

## Research Summary

### Evaluating the impact of the Hazelwood mine fire event on students' educational development

April 2021



## 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, with the concentration of smoke contaminants reaching high levels.

The smoke event 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.

## Meet the team

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## Analysis aims

This study aimed to determine whether students in years 3, 5, 7 and 9 from schools in Morwell which were highly exposed to the Hazelwood mine fire, had different academic outcomes to students from schools which were moderately exposed, or from schools with little or no exposure.



## What we did

A new statistical approach was used to analyse NAPLAN and school administrative data from 2008 to 2018 to analyse change in educational outcomes as a result of exposure to the 2014 mine fire. School-level data from 69 primary and secondary schools, including average scores in each NAPLAN domain for years 3, 5, 7 and 9, were used rather than individual student-level data. The analysis compared academic progress in students from highly exposed schools in Morwell, to those from moderately exposed schools in the rest of the Latrobe Valley, and students from schools in Wellington Shire which had little or no exposure to the smoke event. The analysis took into consideration differences in school profile, including socioeconomic status, school size, gender ratio, and school sector (government vs non-government), as well as grade level and longer term trends in NAPLAN.

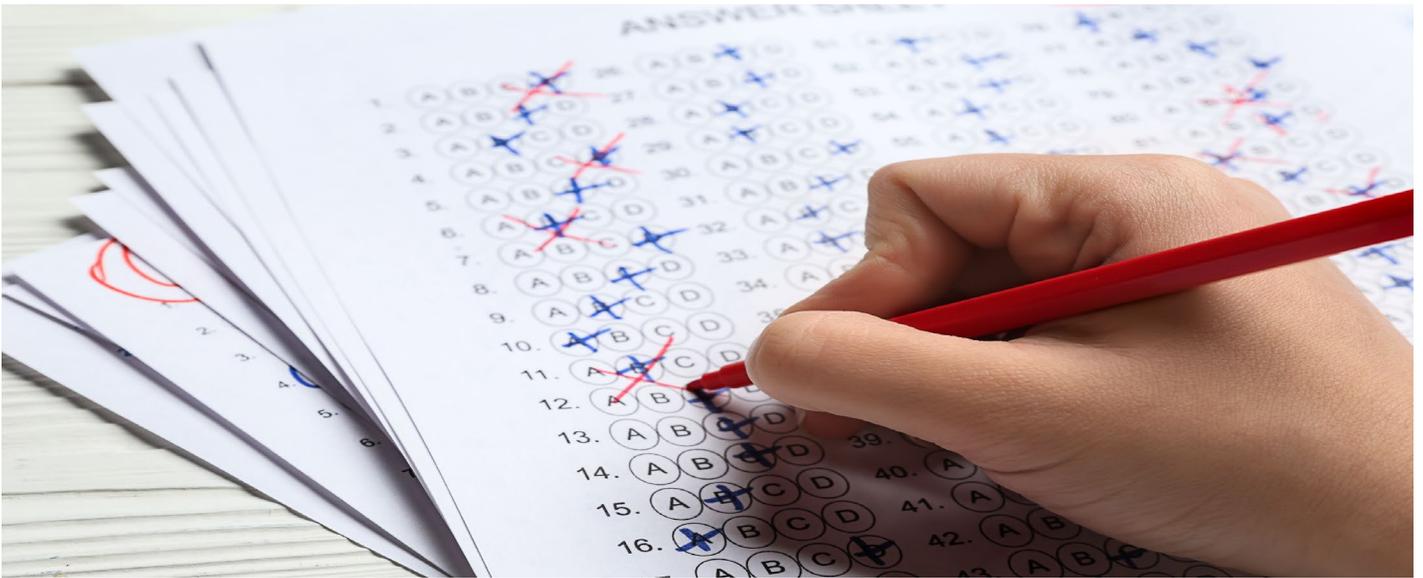
**A more detailed paper describing the findings from this analysis can be found at**

<https://hazelwoodhealthstudy.org.au/study-findings/publications>



## What we found

In the year following the mine fire, major academic interruptions across all NAPLAN domains were evident in the highly exposed Morwell schools. Compared to the Victorian regional average, this interruption equated to a three to four-month delay in educational attainment which had not fully recovered several years later. This evidence of considerable and enduring delays highlights the need to provide educational and community-based supports in response to future events. Importantly, this work introduces a new statistical method to use readily available school-level data to assess educational impacts resulting from other disasters.



## Considerations

Due to the low number of secondary schools in the region, we were unable to evaluate which year levels were most impacted by the mine fire event. The aggregated nature of the school-level data meant that we were unable to consider individual-level factors that influence academic outcomes, such as each student's physical, psychological or social health. More detailed region-specific data on unemployment, service availability and other factors which might influence academic performance were not available for this analysis.



## Where to from here

HHS results will be shared with relevant organisations to ensure they are used to shape services for the future wellbeing of the Latrobe Valley

**The Hazelwood Health Study is a collaborative program of research led by the Monash University Schools of Public Health and Preventive Medicine and Rural Health in partnership with Federation University, the Menzies Institute for Medical Research at the University of Tasmania, the University of Adelaide and the CSIRO.**

**This research was funded by the Department of Health.**