



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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SHPN (EHB) 030281
ISBN 0 7347 3624X

Further copies of this document can be downloaded from the NSW Health website: www.health.nsw.gov.au

November 2003

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Acknowledgments

The preliminary study into the possible health impacts of the M5 East exhaust stack was conducted on behalf of NSW Health by:

- Physicians from the Royal Prince Alfred Hospital; in association with
- The Environmental Health Branch, NSW Health

The following medical specialists conducted the clinical assessments of the affected residents in April and May 2003:

- Dr. Robert Loblay
- A/Professor. Guy Marks
- Dr. Janet Rimmer
- Professor Wai-On Phoon
- Dr. Kwok Yan
- Dr. Karl Baumgart
- Dr. Velencia Soutter.

The specialist nursing staff performing testing were Dorothy Callender, Catherine Broue, Carol Field, Susan Henderson, and Nuala Hanniffy.

Dr. Robert Loblay coordinated the clinics, which were held at the Royal Prince Alfred Hospital, Allergy Clinic. Clerical assistance was provided by Jenny Misa, Ann Martin, Carmen Hurley and Vicki Harrison.

Data were compiled and analysed by Adam Capon, Katy Emmett, Dr. Vicky Sheppard and Dr. Alison Rutherford, Environmental Health, NSW Health.

Advice concerning study design and protocol was provided by Dr. Robert Loblay, A/Prof. Guy Marks, Dr. Steven Corbett,⁵ Dr Michael Staff,⁶ A/Prof Mark Ferson,⁷ A/Prof. Bin Jalaludin,⁸ Margo Eyeson Annan⁵ and Gea de Meer.⁹

All other activities were coordinated by Dr. Vicky Sheppard, Dr. Alison Rutherford, Adam Capon and Katy Emmett.

Funds were provided by NSW Health.

The research team wishes to thank all participants for their interest and willingness to be part of this exploratory study.

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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.