and feedback about the analytical approaches employed by the researchers. Meanwhile the Study will continue to collect health information from the community.

HHS Fact Sheet 1. 2 September 2016

**Figure 18 Fact Sheet 1; mine fire smoke exposure and ambulance call out analyses**



**Figure 19 Hazelinks data sources**



## 8 Respiratory and Cardiovascular streams

### 8.1.1 Aims and Objectives

The specific research questions relevant to Respiratory and Cardiovascular streams are as follows:

1. Is there evidence that people in general, and susceptible sub-populations in particular, who were heavily exposed to emissions from the Hazelwood fire, compared with otherwise similar people who were minimally exposed to emissions from the fire:
  - a) currently have clinical or sub-clinical cardiovascular or, respiratory conditions that could be associated with clinically important adverse health consequences in the future?
  - b) over time develop clinical or sub-clinical cardiovascular or respiratory conditions that could be associated with clinically important adverse health consequences in the future?

The aims of the Respiratory and Cardiovascular Streams are to determine whether exposure to smoke from the Hazelwood coal mine fire is associated with:

- Respiratory symptoms
- Asthma control and lung inflammation
- Rate of decline in lung function.
- Gas transfer and small airway function
- Blood pressure
- Abnormal Electrocardiographs (ECG).
- Endothelial function (as a marker of early vascular disease).
- Inflammatory markers, such as C-Reactive Protein (CRP)

### 8.1.2 Year 2 update

Intended to launch in 2017, the Respiratory and Cardiovascular streams are in a planning and implementation stage. Stream meetings have focused on:

- Reviewing, discussing and refining the original Project Plan;
- identifying position descriptions for the required Clinical Appointments, Sonographer and Research Assistant staff;
- finalising equipment requirements, obtaining updated quotes and arranging purchase;
- identifying points of segue with ELF stream activities in 2017, and possible efficiencies in combining resources;
- identifying and securing appropriate clinical rooms in/near Morwell and Sale;
- progressing applications to the relevant Human Research Ethics Committees. An application to MUHREC is due to be submitted by 23/11/2016.

## 9 Exposure Assessment

CSIRO Oceans & Atmosphere Flagship were subcontracted to conduct an in-depth analysis of existing air quality datasets in order to:

- Identify key pollutants relevant to health impacts;
- statistically analyse 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);
- compare pollutant concentrations measured at Morwell to other urban sites within Australia and assess of the impact of Morwell fire on ambient air quality.

### 9.1 Analysis of air quality during the Hazelwood mine fire

In May 2016, CSIRO completed a report describing the air quality during the Hazelwood mine fire based upon measurements made by various organisations. The complete report titled “Analysis of air quality during the Hazelwood mine fire” can be found at [hazelwoodhealthstudy.org.au/air-quality-assessment](http://hazelwoodhealthstudy.org.au/air-quality-assessment). With the permission of CSIRO, the Executive Summary to the report is reproduced here:

#### **Analysis of air quality during the Hazelwood mine fire**

Authors:

Fabienne Reisen, Martin Cope, Kathryn Emmerson, Ian Galbally, Rob Gillett, Melita Keywood, Suzie Molloy, Jennifer Powell (CSIRO Oceans & Atmosphere)  
Gavin Fisher, Paul Torre and Andrew Marshall (EPA Victoria).

#### ***Executive summary***

The Hazelwood mine fire started on 9 February 2014, causing a major air pollution event that affected thousands of residents in nearby towns. The fire was declared safe on 25 March 2014, burning over a period of 45 days.

The Hazelwood mine fire was ignited by embers from nearby bushfires burning in East Gippsland and other parts of the Latrobe Valley, including land adjacent to the township of Morwell where the Hazelwood mine is located. The smoke plume from the Hazelwood mine fire and the Gippsland fires could be clearly identified in satellite images showing the extent of both smoke plumes.

The full report summarises the air quality measurements made during the Hazelwood mine fire by various organisations including EPA Victoria, Country Fire Authority Victoria and CSIRO. Pollutants measured include particulate matter with an aerodynamic diameter of

2.5  $\mu\text{m}$  ( $\text{PM}_{2.5}$ ) and 10  $\mu\text{m}$  ( $\text{PM}_{10}$ ), carbon monoxide (CO), ozone ( $\text{O}_3$ ), nitrogen dioxide ( $\text{NO}_2$ ), sulphur dioxide ( $\text{SO}_2$ ), volatile organic compounds (VOCs), polycyclic aromatic hydrocarbons (PAHs), dioxins, furans and metals. The air quality measurements started approximately four days after the mine fire started with the more targeted monitoring commencing on 26 February.

Due to the close proximity (~500 m) of the Morwell South air monitoring station (AMS) to the Hazelwood mine, smoke concentrations measured at the Morwell South AMS were especially elevated when compared to those recorded at the Morwell East AMS and the Traralgon AMS. In particular concentrations of  $\text{PM}_{2.5}$ , CO and benzene exceeded air quality standards and guidelines during the smoke event. Concentrations of benzo(a)pyrene were also elevated and resulted in the yearly averaged concentrations exceeding air quality guidelines.

Concentrations were highly variable with highest concentrations occurring during south-westerly winds when the smoke from the Hazelwood mine fire was blown into the town of Morwell. The low plume buoyancy of the fire resulted in the plume being trapped within the lower boundary layer allowing for minimal dispersion and hence elevated ground concentrations. Concentrations of air pollutants were primarily elevated in February with a significant decrease observed as the fire intensity abated through March for all pollutants measured.

Large bushfires such as the Eastern Victoria Great Divide fires in 2006/07 also resulted in significant air quality impacts, and similarities and differences between that event and the Hazelwood mine fire have been highlighted. Impact on ambient particle concentrations between the Hazelwood mine fire and the 2006/07 bushfires that burned for 65 days were of similar magnitude and duration. Maximum hourly and daily  $\text{PM}_{2.5}$  concentrations were slightly higher in the Ovens Valley than in Morwell South, but the number of hours that  $\text{PM}_{2.5}$  concentrations remained above  $250 \mu\text{g m}^{-3}$  was higher at Morwell South.

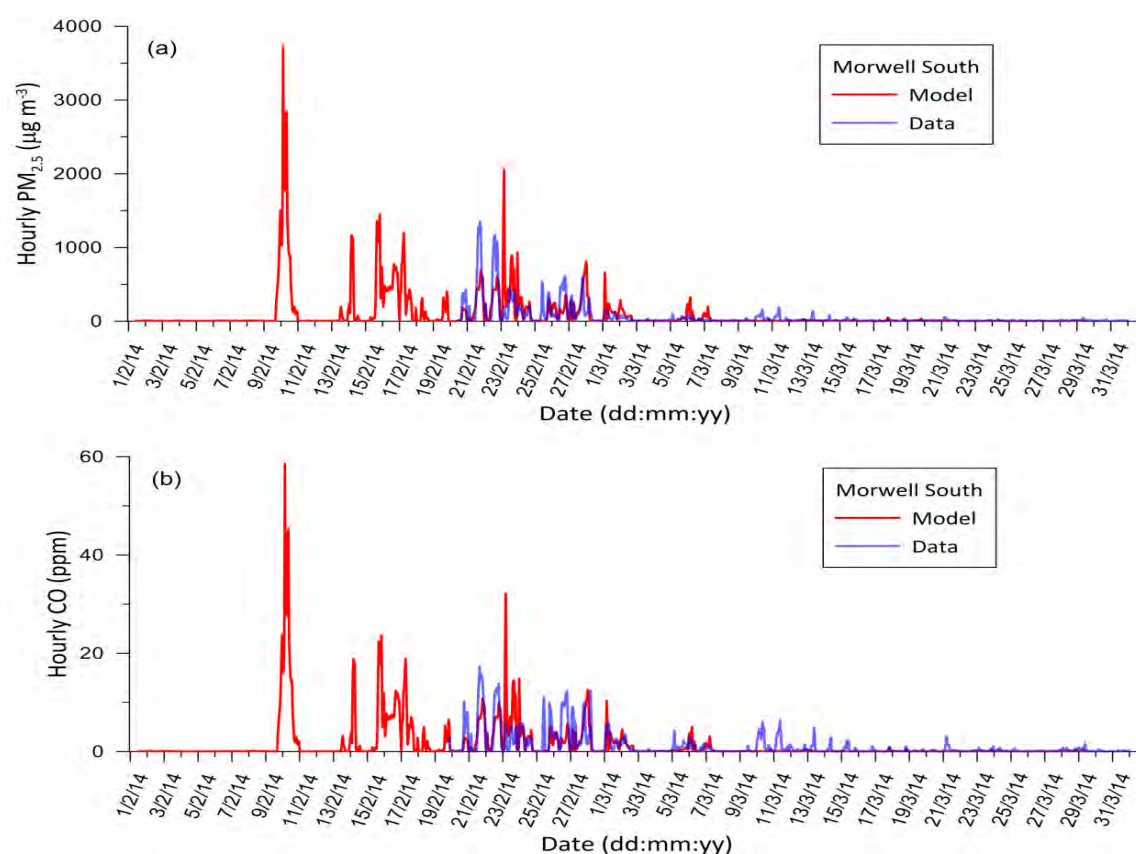
During the Hazelwood mine fire EPA Victoria recorded its highest 8-hour average CO concentration ever measured. CO concentrations were higher in Morwell South compared to those measured at a staging area in Northeast Victoria during the 2006/07 bushfires, although only a short period during the fires was sampled and concentrations may have been higher. In general though, bushfires are less likely to cause increased CO levels above air quality guidelines in downwind communities, but are a potential health risk on the fire ground, within the immediate vicinity of the fire.

Benzene concentrations were elevated during the Hazelwood mine fire, and were higher than those measured in Northeast Victoria during the 2006/07 bushfires. The measured

benzene to toluene ratio is consistent with that of wood burning rather than traffic-related emissions. The ratios were similar to those recorded for smoke measurements in peat fires and underground coal fires.

## 9.2 Air quality modelling of smoke exposure from the Hazelwood Mine Fire

In October 2016, CSIRO submitted a draft report describing modelling which provides hourly air exposure estimates for the entire smoke effected area in the Latrobe Valley, distinguishing between exposure from the Morwell fire and other air pollution sources. The report is under review and when approved, the final version and a plain language summary will be made available on the HHS website ([hazelwoodhealthstudy.org.au](http://hazelwoodhealthstudy.org.au)). The modelled data are integral to the Adult Survey and ELF streams which aim to estimate each participant's cumulative exposure to air pollutants by linking the model to geocoded locations where participants spent time during the mine fire.

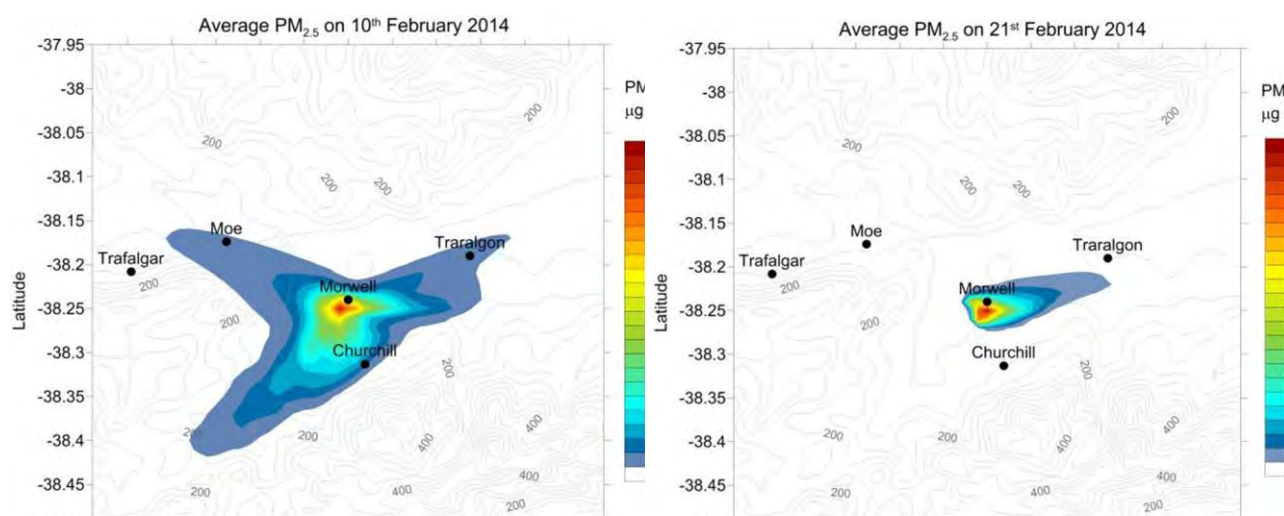


**Figure 20 Time series of hourly-averaged observed and modelled concentrations of (a)  $PM_{2.5}$  and (b) CO at Morwell South**

The CSIRO report includes a number of Figures which demonstrate the variations in exposure concentrations across time during the period of the mine fire. For example, Figure 20 shows observed and modelled hourly CO and  $PM_{2.5}$  concentrations in February and March 2014 in Morwell South. Concentrations of  $PM_{2.5}$  as high as 3700  $\mu g m^{-3}$ , and CO at almost 60 ppm, were predicted by the model during 9 - 10 February 2014, followed by background concentrations as the wind direction changed and transported the plume away from the monitoring station. The modelled concentration started increasing again from 13th

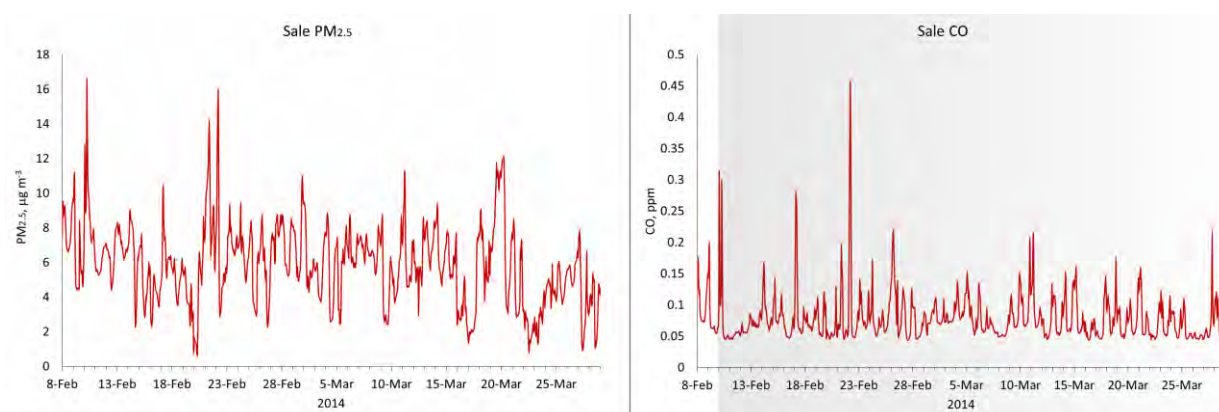
February. The model predicted very low  $PM_{2.5}$  concentrations from 8th March 2014 onwards when there was virtually no coal burning.

The shape of the plume on 10<sup>th</sup> and 21<sup>st</sup> February is shown in Figure 21. These maps show the spatial extent of the plume over 24 hours near the time of the start of the mine fire on 10<sup>th</sup> February and again on 21<sup>st</sup> February. At the start of the fire the winds were predominantly towards the south west. The modelled plume was constrained on 21<sup>st</sup> February due to light winds.



**Figure 21 Maps showing average  $PM_{2.5}$  concentrations predicted by the model on 10<sup>th</sup> and 21<sup>st</sup> February.**

Figure 22 shows the hourly concentrations of  $PM_{2.5}$  and CO in February and March 2014, as predicted by the model for Sale. When compared with Figure 20, the difference in the magnitude of the scale should be noted. The peak hourly  $PM_{2.5}$  concentration modelled for Sale was  $17 \mu g m^{-3}$  on 10th February 2014 (compared to  $3700 \mu g m^{-3}$  in Morwell). The peak hourly concentration of CO in Sale was 0.46 ppm on 22nd February, when winds were from the west (compared to a peak of 60ppm earlier in the month in Morwell).



**Figure 22 Time series of modelled hourly  $PM_{2.5}$  and CO concentrations at Sale.**

With the permission of the CSIRO, the Executive Summary to the draft report is reproduced below. We appreciate that this contains highly technical details of the modelling and a plain language summary will be approved in due course.

## **Air quality modelling of smoke exposure from the Hazelwood Mine Fire**

Authors:

Kathryn M. Emmerson, Fabienne Reisen, Ashok Luhar, Grant Williamson and Martin E. Cope.

### ***Executive Summary***

The Hazelwood coal mine fire began on February 9th 2014 and burned for 45 days. A preliminary smoke tracer study, conducted by CSIRO in April 2015, showed most towns within a 30km radius of the mine fire were exposed to high concentrations of smoke. The highest concentrations of smoke from the fire occurred when the winds were blowing from a south westerly direction. The preliminary study was conducted in the absence of smoke emission rates for the fire and also was not able to resolve strong concentration gradients for locations (such as Morwell) immediately adjacent to the mine.

In the current study, our smoke exposure modelling has been refined through the use of quantitative estimates of hourly emission rates of various species based on parameters such as how much coal was burned using maps of the area burned drawn by the Country Fire Authority and emission factors. Emission factors for the Hazelwood fire were estimated. Additionally we have used both a high-resolution near-field model and a regional scale model in order to better resolve smoke concentration gradients across the impacted areas in the Latrobe Valley – Gippsland region.

The high resolution near-field concentration predictions were generated using CSIRO's The Air Pollution Model (TAPM) in order to properly resolve the smoke plume around Morwell. The coal fire area was represented by a number of ground-level point sources each 100 m apart. PM<sub>2.5</sub> and CO from the fire were treated as tracer species (i.e. no chemistry acted upon them) and dispersed using TAPM predicted meteorology. Hourly PM<sub>2.5</sub> concentrations of up to 3700 µg m<sup>-3</sup> and CO concentrations up to 60 ppm were predicted in the early phases of the fire at Morwell South. These predictions for Morwell East were 2200 µg m<sup>-3</sup> and 35 ppm, respectively. Direct comparisons between the model and observations showed that TAPM predicted the correct magnitude, but did not always predict observed temporal maxima at the same time. However, when concentrations are unpaired in time TAPM simulates the concentration distribution around Morwell satisfactorily. This result

demonstrates that the assumptions made in the modelling, especially in the emissions methodology, are realistic.

The second modelling system conducted full chemistry simulations. The CSIRO Chemical Transport Model (CTM) coupled with the CSIRO's Conformal Cubic Atmospheric Model (CCAM) meteorological model was used to predict the exposure of residents living in towns across the Latrobe Valley, such as Sale, chosen as the control community for the long term Hazelwood health study.

Regional modelling of background concentrations showed PM<sub>2.5</sub> levels at 6 µg m<sup>-3</sup> in Morwell. This demonstrates the level of PM<sub>2.5</sub> that would have been present in Morwell if the Hazelwood mine fire had not taken place. It includes the contribution from all anthropogenic sources and any wildfires occurring in Victoria during February and March of 2014. Likewise, background CO concentrations were 0.07 ppm. The air quality in the closest towns to the mine was returned to background levels after March 12th 2014.

Inclusion of the mine fire in the CTM resulted in peak concentrations of up to 2000 µg m<sup>-3</sup> for PM<sub>2.5</sub> at Morwell South. In the absence of measurements at this time, this predicted concentration is reasonable as fire activity was maximum during the early phases of the fire. The magnitudes of the predicted PM<sub>2.5</sub> and CO as compared to the observations demonstrates that the emission rates calculated in the first exercise are reasonable.

Overall residents of Morwell were exposed to the greatest number of breaches of the 24 hour air quality standard for PM<sub>2.5</sub>, exceeding the 25 µg m<sup>-3</sup> limit on 27 days. Outside of Morwell PM<sub>2.5</sub> concentrations decreased rapidly. There were 3 breaches of the PM<sub>2.5</sub> air quality standard at Churchill, and 2 breaches at Moe and Traralgon. There were no breaches of the CO air quality standard (9 ppm as an 8 hour average) outside of Morwell.

The regional model also predicted low concentrations of PM<sub>2.5</sub> and CO for the control population at Sale. The peak hourly PM<sub>2.5</sub> concentration predicted at Sale was 17 µg m<sup>-3</sup> on 10th February, whilst peak CO was 0.46 ppm on 22nd February. There were no breaches of either air quality standards predicted at Sale during the mine fire.



# 10 Communications and Media

## 10.1 Year 2 updates on community and stakeholder engagement activities:

### Developments since the 1<sup>st</sup> Annual Report

There has been extensive community engagement over the past year, particularly in the lead up to the roll-out of the Adult Survey in April this year. Full details are provided in the Community Engagement Register which can be found in Appendix 5. Key activities included:

- Recruitment and Engagement Coordinator, Susan Denny undertaking extensive consultation and engagement activities in both the Latrobe Valley and Sale including a clear identifiable HHS presence at, and participation in, local community activities such as farmers markets and Pop-Up events.
- Identification of community champions to promote the Hazelwood Health Study, including photoshoots in Morwell and Sale which have provided material and resources to promote the Study.
- Appointment of Wordwise Communications, a local media and communications consultancy group, to facilitate promotion of the HHS with local media outlets (print, radio and TV).
- Wide-ranging consultations with Shop In Sale and Latrobe City Gift Card personnel to organise the \$20 gift vouchers that are being used for reimbursement to people who participate in the Adult Survey. This has included identification and negotiation with a local Morwell newsagent who has agreed to be the collection point for Morwell.
- Systematic review of the HHS website (see [hazelwoodhealthstudy.org.au](https://hazelwoodhealthstudy.org.au)) to increase the focus on the Adult Survey. This includes a detailed list of responses to Frequently Asked Questions which can be found at [hazelwoodhealthstudy.org.au/research-areas/adult-survey/adult-survey-faqs](https://hazelwoodhealthstudy.org.au/research-areas/adult-survey/adult-survey-faqs). A new community connections section has been added to highlight engagement activities and features photographs of discussions with local community members.
- Ongoing consultation with communications personnel from key local stakeholders (Latrobe City, Wellington Shire, Latrobe Community Health Service, Latrobe Hospital, Gippsland Primary Care Partnership, Gippsland Primary Health Network) including a workshop on 27 April where they agreed to promote and support the study including disseminating updates via their websites, social media and printed materials.



- A meeting with key stakeholders in Sale to discuss the roll out of the Adult Survey in Sale with two local CAC members and communications personnel from the Central Gippsland Health Service and Wellington Shire Council. Considerable feedback was provided for ongoing media releases, frequently asked questions for the website, and key messages for stakeholders as well as outlining a coordinated approach to sharing updates between stakeholders.
- Four meetings of the CAC have been held in this reporting period (see 4.2).
- Three meetings of the Clinical Reference Group have been held in this reporting period (see 4.3).
- In addition to actively seeking opportunities to engage with the local community, we have been invited by third parties to participate in a range of activities which are included in the Engagement Register. These include:
  - Participation in a community meeting organised by Voices of the Valley following the release of the state government response to the recommendations of the Hazelwood Mine Fire Inquiry. The meeting featured representatives from key organisations including council, DHHS, Environment Protection Authority and the health study, who were able to respond to queries from community members. Four study team members were in attendance, providing coverage for all the study streams currently operating.
  - Participation in a Community Activation Initiatives meeting in Morwell which involved key community groups and agencies including council, the 50 Mile Farmer's Market committee, and members of the ReActivate Morwell initiative. The aim of the discussion was to share information about activities targeting Morwell and establish an ongoing dialogue.
  - Gippsland FM community radio as part of the regular segment run by the University of the Third Age.

## 10.2 Publication Policy and Procedures

The HHS Publications Policy and Procedures document provides the researchers with internal guidelines around proposals for data analysis, preparation of and approval for, publications and/or presentations, the role of the Project Steering Committee in the review of such work, authorship, acknowledgements, contractual rights around publications and licensing, and the role of students and their supervisors. The Publications Policy and Procedures document is under continual review and has been revised in year 2 as the study has advanced toward publication of first results. The most recent version 1.1 of the Publications Policy and Procedures, dated June 2016, is designed to be read in conjunction with the Dissemination Guidelines (see 10.3 below) and is shown in Appendix

## 10.3 Dissemination Guidelines

An important piece of work developed in the first half of year 2 was a set of guidelines around the dissemination of the study's findings to the community. The *Guidelines for the Dissemination of Findings to the Community from the Long Term Hazelwood Health Study* were developed in consultation with the HHS CAC and CRG. The Dissemination Guidelines include:

- the scope of the HHS (illustrated using the first three years of the study)
- explanations of the terms *dissemination*, *knowledge translation*, and *the community*, emphasising the need to tailor research findings to the community and other identified audiences
- a set of guiding principles for the dissemination of the study's findings to the community
- clear attribution of roles and responsibilities, and
- further information about dissemination techniques and tools.

The complete Dissemination Guidelines are shown in Appendix 7 and can also be viewed from a link on <http://hazelwoodhealthstudy.org.au/how-the-study-will-release-findings/>

The Dissemination Guidelines complement the HHS Publication Policy and Procedures described at 10.2 above.

## 11 Appendices

<b>Appendix 1</b>	<b>Project Governance Structure v 2.0</b>	<b>84</b>
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## Appendix 1

### **Project Governance Structure v 2.0**



## **Project Governance Structure**

**Version 2.0    May 2016**

## 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) 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**).

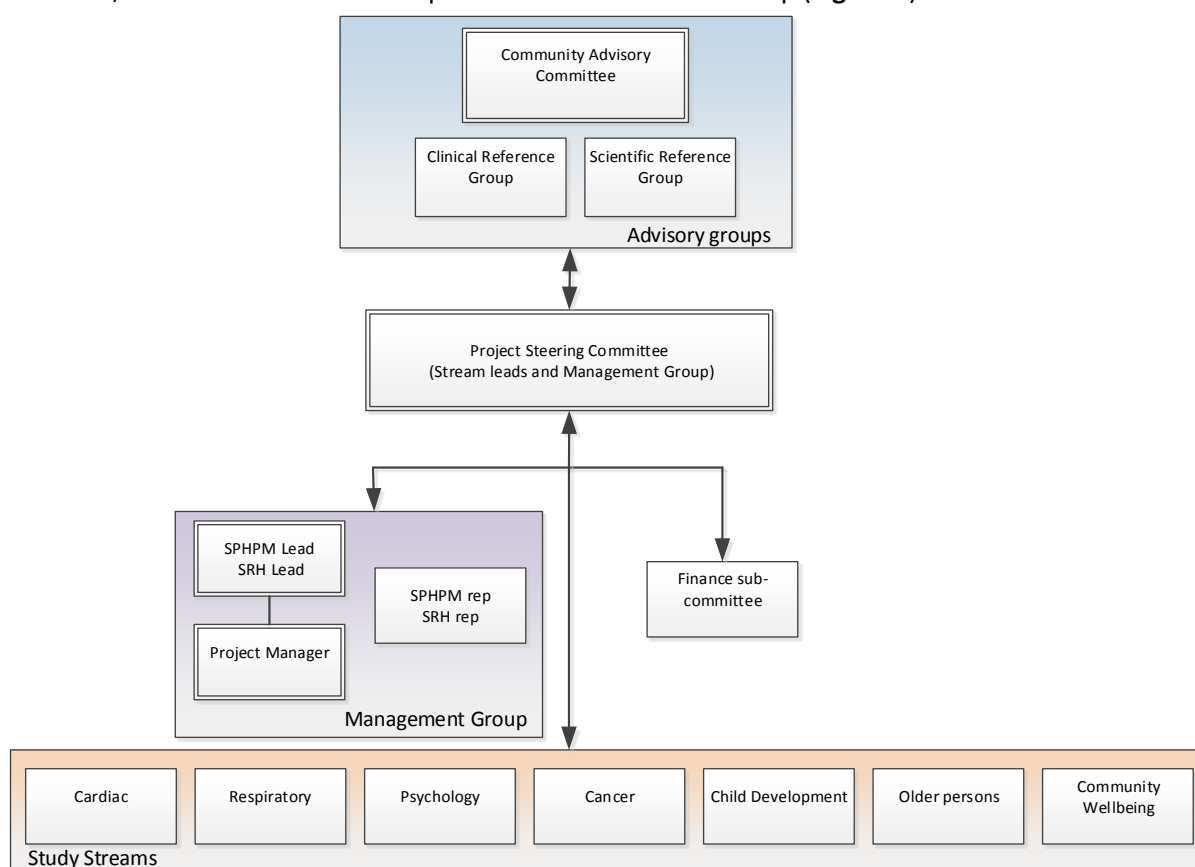


Figure 1: Hazelwood Mine Fire health study governance structure.

# **Community Advisory Committee: Terms of Reference (revised April 2016)**

## ***Preamble***

The Community Advisory Committee (CAC) is the study'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). Selection was at the discretion of the Co-Principal Investigators to ensure equitable membership across the CAC including gender balance. The same process has been used to identify two community members from Sale.

Membership of the CAC is:

1. Three community members from Morwell
2. Two community members from Sale
3. A representative of Latrobe City Council
4. A representative of Federation University (Gippsland campus)
5. A representative of the Latrobe Regional Hospital Board
6. A representative of the Latrobe Community Health Service Ltd Board
7. A representative of the Central Gippsland Health Service Board
8. A representative of Wellington Shire Council

## ***Ex Officio***

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 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.

### ***Process for annual election of the Chair***

1. The Secretary will act as Returning Officer.
2. Returning Officer to invite nominations from CAC community members and organisational representatives for the position of independent Chair.
3. There must be two nominators.
4. Only community members are eligible for nomination and must agree to the nomination.
5. If more than one nomination is received the Returning Officer will conduct an email ballot from among CAC members.
6. Successful nominee to take up the position of Chair at the first meeting of the year.

## **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

### ***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
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)**

### ***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.

### ***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.

### ***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.

## ***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. five working days prior to the next scheduled meeting.

The PSC agenda, with attached meeting papers will be distributed at least two 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.

### ***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 five 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)**

### ***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.

### ***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.

### ***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.

## **General**

### ***Membership***

Senior Project Manager  
 Principal Investigator  
 Principal Co-Investigator (Gippsland)  
 SRH Senior Researcher  
 SHPM 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.

### ***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, Senior Project Manager and Management Group revise

the annual budget and approve variations within the budget.

3. To assist the Senior Project Manager develop a policy on claiming expenses as defined by the DoH and in monitoring this budgetary item.
4. To assist the Senior Project Manager with financial reporting (internal and external).

These ToR were confirmed at the first meeting.



## Appendix 2

### **Adult Survey Invitation letters and Explanatory Statement**

## Adult Survey invitation letter for Morwell residents



**MONASH** University



**Hazelwood**  
HEALTH STUDY

Date

First name Surname  
Street address  
Suburb State Postcode

Dear [insert Title] [insert surname]

UNIQUE ID [insert ID]

### HAZELWOOD ADULT SURVEY & HEALTH RECORD LINKAGE STUDY

The *Hazelwood Health Study* is an important program of research measuring possible long term health effects of the Hazelwood coal mine fire which caused smoky conditions in the Latrobe Valley during February and March 2014. Research about infants, school children and the elderly is already underway. You are invited to participate in the next phase of research, the *Hazelwood Adult Survey & Health Record Linkage Study* which will measure the long term health of adults.

The study is being led by an independent team of researchers from the School of Public Health and Preventive Medicine and the School of Rural Health at Monash University. Your contact information has been obtained by the researchers from the Victorian Electoral Commission under section 34 of the *Electoral Act 2002*.

This valuable study aims to address community concerns about the health impacts of the mine fire event and to provide evidence on which to base future health advice. It is really important that as many adults as possible participate in this study, whether young or old, well or unwell.

Enclosed in this package you will find an Information Sheet explaining the study and what to do if you wish to participate or not. Participation includes completing a questionnaire about your health and where you were during the mine fire event. You can complete the questionnaire over the phone or online at a time convenient to you.

To compensate participants for their time, all invited adults in Morwell who complete the questionnaire will receive a \$20 Latrobe City gift card.

Thank you for considering our invitation.

Yours sincerely

Professor Michael Abramson  
Principal Investigator

Professor Judi Walker  
Co-Principal Investigator

Letter of Invitation, Version 1, April 2016

## Adult Survey invitation letter for Sale residents



MONASH University



Hazelwood  
HEALTH STUDY

<<insert date>>

«RESIDENT\_ID»

«FIRST\_NAME» «SURNAME»

«RESIDENT\_ADDRESS\_LINE1»

«RESIDENT\_ADDRESS\_LINE2»

«RESIDENT\_ADDRESS\_LINE3»

Dear «FIRST\_NAME»,

UNIQUE ID «PIN»

### HAZELWOOD ADULT SURVEY & HEALTH RECORD LINKAGE STUDY

The *Hazelwood Health Study* is an important program of research measuring possible long term health effects of the Hazelwood coal mine fire which caused smoky conditions in the Latrobe Valley during February and March 2014. Research about infants, school children and the elderly is already underway. You are invited to participate in the next phase of research, the *Hazelwood Adult Survey & Health Record Linkage Study* which will measure the long term health of adults.

The study is being led by an independent team of researchers from the School of Public Health and Preventive Medicine and the School of Rural Health at Monash University. Your name and address have been obtained by the researchers from the Victorian Electoral Commission under section 34 of the *Electoral Act 2002*.

In order to understand the severity and spread of any health impacts of the smoke, the Adult Survey will compare Morwell to another less exposed local community. Sale has been selected as the comparison community. This research aims to address community concerns about the health impacts of the mine fire event and to provide evidence on which to base future health advice. It will also provide a snapshot of the health of Gippsland communities. It is very important that as many invited adults as possible participate in this study, whether young or old, well or unwell.

Enclosed in this package you will find an Information Sheet explaining the study and what to do if you wish to participate or not. Participation includes completing a questionnaire about your health and where you were during the mine fire event. You can complete the questionnaire over the phone or online at a time convenient to you.

To compensate participants for their time, all invited adults in Sale who complete the questionnaire will be emailed a \$20 Shop in Sale E-voucher.

Thank you for considering our invitation.

Yours sincerely

Professor Michael Abramson  
Principal Investigator

Professor Judi Walker  
Co-Principal Investigator

Letter of Invitation, Sale, Version 1.0, May 2016



## INFORMATION SHEET

### Hazelwood Adult Survey & Health Record Linkage Study

You are invited to take part in the ***Hazelwood Adult Survey & Health Record Linkage Study*** component of the Hazelwood Mine Fire Health Study being led by Professors Michael Abramson and Judi Walker at Monash University. Please read this Information Sheet in full before deciding whether or not to participate.

#### What is the study about?

During February and March 2014 a coal fire burned in the Hazelwood Mine causing a period of smoky conditions in the Latrobe Valley. The aim of the *Hazelwood Adult Survey & Health Record Linkage Study* is to find out whether smoke from this fire has affected the health of adults living in Morwell. Health outcomes of particular interest include effects on the heart and lungs, also psychological health and cancer. The health of adults living in Morwell will be compared with the health of adults living in Sale which was only minimally exposed to the mine fire smoke.

#### Why were you chosen for this research?

All adults who were aged at least 18 years on the 9<sup>th</sup> of February 2014 (the start of the mine fire event) and living within the town boundary of Morwell or selected regions of Sale are eligible and encouraged to take part in the *Hazelwood Adult Survey & Health Record Linkage Study*. Sale was selected as the most appropriate community to compare with Morwell based on several factors including smoke exposure and community characteristics.

Other parts of the Hazelwood Mine Fire Health Study are investigating the health of infants (Latrobe Early Life Follow-up Study), school-aged children (Hazelwood Schools Study) and the elderly (Impacts on Older People Study). If eligible, you may be invited to participate in those as well as in this study.

#### What does participation involve?

Participation in the *Hazelwood Adult Survey & Health Record Linkage Study* involves two main parts:

##### 1. Questionnaire

You are invited to complete a questionnaire (either online or by telephone-interview) about your exposure to the mine fire smoke and your health and lifestyle. The questionnaire will take approximately 30 to 40 minutes to complete. If you complete the questionnaire over the phone, the interviewer will be a trained researcher from the Hunter Research Foundation ([www.hrf.com.au](http://www.hrf.com.au)).

##### 2. Health Record Linkage

It can be difficult for people to remember exactly when they used a health service, or the name of a particular diagnosis received, and it may be difficult for us to contact you about your health in the future. For these reasons you are invited to give permission for the researchers to access your information from health databases such as ambulance, hospital, cancer and death records. The researchers do this by linking your name, date of birth and sex to these health records. For some linkages we need your Medicare Card number.

Linkage to these health records will be repeated in the future for as long as it remains scientifically informative to do so.



## Possible benefits

Participants who complete the survey will be eligible to receive a \$20 Latrobe City gift card (Morwell participants), or a \$20 Shop-in-Sale e-voucher (Sale participants), which they can use at local businesses.

This study will provide valuable new information about long-term or chronic health conditions in Morwell residents and any associated impact of the mine fire smoke event. The findings will help inform the local community, their health-service providers and the State of Victoria Department of Health and Human Services (DHHS) of the long-term health needs of the Latrobe Valley community.

## If you wish to participate

- You can complete the questionnaire and give written permission for health record linkage online by going to <http://tinyurl.com/HAZELWOODSURVEY> and entering your unique ID shown on the cover letter that accompanied this Information Sheet.

OR

- You can complete the questionnaire and give verbal permission for health record linkage over-the-phone by calling 1800 082 238. When you call, an interviewer may be available to administer the questionnaire immediately, or you may prefer to make an appointment time which is more convenient for you to be called back.

## If you do not wish to participate

- You can decline participation by calling the Recruitment Coordinator on freecall 1800 985 899. Please quote your full name, residential address and the unique ID shown on the cover letter that accompanied this Information Sheet.

OR

- You can decline participation by emailing the Recruitment Coordinator at [recruitment@hazelwoodhealthstudy.org.au](mailto:recruitment@hazelwoodhealthstudy.org.au). Please type "Adult Survey opt out" in the subject header. In the body of your email, please type your full name, residential address and the unique ID shown on the cover letter that accompanied this Information Sheet.

## If you do not respond to this invitation

If we do not hear from you, we will try to phone you if there is a phone number for your household listed in the Electronic White Pages to answer any questions you might have. Alternatively, we will send you a reminder letter.

## Risks and inconveniences

Risks and inconveniences involved with participation include the time taken to complete the questionnaire and potential discomfort answering questions about the mine fire event and your health. You may prefer to answer the questionnaire with a supportive family member or friend present. Alternatively, if you feel distressed it may be helpful to phone a friend or local community support group. In addition there are 24-hour counselling services available over the phone such as **Lifeline on 13 11 14**.

## Can I withdraw from the study after consenting to take part?

Being in this study is voluntary and you are under no obligation to agree to take part. If you do participate, you can discontinue participation, or withdraw your consent to health record linkage, at any later date up to such time that your data has been included in final reports.

## Confidentiality, privacy and data storage

Your answers to the questionnaire, and any of your information accessed through health record linkage, will be completely confidential. All of the information gained in the study will be held securely by Monash

University for a minimum of five years in adherence with the University's regulations and the various provisions of the *Privacy Act 1988*.

All data will be stored in a secure, restricted-access area maintained by Monash University. The results of the study will be presented as grouped data which means that no individual participants can be identified.

### **How will I be informed of the study results?**

The Morwell and Sale communities and the wider region will be kept up to date on the progress of the study and the research findings through regular community updates, media notices and via the study website [www.hazelwoodhealthstudy.org.au](http://www.hazelwoodhealthstudy.org.au).

### **Future Investigations**

In future it is proposed that follow-up studies be undertaken to specifically investigate cardiovascular and respiratory health conditions. Based on information that you provide in the Adult Survey, you may be invited to participate in those follow-up studies. If we do contact you, you will be under no obligation to participate.

### **Source of funding**

The study is funded by the DHHS; however, the DHHS has no role in the collection, analyses and interpretation of participants' data, nor in the reporting of results.

### **Enquiries, concerns or complaints**

If you have any questions about participating in this study, please contact the Recruitment Coordinator on freecall 1800 985 899 or by email at [recruitment@hazelwoodhealthstudy.org.au](mailto:recruitment@hazelwoodhealthstudy.org.au).

Alternatively you can contact the Principal Investigator, Professor Michael Abramson, at:  
Monash University, Department of Epidemiology & Preventive Medicine,  
The Alfred Centre, 99 Commercial Road,  
Melbourne VIC 3004  
Tel: 03 9903 0573 Email: [michael.abramson@monash.edu](mailto:michael.abramson@monash.edu)

If you have a complaint concerning the manner in which this study is being conducted, please contact the Executive Officer, Monash University Human Research Ethics Committee, and quote project number 2015/000389, at the following address:

Monash University Human Research Ethics Committee (MUHREC)  
Building 3e Room 111  
Research Office  
Monash University VIC 3800  
Tel: +61 3 9905 2052 Email: [muhrec@monash.edu](mailto:muhrec@monash.edu) Fax: +61 3 9905 3831

## SURVEY REFERENCE CALENDAR

If you participate in the Adult Survey, you will be asked questions about where you were at different periods of time during the mine fire event. To help prompt your memory, below we have provided a calendar of events related to the mine fire from the 9<sup>th</sup> of February 2014 (the date the mine fire started) to the 31<sup>st</sup> of March 2014.

Day	Date	Events
Sun	9 Feb	• Morwell grass fire and coal fire started
Mon	10 Feb	
Tues	11 Feb	• Visit to Morwell by Premier Napthine • Firefighting of the mine temporarily suspended
Wed	12 Feb	
Thurs	13 Feb	• Dr Lester issued first health alert
Fri	14 Feb	• Community meeting arranged
Sat	15 Feb	• CFA message 'Watch and Act – Morwell residents indoors immediately, close windows/doors/vents. Seek further information via radio.'
Sun	16 Feb	
Mon	17 Feb	
Tues	18 Feb	• Community meeting held at Kernot Hall
Wed	19 Feb	• Respite Centre in Moe opened
Thurs	20 Feb	• Commercial Road Primary School and Sacred Heart Primary School relocated
Fri	21 Feb	• Community Health Assessment Centre opened at Saskia Way, Morwell
Sat	22 Feb	
Sun	23 Feb	
Mon	24 Feb	• Maryvale Crescent Preschool relocated
Tues	25 Feb	
Wed	26 Feb	• Premier Napthine second visit to Morwell
Thurs	27 Feb	• All government-run children's services closed
Fri	28 Feb	• Dr Lester advised vulnerable residents to relocate
Sat	1 Mar	
Sun	2 Mar	

Day	Date	Events
Mon	3 Mar	
Tues	4 Mar	• St Kilda Football Club visited Morwell
Wed	5 Mar	
Thurs	6 Mar	
Fri	7 Mar	
Sat	8 Mar	
Mon	10 Mar	• Labour Day Holiday
Tues	11 Mar	
Wed	12 Mar	
Thurs	13 Mar	
Fri	14 Mar	
Sat	15 Mar	
Sun	16 Mar	
Mon	17 Mar	• Dr Lester lifted relocation advice
Tues	18 Mar	
Wed	19 Mar	
Thurs	20 Mar	
Fri	21 Mar	• Choppers dropped in to visit Morwell primary school students
Sat	22 Mar	
Sun	23 Mar	
Mon	24 Mar	• All children's services and Maternal and Child Health Centres resumed normal operations
Tues	25 Mar	• Mine handed back from CFA to Mine Managers
Wed	26 Mar	
Thurs	27 Mar	
Fri	28 Mar	
Sat	29 Mar	
Sun	30 Mar	
Mon	31 Mar	

## Appendix 3

### **Media coverage and community engagement**



## Media promoting the Hazelwood Health Study 2016

There has been extensive media promoting the Hazelwood Health Study, particularly the Adult Survey, over the past year. A list of key media activities is shown in Table 3.

Date	Type	Outlet	Details
14/11/2016	Radio	ABC Gippsland radio	News report featuring Michael Abramson and describing Adult Survey participation rates and recruitment deadlines
10/11/2016	Print	Latrobe Valley Express	Article about the Adult Survey deadlines approaching
1/11/2016	Print	Gippsland Times	Letter to the Editor, describing inclusion of Sale in the Adult Survey
25/10/2016	Print	Latrobe Valley Express	Article informing Morwell residents of final area to be approached
26/9/2016	Print	Gippsland Times	Story about the roll out of the Adult Survey to the final area of Sale addresses
26/9/2016	Print	Latrobe Valley Express	Story about the roll out of the Adult Survey to the final area of Morwell addresses
8/9/2016	Print	Latrobe Valley Express	Story about Mine fire medical discovery through ambulance data
29/8/2016	Print	Gippsland Times	Story about the privacy and independence of the study
29/8/2016	Print	Latrobe Valley Express	Story about the privacy and independence of the study
1/8/2016	Print	Latrobe Valley Express	Story requesting more Morwell resident needed for Adult Study
1/8/2016	Print	Gippsland Times	Story requesting more residents needed for Adult Study
5/7/2016	Print	Gippsland Times	Story about roll out of the Adult Survey to the second batch of Sale addresses
4/7/2016	Print	Latrobe Valley Express	Story about the roll out of the Adult Survey to the third batch of Morwell addresses
9/6/2016	Print	Gippsland Times	Story about Sale being used as the comparison community for the Adult Survey
7/6/2016	Radio	ABC Gippsland	Prof Michael Abramson talking about roll out of Adult Survey to Sale

6/6/2016	Print	Latrobe Valley Express	Story about the roll out of the Adult Survey to the second batch of Morwell addresses
6/6/2016	TV	Win TV News	Brief report about the Morwell Community Recovery Committee encouraging the community to engage in consultations regarding the scope of the Adult Survey
23/5/2016	Radio	ABC Gippsland	Discussion with Voices of the Valley re review of the scope of the Adult Survey
2/5/2016	Print	Gippsland Times	Story informing the Sale community that the Adult Survey will commence in June
28/4/2016	Radio	ABC Gippsland	Prof Judi Walker talking about the the Adult Survey commencing in Morwell
7/4/2016 - 25/4/2016	Various	ABC Gippsland, 3AW, Latrobe Valley Express	Multiple stories regarding the response of the state government re the Hazelwood Mine Fire Inquiry, including the independent review of the study scope.
21/4/2016	Print	Latrobe Valley Express	Prof Judi Walker confirmed that the study is progressing as planned while the review of the scope takes place.

Table 3. Key media activities in year 2.

Examples of media releases and associated print media stories are provided below and links are available on the study website at <http://hazelwoodhealthstudy.org.au/media/>.

## Health study to continue amid scope review

Stephanie Charalambous

21 Apr 2016, midnight

The study into the long-term health impacts of the Hazelwood mine fire will continue to run as planned as an independent review of its scope is carried out.

As part of the study, a large survey of Morwell adults is expected to begin next week and continue until the end of the year.

The State Government announced it would review the study to determine whether it should be expanded to include additional cohorts of people who do not live in Morwell, including emergency responders to the fire.

Hazelwood Health Study principal co-investigator Judi Walker welcomed the government's decision, which was a response to the recommendations of the Hazelwood Mine Fire Inquiry.

Professor Walker said she was aware the government had engaged an independent consultant to undertake the review.

"We understand that the consultant's report will be made public and it will make recommendations to government about how to meet the aims and objectives of the long-term health study," Professor Walker said.

In the meantime, researchers are rolling out the adult survey component of the study.

"The adult survey is the final research stream to roll out as it is the largest and most complex part of the study," Professor Walker said.

"The success of the study depends on as many people as possible completing the survey, the higher the participation rate, the better the outcome for the community."

Some streams of the overall study - the early life follow-up and the schools study - include participation by the entire Latrobe Valley.

Morwell and District Community Recovery Committee chair Carolyn Boothman said it was positive to hear the government's affirmations about the study review and the committee looked forward to seeing further detail.

"We wish to be involved in any consultation about who those people are that need to be in the study," Ms Boothman said.

"It should be open to anybody who believes they were impacted because they had to be in Morwell at the time.

"We have to be grateful for the support we got from all over Australia at the time and we need to look after those people who literally put their lives on hold to support us."

The Hazelwood Health Study is led by Monash University, with assistance from Federation University, the University of Tasmania, the University of Adelaide and the CSIRO.

It has been commissioned by the Department of Health for an initial 10 years, with a government commitment to continue it for at least a further decade.

The State Government has re-affirmed its commitment to the 20-year period, as was recommended by the inquiry.



**EMBARGOED until; 6am, Thursday 28<sup>th</sup> April**

### HAZELWOOD HEALTH STUDY'S ADULT SURVEY UNDERWAY

A SURVEY of the health of adults who lived in Morwell at the time of the Hazelwood mine fire is now underway as one of the most significant stages of the Hazelwood Health Study rolls out.

In coming weeks Morwell households will begin receiving their invitation and information packs asking adults to participate in the survey which looks at the long-term health effects of the Hazelwood Mine Fire. This will continue until the end of the year.

Central to the Hazelwood Health Study's work will be the comparison of Morwell, which was most exposed to the smoke, and Sale, which was minimally exposed.

"The selection of Sale as a 'comparison town' will help researchers develop a detailed understanding of the health pathways in Gippsland," Professor Judi Walker, Principal Co-Investigator of the study said. "This will be vital to future health planning for the region."

Adults in selected parts of Sale will also be asked to participate in the Adult Survey, with the first batch of invitations going out next month.

The large scale Monash University-led study was established in response to community concerns about health impacts of exposure to the smoke during the mine fire event in February 2014.

Professor Walker has urged all eligible adults in Morwell and the selected parts of Sale to participate in the Adult Survey. "The study's success depends on as many people as possible completing the survey, whether they are older, younger, well or unwell," she said.

The internationally-renowned health research team led by Professor Michael Abramson is already working locally on the multi-stream study, targeting babies and toddlers, school aged children, older adults and community wellbeing.

Professor Abramson said the Adult Survey – the final stream to roll-out – was the largest and most complex part of the study.

"The higher the participation rate of this survey the better the outcome for the community will be," he said. "This really is the most effective way for the community to take ownership of the study and be part of the research."

Those who choose to participate will be able to complete the questionnaire – expected to take around thirty minutes - over the phone or online. Participants will be compensated for their time with a \$20 local gift voucher.

Professor Walker said responses from the Adult Survey, combined with information from other health datasets, would allow researchers to identify any health impacts from mine fire exposure and determine how widespread these impacts were felt in the region.

“This survey will also provide us with new information about the long-term or chronic health conditions of Morwell adults which will be fed back to the local community, local health service providers and the Department of Health and Human Services,” Professor Walker explained. She said this would provide a solid evidence base for future health policy and planning across Gippsland.

The Hazelwood Health Study team will be at local community events over the next six months to explain the Adult Survey. Information will continue to be provided in the local media and on the study website at [hazelwoodhealthstudy.org.au](http://hazelwoodhealthstudy.org.au)

**For more information, please contact:**

**Professor Judi Walker on 5122 0466 or 0418 508 680;**

**Professor Michael Abramson on 9903 0573 or 990 30892; or**

**Lynda McRae, Wordwise Communications on 0419 536 335 or  
[lmcrae@wordwisecommunications.com.au](mailto:lmcrae@wordwisecommunications.com.au)**

## Morwell residents wanted for Hazelwood Health Study

28 Apr 2016, midnight



**Leading the way: Hazelwood Health Study researchers Matthew Carroll, Judi Walker and Susan Denny. photograph bryan petts-jones**

Researchers are urging as many Morwell residents as possible to participate in a large-scale survey critical to the success of the Hazelwood Health Study.

The study is looking at the long-term health effects of the 2014 Hazelwood mine fire on the community and the survey component is the largest and most complex part.

"The study's success depends on as many people as possible completing the survey, whether they are older, younger, well or unwell," the study's principal co-investigator Professor Judi Walker said.

Information packs have begun arriving at Morwell households and will continue in the coming months, inviting adults to participate.

The survey will ask participants to answer questions about their health and wellbeing, where they were during the mine fire and the type of house in which they live.

They will also be asked to give the research team permission to access further health information from hospital, ambulance and cancer databases, making it possible to follow people's health without having to resurvey them.

The questionnaire is expected to take about 30 minutes either over the phone or online and participants will be compensated for their time with a \$20 Latrobe City Gift Card which can be used at local shops across the Valley.

Professor Walker said responses from the Adult Survey, combined with information from other health datasets, would allow researchers to identify any health impacts from mine fire exposure and determine how widespread these impacts were felt in the region.

"This survey will also provide us with new information about the long-term or chronic health conditions of Morwell adults which will be fed back to the local community, local health service providers and the Department of Health and Human Services," Professor Walker said.

She said this would provide a solid evidence base for future health policy and planning.

Lead researcher, Professor Michael Abramson said participation in the survey was "the most effective way for the community to take ownership of the study and be part of the research".

It's expected to take until the end of the year for researchers to complete the survey component.

Other streams of the study look at babies and toddlers, school aged children, older adults and community wellbeing.

Also to be surveyed are adults in selected parts of Sale, which has been chosen as the study's comparison community.

The first batch of Sale invitations will go out next month.

The Adult Survey is currently only targeting Morwell residents, however the State Government plans to review the study's scope to determine whether it should be expanded to include additional cohorts of people who do not live in Morwell, including emergency responders to the fire.

This is in response to recommendations by the Hazelwood Mine Fire Inquiry.

The Hazelwood Health Study is led by Monash University, with assistance from Federation University, the University of Tasmania, the University of Adelaide and the CSIRO.

It has been commissioned by the Department of Health for an initial 10 years, with a government commitment to continue it for at least a further decade.

## **Sale residents contribute to the Hazelwood fire health study**

2 May 2016, 2 p.m.

A LARGE number of Sale adults will soon be asked to contribute to the Hazelwood health study, which is looking at the long-term health effects of the Hazelwood Mine Fire.

While Sale was minimally exposed to smoke from the 2014 mine fire, compared with Morwell, Sale has been selected as a 'comparison' town to help the study's researchers develop a detailed understanding of health pathways in Gippsland.

All adults who lived in Morwell at the time of the mine fire will be asked, over coming weeks, to participate in an adult survey, which is one of the most significant stages of the Hazelwood health study.

Soon after, adults from selected parts of Sale will also receive invitations and information packs, asking them to participate in the survey.

The large scale Monash University-led Hazelwood health study was established in response to community concerns about health impacts of exposure to the smoke during the mine fire during February 2014.

Principal co-investigator of the study, Professor Judi Walker has urged all eligible adults in Morwell and the selected parts of Sale to participate in the adult survey.

She said the participation of Sale adults would be "vital to future health planning for the region."

"The study's success depends on as many people as possible completing the survey, whether they are older, younger, well or unwell," she said.

The internationally-renowned health research team led by Professor Michael Abramson is already working locally on the multi-stream study, targeting babies and toddlers, school aged children, older adults and community wellbeing.

Professor Abramson said the adult survey, the final stream to roll-out, was the largest and most complex part of the study.

"The higher the participation rate of this survey, the better the outcome for the community will be," he said.

"This really is the most effective way for the community to take ownership of the study and be part of the research."

Those who choose to participate will be able to complete the questionnaire, expected to take about 30 minutes, over the phone or online. Participants will be compensated for their time with a \$20 local gift voucher.

Professor Walker said information gathered from the adult survey would provide a solid evidence base for future health policy and planning across all of Gippsland.

The Hazelwood Health Study team will be at local community events during the next six months to explain the adult survey.

Information will continue to be provided in the local media and on the study website at [hazelwoodhealthstudy.org.au](http://hazelwoodhealthstudy.org.au).

## Hazelwood survey moves to phase two

6 Jun 2016, midnight



**Staged survey:** Researchers for the Hazelwood Health Study are inviting Morwell residents to take part in the Adult Survey component of the study. They're sending out invitations to participate to one section of the town at a time and are about to move onto the second area.

Almost 1000 invitation packs have now been distributed, calling on eligible adults in a section of Morwell to participate in the Hazelwood Health Study's adult survey.

A second area will be targeted this week.

The survey of adults who lived in Morwell at the time of the February 2014 Hazelwood mine fire looks at the long-term health effects of the fire.

The large survey is expected to take the rest of the year to recruit all the participants needed.

Professor Judi Walker, principal co-investigator of the Monash University-led Hazelwood Health Study, urged all eligible adults to participate in the Adult Survey whether they were young, old, well or unwell, and regardless of whether they think they were impacted by the smoke event or not.

"It is important that we speak to people who had little or no exposure to the smoke so that we can compare their health with that of people who had high levels of exposure," Professor Walker said.

"We are hoping that every person who receives an invitation agrees to participate."

Professor Walker said the study had been established in response to community concerns about the health impacts of exposure to smoke from the mine fire event and now it was vital the community contributed to its outcomes.

Participation in the survey involves completing a questionnaire, over the phone or online - including on the computer, tablet or smart phone - which is expected to take about 30 minutes.

Participants will receive a \$20 Latrobe City gift card, redeemable at about 85 local businesses, to compensate for their time.

"The study team chose this gift card to ensure the money remains in the local economy and supports this region," Professor Walker said.

For more information on the Adult Survey phone 1800 985 899 or visit [hazelwoodhealthstudy.org.au/research-areas/adult-survey/adult-survey-faqs/](http://hazelwoodhealthstudy.org.au/research-areas/adult-survey/adult-survey-faqs/)



## Hazelwood Health Study uses Sale as control comparison

9 Jun 2016, noon



**Sale woman Terrienne Faithful and her son Tim, two, learn about the Hazelwood Health Study, with help from Monash University Hazelwood Health Study recruitment and engagement coordinator Susan Denny at Sale Library.**

SOME Sale residents are being asked to contribute to the large-scale Hazelwood Health Study by participating in a survey about the long-term health effects of the Hazelwood Mine Fire.

The fire in the Morwell open cut mine adjacent to the Hazelwood power station blanketed Morwell and the surrounding area in smoke and ash for six weeks in February and March 2014.

Sale was minimally exposed, compared with Morwell, so it was selected as a comparison town in the Monash University-led long-term health study.

To focus its efforts, the study team will target selected areas of Sale.

Five areas with a similar profile to Morwell have been identified and one area will be targeted each month until late this year.

Information flyers have been delivered to households in the first targeted area bordered by Cobains Rd, Gibsons Rd, Guthridge Parade, Raglan St and Buckley St.

Invitation packs will be mailed to eligible adults who were registered on the Victorian Electoral Roll as living within this part of Sale at the time of the Hazelwood Mine Fire.

Participation in the survey involves completing a questionnaire over the phone or online, which takes about 30 minutes.

The questionnaire asks about cardiovascular and respiratory health, place of residence and whereabouts during the mine fire, as well as giving the researchers permission to access health records.

Principal co-investigator Professor Judi Walker said the survey was the one of the most significant stages of the Hazelwood Health Study.

“The survey’s success depends on the participation of as many eligible adults as possible in the targeted areas of Sale and all of Morwell,” she said.

“We want to hear from these people whether they are young, old, well or unwell, regardless of whether they think they were impacted by the smoke event or not and even if they were away at the time of the fire.”

Those who choose to participate will be compensated for their time with a \$20 Shop in Sale E-voucher, redeemable at a range of local businesses.

“The study team chose this voucher to ensure the money remains in the local economy and supports this region,” Professor Walker said.

“We are relying on the goodwill of Sale residents to help us properly evaluate the effect of the smoke event on people’s health.

“We are also confident that the health data we collect will be of long-term benefit to health and emergency management services in Sale, Morwell and right across Gippsland.”

Professor Walker said Sale was chosen as the comparison town as it was comparable to Morwell in size, rural location and age of residents.

“In addition, we were keen to select another Gippsland town so we could understand the impacts of this fire across the broader Gippsland region,” she said.

Leader of the internationally renowned health research team, Professor Michael Abramson, said the survey was the largest part of the multi-stream Hazelwood Health Study and the final stream to roll out.

Other parts of the study are already underway in Morwell and other Latrobe Valley towns, targeting babies and toddlers, school-aged children, older adults and community wellbeing.

“This study was commissioned by the Victorian Department of Health and Human Services in response to community concerns,” Professor Abramson said.

“It is a long-term study and as it progresses it will provide vital evidence to the local health sector, informing its policy, planning and actions into the future.”

For more information on the survey phone 1800 985 899 (toll free) or visit <http://hazelwoodhealthstudy.org.au/research-areas/adult-survey/adult-survey-faqs/>.

## Survey participants needed

4 Jul 2016, midnight



Participation: Morwell Community Advisory Committee member Andrew Wood is pictured completing the Hazelwood Health Study adult survey online. photograph supplied

Morwell residents living closest to the Hazelwood mine will be targeted this week as part of the Hazelwood Health Study's adult survey.

As the study rolls out across the town 1188 invitation packs will be sent to all eligible adults on the south side of Morwell from today.

The health study research team, led by Monash University, has urged all residents, regardless of whether they think they were impacted by the 2014 smoke event or not, to participate in the study.

Professor Judi Walker, principal co-investigator of the study, said while the process of rolling out the adult survey was still in its early stages, so far only one in five residents in the first Morwell area targeted by the study had completed the survey.

"We are calling on all eligible Morwell adults to support our efforts in this community-driven initiative," Professor Walker said.

Recently-elected chair of the Hazelwood Health Study's Community Advisory Committee, Tracie Lund, said the State Government had commissioned the study in response to community concerns about the long-term health effects of the mine fire, so it was critical the community now take the opportunity to participate.

"This fire covered Morwell in smoke and ash for six weeks," Ms Lund said.

"In order to really understand the effects of this on people's health, the study's research team need as many people as possible to support the adult survey, including those who think they were not affected."

Professor Michael Abramson, who leads the health research team, said researchers wanted all eligible Morwell adults to understand the importance of their input.

"We are finding when we phone residents asking them to complete the adult survey, some are opting not to take part because they believe they were not impacted," he said.

"In fact, it is critical that we have their participation as this allows us to measure the true impact of the event and determine which factors protected some members of the community while others remained vulnerable.

"If only people who think they were affected participate, we may over-estimate the true impact of the smoke and ash."

So far 2652 residents in Morwell have received invitation packs for the adult survey and many of those have already received phone calls from researchers asking them to complete the survey - expected to take about 30 minutes - either online or over the phone.

Those who complete the survey will receive a \$20 gift voucher redeemable at about 85 local businesses. For more information on the adult survey phone 1800 985 899 (toll free) or go to [hazelwoodhealthstudy.org.au](http://hazelwoodhealthstudy.org.au)

## Second area for health study

5 Jul 2016, midnight

A SECOND area of Sale will be targeted this week as part of the large-scale Hazelwood Health Study, and local community leaders are urging eligible adults to participate in the study's Adult Survey.

Although the survey asks participants about the long-term health effects of the 2014 Hazelwood mine fire, the input of Sale residents is critical to the study's success.

Principal co-investigator of the Monash University-led health study, Professor Judi Walker, said that Sale had been selected as a comparison town because it was minimally exposed to the fire.



Dr Iain Nicholson completes the Adult Survey online.

"Sale is comparable to Morwell in size, rural location and age of residents and the survey participation of people who were not affected by the mine fire smoke is equally as important as people who were affected," Professor Walker said.

"It is essential to allow us to measure the true extent and impact of the event."

In the past month 538 information flyers and information packs about the Adult Survey have been sent to households in the first of five targeted Sale areas.

Many residents in this area have already been phoned by researchers asking them to complete the survey - expected to take around 30 minutes - over the phone or online.

However, so far only 38 people have participated.

From this week a further 762 residents in an area to the north of Raglan St and west of McCole St will be targeted.

Professor Walker said those who chose to participate would be compensated for their time with a \$20 Shop in Sale e-voucher, redeemable at a wide range of local businesses.

"If enough residents support this survey it also has the potential to provide Sale businesses with an economic boost," she added.

Long-serving Sale GP Dr Iain Nicholson, who is one of two Sale community members on the study's Community Advisory Committee, has completed the Adult Survey.

He urged all other eligible Sale adults who are invited to participate, to support the study.

"The research team are relying on the goodwill of Sale residents to help them properly evaluate the effect this smoke event had on people's health," Dr Nicholson said.

"Although comprehensive, the questionnaire is not too difficult to complete and the health data collected will be used to inform and improve health and emergency policy, planning and delivery rights across Gippsland, so we all stand to benefit."

Central Gippsland Health Service CAC organisational representative Ruth Churchill, has also completed the survey.

"It was quite an easy process and I can recommend the online version to others with access to a computer," she said.

Ms Churchill encouraged Sale residents to show their support for the community-driven study, which was commissioned by the Victorian Government in response to community concerns.

"Our participation has the potential to provide critical evidence to governments for future health planning for the region," she said.

For more information on the Adult Survey phone 1800 985 899 (toll free) or go to <http://hazelwoodhealthstudy.org.au/research-areas/adult-survey/adult-survey-faqs/>

## More participants needed for health study

1 Aug 2016, midnight



Participation: Long-time Morwell resident and taxi driver Ross Anderson completed the Adult Survey on his mobile phone. He said he hoped as many other Morwell adults as possible would support the study. photograph bryan petts-jones

Only 25 per cent of Morwell residents so far targeted by the Hazelwood Health study have agreed to participate in the large survey component of the project.

It has prompted the research team to urge residents to recognise the significance of the study for the region's future health.

"This means we have no health information for the remaining 75 per cent," study investigator Professor Judi Walker said.

The Adult Survey is the largest component of the study - an initiative which the community called for in response to concerns about the potential long-term health impacts of the 2014 Hazelwood mine fire.

"Over and above the analysis of the impacts of the mine fire, the findings will be vital to health planning for the region's future," Professor Walker said.

The Monash-led research team has so far invited 4691 eligible adults in Morwell, including those who have moved away since the fire, to complete the Adult Survey, as well as a further 1300 adults in Sale, which has been selected as the study's 'comparison town'.

This week a fourth Morwell area, bound by McDonald Street, Princes Drive, Churchill Road and Hourigan Road, will be sent Adult Survey invitation packs.

Professor Walker said it was critical residents understood this was their only opportunity to ensure any long-term health effects from the six-week fire event could be tracked and responded to.

"We understand residents are experiencing a level of survey fatigue following the fire with so many different fire-related activities underway," Professor Walker said.

"We know there are misconceptions about what this study might be about, but we want to reassure everyone that this is the only independent research that is monitoring the short and long-term health impacts of the smoke exposure.

"If people don't complete the survey, then we won't have the information needed to identify, understand and respond to any health impacts which may show up in the years to come."

Professor Walker said the research team had selected the Hunter Research Foundation, an experienced and respected survey-specialist organisation, to interview Adult Survey participants over the phone.

The study team plans to run stands at busy locations in Morwell, including Mid Valley, over the next few months and will provide paper-based surveys to anyone who prefers these over the online and telephone survey options.

The questionnaire takes about 30 minutes to complete and asks participants about their cardiovascular and respiratory health, and proximity to the mine fire.

The study also seeks permission to access some general health information such as hospital, ambulance and cancer registry records, but this does not include details of private conversations with doctors or test results.

The researchers need to collect health information from as many eligible adults as possible, whether old, young, well or unwell and regardless of whether they think they were impacted or not.

Professor Walker said a younger group of Morwell adults had not responded in high numbers to the survey but she insisted their support was essential.

"We know when people are younger and healthy, in particular, they may not worry much about their long-term health, but they might be more concerned later in life."

If invited residents have already opted not to complete the survey it is not too late to 'opt back in'.

They can do so by following the instructions on their invitation pack or calling 1800 985 899 or visiting <http://hazelwoodhealthystudy.org.au/research-areas/adult-survey/adult-survey-faqs/> for more information.

Professor Walker also urged any community groups who were keen to know more about the Adult Survey, to make contact, as a study team member may be able to attend a meeting and provide more information.

Those who choose to participate will be compensated for their time with a \$20 Latrobe Citygift card, redeemable at about 85 local businesses.



## Mine fire health study needs Sale participants

1 Aug 2016, 2 p.m.



At a recent training night, Sale Football-Netball Club urged its members to get behind the Hazelwood Health Study. Pictured standing (from left) are senior football coach Shane Fyfe, netballer Kim Booth, A grade netball coach Jo Ballinger and netball committee member Kris Morrison. Seated are club president Sam Morelli and senior footballer Ben Dessent.

THE Hazelwood Health Study team has stepped up its efforts to encourage Sale residents to support its large-scale adult survey, in light of a low participation rate so far.

At this stage, less than 10 percent of the adults targeted in Sale have chosen to participate in the adult survey.

"This means we have no health information for the remaining 90 percent," study investigator Professor Judi Walker said.

The study has been set up to monitor the long-term health impacts of the Hazelwood Mine Fire which blanketed Morwell and the surrounding area in smoke and ash for six weeks in February and March, 2014.

"It is critical that the study be able to compare the health of the Morwell residents with that of a Gippsland town that was minimally exposed, and Sale residents have been chosen as this important comparison group," Professor Walker said.

She said participation by the Sale community would also contribute to findings which were expected to be "vitaly important to planning for the future health of Sale itself and the wider region."

Five areas of Sale with a similar profile to Morwell are being targeted, with all eligible adults being asked to complete a 30-minute questionnaire about their cardiovascular and respiratory health, and proximity to the mine fire.

The questionnaire can be completed over-the-phone, online or on a paper form.

The study also seeks participants' permission to access some general health information such as hospital, ambulance and cancer registry records, but this does not include details of private conversations with doctors or test results.

About 1300 adults from two areas of Sale have so far been invited to participate, with mailed invitation packs and follow-up phone calls from Hunter Research Foundation, the survey-specialist organisation selected to manage this part of the study.

From this week a third area, bound by Raglan, Lansdowne and Macarthur Sts, Guthridge Parade, Inglis and Patten Sts, will be invited.

Those who choose to take part will receive a \$20 Shop in Sale e-voucher, redeemable at a wide range of local businesses, to compensate for their time.

"We understand Sale residents may not see it as a priority to participate in a study which relates to a smoke event which mostly affected Morwell, however the reason we need the support of eligible adults in Sale is so that we can understand the true extent and impacts of the exposure," Professor Walker said.

"We are also confident that our evidence will contribute in a significant way to future health and emergency planning for all Gippslanders, not only those who live in Morwell."

One local club to show its goodwill is the Sale Football Netball Club.

In recent weeks, the club has met to discuss participation in the study and encouraged its members to take the time to complete the adult survey.

"We see ourselves as being part of the wider Gippsland community and we know the mine fire had a devastating impact on the people of Morwell," said club president Sam Morelli.

"So we have asked our members to complete the adult survey, as it is important to the outcomes of the Hazelwood Health Study."

"We hope that by showing our support, and encouraging others to do the same, the research team is able to collect the evidence it needs to inform future health planning for all of Gippsland," he added.

Professor Walker said the research team appreciated the support of the club and she hoped others local organisations and clubs would follow suit.

"We want to hear back from all eligible adults who receive our invitation to participate, whether they are young, old, well or unwell, regardless of whether they think they were impacted by the smoke event or not and even if they were away at the time of the fire," she said.

Professor Walker said if residents had already opted not to complete the survey it was not too late to 'opt back in'.

They can do so by following the instructions in their invitation pack, or phoning 1800 985 899 (toll free) or visiting [hazelwoodhealthystudy.org.au/research-areas/adult-survey/adult-survey-faqs/](http://hazelwoodhealthystudy.org.au/research-areas/adult-survey/adult-survey-faqs/) for more information.

Professor Walker also urged any community groups who were keen to know more about the adult survey, to make contact.

"One of our study team may be able to attend a meeting, provide more and help to facilitate people's participation," she added.



## **Privacy assurances for long term Hazelwood Health Study**

29 Aug 2016, 2 p.m.

HAZELWOOD Health Study research team has moved to reassure the community of the study's independence and privacy conditions as it this week targets another large area of Sale for participation in its adult survey.

The Monash University-led research team has now invited about 3500 Sale residents to complete its adult survey - the largest component of the Hazelwood Health Study in an effort to collect information about the potential long-term health impacts of the 2014 Hazelwood mine fire.

Sale has been selected as the 'comparison town' in the large-scale study, and investigator professor Judi Walker said it was critical the study be able to compare the health of Morwell residents with that of a Gippsland town that was minimally exposed to the six-week smoke event.

This week, 726 Sale residents living in an area bound by Raglan, Landsdowne, Macarthur, Cunningham and York Sts, as well as Dawson, Buckley and McCole Sts, will receive their adult survey invitation packs.

To date only about seven percent of residents targeted in Sale have completed the survey.

Professor Walker urged as many eligible Sale residents as possible to get behind the study.

"The support of Sale people will not only help the research team understand the true extent of the impacts of the fire, but it will also contribute in a significant way with planning for the future health of Sale and wider Gippsland," she said.

Professor Walker said the research team was eager for Sale residents to understand the value of their participation, whether they think they were impacted or not and even if they were away at the time of the fire.

She said the research team had been listening to the community and understood there was a level of concern about the study's independence and the privacy of information collected.

"We can assure the community that privacy is our over-riding concern and we have stringent safeguards in place to keep all information secure," Professor Walker said.

"It is also important that people understand that any health information they provide is stored separately from name and contact details."

"The researchers involved in analysing the health data do not need, and will not be provided with, contact details.

"In addition, no other groups will be able to access any participant's information," she said.

In response to other concerns expressed about the independence of the study, Professor Walker said that while the state government had funded the research, it had no control over the release of the study's findings.

"If anything, the government has always made it clear how important it is for the research to stand on its own and for the community to be able to access all study findings as they arise," she said.

"Like almost all university research, the funding has come from an external source.

"In this case it has come from the state government in response to concerns expressed by the local community - this in no way compromises the independence and integrity of the findings."

Anyone who participates in the adult survey will also be compensated for their time with a \$20 Shop in Sale E-voucher, redeemable at a wide range of local businesses.

Professor Walker reminded any invited residents who may have already opted out of the survey that it is not too late to 'opt back in'.

They can do so by following the instructions on their invitation pack or calling 1800 985 899 (toll free) or visiting [www.hazewloodhealthystudy.org.au/research-areas/adult-survey/adult-survey-faqs/](http://www.hazewloodhealthystudy.org.au/research-areas/adult-survey/adult-survey-faqs/) for more information.

"I also continue to urge any community groups who are keen to know more about the adult survey, to make contact," she said.

"One of our study team may be able to attend a meeting, provide more information and help to facilitate people's participation."

Researchers say Hazelwood Health Study is independent and private

29 Aug 2016, midnight

The researchers behind the Hazelwood Health Study have moved to reassure the community of the study's independence and privacy.

It comes as they begin to target a new section of Morwell for participation in the Adult Survey, the largest component of the health study.

The Monash University-led research team has so far invited about 7500 Morwell residents to complete the survey in an effort to collect information about the potential long-term health impacts of the 2014 Hazelwood mine fire.

This week, 1663 Morwell residents living in an area bound by Crinigan, Hourigan and Maryvale roads and Burnside Drive will receive their Adult Survey invitation packs.

To date, 1100 Morwell residents have completed the survey.

Investigator, Professor Judi Walker said the research team understood there was a level of concern about the study's independence and the privacy of information collected.

"We can assure the community that privacy is our over-riding concern and we have stringent safeguards in place to keep all information secure," Professor Walker said.

"It is also important that people understand any responses to the Adult Survey and health information we collect is stored separately from name and contact details."

Professor Walker said researchers involved in analysing the data were only given access to the survey and health data and would not be provided with contact details.

"In addition, no other groups will be able to access anybody's results," she said.

In response to other concerns expressed about the independence of the study, Professor Walker said while the State Government had funded the research, it had no control over the release of the study's findings.

"If anything, the government has always made it clear how important it is for the research to stand on its own and for the community to be able to access all study findings as they arise," she said.

"Like almost all research, the funding has come from an external source," Professor Walker said.

"In this case it has come from the State Government in response to concerns expressed by the local community - this in no way compromises the independence and integrity of the findings."

Her comments come in the wake of a review of the health study which recommended the establishment of an independent board as it found there was "compromised independence" due to the involvement of the Department of Health and Human Services in contractual arrangements.

It is unclear whether the government will adopt this recommendation. It has indicated it will formally respond in September.

The research team will host community events in Morwell in the months to connect with community members who have not yet participated in the survey.

This will include a session at the Tribes Play Centre in Morwell between 11.30am to 2.30pm on Sunday, 18 September, where children can play and eat for free while members of the research team will be on hand to assist eligible parents or grandparents to complete the survey.

Registration is essential, by calling 1800 985 899.

The health study team will also have a presence at Mid Valley Shopping Centre between 10am to 2pm on Saturday, 10 September and Thursday, 13 October. Eligible people are invited to enjoy a free coffee and muffin while they complete the Adult Survey.

Professor Walker reminded residents who had already opted out of the survey that it's not too late to 'opt back in' by following the instructions on their invitation pack or calling 1800 985 899.

## **Mine fire medical discovery**

Farrah Plummer  
8 Sep 2016, midnight

COMMUNITY fears of increased heart and lung conditions during the Hazelwood mine fire have been confirmed in Monash University data released today.

Researchers found the link using CSIRO smoke exposure levels along with Ambulance Victoria attendance data in the Latrobe Valley.

"The study found that ambulance call outs for cough, asthma, heart attack and heart failure during February and March 2014, were elevated in the areas of the Latrobe Valley with higher levels of smoke exposure," Monash University Department of Epidemiology and Preventative Medicine researcher Martine Dennekamp said.

Recognising "heightened health sensitivities" during the period of the fire, Dr Dennekamp conceded some people may have been more likely to call an ambulance when they might not have otherwise.

"However, this was unlikely to explain all the increase in ambulance data," she said.

Dr Dennekamp added research also accounted for seasonal and temperature changes.

Morwell and District Community Recovery Committee chair Caroline Boothman said she was not surprised by the findings given the anecdotal data in the community.

"This is an exciting time in the (Hazelwood Mine Fire) Health Study data and really confirms what locals knew at the time and gives us the evidence we need to advocate for the health support that we need," Ms Boothman said.

Ms Boothman said she would like the data to be compared with Latrobe Regional Hospital admittance data, considering people presenting themselves to the emergency department.

She agreed there could have been some fear-based admittance, but also genuine cases.

"This certainly supports our need for a health study and ongoing support to all the people exposed to all levels of smoke," Ms Boothman said.

The 20 year-long health study will continue to collect health information from the community.

The findings were presented at the International Society for Environmental Epidemiology conference in Rome, Italy last weekend.



23/09/16

## Media Release

(Embargoed until Monday 26<sup>th</sup> September)

### Final Sale area to be targeted by Hazelwood Health Study's Adult Survey

THE Hazelwood Health Study will this week send Adult Survey invitations to 715 eligible residents in the last area of Sale to be targeted by the large-scale activity. This brings the total number of invitations to more than 4000.

In the coming month the study team will also distribute paper surveys across public venues in the town including Wellington Shire Council, the Sale library and health and medical clinics, in an effort to boost participation. So far around 13 percent of eligible adults invited to participate in the survey have chosen to do so.

The survey is the largest component of the Monash-led health study which looks at the potential long-term health impacts of the Hazelwood mine fire, which blanketed Morwell and its surrounding area in smoke and ash during February and March 2014.

Sale has been selected as the 'comparison town' in the study and Investigator Professor Judi Walker said it was critical the study be able to compare the health of Morwell residents with that of a Gippsland town that was minimally exposed to the six-week smoke event.

She urged all Sale residents who have been invited to support the study to consider spending around 30 minutes of their time completing the questionnaire.

"The support of Sale people will not only help the study team understand the true extent of the impacts of the fire, but it will also contribute in a significant way with planning for the future health of Sale and wider Gippsland," she said.

This week, invitation packs will be sent to residents living in the areas surrounding Lake Guthridge, bound by Guthridge Parade, Foster and York Streets as well as another area bound by Cunningham, Fitzroy and York Streets.

Information and support sessions will also be hosted by the study team at a number of Sale locations in coming months to assist eligible residents to complete the survey 'on the spot'.

Those who choose to participate in the Adult Survey will be compensated for their time with a \$20 Shop in Sale E-voucher, redeemable at a wide range of local businesses.

Professor Walker said residents who may have chosen not to complete the survey were free to change their mind at any point this year. They can 'opt back in' by following the instructions on their invitation pack, calling 1800 985 899 (toll free) or visiting <http://hazelwoodhealthystudy.org.au/research-areas/adult-survey/adult-survey-fags/> for more information.

"It's also important for people to understand that if they choose to complete the survey online, this can be done over a period of time – it doesn't have to be completed all at once," she added.

Ends.

**Caption:** Hazelwood Health Study administrative assistant Shona Anderson (right) is pictured at the Tribes Playcentre in Morwell with Senior Project Manager Dr Jillian Blackman.

**For more information, contact:**

Dr Matthew Carroll, Hazelwood Health Study Research Leader, 0418 798 489, or

Lynda McRae, 0419 536 335, [lmcrae@workwisecommunications.com.au](mailto:lmcrae@workwisecommunications.com.au)



9 November 2016

### **DEADLINES APPROACHING FOR HAZELWOOD HEALTH STUDY ADULT SURVEY**

AS deadlines approach for completion of the Hazelwood Health Study's Adult Survey, the study team has urged all eligible Sale residents to contribute to the study's findings.

The survey is the largest component of the Monash-led health study which looks at the potential long-term health impacts of the Hazelwood mine fire. Sale has been selected as the 'comparison town' in the study.

Investigator Professor Judi Walker said it was critical the study be able to compare the health of Morwell residents with that of a Gippsland town that was minimally exposed to the six-week smoke event.

So far, of the 4000 Sale residents invited to participate in the Adult Survey, only about 16 percent have chosen to do so.

The study team is keen to see this figure increase. While residents can still participate by paper questionnaire until the end of January 2017, the opportunity to complete the survey by phone or on-line closes on Friday 25<sup>th</sup> November.

Those who would prefer to be interviewed over the phone – often the quickest way to participate – are advised to book in now, Professor Walker said.

"Data collected as part of this study will be used to inform governments about future health service planning needs across all of Gippsland, including Sale, but at present we know very little about the health of 84 percent of the Sale adults we have targeted," she said.

To ease the process, the study team be at Gippsland Centre Sale on Wednesday 7 December between 10am-2pm assisting eligible residents to complete the Adult Survey 'on the spot' while they enjoy a free coffee/tea at Muffin Break.

A study team member will also be at the Sale Library every Tuesday afternoon from 2pm - 4pm to help residents with the survey and provide additional information about the study.

Paper surveys are now available across public venues in the town including Wellington Shire Council, the Sale library, health and medical clinics, Latrobe Community Health and the Sale Neighbourhood house.

Professor Walker said recruitment numbers were particularly low with residents aged in their 20s and 50s, so participants in these age groups are most sought after.

“It is so important for us to have a large sample group to ensure this study accurately reflects the current and future health needs of Gippsland’s population,” Professor Walker said

Anyone who would like more information on the Adult Survey should contact the study team on 1800 985 899.

Those who choose to participate in the Adult Survey will be compensated for their time with a \$20 Shop in Sale E-voucher, redeemable at a wide range of local businesses.

An annual Hazelwood Health Study briefing will be held at the Morwell Bowls Club on Tuesday 29<sup>th</sup> November from 7-9pm for all interested residents. The researchers will provide updates for all the study’s research streams, including infants, school children, community groups and the elderly across the Latrobe Valley. It will cover activities over the past 12 months, discuss early data analysis and advise on what will be happening as the study moves forward.

Ends

**For more information, contact:**

Professor Michael Abramson on 9903 0573 or 990 30892; or

Lynda McRae, Wordwise Communications on 0419 536 335 or  
[lmcrae@wordwisecommunications.com.au](mailto:lmcrae@wordwisecommunications.com.au)





9 November 2016

### **DEADLINES APPROACHING FOR HAZELWOOD HEALTH STUDY ADULT SURVEY**

AS deadlines approach for completion of the Hazelwood Health Study's Adult Survey, the study team has urged all eligible Morwell residents to participate while they still have the chance.

So far just over one quarter of invited Morwell residents have participated in the survey, which is the largest component of the Monash-led study looking at the potential long-term health impacts of the 2014 Hazelwood mine fire.

The study team is keen to see this figure increase. While residents can still participate by paper questionnaire until the end of January 2017, the opportunity to complete the survey by phone or on-line closes on Friday 25<sup>th</sup> November.

Investigator Professor Judi Walker said recruitment numbers were particularly low with residents aged in their 20s and 50s, so participants in these age groups are most sought after.

"It is so important for us to have a large sample group to ensure this study accurately reflects the current and future health needs of Morwell's population," Professor Walker said.

"The study not only aims to answer questions about the true impact of the mine fire, but it will also inform governments about future health service planning needs across the region.

"At present, however, we know very little about the health of 74 percent of the Morwell adults we have targeted," she said.

Professor Walker said any adult who lived in Morwell at the time of the mine fire but has not received a mailed invitation for the Adult Survey should contact the study team on 1800 985 899 or collect a survey pack. Packs are available at Morwell Newspower in Commercial Road, Latrobe Community Health Service in Morwell and Traralgon, all local GP clinics, the Morwell Neighbourhood House, Latrobe City Council and the Morwell Library.

Those who would prefer to be interviewed over the phone – often the quickest way to participate – are advised to book in now, she added.

Professor Walker also reminded participants that Latrobe City gift cards are available for collection from Morwell Newspower around two weeks after they have completed the Adult Survey. Many residents have yet to collect their gift cards.

An annual Hazelwood Health Study briefing will be held at the Morwell Bowls Club on Tuesday 29<sup>th</sup> November from 7-9pm for all interested residents. The researchers will provide updates for all the study's research streams, including infants, school children, community groups and the elderly across the Latrobe Valley. It will cover activities over the past 12 months, discuss early data analysis and advise on what will be happening as the study moves forward.

"The closing of recruitment for the Adult Survey does not mean this research is complete," Professor Walker said. "Instead, new research streams are planned for 2017 which include respiratory and cardiovascular examinations of some of the Adult Survey participants."

Ends

**Photo to be taken by LV Express at 2pm Wednesday 9<sup>th</sup> November at Morwell Newspower.**

Caption: Morwell Newspower Proprietor Ray Burgess and his team members are pictured being presented with a Certificate of Appreciation for their assistance with the Adult Survey, by Hazelwood Health Study Recruitment and Engagement Co-ordinator Susan Denny.

**For more information, contact:**

Professor Michael Abramson on 9903 0573 or 990 30892; or

Lynda McRae, Wordwise Communications on 0419 536 335 or  
[lmcrae@wordwisecommunications.com.au](mailto:lmcrae@wordwisecommunications.com.au)

## **Health study targets final Morwell patch for survey**

25 Oct 2016, 11:21 a.m.

THE Hazelwood Health Study will this week send Adult Survey invitations to 1750 eligible residents in the last area of Morwell to be targeted by the large-scale activity.

This brings the total number of invitations to about 9000.

In the coming month, the study team will also widely distribute paper surveys across a range of public venues in the town in an effort to boost participation.

So far about one quarter of eligible residents invited to participate in the survey have chosen to do so.

The survey is the largest component of the Monash-led health study which looks at the potential long-term health impacts of the 2014 Hazelwood mine fire.

Over past weeks the study team has hosted community events at Mid Valley Shopping Centre and Tribes Playcentre to answer questions about the study and help people complete the survey 'on the spot'.

Study investigator Professor Judi Walker said the response from community members to those events was encouraging.

"However, it remains critical that as many other eligible adults in Morwell as possible take the opportunity to complete the survey before the year's end," Professor Walker said.

Anyone who lived in Morwell at the time of the mine fire, even if they were away at the time or have moved away since - is eligible to participate.

This week, invitation packs will be sent to residents living in an area bound by Princes Drive and west of McDonald Street, including Latrobe and Holmes roads and their surrounding streets.

Professor Walker said anyone who lived in Morwell during the mine fire who has not received an invitation pack by the end of this week - including those who have asked for their names not be included on the public electoral roll - should phone the study team on 1800 985 899 (toll free) or collect a paper survey from the Morwell library or Latrobe City Council once they are available.

Within the next month, eligible adults will also be able to collect surveys from venues including health and medical clinics and the Morwell Newspower Centre in Commercial Road, Morwell.

Professor Walker acknowledged the strong support of Morwell Newspower proprietor, Ray Burgess - and his staff - who have facilitated the distribution of \$20 Latrobe City gift cards (redeemable at around 85 local businesses) to those who have completed the survey, and forwarded community enquiries onto the study team.

She said residents who may have chosen not to complete the survey were free to change their mind at any point this year.

They can 'opt back in' by following the instructions on their invitation pack, phoning 1800 985 899 (toll free) or for more information visit [hazewloodhealthystudy.org.au/research-areas/adult-survey/adult-survey-faqs](http://hazewloodhealthystudy.org.au/research-areas/adult-survey/adult-survey-faqs)

## **Dr Jill Blackman, senior project manager, Hazelwood Health Study**

1 Nov 2016, noon

### **LETTER TO THE EDITOR:**

THE Hazelwood Health Study researchers welcome the opportunity to respond to Ms Allitt's letter headed '[Wondering at the mine fire study](#)', concerned about the inclusion of Sale in the study.

Sale residents, who were minimally exposed to the mine fire smoke, have been invited to participate in the adult survey stream of the study as a comparison community to Morwell, which was more highly exposed.

An alternative "properly conducted scientific study" that Ms Allitt suggests, involves investigating health records before and after the mine fire.

That design, which epidemiologists would call a case-series, is indeed part of the adult survey, where participants can choose to give permission for their health records to be linked to exposure data.

Unfortunately, health information is rarely collected in any standardised way across patients, medical professionals and allied health services, towns and time.

As a result, if we were to only compare health records before and after the mine fire, that would be insufficient to provide robust findings.

The adult survey is greatly strengthened by following an epidemiological cohort design, with the inclusion of Sale as a comparison group.

This allows us to track the pattern of health changes in Morwell over time, against the pattern of health changes in a similar community (Sale), and observe differences between the two which might be attributable to the mine fire, if other risk factors in the two towns are similar.

Interested residents are invited to go to the Hazelwood Health Study website for more information, [hazelwoodhealthstudy.org.au](http://hazelwoodhealthstudy.org.au), or to phone 1800 985899 to discuss any questions or concerns.

## Health study survey deadline approaching

10 Nov 2016, midnight



Rosa Payne, Ray & Jeanette Burgess, Susan Denny, recruitment & engagement coordinator Hazelwood Health Study Sandi Burgess and Therese Kite. photograph bryan petts-jones

The Hazelwood Health Study team has urged all eligible Morwell residents to participate in the Adult Survey while they still have the chance.

So far just over one quarter of invited Morwell residents have participated in the survey, which is the largest component of the Monash-led study looking at the potential long-term health impacts of the 2014 Hazelwood mine fire.

With the deadline looming, the study team is keen to see this figure increase.

While residents can still participate by paper questionnaire until the end of January 2017, the opportunity to complete the survey by phone or online closes on Friday, 25 November.

Investigator Professor Judi Walker said recruitment numbers were particularly low with residents aged in their 20s and 50s, so participants in these age groups were most sought after.

"It is so important for us to have a large sample group to ensure this study accurately reflects the current and future health needs of Morwell's population," Professor Walker said.

"The study not only aims to answer questions about the true impact of the mine fire, but it will also inform governments about future health service planning needs across the region.

"At present, however, we know very little about the health of 74 per cent of the Morwell adults we have targeted."

Professor Walker said any adult who lived in Morwell at the time of the mine fire but had not received a mailed invitation for the Adult Survey should phone the study team on 1800 985 899 or collect a survey pack.

Packs are available at Morwell Newspower in Commercial Road, Latrobe Community Health Service in Morwell and Traralgon, all local GP clinics, the Morwell Neighbourhood House, Latrobe City Council and the Morwell Library.

Those who would prefer to be interviewed over the phone - often the quickest way to participate - are advised to book in now, she added.

Professor Walker also reminded participants Latrobe City gift cards were available for collection from Morwell Newspower about two weeks after they completed the Adult Survey.

An annual Hazelwood Health Study briefing will be held at the Morwell Bowls Club on Tuesday, 29 November from 7pm to 9pm for all interested residents.

The researchers will provide updates for all the study's research streams, including the Adult Survey, infants, school children, community groups and the elderly across the Latrobe Valley.

It will cover activities over the past 12 months, discuss early data analysis and advise on what will be happening as the study moves forward.



## Appendix 4

### **Poster presenting Hazelinks ambulance attendance data**

# Coal mine fire smoke exposure associated with increased ambulance attendances for cardiac and respiratory conditions in the Latrobe Valley, Australia

Lahn Straney<sup>1</sup>, Martine Dennekamp<sup>1</sup>, Martin Cope<sup>2</sup>, Kathryn Emmerson<sup>2</sup>, Fay Johnston<sup>3</sup>, Mick Meyer<sup>2</sup>, Thomas O'Dwyer<sup>1</sup>, Fabienne Reisen<sup>2</sup>, Malcolm R. Sim<sup>1</sup>, Karen Smith<sup>1,4</sup>, Grant Williamson<sup>5</sup>, Rory Wolfe<sup>1</sup>, Michael J. Abramson<sup>1</sup>

- 1. School of Public Health and Preventive Medicine, Monash University
- 2. The Commonwealth Scientific and Industrial Research Organisation (CSIRO)
- 3. Menzies Institute for Medical Research, University of Tasmania
- 4. Ambulance Victoria
- 5. School of Biological Sciences, University of Tasmania

## Introduction

A fire in the open cut mine adjacent to a coal fired power station in Victoria, Australia, blanketed the rural township of Morwell and the surrounding area in smoke and ash for six weeks in February and March 2014. This study aimed to quantify the impact of the smoke exposure on ambulance attendance rates.

## Methods

Ambulance attendance data for the Latrobe Valley were obtained for the period 1 January 2011 to 31 December 2014. Spatial estimates of smoke exposure levels were scaled such that 1 represented the average exposure in the most exposed region during February (Figure 1). The remaining values indicated the relative concentrations of smoke exposure in that area.

Using event geocodes, case numbers for paramedic-assessed conditions were measured at the Australian Bureau of Statistics Statistical Area 2 (SA2) level. We defined “heart attack” as acute coronary syndrome or acute myocardial infarction.

Poisson regression models were used to estimate the incidence rate ratio for attendance rates in the most exposed SA2 versus areas and times with no exposure. We controlled for season and the proportion of days with a maximum temperature over 35°C. Attendances for fractures and lacerations were used as control conditions.

## Results

Higher levels of exposure to smoke were significantly associated with an increased rate of ambulance attendances for asthma (Incidence rate ratio [IRR] 4.03 95%CI: 1.57-10.3), cough (IRR: 8.10, 95%CI: 2.20-29.9), cardiac failure (IRR: 9.94, 95%CI: 2.84-34.8) and heart attacks (IRR: 2.70; 95%CI: 1.37-5.30) (Figure 2).

These estimates were equivalent to an excess of attendances and proportion of the observed attendances during the fire of 10 (29%), 5 (30%), 6 (72%) and 16 (19%) attendances for asthma, cough, cardiac failure, and heart attacks respectively (Figure 3). There was no significant increase in the rate of attendances for fractures or lacerations.

## Acknowledgements

This study was funded by the Victorian Department of Health and Human Services. The poster presents the views of the authors and not the official view of the Department

Figure 1. Model estimated relative smoke concentration from coal mine fire in February and March 2014

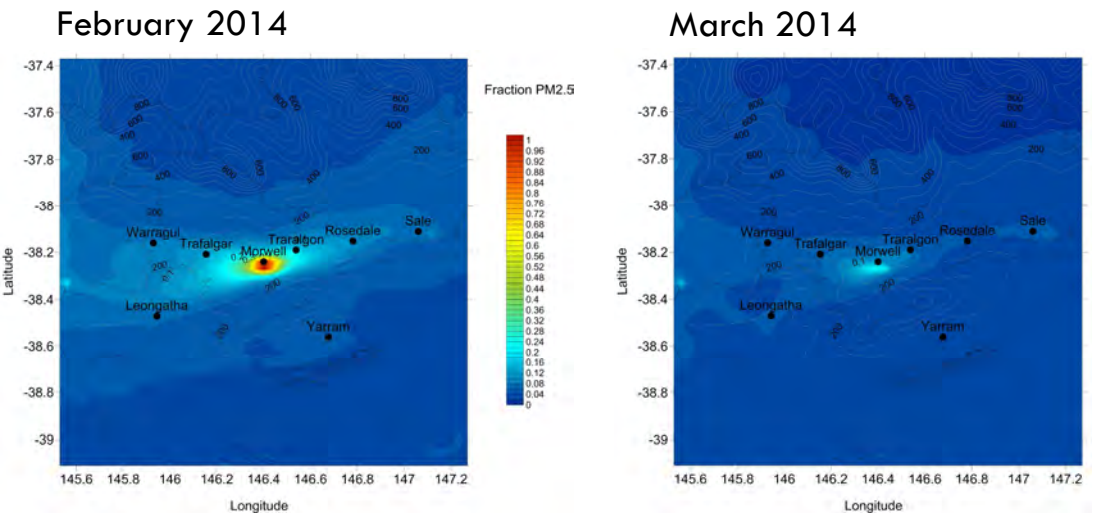


Figure 2. Incidence Rate Ratio by paramedic-assessed condition for maximum SA2 average exposure versus no smoke exposure

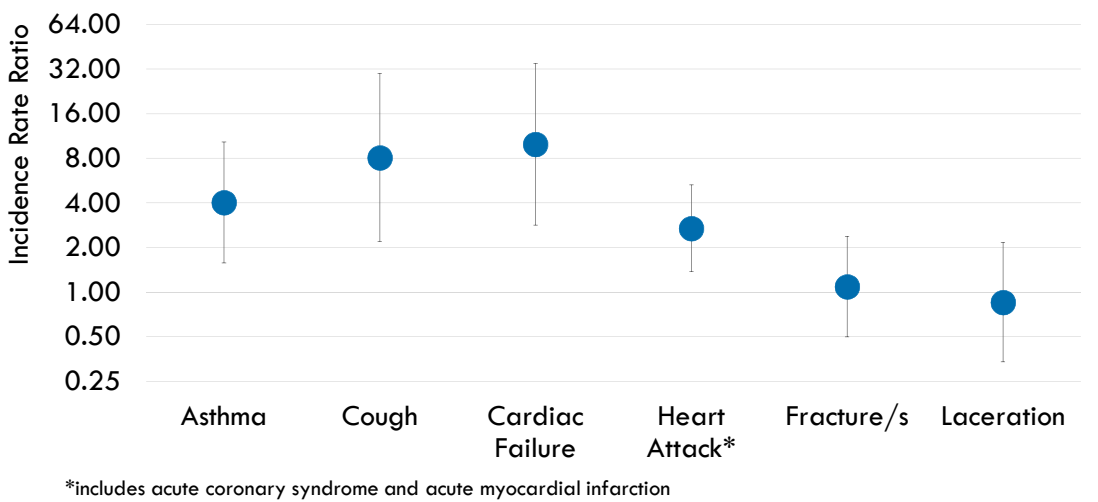
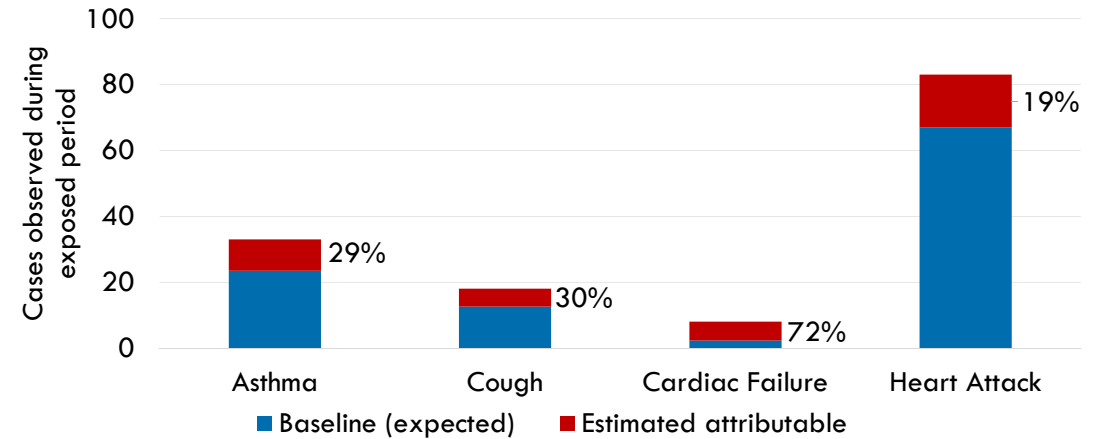


Figure 3. Estimated number of attendances attributable to coal mine smoke exposure



## Discussion

The preliminary estimate of coal mine smoke exposure was significantly associated with an increased number of ambulance attendances for cardiac and respiratory conditions. Increases in attendance rates may reflect both increases in disease-specific incidence as well as a potential increase in ambulance utilisation during the coal mine fire. More refined estimates of PM<sub>2.5</sub> exposure will allow us to estimate the association between attendance rates and µg/m<sup>3</sup> increases in PM<sub>2.5</sub> exposure.

## Appendix 5

### **Register of Community Engagement activities since 1<sup>st</sup> Annual Report**

## Register of Community Engagement activities since 1<sup>st</sup> Annual Report

Date	Activity	Details
10/11/2016	Gippsland Centre Sale	Adult Survey participants were offered free cappuccino and muffin while completing the questionnaire
10/10/2016	Meeting	Consultation with Vic Roads Traffic engineer for banner application on 5 major road entrances for Sale and Morwell
13/9/2016	Mid Valley Event	Adult Survey participant were offered free cappuccino and muffin while completing the questionnaire
12/9/2016	Meeting	Meeting with Vic Roads Traffic Engineer to apply for new banners on highway entrances in Sale and Morwell
21/9/2016	Home visit	Susan Denny assisted an elderly resident in his home to complete the Adult Survey
18/9/2016	Tribes Event	Adult Survey participants were offered to bring their children/grandchildren to play and eat for free, while they completed the questionnaire at Tribes play centre in Morwell
10/9/2016	Mid Valley Event	Adult Survey participants were offered free cappuccino and muffin while completing the questionnaire
22/8/2016	Meeting	Consultation with Wordwise Communications to identify key messages for the monthly media releases
17/8/2016	Meeting	Meeting with Vic Roads Traffic Engineer to apply for banners on highway entrances in Sale and Morwell
21/7/2016	Flyer drop off	Sale flyers delivered to distributor for letter box drop
20/7/2016	Meeting	Meeting with Wordwise Communications for next media release
9/7/2016	50 Mile Farmers Market	Attended a stall at the Morwell 50 Mile Farmers Market
5/7/2016	Meeting	Presentation given to staff at Clocktower Medical about the Adult Study
22/6/2016	Meeting	Meeting with Wordwise Communications for next media release
21/6/2016	Meeting	Meeting with GP's from Sale Medical about the Adult Survey
21/6/2016	Sale Neighbourhood House	Briefing new staff at the Sale Neighbourhood House about the study and distributing flyers
19/6/2016	Sale Charity Variety Market	Study stall held at the Sale Charity Variety Market
15/06/2016	Meeting	Meeting with Senior GP from Sale Medical
11/6/2016	50 Mile Farmers Market	Attended community event promoting the Adult Study
9/6/2016	Group Meeting	Clinical Reference Group meeting held at the local study offices at Latrobe regional Hospital
2/6/2016	Induction of CAC Chair	Professor Judi Walker and Dr Matthew Carroll met with newly elected Independent Chair, Ms Tracie Lund
31/5/2016	Community FM Radio	'Conversation' between Professor Judi Walker and Lorraine Bull about HHS in the University of the Third Age's regular weekly hour long segment
26/5/2016	Media event	Photoshoot for local media release at Sale Library with HHS Recruitment Coordinator, local Councillor and Library Coordinator
25/5/2016	Distribution of HHS flyers &	Meeting with Sale Neighbourhood House personnel who agreed to distribute the flyers and display the poster

	posters	
25/5/2016	Meeting	Meeting with Wellington Shire Media Manager, General Manager Community & Culture
23/5/2016	Distribution of HHS flyers & posters	Meeting with Latrobe City Council and Morwell Neighbourhood House personnel who agreed to distribute the flyers and display the poster
18/5/2016	Induction of Sale CAC community member	Professor Judi Walker met with Dr Iain Nicholson the newly appointed Sale Community member
18/5/2016	Meeting	Meeting to discuss key messages and engagement strategies with Sale Community members, Central Gippsland Health Service, Sale Medical, Wellington Shire, and Wordwise
15/5/2016	Study stall event	Study stall held at the Sale Charity Variety Market
14/5/2016	Study stall event	Study stall held at the 50 Mile Farmers Market Morwell
4/5/2016	Group meeting	Team member participated in a Community Activation Initiatives meeting in Morwell which involved key community groups.
23/4/2016	Study stall event	Study stall held at the Morwell pop up park attended
21/4/2016	Community meeting	Voices of the Valley held a community forum to discuss future plans for the Latrobe Valley community. Attended by three study team members along with representatives from other stakeholder agencies
12/4/2016	Presentation	Study team member gave a presentation to the Sale St Columbus Church group
6/4/2016	Communications briefing	Study team members gave an overview of the study with media executives from Latrobe City, Wellington Shire, Central Gippsland Health Service, Primary Health Network, Latrobe Regional Hospital and Wordwise
5/4/2016	Presentation	Study team member gave a presentation at the Departmental heads meeting for Central Gippsland Health Service
5/4/2016	Presentation	Study team member gave a presentation to the Morwell Twin City Archers Club
4/4/2016	Presentation	Study team member gave a presentation to the Sale Cancer Council
31/3/2016	ABC Radio interview	Professor Judi Walker gave an in-depth interview about the roll out of the HHS Adult Survey
31/3/2016	Presentation	Study team member gave a presentation to the Sale Golf Veterans
30/3/2016	Meeting	Study team members met with Re Activate Morwell to discuss linking in with local events and possible collaborations
23/3/2016	Presentation	Study team member gave a presentation to the Sale Mixed Bowls group
22/3/2016	Presentation	Study team member gave a presentation to the Sale Central Rotary Club
21/3/2016	Presentation	Study team member gave a presentation to the Sale lacemakers group
17/3/2016	Study stall	Study stall held at the Morwell Pop up Park attended by a study team member
17/3/2016	Meeting	Meeting to discuss study overview with Latrobe Community Health Manager for Primary Intervention
17/3/2016	Presentation	Study team member gave a presentation to the Sale Croquet Club
17/3/2016	Meeting	Meeting held with three study team members and Wordwise to discuss media plan for the Sale Community

15/3/2016	Presentation	Study team member gave a presentation to the Sale Woman's Support Group
15/3/2016	Presentation	Study team member gave a presentation to the Sale Neighbourhood House literacy & numeracy group
9/3/2016	Presentation	Study team member gave a presentation to the Morwell Croquet Club
8/3/2016	Meeting	Meeting to discuss key community groups with Latrobe City Senior Events Officer
7/3/2016	Presentation	Study team member gave a presentation to the Morwell Combined Pensioners Group
3/3/2016	Presentation	Professor Judi Walker made a keynote presentation to AMA Gippsland Annual General Meeting
2/3/2016	Media photoshoot	Study team members along with key community champions participated in a promotional photoshoot for the Morwell and Sale flyers
1/3/2016	Presentation	Study team member gave a presentation to the Coal Valley Male Chorus
17/2/2016	Meeting	Study team member met with GP from The Healthcare Centre Morwell to discuss study overview
16/2/2016	Presentation	Study team member gave a presentation to the Morwell Senior Citizens Club
15/2/2016	Meeting	Study team member held meeting with the CEO of Dyer Transport, Sale, to discuss pilot study
15/2/2016	Meeting	Study team member met with local Sale GP to discuss study overview and the CAC
15/2/2016	Meeting	Study team member met with General Manager, Community & Culture at Wellington Shire to discuss study update
10/2/2016	Meeting	Study team member met with Morwell Neighbourhood House Coordinator to discuss possible community support for local residents interested in study
9/2/2016	Meeting	Meeting with Latrobe City Community Resilience Coordinator to discuss their staggered approach to the LC recovery door knock survey
8/2/2016	Presentation	Study team member gave a presentation to the Sale Neighbourhood House Cooking Group
28/1/2016	Meeting	Three study team members held meeting with Wordwise Communications to discuss community engagement strategy
12/1/2016	Meeting	Meeting with Latrobe City Community Support & Volunteer Program Officer
5/1/2016	Meeting	Two study team member had meeting with Monash University Media team
17/12/2015	Meeting	Meeting to discuss pilot study at the Sale Neighbourhood House
9/12/2015	Presentation	Presentation given to discuss the pilot study for the Sale Easy Riders Club
2/12/2015	Meeting	Two study team member met with the CEO of the Gippsland Primary Health Network to discuss the scope of the study
2/12/2015	Meeting	Community Advisory Committee meeting held at the local study offices at Latrobe Regional Hospital
1/12/2015	Meeting	Meeting held with key Latrobe City staff to assist with identifying key community groups for community engagement presentations
1/12/2015	Meeting	Study team member gave a presentation overview of study to Gippsland Disability Advocacy Inc

1/12/2015	Presentation	Study team member gave a presentation to the U3A craft group
26/11/2015	Meeting	Meeting with study team member and key staff member from Latrobe City
25/11/2015	Meeting	Two study team members met with Board member of the Sale Neighbourhood House
25/11/2015	Meeting	Two study team members met with Inglis Medical Centre Dr David Monash to discuss study overview and the Clinical Reference Group
24/11/2015	Meeting	Study team member gave an overview of the study with CEO of the Gippsland Multicultural Services
23/11/2015	Meeting/ Presentation	Two study team members coordinated pilot study at Guest Training in Moe which included local residents
17/11/2015	Meeting/ presentation	Study team member gave presentation to the Healthy Wellington Action Group
16/11/2015	Flyer distribution	Study team member visited all GP clinics in the Latrobe Valley for study flyer distribution
15/11/2015	Study stall event	Study team members representing the Adult Survey and ELF streams attended the Latrobe Valley Health & Wellbeing Expo



## Appendix 6

### **Hazelwood Health Study Publications Policy and Procedures**



# **PUBLICATIONS POLICY AND PROCEDURES**

Version 2.0 June 2016

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## Scope

The aim of Hazelwood Health Study is to undertake a long term research program, comprising a series of studies into the potential long term health effects from the Hazelwood coal mine fire. The studies will also provide data that has the potential to address new questions of benefit to the wider community beyond the original aims of the study. This *HHS Publication Policy and Procedures* is for all publications arising from the Hazelwood Health Study (HHS) data. This document should be viewed in conjunction with the *Guidelines for the Dissemination of Findings from the Long Term Hazelwood Health Study* filed at S:\R-MNHS-SPHPM-SRH\Hazelwood\Guidelines for dissemination of findings.

For the purposes of the *HHS Publication Policy and Procedures*, publications include any article to be submitted for consideration by a peer-reviewed journal, any abstracts to be submitted for an oral or poster presentation at a conference and papers to be included in conference proceedings. There will also be non-peer reviewed publications in the form of interim and annual reports which will be made available to the public via the HHS website. It is expected that the research will also attract a lot of media attention. In these cases of media attention, please consult the HHS Media Protocol.

## Role of the Project Steering Committee (PSC)

All publications will initially be approved by the Project Steering Committee (PSC) at one of the PSC meetings or out of session if a faster turnaround is required. At a later date, it may be necessary for a separate publication committee be set up to discuss publications.

## HHS publication authorship:

There will be a considerable number of research staff involved in the HHS. Many of the staff will only be involved in a particular stream of the study. At the time of publication, staff who no longer work on the study but who contributed sufficiently to meet the criteria for authorship should still be considered for authorship. Each publication will need to be considered on a case-by-case basis.

As a large group of researchers with widely different roles will be involved in different parts of the HHS study program over a long period of time, this complicates consideration of who should be an author on a particular paper. Authorship should be considered by using the specified criteria in the International Committee of Medical Journal Editors ([ICMJE](#)) guidelines.

The criteria for authorship are as follows (all criteria should be met):

1. Substantial contributions to conception and design, or acquisition of data, or analysis and interpretation of data;
2. Drafting the article or revising it critically for intellectual content;
3. Final approval of the version to be published;
4. Agreement to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

## Hazelwood data and new statistical analyses to be used for publications

All HHS data will be held on a secure server under the care of SPHPM and SRH at Monash University and are the primary responsibility of the HHS Data Manager. In specific cases, for example with the Latrobe Early Life Follow-Up (ELF) Study, data will also be held at the Menzies Institute as required by the Tasmanian Human Research Ethics Committees approval.

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Subsets of data along with appropriate data dictionaries will be provided by the HHS Data Manager where further analyses beyond those already undertaken are required. These data will be specific for the proposed publication only. They should not be re-used for any other purposes or further distributed. The HHS Data Manager will archive the subsets of data and data dictionaries.

All new analyses using HHS data will be overseen by the HHS statistician, who will provide statistical support to the HHS study team. The analysis plan for any new proposal will need to be sent to the HHS statistician for checking whether the proposed analytical methods are appropriate and whether these need to be modified. The HHS statistician will archive the statistical programs relating to that dataset on the SPHPM/SRH Shared folder.

## Data linkage

The HHS is seeking approval to gain access to several national and state-based external data sets. These de-identified data may be linked with HHS data. Various State and Federal Privacy Acts govern the use of administrative datasets in addition to the usual ethics regulations. Research teams using linked datasets are therefore legally and ethically bound to comply with all rules as detailed for each particular data set, in addition to the usual Human Research Ethics Committee requirements that governs all collected data.

## Agreement with DHHS regarding publications and licensing rights

The Agreement between the HHS and the DHHS provides conditions around the approval of publications and associated licensing rights. These conditions are reproduced in Appendix . In summary, all publications must be presented to the DHHS for approval, at least 30 days prior to the date of publication. The DHHS grants the contractor (i.e. the HHS researchers) a non-exclusive, license to publish the material.

## Publications database

A spreadsheet called HHS Publications Tracking.xlsx has been created, and stored, at S:\R-MNHS-SPHPM-SRH\Hazelwood\Presentations and Publications. The purpose of this spreadsheet is to track all publications (including abstracts) as they progress through internal and external review and acceptance processes. This includes tracking their submission to, and review by, the PSC and DHHS respectively, also submission to journals or conferences and any rejections/revisions/acceptance therein.

The Project Manager is responsible for updating the spreadsheet, however the lead author of each publication is responsible for ensuring that the relevant information is provided.

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## Guidelines for the preparation of publications, including conference abstracts

Maintaining the reputation and standing of the HHS is critical. **All** publications that use HHS data will need to follow the process outlined below to ensure:

- Any proposed publication is appropriate to the HHS;
- The publication policy process is followed;
- A fair approach has been taken regarding authorship;
- The publication's progress can be monitored to ensure a timely process occurs from conception to publication;
- Descriptions of why the overarching HHS came about across publications are consistent
- The statistical analyses are appropriate;
- All publications are checked for consistency by the Project Manager before primary submission to a journal;
- All publications arising from the HHS are archived centrally at Monash University with the Project Manager to assist in meeting reporting obligations. Publications may also be stored at the partner organisations.

### Procedure and timeline for circulating a proposal for a HHS publication

1. Before preparing a paper, conference abstract or other presentation, researchers with an idea (proposal) for a HHS publication will need to complete and send the "Proposal for a HHS publication" one-pager (see Appendix 2) to their Stream Leader. If it is the stream leader who has the original idea, they should follow step two directly. Please note the [ICMJE](#) guidelines for authorship.
2. Once the Stream Leader has discussed content and proposed authorship, the proposal will be circulated to the proposed authors, asking if they wish to be an author and if they have any comments on the proposal. This group will decide who the lead author should be. The order of subsidiary authors will be decided by the lead author.
3. Stream leaders submit the proposal, including authorship to the Project Manager and the PIs (Michael Abramson and Judi Walker). The proposal will be recorded in the publications database and will then be forwarded by the Project Manager on to members of the PSC for comment/approval. All comments from the PSC will be sent to the lead author within one weeks of receipt and will also be discussed at the next PSC.

For a summary of the process described above, see Figure 1.

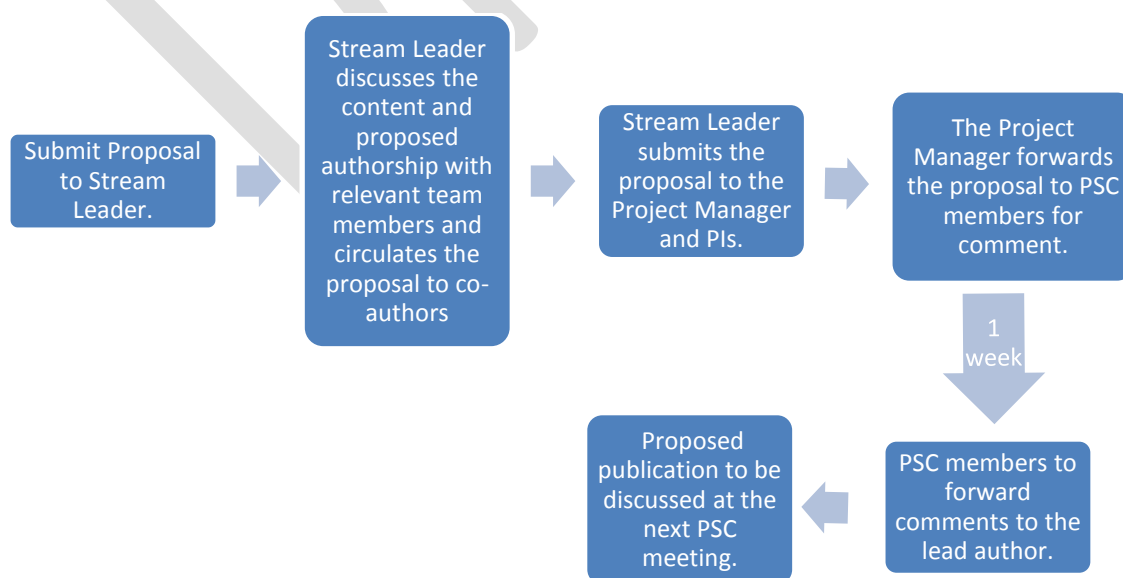


Figure 1 Representation of the procedure for circulating a proposal for a Hazelwood Health Study publication

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## Procedure and timeline for circulating a HHS publication

1. Allow **at least 8 weeks** before a submission deadline to circulate your paper/abstract or presentation (hereafter referred to as publication) for PSC feedback (3 weeks) and DHHS contractual approval (3-4 weeks).
2. Once a publication has been drafted, stream leaders should submit the draft to the Project Manager who will maintain the publications database in regard to submission history (including to PSC, DHHS and to relevant journal/conference etc), rejections, revisions, resubmissions and publication citations.
3. The Project Manager will circulate the draft to the PSC and table the document for discussion at the next PSC meeting. All comments from the PSC will be sent to the lead author within three weeks of receipt. The lead author (or an appropriate delegate) should make themselves available to discuss the publication further at the relevant PSC meeting.
4. At least 30 days before a submission deadline, and when the publication has been revised on the basis of PSC feedback, the final version should be submitted to the Project Manager along with a completed *“Report to the Department of Health and Human Services for release of project findings”* (see Appendix 3).
5. The Project Manager will forward the publication and associated ‘release report’ to the DHHS for their appraisal at least 30 days before a submission deadline. DHHS should provide comment within 21 days. The publication may also be tabled for discussion at the next Contract Committee meeting and, in some cases, the lead author (or an appropriate delegate) should make themselves available to discuss the publication at that meeting.
6. Responsibilities of lead author are to:
  - ensure the descriptions of the study design, aims, etc are in line with standard descriptions available on the shared document repository;
  - liaise with the HHS statistician to ensure that the proposed analysis plan, as well as the analysis itself, is appropriate;
  - ensure all authors have the opportunity to contribute to the publication in a timely manner;
  - ensure all correspondence relating to the proposal and the final version of the publication are provided to the Project Manager and checked for HHS consistency;
  - respond to comments from the PSC;
  - ensure all author signatures, and declarations of competing interests, are collected;
  - at the time of submission to the journal, ensure all authors have a copy of the final version;
  - act as corresponding author, unless there is a reason why the lead author should not be the corresponding author (eg. about to go on extended leave);
  - forward correspondence from the journal editor to the other authors, and to co-ordinate their responses to the editor’s and reviewers’ comments in a timely manner;
  - where revisions involve significant changes to the publication, the lead author will provide a copy to the PSC for further discussion and comment.

For a summary of the process described above, see Figure 1.

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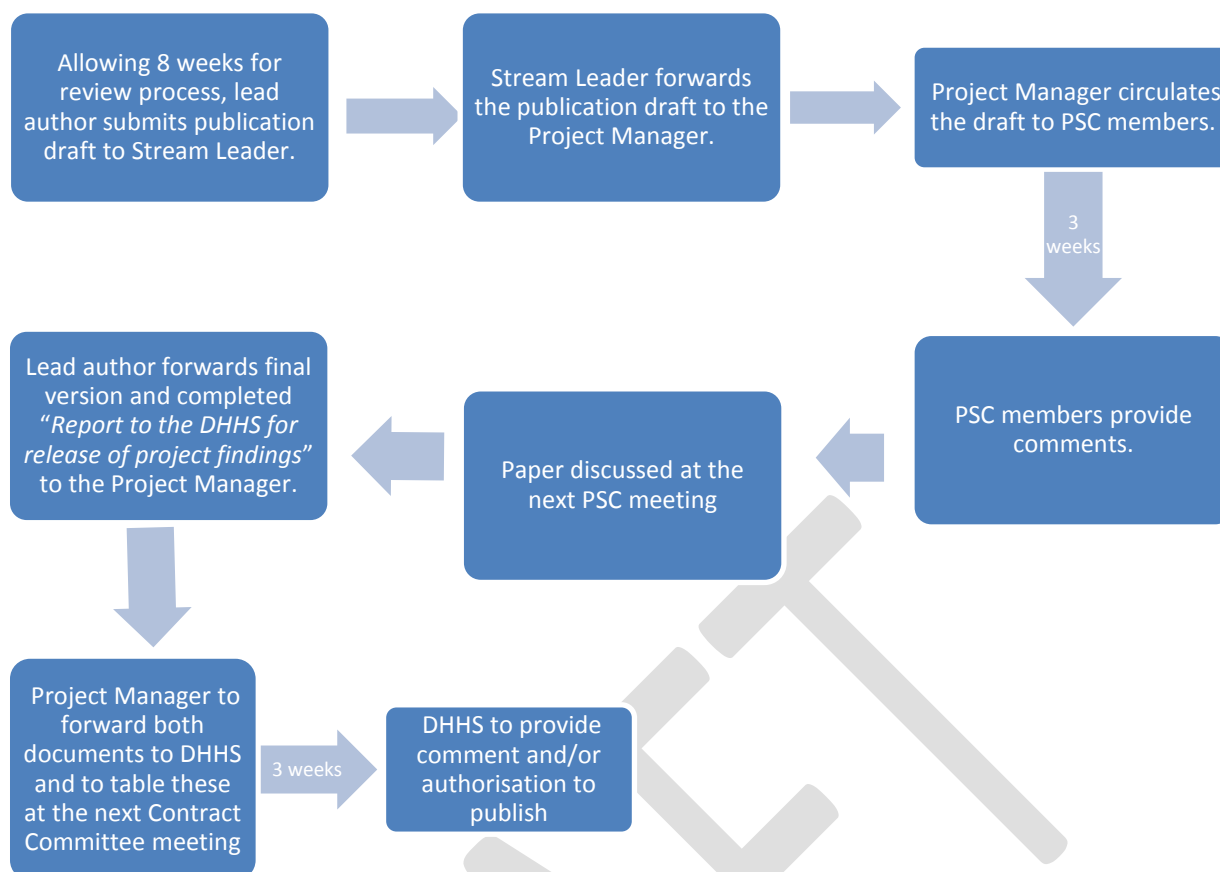


Figure 2 Representation of the procedure for circulating a Hazelwood Health Study publication

## Acknowledgements to be listed on all publications

The Victorian Department of Health and Human Services needs to be acknowledged as funders of the study on all publications. The Agreement specifies the following text:

*"This research was funded by the Victorian Government through the Department of Health."* (see Appendix 1, section 8.14)

All other acknowledgements will be specific to the particular publication. Please see below the partners that may be included in some of the acknowledgements. Acknowledgements may also reference specific members of the team from each of these sites who contributed to the publication, but not significantly enough to warrant authorship.

- Monash University
- Federation University Australia
- University of Tasmania
- University of Adelaide
- CSIRO

Publications that include Adult Survey participants should state that their identifying and contact information was obtained from the Victorian Electoral Commission under Section 34 of the *Electoral Act 2002*.

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## Students

Any student to complete work on the HHS must be nominated by a member of the PSC and approved by the PSC. The student would normally be supervised by at least one HHS investigator. The student must be listed as lead author where the majority of the project will contribute to the student's thesis or degree. Students must also complete the proposal for a HHS study publication and follow the above procedure. Reports required as part of monitoring each student's progress will be submitted to the PSC.

## Role of supervisors of students

All students should be supervised by at least one HHS Investigator. A student may also be supervised by others who do not belong to the HSS study team but have relevant experience to the student's field of research. The supervisor will ensure the student is aware of any HHS policies and procedures, particularly in relation to accessing data or where extra data linkage may be required.

## Other publications

For other publications or presentations (such as invited presentations and publications in non-peer-reviewed publications), this will need to be raised with the PSC, where the appropriate procedure for the presentation or publication will be decided.

## Dissemination of results to the community

This *HHS Publications Policy and Procedures* will operate alongside the *Guidelines for the Dissemination of Findings from the Long Term Hazelwood Health Study* filed at S:\R-MNHS-SPHPM-SRH\Hazelwood\Guidelines for dissemination of findings.

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## Appendix 1

### Sections of the Agreement with DHHS outlining conditions around publications and licensing

#### Publication

8.9 The parties acknowledge that the Project is for the benefit of the Victorian public and that public dissemination of the Project outcomes is an important part of the Project.

8.10 If the Contractor proposes to publish or publicly present material incorporating Project Intellectual Property, the Contractor shall submit the proposed publication or abstract of the presentation to Department for approval at least 30 days prior to the date of proposed submission for publication or presentation. Such approval will not unreasonably be withheld.

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8.11 Where the proposed publication or presentation contains Confidential Information, the Department may require the proposed publication or presentation be amended so as not to contain Confidential Information. The Department must notify the Contractor in writing of its required amendments within 21 days of receipt of the proposed publication or abstract and will not unreasonably withhold or delay its approval for publication or presentation.

8.12 If the Department fails to respond to the Contractor within the said 21 day period, the Department's approval will be taken to have been given to the relevant publication or presentation.

8.13 Subject to the Contractor complying with clauses 8.10 and 8.11, the Department grants, and the Contractor accepts, a non-exclusive, irrevocable, perpetual, world-wide, royalty-free licence (including a right to sub-license) to use, reproduce, publish, communicate to the public, modify, adapt, and exploit (excluding the right to commercialise) the Project Intellectual Property for the purpose of the Contractor publishing or publicly presenting the Project outcomes for technical, scientific or educational purposes.

8.14 The Contractor must acknowledge the contribution and support of the Department in any oral announcements and publications in connection with the Project, the Services or this Agreement as follows:

*This research was funded by the Victorian Government through the Department of Health.*



## Appendix 2

### Proposal for a HHS publication (including a conference abstract)

1. Name of proposer:	
2. Name of Lead Author:	
3. Names of Co-Authors:	
4. Proposed Title:	
5. Data to be used:(Include specific details of datasets if data linkage required)	
6. Aim and description of publication, including which study it relates to: (no longer than about 200 words)	
7. Journal(s)/Conference of preference:	
8. Estimated submission date:	

## Appendix 3

### Report to the Department of Health and Human Services for release of project findings

For use when there is intent to publish or publicly present material from the Hazelwood Longterm Health Study incorporating Project Intellectual Property.

Monash University will provide the Contract Steering Committee with an overview of their findings as follows.

Issue		
1	Purpose of the specific study and how the findings fit into the study stream and overall study	Dot points
2	Identify the findings.( High level outcomes)	• Dot points
3	Future Developments – further study or investigations anticipated in relation to findings	• Dot points
4	Received approval from the Scientific Reference Group	
5	Project biostatistician reviewed	
6	Where and when will the work be published	
7	Identify / describe any potential sensitivities regarding the findings and proposed strategies to manage these.	

**One Page max**

Timelines:

- Monash University must submit the proposed publication or abstract of the presentation to the Contract Steering Committee for approval at least 30 days prior to the date of proposed submission for publication or presentation.
- The department must notify Monash University in writing of any required amendments within 21 days of receipt of the proposed publication or abstract.

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## Appendix 7

### **Guidelines for the Dissemination of Findings to the Community from the Long Term Hazelwood Health Study**

# **GUIDELINES FOR THE DISSEMINATION OF FINDINGS TO THE COMMUNITY FROM THE LONG TERM HAZELWOOD HEALTH STUDY**

## **Preamble**

In February 2014, a bushfire spread into the Morwell open-cut brown coal mine adjacent to the Hazelwood power station in the Latrobe Valley which burned for approximately 45 days. Surrounding communities were shrouded in smoke, in particular the town of Morwell which is located a few hundred metres from the mine. As authorities struggled to put out the fire, nearby communities became increasingly concerned about perceived health risks of exposure to the smoke, particulate matter and gaseous emissions from the burning coal.

The smoke event galvanised the community leading to the establishment of advocacy groups and a petition signed by over 25,000 people calling for a long term health study of the smoke impacts. One of the recommendations from a round of community consultations by the Victorian Department of Health was for the Victorian Government to establish a long-term health study and a Tender process began in July 2014. The Victorian Government's Hazelwood Mine Fire Inquiry, which first reported in August 2014 reinforced the need for the long-term study and the importance of community involvement in the study.

A consortium of researchers led by Monash University were the successful tenderers and the long term health study – the Hazelwood Health Study (HHS), with six research streams, began in November 2014.

Since its inception, the HHS has intended to feedback key health findings to the Latrobe Valley community. Evaluation of possible information delivery approaches, and the timing of messages, has been undertaken with the aim of developing an optimal framework for the dissemination of study findings to the community in ways which are both meaningful and appropriate to the target audience.

In 2015 the Government re-opened the Inquiry to address continuing community health concerns. During this renewed inquiry, issues were raised regarding the long-term health study, including, in Recommendation 6, a request to the state to “establish a process whereby key health information obtained through the study about the health status of the population and the effects from the Hazelwood mine fire is provided to study participants, the community, local health practitioners and the Latrobe Valley Health Assembly”. This recommendation supports the process which was already under evaluation by the HHS Team.

## **Purpose**

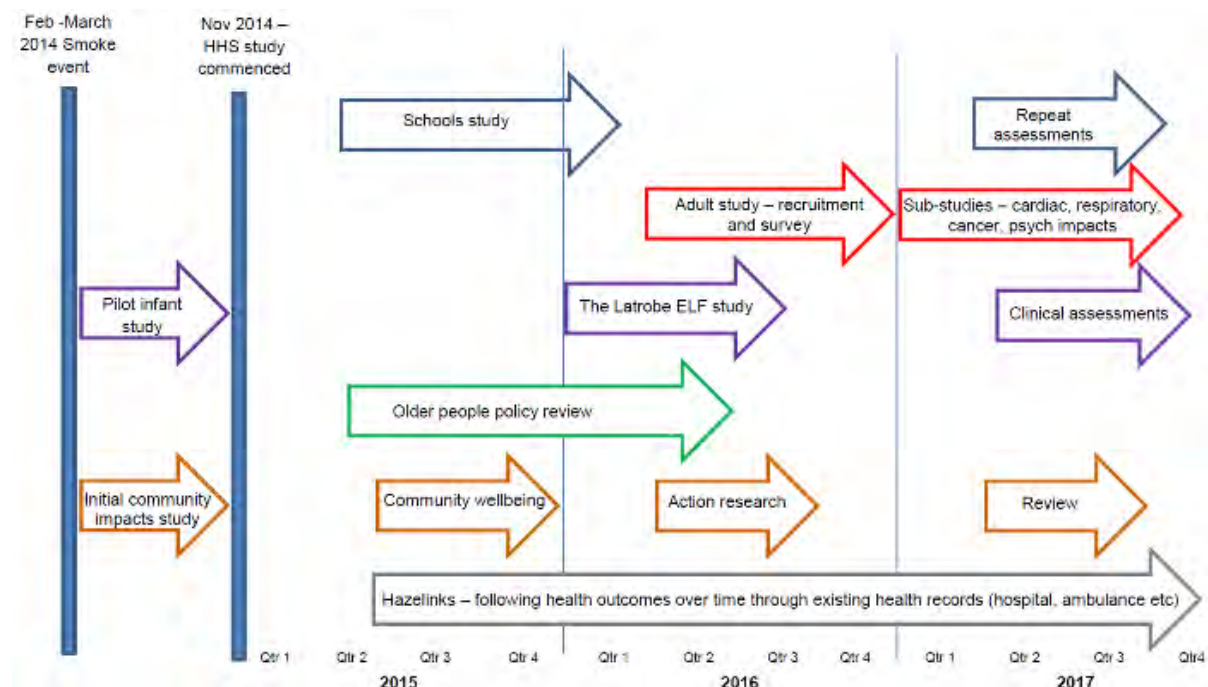
The purpose of this document is to provide guidelines for the dissemination of the study's findings to the community. It has been developed in consultation with the HHS Community Advisory Committee and the Clinical Reference Group.



The Guidelines include:

- A diagram of the scope of the Hazelwood Health Study (illustrated using the first three years of the study)
- Explanations of the terms *dissemination*, *knowledge translation*, and *the community*, emphasising the need to tailor research findings to the community and other identified audiences
- a set of guiding principles for the dissemination of the study's findings to the community
- clear attribution of roles and responsibilities, and
- attachments with further information about dissemination techniques and tools.

## HHS Research Streams (Years 1 – 3)



## Explanations

*Dissemination* is a term meaning communication or a flow of information from a source. Dissemination is an active concept where the information is tailored or targeted for an intended and identified audience.

*Dissemination* goes well beyond simply making research available through the traditional vehicles of scientific journal publication and academic conference presentations. It involves a process of extracting the main messages or key implications derived from research results and communicating them to study participants, the wider community and targeted groups of decision makers and other stakeholders in a way that encourages them to factor the research implications into their work.

*Knowledge Translation* is understood as a dynamic and iterative process that includes the synthesis, dissemination, exchange and ethically sound applications of knowledge to improve health, provide more effective health services and products and strengthen healthcare systems.

The emphasis of knowledge translation is to ensure the community, especially those who have participated in the research, advocates, health providers, policy makers and the researcher community, are aware of, can access, and are able to use health research findings especially to inform decision making. Differences among audiences make it imperative to know when and how to utilise various modes of dissemination for health research.

The simple dictionary definition of *the community* ranges from a group of people who live in the same area to society at large. For the purposes of these Guidelines *the community* encompasses residents of the Latrobe Valley and Sale, and the wider Gippsland region, including but not limited to study participants, local healthcare practitioners and organisations, local government entities and a wide range of groups and individuals bound by a common interest in the impact of the 2014 Hazelwood mine fire.

## **Guiding Principles for the dissemination of HHS's findings to the community**

### **1. Principles of Effectiveness**

- release findings in a timely way to avoid potential release via other sources
- release findings when available not at the end of the study
- resource dissemination strategies appropriately
- be prepared to pay attention to comments about effectiveness of dissemination strategies
- provide options for access to more detailed/technical information
- monitor and evaluate the effectiveness of the dissemination process

### **2. Principles of Inclusion**

- build on the community's diversity and individual's differences
- eliminate barriers to access study findings
- utilise a variety of media

### **3. Principles of Clarity**

- transparency in terms of purpose and communication
- transparency about how findings will be used
- present findings in ways that are simple and easy to understand
- present findings in the context of the entire study over time

### **4. Principles of Respect**

- work in partnership with the community
- use dissemination tools and techniques that are acceptable to the community
- hear what people say
- make best use of research data
- make available opportunities for discussion of findings
- take public sensitivities into account
- identify pathways for immediate support (medical or otherwise)
- provide briefings for affected community members before any public media release

## Dissemination Roles and Responsibilities

### 1. The role of HHS research stream teams is to:

- advise the Project Steering Committee when research stream findings/outcomes become available
- advise the Project Steering Committee about the nature of the findings/outcomes
- make suggestion about appropriate dissemination tools and techniques, formats and target audiences, and
- provide spokespersons.

### 2. The role of the HHS Project Steering Committee (PSC) is to

- ensure the research stream teams provide appropriate advice and peer review about research findings, target audiences and dissemination activities
- advise the Community Advisory Committee when this information is available, and
- ensure these dissemination Guidelines are followed.

### 3. The role of the HHS Clinical Reference Group (CRG) is to

- identify the significance of the findings and their potential impact on the community, and
- provide expert advice regarding the format and level of information provided.

### 4. The role of the HHS Community Advisory Committee (CAC) is to

- receive advice from the HHS PSC and CRG on the nature of research findings
- provide advice as to appropriate audiences, dissemination tools, techniques and formats
- receive appropriate advice as to when information is to be disseminated; and
- participate in dissemination activities.

## Linked documents

- HHS Publications Policy
- DHHS Contract Committee Release of Project Findings (Project Intellectual Property)
- HHS Community and Stakeholder Engagement Plan
- HHS Governance document

## References

Canadian Foundation for Healthcare Improvement [www.cfhi-fcass.ca](http://www.cfhi-fcass.ca) accessed 12/06/2016

Primary Health Care Research & Information Service <http://www.phcris.org.au> accessed 30/05/2016

Rural Health Research Gateway [www.ruralhealthresearch.org/pdf/rural-health-research-dissemination-toolkit.pdf](http://www.ruralhealthresearch.org/pdf/rural-health-research-dissemination-toolkit.pdf) accessed 12/06/2016

## Attachments to these Guidelines

### 1. Dissemination Tools and Techniques

- Policy Brief
  - Offers research findings and evidence informed policy options in a synthesised, neutral and user-friendly format to a non-specialised audience. The World Health Organization states that “policy briefs improve the chances that policy makers will read, consider, and apply the contents of research summaries when reaching policy decisions”.
- Fact sheet / Newsletter
  - One to two page document that provides basic information and important facts in lay language on a specific topic or issue. They are particularly useful when disseminating information to an audience with very little time and outside of the discipline.
- Full Report / Working paper
  - Technical paper that makes a practical contribution to a field of study or area of research. Papers may also include preliminary results of research that has yet to be tailored for publication in a professional journal. It provides an opportunity to publish results quickly especially when the topic is currently receiving significant attention. Working papers will provide significant background to the topic and justification for the study.
- Journal publication
  - Peer-reviewed scientific journal articles are an important resource in the research community and speak to a study’s credibility, but they do not meet the needs of users who prefer timely, easily accessible and jargon free information. Journals look for innovative and original research that will either impact patient care or add to the specialised field of the study.
- Chartbook
  - A comprehensive report that presents the most complete data available on a particular topic. Majority of the document will be tables and figures with very little narrative or discussion. The purpose of a chartbook is to illustrate all that is known about a given topic based solely on the most recent available data.
- Powerpoint presentation
  - An effective way to support research, visualise a complicated concept and share research findings with a large audience. It provides visual support for the information being discussed – slides do not contain the narrative.
- Poster presentation
  - Efficiently communicates concepts and data to an audience using a combination of text and visuals. Posters allow the authors to network and speak with viewers, promote the findings and facilitate exchange of ideas. Often forms part of a scientific conference.

- Infographic
  - Information graphics are visual explanations of data, information or knowledge. A well-developed infographic is an excellent tool for clearly and immediately explaining complex data. It may be a standalone one page flyer, be presentation as a slide in a larger presentation, provide summation in a report or be printed as a large poster for display.

## **2. Examples of ways to disseminate HHS findings**

- Community/stakeholder briefings
- Community forums
- Presentations to community groups
- HHS web site
- Press releases and media interviews
- Newspaper articles
- Social media (Twitter, Facebook)
- Study participant briefings
- Individual participant briefings
- Professional/provider briefings
- Masterclasses
- Policy briefings
- Conferences
- Exhibit (displays)

<b>Version number</b>	<b>Date approved</b>	<b>Approved by</b>	<b>Brief description</b>
1.0	15 November 2016	Senior Project Manager	Submitted to DHHS. Approved by DHHS on 6 December 2016.
1.1	8 December 2016	Senior Project Manager	Clarification of Schools Study Fact Sheet. Approval to upload to HHS website.