



Joint Expert Report – 19 October 2015

Attendees:

Emeritus Professor Bruce Armstrong	Epidemiologist and Public Health Physician
Associate Professor Adrian Barnett	Principal Research Fellow Faculty of Health, School of Public Health and Social Work Queensland University of Technology
Dr Louisa Flander	Senior Research Fellow, Centre for Epidemiology & Biostatistics, Melbourne School of Population and Global Health, University of Melbourne.
Professor Ian Gordon	Director Statistical Consulting Centre, University of Melbourne
Dr Fay Johnston	Senior Research Fellow, Environment and Health Research Group, Menzies Institute for Medical Research.
Dr Philip McCloud	Director and Principal Statistician, McCloud Consulting Group
Monica Kelly	HMFI Secretariat - scribe

Conclusions relating to Term of Reference 6: Whether the Hazelwood Coal Mine Fire contributed to an increase in deaths, having regard to any relevant evidence for the period 2009 to 2014.

1. Do you agree with Associate Professor Barnett's conclusions that:

a. There is a 99% probability of an increase in deaths during the 45 days of the fire?

ARMSTRONG: Agree there was an increase in deaths, but not the 99% probability statement. I would say that an increase 'is more likely than not'.

FLANDER: Agree there is an increase in deaths during the period of the fire, but don't agree there is a 99% increase in probability.

BARNETT: Agreed.

GORDON: Agree there was an increase in deaths during the period of the fire. Do not agree with the way it has been expressed. Noted reservation about having insufficient time to explore the models in depth and the findings.

JOHNSTON: Agreed that there is an increased probability of an increase in deaths during the 45 days of the fire. Don't necessarily accept there is a 99% probability.

McCLOUD: Agree there was an increase in the observed number of deaths, but not agreed that there was a 99% probability. The increase in the observed number of deaths was within the bounds of natural random variation.

b. With an estimated 23 additional deaths?

ARMSTRONG: Not agreed. Given the uncertainty about the increase in risk ('moderate evidence') very reluctant to quantify the number of extra deaths.

FLANDER: Not agreed.

BARNETT: Agreed.

GORDON: Agree that there is a way to attempt to estimate an increase number of deaths, but for reasons relating to 1a, I don't agree that 23 additional deaths is the best estimate.

JOHNSTON: Not agreed.

McCLOUD: Not agreed. Work of Abramson and Johnston relevant. Zero - two deaths in line with these models would be more reasonable.

2. Do you agree with the methodology used by Associate Professor Barnett to reach those conclusions?

ARMSTRONG: Agreed

FLANDER: Not qualified to answer the question.

BARNETT: Agreed

GORDON: Qualified agreement. Would prefer further discussion regarding details of the methods.

JOHNSTON: Agreed

McCLOUD: Agreed

3. Do you agree with the way in which Associate Professor Barnett has presented his conclusions?

ARMSTRONG: Qualified agreement. More detail and clarity would have been welcome.

FLANDER: Qualified agreement. Not enough information in plain language to understand it.

BARNETT: Agreement

GORDON: Qualified agreement. Prefer more findings presented in a more transparent and accessible way for readers of the report.

JOHNSTON: Qualified agreement. Required discussion of findings in the light of existing evidence.

McCLOUD: Qualified agreement. Prefer more findings presented in a more transparent and accessible way for readers of the report.

4. For those who have previously given evidence to the Inquiry, has the additional analysis undertaken by Associate Professor Barnett and any commentary done on that analysis altered your previous opinions? If so, how?

ARMSTRONG: I reach the same conclusion now as when giving evidence to the Inquiry. I have increased confidence in that position as a result of this additional work.

FLANDER: Not changed my previous opinion.

BARNETT: My opinion is changed and I'm now more certain there is an association.

GORDON: I reach the same conclusion as when giving evidence to the Inquiry. I have increased confidence in that position as a result of this additional work.

5. Having regard to the reports of Associate Professor Barnett dated September, 25 September and 9 October 2015 and commentary on them undertaken by Professor Armstrong, Professor Gordon, Dr Flander and Dr McCloud:

- a. Was there an increase in mortality in the Latrobe Valley during the coal mine fire in 2014?**

ARMSTRONG: There is moderate evidence that the mortality was increased in the Latrobe Valley during the coal mine fire.

FLANDER: There is moderate evidence that the mortality was increased in the Latrobe Valley during the coal mine fire.

BARNETT: Yes

GORDON: Yes

JOHNSTON: Qualified agreement. I think it is very likely there was an increase in deaths, but not of the magnitude of those estimated by Associate Professor Barnett.

McCLOUD: Although there was an observed increase in mortality during the time of the CMF, this is within the bounds of natural random variation.

b. If yes, did the coal mine fire contribute to the increase in mortality?

ARMSTRONG: It is likely that the coal mine fire contributed to the increase in mortality but it does not explain the apparent magnitude of the increase.

FLANDER: I am not prepared to say what the causes were as the numbers observed are so small.

BARNETT: Yes.

GORDON: I think it is likely that the coal mine fire contributed to the increase in deaths.

JOHNSTON: Yes it is likely.

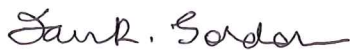
McCLOUD: I do not believe we can answer yes to this question based on any statistical analysis because of the inherent random variation. Only a detailed examination of death certificates could ascertain the number of deaths caused by coal mine fire pollution.

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Associate Professor Adrian Barnett

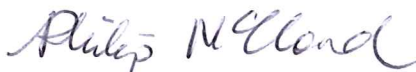


Dr. Louisa Flander



Professor Ian Gordon

Dr. Fay Johnston



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