



Investigation into the possible health impacts of the M5 East Motorway Stack on the Turrella community

Phase 1 – a cross sectional clinical assessment of potentially affected residents

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Summary

The M5 East Motorway includes a 4 km long tunnel that is ventilated through a single exhaust stack system. The exhaust stack is located in Turrella and is designed to remove all motor vehicle exhaust emissions from the tunnel. In the first half of 2002, immediately after the opening of the tunnel, NSW Health received over 80 complaints from local residents who believed their health was being affected by the stack exhaust. Monitoring in the local area showed that pollutant levels had not changed, so there was no apparent cause for the symptoms. After consultation with key stakeholders and experts, NSW Health developed a multi phase investigation strategy to examine the health concerns and symptoms of the local residents. This report is of Phase 1 of that strategy.

Phase 1 investigation consisted of an exploratory, qualitative study to better define the nature of the symptoms being experienced by the residents. It involved a clinical examination by a medical specialist, allergy testing and a questionnaire on the residents' health status. The sample population was all residents within 700 metres of the exhaust stack and those who had made a previous complaint to NSW Health. By the nature of its design, the study was purposely biased toward those who believed their health had been affected by exposure to emissions from the M5 East exhaust stack.

Invitations for participation were sent to the 1,928 homes identified within the 700 metre zone and 88 invitations were sent to those who had previously complained to NSW Health.

Fifty-two residents from within the 700 metres and two residents from outside the 700 metres presented for examination. Their clinical histories were summarised to provide information on the perception of risk, initiating events, symptom triggers and temporal relationships of their symptoms. Once clinical information had been collected, symptoms were categorised by the specialists into three categories.

Category A: Person reported symptoms that were assessed by the physicians as having a likely relationship with the M5 East stack.

Category B: Person reported symptoms that were assessed by the physicians as having an uncertain relationship with the M5 East stack.

Category C: Person reported symptoms that were assessed by the physicians as having an unlikely relationship with the M5 East stack.

This classification provided the basis for the analysis of the information collected.

Thirty-four of the fifty-four participants had one or more symptoms that were assigned into 'Category A'. Sixteen participants' symptoms were assigned into 'Category B' while four participants' symptoms were classified as 'Category C'.

The symptoms most commonly reported and assessed by the medical specialists in 'Category A' were eye (29 participants), nose (14 participants) and throat (10 participants) symptoms. Other less commonly associated symptoms related to chest, skin, headache and feelings of depression.

'Category A' symptoms were generally noted as having an onset temporally related to the opening of the tunnel. These symptoms tended to not fluctuate hour to hour or day to day.

Allergy testing revealed a lower but not statistically significant prevalence of allergen reaction in those with 'Category A' symptoms when compared with the general population.

Quality of life was assessed using the Short Form – 36 questionnaire. Results showed participants reporting a poorer health status than the general Australian population in all criteria except for mental health. However these differences were not statistically significant.

This study can make no inference about the actual 'cause/s' of the symptoms being experienced. It remains for analytical studies to prove or disprove whether or not there is an association between 'Category A' symptoms and living close to the M5 East stack.

Recommendations for further investigation include:

1. An analytical study with the aim of determining whether or not there is a real association between residential location and 'Category A' symptoms.
2. Should an analytical study demonstrate an association, an environmental investigation to better characterise pollutant exposure levels.