From: Adrian Barnett
To: Justine Stansen
Subject: Fwd: Voices of the Valley BDM
Date: Wednesday, 2 September 2015 4:04:34 PM
Attachments: Herald Sun 12 Oct 14 edited-1.jpg
ATT00001.htm
Hazelwood report - Melbourne University.pdf
ATT00002.htm

Sent from my iPhone

Begin forwarded message:

From: "Wendy Farmer" [redacted]
To: "Adrian Barnett" [redacted]
Cc: "Ron Ipsen" [redacted]
Subject: Voices of the Valley BDM

Hi Adrian,
Thankyou for all the hard work you have done in the analysis of the BDM data & also looking over our Health Audit that we are preparing. At the moment we are trying to go further then the previous stats from BDM, we have requested the Death stats for the previous 10 years up to September 2014 from the BDM including the cause of death. Voices of the Valley have hit a brick wall, we received an email back from BDM & they will not supply the cause of Death to us. Please see insert
From: [redacted]
Date: 9 October 2014 9:14:12 am AEDT
To: Tara [redacted]
Cc: [redacted]
Subject: Re: Data
Hi Tara,
I can give you yearly death data totals for the whole of Victoria 2004 - 2014, and yearly totals for the postcodes listed for 2004 - 2014, however, I cannot give you cause of death.
This information is released only in specific circumstances, generally to assist with medical research, and entails a full application, including Human Research Ethics Committee approval for the project.
The cost would be calculated on the basis of the time taken for me to extract this data.
Please let me know if you wish to proceed without the Cause of death information.
Regards
Dawn
It has been suggested that you could possibly get this information with your status? I understand that this is a big ask from you but if this is a all possible we would really appreciate this.

The Melbourne Herald Sun ran a small article in their paper on Sunday with data from the Melbourne University which I have attached both for you. Interesting that the paper has said there was no spikes in deaths during the fire, which is not actually what Melbourne University has

said.

At the moment we are pushing for a Coroners Investigation into the increased deaths. Environment Justice are now supporting us with Lawyers & Barristers, we have sent our Community Health Report to the Coroner & we are waiting for an answer to whether the investigation will proceed.

Once again I want to thank you for your time.

Regards
Wendy Farmer
President
Voices of the Valley
[redacted]

Valley fire not a killer

BRIGID O'CONNELL

A REVIEW has found the Morwell mine fire, which dumped clouds of ash on residents for more than six weeks, did not cause a spike in deaths.

Victoria's chief health officer advised vulnerable residents to temporarily leave the Latrobe Valley almost three weeks after the February 9 fire started at the Hazelwood coal mine.

Many Morwell residents reported respiratory and other health problems during the 45-day fire, with about 20 firefighters treated for carbon monoxide poisoning in the first week of the fire.

A review of data from Birth Deaths and Marriages Victoria, by the University of Melbourne, of deaths between January and June this year compared to the same period for past five years found while "slightly more" deaths occurred this year, they could not attribute these to the fire.

For the whole Latrobe Valley, 339 people died in the first half of this year, above the 302 deaths that were expected, with the additional deaths occurring in March and May.

President of the action group Voices of the Valley Wendy Farmer said there was still widespread concern about the long-term health effects of living amid the thick smoke.

Ashley Gardiner, spokesman for Health Minister David Davis said the Department of Health was overseeing a long-term health study in recognition of community concerns.

THE UNIVERSITY OF
MELBOURNE

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

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Executive Summary

Our review of the BDMV mortality data (2009-14) for the Latrobe Valley shows that slightly more deaths occurred in the period January to June 2014 compared with the period January to June 2009-13 but the evidence that this is not due to just chance alone is inconclusive.[1]

This assessment reviews the data provided, and shows several ways of demonstrating the small increase in Latrobe Valley deaths in 2014, compared with 2009-13. We have shown these results using the following analyses, looking at deaths per month/all postcodes, and annual deaths/all postcodes. We have analysed reported mortality from Morwell as well.

We do not find this increase to be conclusive evidence of any particular effect, given the very wide confidence intervals around the observations, and the lack of useful denominators to compare health events in these postcodes. These uncertainties include, but may not be limited to, the small population size under review, and the fact that we have no information about the underlying age or sex distribution or population movements over time within the postcodes concerned.[2]

Monthly mortality

The graphic representation of reported deaths by month and associated exact confidence intervals for these observations over the period 2009-14 shows that 2014 deaths are within the range observed for the previous five years, with postcode data combined for analysis (Figure 1).[3]

Poisson regression

The 2009-13 data were modelled using Poisson regression (for categorical data) and the 2014 deaths were predicted using this model (see Figure 2 and Table 1). This model shows that there are 37 additional deaths overall in the 2014 period (339 observed for 2014, compared to the 302 annual average predicted by the model). The additional deaths observed occurred in March and May of 2014.

Linear Regression

The monthly number of deaths was approximately normally distributed, so the data were analysed also using linear regression. Separate analyses were done for all Latrobe Valley postcodes and for Morwell (3840). There was no evidence of

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[1] Excess mortality means the number of deaths observed exceed the number predicted by statistical estimation.

[2] As we lack information on the population size and thus person/years (estimated time-at-risk for the population) for each postcode, we are unable to adjust for the difference in postcode population size and any subsequent difference in postcode death rate. By aggregating the postcodes into a single group (and assuming the overall population stayed relatively stable over the study period), we assume then that the number of deaths represent a single population for analysis.

[3] Exact confidence interval from D. Clayton and M. Hills, Statistical Models in Epidemiology, Oxford University Press, Oxford, 1993. The confidence bounds are derived from the observations in this (Poisson) distribution, without assuming and thus approximating the Normal distribution.

serial autocorrelation of the residuals. 'Exposure' for this analysis was defined in two ways:

1. January-June 2014 versus January-June all other years;
2. February-March 2014 versus February-March all previous years.

For Morwell, there was weak evidence of additional deaths in 2014 compared with other years (Table 2), but for February-March, there were fewer deaths than in previous years. Wide confidence intervals (including zero) around these estimates and large p-values indicate that the results are inconclusive, since the results are consistent with large excesses in deaths in 2014 and large decreases for the February-March period. For the whole Latrobe Valley, there were 7.4 additional deaths per month in 2014 when compared with 2009-13 and 9.2 additional monthly deaths for February-March 2014 compared with February-March 2009-13. Again, the confidence intervals were wide and included zero (see Table 2), and the results inconclusive.

Limitations

We cannot conclude that the 2014 mortality observed is due to any single cause, or whether it has occurred by chance alone. We did not take external factors such as local weather conditions into account in these analyses. Analysis of the cause of deaths for this period would be required to explore common risk factors. We have no information on the underlying age/sex distribution of these localities, or of the recent demographic changes in these communities, both trends that could underlie the mortality observed in 2014.

Figure 1. Monthly mortality and associated exact 95% confidence intervals for aggregated Latrobe Valley postcodes, 2009-14

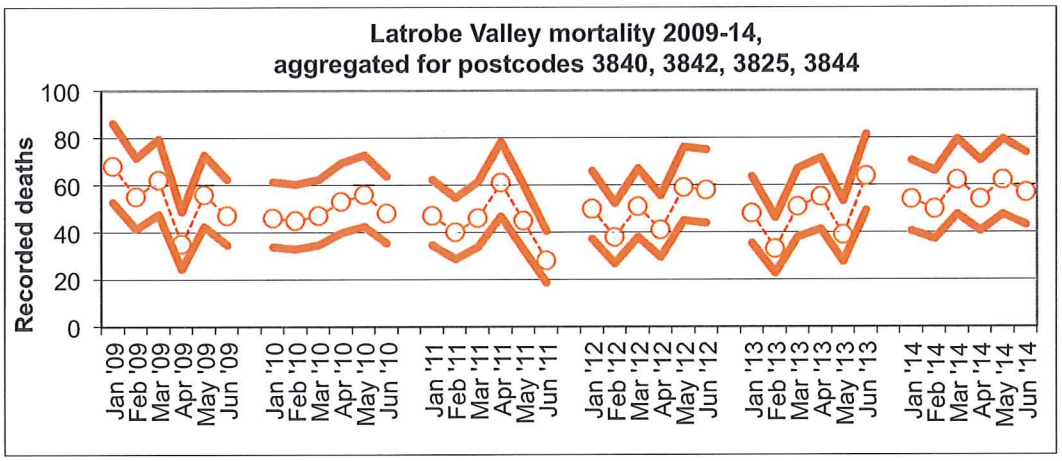

Figure 2. Monthly mortality and associated exact 95% confidence intervals, Latrobe Valley postcodes 2009-13, and Poisson predicted values, 2014

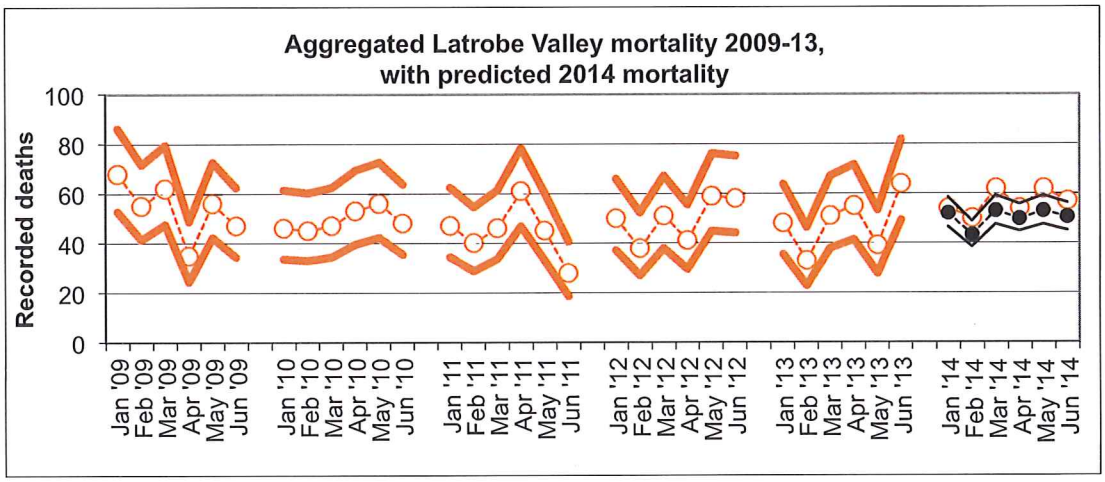

Table 1. Predicted additional monthly deaths during 2014 from Poisson regression analysis, for aggregated postcodes

	Observed	Predicted	Lower bound	Upper bound
Jan 2014	54	51.94	46.53	58.56
Feb 2014	50	43.38	38.47	48.91
Mar 2014	62	52.98	47.47	59.15
Apr 2014	54	49.90	44.70	55.70
May 2014	62	52.98	47.47	59.15
Jun 2014	57	50.40	45.15	56.26
TOTAL	**339**	**301.58**	269.78	337.72

Table 2. Predicted additional monthly deaths during 2014, compared with 2009-13, for aggregated Latrobe Valley postcodes, and for Morwell, linear regression analysis

Time period	Predicted additional deaths per month,		p-value[4]	R^2
	Number	95% confidence interval		
All postcodes				
Jan-June 2014 *vs* Jan-June 2009-13	7.4	-0.69, 15.55	0.07	0.09
Feb-Mar 2014 *vs* Feb-Mar 2009-13	9.2	-5.48, 23.88	0.19	0.16
Morwell				
Jan-June 2014 *vs* Jan-June 2009-13	1.4	-2.8, 5.7	0.50	0.01
Feb-Mar 2014 *vs* Feb-Mar 2009-13	-2.6	-11.5,06.3	0.53	0.04

[4] These p-values can be interpreted as providing only weak evidence against the null hypothesis of no difference in number of deaths in 2014 versus the previous years. See B.R. Kirkwood and J.A.C. Sterne, Essential Medical Statistics, 2nd edition, Blackwell Science, Oxford, 2003.