

Hazelwood Mine Fire Health Study

Project Scientific Reference Group Meeting 6

Tuesday 30 May 2017, 10:00am-12:00pm

Meeting Room 3, Level 3, 553 St Kilda Road

and via Zoom

MINUTES

Membership:

Professor Michael Abramson (Chair), Monash University

Professor Judi Walker, Monash University

Professor Ross Coppel, Director of Research, FMNHS, Monash University

Professor Brian Priestly, Australian Centre for Human Health Risk Assessment

Professor Alexander McFarlane, University of Adelaide

Associate Professor Christine Roberts, Kolling Institute, University of Sydney

Associate Professor Rebecca Kippen, School of Rural Health, Monash University

Professor Rory Wolfe, School of Public Health & Preventive Medicine, Monash University

Professor John McNeil, School of Public Health & Preventive Medicine, Monash University

Professor Dennis Moore, Director - Krongold Centre, Monash University

Dr Anna Hansell, Environmental Epidemiology, Imperial College London

Dr Michael Keating, Medical Scientist

Dr Melita Keywood, CSIRO Ocean & Atmosphere Flagship

Dr Jillian Blackman, Project Manager

1. In Attendance

Michael Abramson (Chair), Judi Walker, Rory Wolfe, Brian Priestly, Ross Coppel, Rebecca Kippen, Melita Keywood, Jill Blackman, Sharon Harrison (Minutes), Matthew Carroll (Observer)

2. Apologies

Alexander McFarlane, Christine Roberts, John McNeil, Michael Keating

3. Conflict of Interest

No conflicts of interest were declared.

4. Minutes of previous meeting

The minutes of the previous meeting were accepted.

5. Report from Principal Investigator

Michael Abramson (MA) reported that CSIRO has provided a plain language statement to accompany the Air Quality Modelling report.

Dr Caroline Gao (CG) has been appointed as the HHS biostatistician, commencing her appointment in February.

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6. Schools Study (see NAPLAN Analysis Summary and Children’s Revised Impact of Event (CRIES) Analysis attached)

The Schools Study has completed analysis of NAPLAN results and the Children’s Revised Impact of Events (CRIES) scores. These were circulated to the SRG.

Matthew Carroll (MC) from the Schools Study attended the SRG meeting to report on the Schools Study. He reported that the first round of data collection for the Schools Study took place in late 2015. The second round of data collection will be conducted in 2017. The Schools Study completed initial analysis and, following feedback from the Project Steering Committee and CG repeated the analysis of the Year 1 data collection in more detail. The repeated analysis adjusted for age, gender and school type.

MC reported that the Schools Study team were unsure of what the findings would be for the CRIES data. A cross-section of government and non-government schools were surveyed. In the initial analysis, Morwell students scored higher than non-Morwell students. However, this could largely be accounted for by age differences.

The team repeated the analysis adjusting for location. This had a significant impact on how the children scored. Primarily younger children achieve higher scores on the CRIES scale. Sandy McFarlane has suggested that younger children find it more difficult to understand how close they are to an event.

MC reported that the Schools Study team is confident that the CRIES scores have detected something and noted that there is good concordance with the interviews that were conducted with Morwell children. The team feel that the findings are robust and that the impacts reported by the children were not by chance.

Rebecca Kippen (RK) has whether there are international benchmarks that can be used for comparison, such as an earthquake event or a fire like Black Saturday. MC suggested that another comparable disaster even is the Oklahoma Bombing. Studies of this event are very similar to the results of the Morwell children.

MC reported that the Schools Study team are working on a 2-page summary of the findings.

MC noted that the Schools Study cohort did NAPLAN testing a year before the Hazelwood mine fire and a year after the mine fire. By focussing on the children who did NAPLAN testing in 2013, the Schools Study team was able to limit the focus to a smaller number of grades and was able to compare the school students’ results in 2013 and 2015.

Crude analysis of the NAPLAN results from 2013 to 2015 showed a difference between Morwell and schools elsewhere in Latrobe City. However, once you adjust for age, gender and school, the differences disappear. Despite the significant disruption to schools in Morwell, the Schools Study researchers found that the NAPLAN scores of school students from Morwell did not decrease.

The Schools Study Stream has done two sets of analysis: the first set looks at Study participants, while the second analysis looks at the whole dataset. MC reported that the small participant sample is indicative. Unit-level data have been requested from the Department of Education and the team are waiting for this to be provided. This is effectively a reverse linkage that excludes Study participants.

It was noted that the Morwell students come from a lower base and therefore have more scope to improve their NAPLAN results. The Department of Education has implemented an active program of work to improve educational standards. MC reported that the team is trying to get more information about the programs that were run, and noted that he did not think the programs were specific to Morwell. MC noted that the Department of Education supported Morwell schools during the mine fire, providing diversional activities.

7. Adult Survey

7.1. Report on Recruitment – previously circulated

JB reported that the Adult Survey closed in mid-February and there were close to 3,000 participants in Morwell (response rate of 34%) and just under 1,000 participants in Sale. JB reported that the quality of the completed Adult Survey respondents varied depending on the mode of the survey. The telephone interview data has proved to be the cleanest data.

The tables for the Adult Survey Recruitment Report were circulated to SRG members.

Researchers are using Victorian Population Health Survey for comparison. Comparing with the Victorian Population Health Survey data, women and older people are overrepresented amongst Adult Survey participants, while younger people are underrepresented. JB suggested that the data is quite consistent with what researchers expected.

JB reported that there were some differences between the Adult Survey findings and the Victorian Population Health Survey data. A third of participants in Morwell self-reported fair or poor health. This was higher than the expected 15%. Morwell Adult Survey participants are slightly more likely to be former smokers, compared with estimates for Latrobe City.

JB reported that the active refusers were asked to complete a basic set of questions. Refusers were quite different from those who participated in the survey. JB questioned whether the Refuser Questionnaire data were useful. Rory Wolfe (RW) suggested that it is worth including the data in the Adult Survey report, but it is a very small piece of the puzzle and there are limitations to the insights it offers.

RW suggested that some points were in our favour in answering questions regarding selection bias: comparison to the Victorian Population Health data helps; it is reassuring that there is selection bias in the Victorian Population Health; and there are similar trends in selection bias in both Morwell and Sale.

The SRG discussed this use of weightings to adjust for the selection bias in the sample and it was emphasized that this is a widely used approach to allow for differences in the community. Researchers will use weighting methods, down-weighting responses from females and older people and upweighting responses from males and younger people. Five-year age categories will be used.

Action: RW to send brief comment in writing on recruitment for the Recruitment Report.

In response to the a question regarding whether the sample was representative, RK suggested that the sample was as good as you could expect for this type of Study and the

Adult Survey has had a great result with the recruitment rate. The over-representation of women and older people could easily be fixed.

Action: RK to send a brief comment on Adult Survey response rate and sample.

JB reported that preliminary result from the Adult Survey will be included in the Interim Report, which is due in June.

Action: JB requested that members of the PSC provide feedback to JB regarding the Adult Survey tables and what is meaningful and useful.

Action: Interim Report to be circulated to SRG members when it is completed.

JB acknowledged the work data cleaning and analysis work undertaken by CG and Anthony Del Monaco (ADM), noting that the timelines will be challenging for CG to meet. The team is also working on the analysis of psychological outcomes.

7.2. *Hazelniks Data Linkages Medicare/Pharmaceutical Benefits Scheme (see attached), Hospital usage, Victorian Cancer Registry Data Linkage (see attached) (MA)*

MA reported that researchers are hoping to get MBS/PBS data at SA2 (town) level. The data at SA3 level includes the whole of Latrobe City and if the data are only provided at this level it would not be possible to do spatial analysis. Yuming Guo is planning to lead time series analysis of the MBS/PBS and hospital usage data. Time series analysis of the MBS data will enable researchers to test the hypothesis that there was an increase in GP usage during the mine fire period. PhD student Amanda Johnson is working on this and has been referred to Caroline Gao and Helen Kelsall for advice.

Using time series analysis, researchers will be able to test the hypothesis that there was an increase in people accessing bronchodilators. This analysis would not be completed in time for inclusion in the Interim Report. The data extract will include 4.5 years of data, so researchers will be able to look at prescribing before the mine fire.

A data linkage with the Victorian Cancer Registry was completed in 2017. The VCR data for period 1 January 2009 to the most recent data available has been received. It will not be possible to address the association with the incidence of cancer until Year 9 of the Study. The data extracted from the VCR provides background cancer incidence. It was noted that the VCR data are helpful and include detailed data from pathologists. Less data is available on the clinical stage of cancer. Researchers have already detected a higher number of mesothelioma cases. This is probably related to the widespread use of asbestos in the power industry.

RW noted that non-melanoma skin cancers have not been included in table 3 in the analysis plan for the Victorian Cancer Registry Data Extraction. It was suggested that this may be because skin cancers are not reliably reported.

Action: Check with Malcolm Sim regarding the exclusion of non-melanoma skin cancers from the results table.

8. CSIRO Air Quality Modelling (MK)

MA reported that the team has been pleased to get the Air Quality Modelling report and exposure fields from CSIRO, although they are not quite ready to use these yet. Two animations

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showing the output of the fine-scale TAPM of fine particulate (PM_{2.5}) concentrations that were run on a 100-kilometre grid, and an hourly time step, for the town of Morwell during the Hazelwood mine fire have been posted on the Study website. A second animation shows the modelled fine particulate (PM_{2.5}) concentration at two spatial scales, with south-eastern Victoria on the left, and the town of Morwell on the right.

MA reported that DHHS has reported concerns around modelling and uncertainty, referring to how things had been done in the past and the Department's own standards. The CSIRO used the National Environment Protection Measures, whereas DHHS had released a series of standards regarding particulate matter.

Action: Melita Keywood to send link to documents.

The EPA has expressed concerns about the high levels predicted. The CSIRO are due to meet with the EPA next week. It was noted that as a consequence of the mine fire inquiry DHHS are not permitted to require researchers to change a report.

MA emphasized that the CSIRO modelling report is a very good report technically and the lay summary and the animations will help explain the findings.

It was noted that a fourth report for CSIRO to prepare that is listed in the contract deliverables. This report is a modelling exercise looking at background PM_{2.5} levels.

Action: JB and MK to discuss this contract deliverable further.

It was suggested that Martine Dennekamp should also be involved in this discussion.

9. Dissemination of Findings

JW reported on the timetable for the dissemination of findings from the HHS retreat in February and advised that this timetable is a living document and will continue to be updated. JW noted that there will be a concentration of Study findings being reported at certain times in the year.

JW reported that the report for the Older Persons review and the policy brief has been finalised and accepted. The Older Persons Stream has conference presentations coming up and 3 publications being developed.

JW reported that the Community Wellbeing Stream has submitted an article for publication and their video will be posted on-line soon.

Interim data analysis is being prepared by the Early-Life-Follow-up team.

Action: Dissemination Plan to be circulated to SRG members.

10. Clinical Streams

JB reported that the team is setting up the Respiratory and Cardiovascular Streams that are due to commence clinical testing soon, with Respiratory Stream starting clinical testing in Morwell. It has taken time to get this off the ground and there have been challenges setting up the clinical testing sites in Morwell and Sale and recruiting staff. Brigitte Borg from the Alfred Respiratory Service is coordinating the Respiratory Stream and Dr Sylvia Pomeroy is coordinating the CV Stream.

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A total of 1,000 participants will be recruited (500 per Study Stream). A small number of participants will be eligible for both Streams. Recruitment will be challenging. The Latrobe Community Health Service in Morwell is open from 9am to 5pm Monday to Friday and until 7pm on Wednesday. The Respiratory testing of each participant will take 2.5 hours.

Ethics approval has been granted for the payment of a \$50 participant reimbursement. This has been funded through the carry forward from the Year 2 budget.

It was noted that John McNeil has concerns regarding the flow mediated dilatation (FMD) testing and whether this can be reliably measured outside a hospital setting.

11. Governance – Ministerial Advisory Committee

MA reported that the MAC has not been established yet. DHHS is waiting for Cabinet to approve the appointment of a Chair.

12. Rebid for Years 4 & 5

MA reported that the rebid for Years 4 & 5 of the Hazelwood Health Study contract is due to be submitted to DHHS in July. MA suggested that it is unlikely that DHHS would not extend the contract; however it is important to submit a solid Interim Report in June.

The Study will have a Planning Day in June, which Jason Smythe from the Faculty of Medicine, Nursing and Health Sciences will attend.

MA reported that there has been a restructure of DHHS and Environmental Health responsibilities have been transferred to the Environment Protection Authority.

MA noted that the deadline for the rebid is quite tight and June/July will be a very busy time for the HHS. It was noted that the \$4m budget for Year 4 & 5 is above the Dean's financial delegation level and will need to be approved by the VC. Ross Coppel's assistance will be needed to get the budget through the approval process.

13. Other Business

JW reported that Communications & Engagement Adviser Shaun Mallia has been appointed. SM was previously the editor of the Latrobe Valley Express. He will assist with the release of Study findings and will attend the Latrobe Health Assembly.

It was noted that RK submitted a one-page proposal for a research project that would draw on the HHS data. JB advised that this proposal has been referred to the Project Steering Committee and that the PSC is looking at setting up a sub-committee that will consider proposals for research projects and publications.

RC commented that it is good to see the first data and results from the Study.

14. Next Meeting

MA advised that the Annual Report is due in November. It was suggested that the SRG meet again around this time.

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