

A population-based health study

About this report

In 2009, local residents and local government raised concerns about the possible health effects of living in close proximity to the Dandenong South industrial zone and the Lyndhurst landfill. As a result of these concerns, the Department of Health agreed to undertake a population-based health assessment of the Dandenong South and Lyndhurst areas (the study area) to determine whether a cluster of cancer, birth defects or other birth-related outcomes existed and whether it could be linked to industrial activity in the area.

A disease cluster is defined as a greater number of cases of a disease than expected within a group of people in a geographical area over a specific period of time. While there are many common factors affecting the health of individuals and communities, for example the food we eat, our income and education level, our relationships and access to health services, certain conditions must exist for a cluster to be considered. These include:

1. an unusually high number of disease cases that would not be expected by chance, age, gender or influencing social or lifestyle factors
2. multiple cases of an unusual (that is, rare) disease or condition
3. a likely cause being identified (that is, an environmental factor) with plausible and sufficient exposure
4. adequate time between exposure and development of the disease or condition.

These issues were all considered with data provided from the following sources:

- cancer rates – by conducting a study by Cancer Council Victoria into residents living in the Dandenong South and Lyndhurst areas
- birth defects and birth-related outcomes¹ – by conducting a study by the Victorian Perinatal Data Collection Unit (VPDC) into birth defects and birth-related outcomes in babies born to women living in the Dandenong South and Lyndhurst areas.

Investigating cancers

The Victorian Cancer Registry has collected details of every cancer diagnosis in Victoria since 1982 under state legislation.

This population-based analysis used existing health information from the Victorian Cancer Registry to examine cancer rates (standardised incidence ratio) in a four-kilometre area surrounding the industrial zone and the landfill and compared it with the remainder of the cities of Greater Dandenong and Casey, and the whole of metropolitan Melbourne.

Twenty individual cancer types were examined for adults and children less than 14 years of age.

The analysis found a reduction in the incidence of cancer for total cancer and no difference for cancers occurring in children less than 14 years of age compared with the rest of metropolitan Melbourne.

The incidence of cancer was lower or no different in the rest of the cities of Greater Dandenong and Casey when compared to the whole of metropolitan Melbourne.

¹ birth-related outcomes include low birth weight, pre-term birth (less than 37wks) and stillbirth.

The incidence of lung cancer in men only was found to be greater than expected when compared with the rest of metropolitan Melbourne. Historically higher smoking rates in the area are a likely explanation. Smoking is the most common cause of lung cancer.

Overall, the result of this population-based analysis does not suggest an excess in the overall incidence of cancer in residents living in the study area.

Investigating birth defects and birth-related outcomes

The Consultative Council on Obstetric and Paediatric Mortality and Morbidity has collected information on all birth defects since 1982 and is responsible for maintaining the Victorian Birth Defects Register (VBDR).

This analysis compared existing health information on birth defects and other birth-related outcomes for women and babies living in the study area with the rest of Victoria, the rest of metropolitan Melbourne and a comparison group of women and babies living in similar areas of Melbourne (quintile group).

The results do not point to any relative risks of birth defects or birth-related outcomes in the study area that would require further investigation.

Expert panel statement

The expert panel is satisfied that the design of the study was the best possible design and the results have been appropriately interpreted. Overall, the expert panel believe that the results provide no evidence that living in the area nearby the Lyndhurst landfill and the Dandenong South industrial zone has led to an increase in either cancer incidence or pregnancy and birth abnormalities.

Ongoing work

The Cancer Registry and Victorian Birth Defects Register will continue to collect information on cancer and birth defects and other birth-related outcomes across Victoria.

The Environment Protection Authority (EPA) has also commenced a 12-month air-monitoring program in the Dandenong South area to better understand the impact of the industrial precinct on local air quality. The program will measure volatile organic compounds (VOCs), the major industrial emissions in this area. Canisters that sample air have been placed at five locations across the area, capturing 50 different VOCs. The program will run for 12 months and began in April 2011. Results will be made available quarterly. The EPA will release results of the air monitoring program as they become available.

More information

You can review the full report at <http://www.health.vic.gov.au/environment/community/land/>

If you have further questions on the health assessment call the Department of Health Environmental Health Unit on 1300 761 874.

If you have further questions on the EPA air-monitoring results call 1300 EPA VIC (1300 372 842).

The Department of Health Victoria

The Department of Health Victoria works to achieve the best health and wellbeing for all Victorians. This is done through planning, policy development, funding, regulation of health service providers and activities that promote and protect the health of all Victorians.

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