

## General practitioner visits and medication use amongst young children exposed to the mine fire smoke

### Research Summary

December 2019

### Background

The fire in the Morwell open cut brown coal mine adjacent to the Hazelwood Power Station blanketed the town of Morwell and the surrounding area in smoke and ash for six weeks in February and March 2014. The smoke event was recognised as one of the most significant air quality incidents in Victoria's history. It caused considerable community concern within Morwell and the broader community. In response to these concerns, and following extensive community consultation, the Hazelwood Health Study (HHS) was established to examine the impacts of the mine fire. The HHS involves multiple research streams targeting different health outcomes and different vulnerable groups.

The **Latrobe Early Life Follow-up (ELF) Study** is the part of the HHS that follows the health and growth of children who were younger than two years old when the fire happened. This includes children who were in the womb and had not been born yet.

### Analysis aims

We aimed to find out if exposure to smoke from the mine fire either during pregnancy, or during the first two years of life, was associated with visits to a General medical Practitioner (GP) or the prescription of asthma puffers, steroid skin creams and antibiotics over a one-year period following the fire.



### Meet the team

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### What we found

We found that children exposed to the mine fire smoke during their first two years of life were more likely to have antibiotics dispensed in the year after the fire, compared with those not exposed. For those exposed children, there were no other associations between mine fire smoke and visits to GPs or the dispensing of other medications.

In the group of children whose mothers were exposed to the mine fire smoke during pregnancy there were no associations between mine fire smoke and visits to GPs or dispensing of medications in their first year of life.

**A detailed paper describing the findings from this analysis can be requested from [contact@hazelwoodhealthstudy.org.au](mailto:contact@hazelwoodhealthstudy.org.au)**



## What we did

- With the permission of the parents of 286 children in the ELF Study, we obtained Medicare Benefits Schedule (MBS) data on the number of GP visits, and Pharmaceutical Benefits Scheme (PBS) data on the numbers of prescribed asthma puffers, steroid containing skin creams, and antibiotics dispensed from pharmacies during the period 2014-2016.
- We used each child's home address and locations during the fire period to estimate how much smoke had been experienced by each child, or mother if pregnant. The analysis included children who had a range of exposure to the smoke, including some who had no exposure in pregnancy or infancy.
- For children whose mother were exposed to smoke during pregnancy we evaluated these outcomes for their first year of life. For children who were exposed to smoke during their infancy we evaluated outcomes for the year following the fire.
- When we analysed the data, we took into account other factors that can affect health outcomes such as age, second hand smoke exposure, the mothers' level of stress during pregnancy, socioeconomic status and the background air quality in this area.

## Considerations

PBS data only captures prescribed and subsidised medications, so some asthma puffers and steroid skin creams bought without a medical prescription are not included. This study could not determine reasons for the observed increases in antibiotic prescribing. This might have reflected an increased tendency to prescribe antibiotics because of heightened health concerns following the fire, or it might have reflected an increase in the diagnosis of infections requiring antibiotics. These results were based on a relatively small number of children. Further analysis of anonymous health data from the entire Latrobe Valley will include many more children.



## Where to from here

The results will be shared with relevant organisations and the scientific community to ensure they are used to shape services for the future health of the Latrobe Valley.

The Latrobe ELF Cohort Study is led by the Menzies Institute for Medical Research at the University of Tasmania with collaborators from Melbourne University and the Telethon Kids Institute. The HHS is led by Monash University with collaborators from Menzies, Federation University, The University of Adelaide, and CSIRO.