

# Hazelwood Mine Fire Health Study

## Project Scientific Reference Group Meeting 2/2017

Monday 11 December 2017, 5.00-6.00pm

Meeting Room 2, Level 2, 553 St Kilda Road

and by Zoom

### MINUTES

#### 1. Welcome & Introductions

*In attendance:*

Professor Michael Abramson (chair), Dr Jill Blackman, Professor Rory Wolfe, Associate Professor Rebecca Kippen, Associate Professor Graeme Zosky, Professor Margaret Alston, Dr Michael Keating, Associate Professor Jane Ford, Professor John McNeil, Dr Sharon Harrison (minutes).

*Apologies:*

Alexander McFarlane; Anna Hansell, Judi Walker, Melita Keywood

MA welcomed new SRG members: Jane Ford, Margaret Alston and Anna Hansell.

Jane Ford has replaced Christine Roberts who has retired. Jane is a Principal Research Fellow Medicine, Northern Clinical School Kolling Institute of Medical Research. Her main research interests include maternal morbidity and mortality, and the use of linked routinely collected administrative data for investigation of maternal and neonatal outcomes.

Margaret Alston is Professor of Social Work and heads Monash University's Department of Social Work. Her main research areas are gender, climate and environmental disasters and rural women.

Dr Anna Hansell is an air pollution epidemiologist at Imperial College London.

#### 2. Conflicts of Interest

No conflicts of interest were declared.

#### 3. Minutes of previous meeting

The minutes of the previous meeting were accepted without amendment.

#### 4. Adult Survey

*4.1. Hazelwood Health Study 2<sup>nd</sup> Recruitment Report V1.1 (Att. 1)*

The Recruitment Report was provided for the SRG's records.

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JB reported that the HHS *Adult Survey Report Volume 1 Comparison of Morwell and Sale* had been publically released in September 2018. The associated Research Summary, and a link to the full report, had been sent to SRG members at that time.

MA summarised they key findings:

- Self-reported doctor diagnosed asthma, since the mine fire, and current respiratory symptoms were all more common among Morwell participants compared with Sale;
- Morwell participants were one and a half times more likely than Sale participants, to report that a doctor had diagnosed them with high blood pressure since the mine fire;
- Morwell participants were also seven times more likely to report that a doctor had diagnosed them with a CV condition since the mine fire; and
- Morwell participants were more likely to report symptoms of psychological distress following the event.

Participants from Morwell reported higher rates of these conditions even after adjustments were made for socio-economic imbalance.

JB advised that over 3,000 (33%) Morwell residents participated and ~1,000 (23%) Sale residents participated in the Adult Survey. JB noted that because a relatively large proportion of adults from Morwell did not participate, sampling (selection) bias is a concern, as the health of participants might differ from the health of non-participants.

MA emphasized that the Study will next seek to measure how much of these differences between Morwell and Sale might have been caused by PM<sub>2.5</sub> exposure.

**Action:** MA to send the Adult Survey report to Graeme Zosky for comment.

JB reported that the cumulative exposure score for the exposure assessment is a more difficult data cleaning task. Self-reported addresses need to be tracked against geocodes and then blended with the CSIRO data. Joanna Dipnell has written the code for calculating the cumulative exposure score and it will not be too difficult to assign an individual score once the address data is cleaned.

## 5. Hazelinks Data Linkages

### 5.1. *Report Medicare Benefits Schedule and Pharmaceutical Benefits Scheme data: Time Series Analyses (Att. 2)*

MA reported that researchers had completed a report on Medicare Benefits Schedule and Pharmaceutical Benefits Scheme data, examining whether mine fire-related pollutants were associated with increased use of health services and medications. Researchers used time series statistical models to assess the association between the daily mine-fire related PM<sub>2.5</sub> and health service use and medications dispensed. MA advised that analyses showed clear evidence that mine fire-related PM<sub>2.5</sub> was significantly associated with increased utilisation of all health service types examined and dispensing of all medication types after a lag of 2-5 days from exposure. PhD candidate Amanda Johnson prepared this report with

assistance from Yuming Guo who assisted with the adjustments allowing for the effects of temperature.

MA reported that access to MBS/PBS data has been limited. MBS/PBS will only provide the data at SA3 level, i.e. at the level of the Latrobe Valley.

The technical reports will be released with a lay summary, which must be approved by DHHS. MA advised that it is likely that a media release will be sent out in January 2018.

#### 5.2. *Report Hazelinks – Emergency presentations and hospital admissions analysis (First Data Extraction) (Att. 3)*

MA reported that YG has done further analysis of the emergency presentations and hospital admissions data. Lahn Straney had previously analysed the data using a time period count models. Yuming Guo has analysed the data using more nuanced measures. MA reported that an identified data linkage will be completed next year.

Researchers found increased rates of emergency presentations or hospital admissions for asthma/COPD, and all respiratory diseases during the coal mine fire period, in comparison to non-fire periods, but no evidence of increased rates for cardiovascular diseases.

### 6. Schools Study

JB advised that there is not a lot to report on the Schools Study. The first round of data collection was completed in late 2015/early 2016. There is a recruitment rate of 15% across the Latrobe Valley. Researchers are surveying students in the year that they have NAPLAN testing (Year 3, Year 5, Year 7 and Year 9). The students are now being resurveyed. Where the students are still at the same school recruitment has been quite successful with 70% of those students completing the survey. The Schools Study plans to recruit a cohort of new Year 3 students in 2018, thereby picking up children who were too young for the 1<sup>st</sup> round of Schools Study data, and too old for the first round of ELF Study data. Recruitment of a new Year 3 cohort, however, is proving difficult. The feedback researchers have received is that people have moved on. The SRG discussed whether it will be useful to recruit a new cohort of Year 3 students, given that the participation rates may be low and it is likely that there will be further attrition in future years.

JB reported some children in the cohort were invited back and interviewed.

**Action:** JB to pass on protocol to the SRG and send a query to DM regarding Working with Children Checks.

It was noted that ~300 children participated in the Schools Study. Multivariate analysis will not be possible.

### 7. Early Life Follow-up

#### 7.1. *Report on the Latrobe Early Life Follow-up (ELF) Study: the child health and development stream of the Hazelwood Health Study (Att. 4)*

The SRG discussed the first report of preliminary findings from the Latrobe Early Life Follow-up (ELF) Study, which was submitted to DHHS with the 2<sup>nd</sup> Annual Report.

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The ELF Study has found that no associations were observed between maternal exposure to the average or peak PM<sub>2.5</sub> from the mine fire and preterm birth, birth weight at term.

Researchers did not observe an association between stress specifically related to the mine fire and adverse perinatal outcomes. However, a number of well-recognised risk factors, including smoking in pregnancy, general stress in pregnancy and lower maternal education, were independently associated with some adverse birth outcomes evaluated in the study cohort.

It was reported that the ELF team has been waiting 12 months to receive the Victorian perinatal data.

The SRG discussed the identified data linkage SURE platform.

AIHW is in the process of preparing an application for a Public Interest Certificate on the Study's behalf. The fees for the use of the SURE platform, a secure virtual environment where researchers can do analysis, will be \$60k for the ELF Study. The ELF team had not budgeted for such high data linkage costs.

**Action:** Jane Ford to send one-page document on E-Research Institutional Cloud Architecture (ERICA) the platform used by UNSW.

It was reported that a total of 263 participants were tested for ELF. A total of 120 participants attended for ultrasound only (those aged < 3 years) and 107 participants had successful Forced Oscillation Technique measurements carried out.

## 8. Dissemination of Findings

MA reported that publications from the Study are starting to appear. The Community Wellbeing and Older Persons Streams have published articles. FJ has submitted a conference abstract.

## 9. Clinical Streams

### 9.1. Respiratory Stream

MA acknowledge the work of Brigitte Borg in coordinating the Respiratory Stream. A total of 339 participants have completed respiratory testing in Morwell. MA reported that 43% of participants had some abnormality. There were also a high number of participants with BMIs over 50. The Respiratory Stream will commence testing in Sale in January with a recruitment target of 160.

### 9.2. Cardiovascular Stream

MA reported that Sylvia Pomeroy resigned from her position coordinating the CV Stream and JB has taken on the coordination of the CV Stream. JB reported that the testing protocol for the CV Stream is taking a long time due to the lengthy CV health questionnaire, diet questionnaire, anthropometric measurements, ECG, blood taking and FMD testing. The CV team are only managing to test 4 participants per day. BB will attend the clinic to review testing and look for ways to make the process more efficient so that more participants can be tested each day. The Sale data collection for the CV Stream is almost complete.

## 10. Governance – Ministerial Advisory Committee

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MA reported that the Ministerial Advisory Committee has been set up and is chaired by Ian Gibson. MA and JW have met with the MAC. The DHHS Contract Committee continues to meet as well.

MA reported that a review of Study committees/advisory groups is being undertaken. A link will be sent to members.

**11. Year 3 Annual Report (Att. 5)**

JB reported that the 3<sup>rd</sup> Annual Report had been submitted to DHHS in November. This is a 120-page document reporting on progress across all the Research Streams. Feedback has been received from DHHS and it is likely that this report will be approved by the end of the week.

**12. Other Business**

There was no other business.

**13. Next Meeting**

Meeting date to be advised.