

Project brief – 16 September 2014

Review of Birth Deaths & Marriages Victoria (BDMV) mortality data for the Latrobe Valley and the time of the Hazelwood coal mine fire in Morwell

Background

In 2014 Victoria experienced one of the most severe heatwaves on record. Although the four days of extreme heat were in January, overall the summer was the third hottest summer on record, and extreme heat conditions were also experienced on the weekend of 8-9 February. Heat, particularly sustained high temperatures, can cause increased mortality in those most vulnerable, eg older people, and those with some chronic medical conditions. Subsequent to the heatwave, a fire in the disused part of the Hazelwood Power Station open cut coal mine, adjacent to Morwell burned from 7 February 2014 for a period of 45 days.

During this coal mine fire, the Department of Health monitored health impacts on the local community. A part of this surveillance was a formal Rapid Health Risk Assessment undertaken by the Monash University School of School of Public Health and Preventive Medicine.

This report considered the potential long term health effects on the Morwell community of short to medium term exposure to coal mine fire smoke, including particulates and gaseous pollutants – *Attachment 1*. In relation to mortality, the report concluded that no additional deaths would be expected even if the exposure continued for six weeks.

Further detail from page 21 of this report:

How does the risk change with persisting exposure; i.e. for periods of 3 weeks, 6 weeks, 3 months, 6 months, 9 months, or 1 year.

... Epidemiological modelling has been undertaken to address this question. For combined PM_{2.5} exposures around 250 µg/m³ in Morwell South and around the National Environment Protection Measure in the rest of Morwell, no additional deaths would be expected even if the exposure continues for 6 weeks. However, after 3 months this level of PM_{2.5} exposure would be expected to result in some additional deaths from IHD (0.5 additional deaths), Stroke (0.2), COPD (0.1), Lung Cancer (0.1) and Acute Lower Respiratory Infection (ALRI) (0.2).

Analysis of death notices undertaken by Voices of the Valley

A local community advocacy group, the Voices of the Valley (VoTV), analysed the death notices appearing in the local newspaper (ie Latrobe Valley Express) to try and ascertain whether there was an increase in death rates (ie reported in the newspaper) due to the fire. The VoTV analysis showed a 40% increase in death notices in the newspaper in March 2014, compared to the average for the years 2010 to 2013. Refer to *Appendix 1*.

The VoTV analysis apparently showed a 40% increase in death notices in the newspaper in March 2014, compared to the average for the years 2010 to 2013. VoTV claims that this may be a "harvesting effect" ie the effect sometimes seen in heatwaves, where deaths which would have occurred soon are brought forward by the heat event.

The death notice data were provided to the Hazelwood Mine Fire Inquiry Board which referred it to the Department of Health to respond to the concerns raised by VoTV, with the suggestion that the Department also consider this information as part of the future long term health study.

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Analysis of death data undertaken by Professor Adrian Barnett, QUIT

Recent media (ie ABC 7.30 report 12 February 2014) reported work undertaken by Professor Adrian Barnett of the Queensland University of Technology.

The full details of Professor Barnett's work are not currently available to the Department, however the Department understands from the media reports that:

- Professor Barnett is a statistician and epidemiologist with an interest in environmental health.
- BDMV data for four postcodes in and around Morwell was sourced for 2009 to 2014.
- The four postcodes include 3840 Morwell; 3842 Churchill and 3869 Jumbuk, and Yinnar and Yinnar South.
- Professor Barnett reported a '89% probability of increased death' in this area as well as noting a '15% increase in death' which he estimates is equal to approximately 11 extra deaths.
- Professor Barnett also mentioned that, upon adjusting the work for heat effects, this resulted in a '81% probability of increased death' in this area and a corresponding estimated '11% increase in death'. He did not quote the corresponding estimated extra deaths in this regard.
- Professor Barnett has suggested that the results of his investigation could be attributed to the Hazelwood coal mine fire.

A further media report [15 September Latrobe Valley Express] also made reference to:

- 'Births Deaths and Marriages data shows the total deaths between February and June (ie this is 5 months) for the postcodes was 285 - compared to a 2009-2013 average of 239.5.'

Births, Deaths and Marriages Victoria data provided to Department of Health

The Department has received a death data set from BDMV. Refer to *Attachment 2* in excel format.

Deliverables

To undertake an analysis of the attached death data set from the BDMV, and advise if any conclusions can be drawn about any increase or decrease in deaths during the time of the fire (February to March 2014) or for the whole period (January to June 2014).

Timeframe

Preliminary assessment delivered by: **Friday 19 September 2014.**

Final assessment report by: **Tuesday 23 September 2014**

Key contacts: Dr Rosemary Lester, Chief Health Officer – 9096-5174 or
Environmental Health program on 1300 761 874

Attachments:

- (1) Rapid Health Risk Assessment (12 March 2014), Monash University School of School of Public Health and Preventive Medicine.
- (2) Excel spreadsheet of data provided to the Department of Health by BDMV.