

Non-Occupational Blood Lead Notifications in Queensland

2007

Introduction

In Queensland, blood lead levels are notifiable when the level meets the notification criteria of 0.73 $\mu\text{mol/L}$ (~15 $\mu\text{g/dL}$) or greater. In association with the attending medical practitioner, an attempt is then made to identify the source of exposure so appropriate measures can be introduced to reduce further exposure.

While all notifications equal to or greater than 0.73 $\mu\text{mol/L}$ (~15 $\mu\text{g/dL}$) are recorded on the Notifiable Conditions Register, Queensland Health is particularly interested in non-occupational exposure. Workplace Health and Safety Queensland is responsible for lead exposure in the workplace.

This report contains data on non-occupational blood lead level notifications recorded for 2007.

Methods

Data on notifiable cases of blood lead levels from the Queensland Health Notifiable Conditions System (NOCS) were analysed for the period January - December 2007.

The Notifiable Conditions System only captures information on notifiable conditions. It does not retain information on the total number of blood lead tests performed each year or the percentage of total tests that are notifiable.

Data Analysis

There were a total of 51 notifications made for the period: 34 notifications were recorded for non-occupational exposure including 15 notifications for children aged from 0-4 years.

Table 1 displays the breakdown of the non-occupational exposure by sex. The results indicate that the distribution of notifications is predominately male (79%). Children aged between 0-4 years accounted for 44% of these notifications.

Table 1: Total Non-Occupational Exposure to Lead—2007

| Non-Occupational Exposure to Lead: Total | | |
|--|----|------|
| Male | 27 | 79% |
| Female | 7 | 21% |
| Total | 34 | 100% |

Table 2: Non-Occupational Exposure level - 2007

| Exposure Level (µmol/L) | |
|-------------------------|------|
| Max | 3.21 |
| Median | 0.93 |
| Min | 0.73 |

The median blood lead level was 0.93 µmol/L with a maximum of 3.21 µmol/L. The maximum exposure level was associated with the removal of lead based paint in a domestic dwelling.

Table 3: Causes of Non-Occupational Lead Exposure 2007

| Causes of Lead Exposure | Cases | % | Children under 5 years of age | % |
|---|-----------|-------------|-------------------------------|-------------|
| Removal of Lead-Based Paint From Domestic Buildings | 16 | 47% | 5 | 33% |
| Mount Isa Resident - General Non-Specific Environmental Lead Exposure | 10 | 29% | 10 | 67% |
| Exposure at Indoor/ Outdoor Rifle Range | 5 | 15% | 0 | 0% |
| Making Lead Sinkers, Lead Toy Soldiers | 1 | 3% | 0 | 0% |
| Others* | 1 | 3% | 0 | 0% |
| Unknown Source of Exposure | 1 | 3% | 0 | 0% |
| Total | 34 | 100% | 15 | 100% |

* Others include: burning wood with lead paint coating

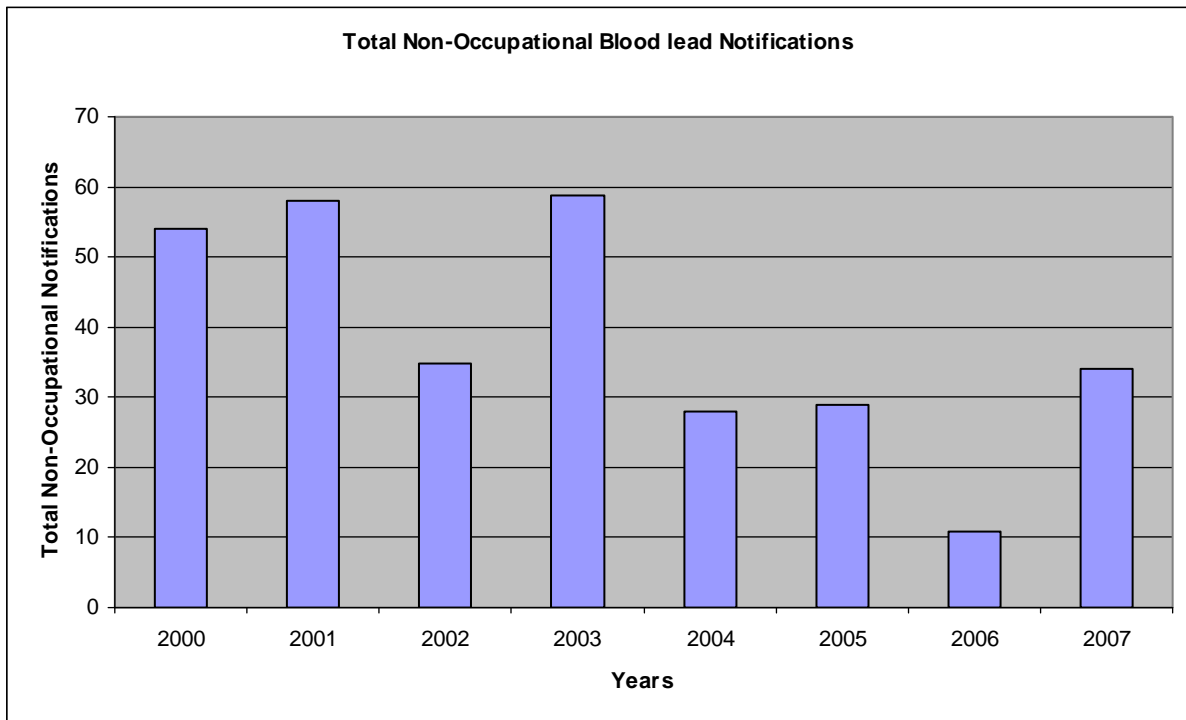
The most common cause of non-occupational exposure in 2007 was associated with the removal of lead based paint from domestic dwellings which accounted for 16 cases (33%). The next most common cause was associated with non-specific exposure of Mount Isa residents with ten cases (29%) recorded for children aged between 0-4 years.

Trend Analysis

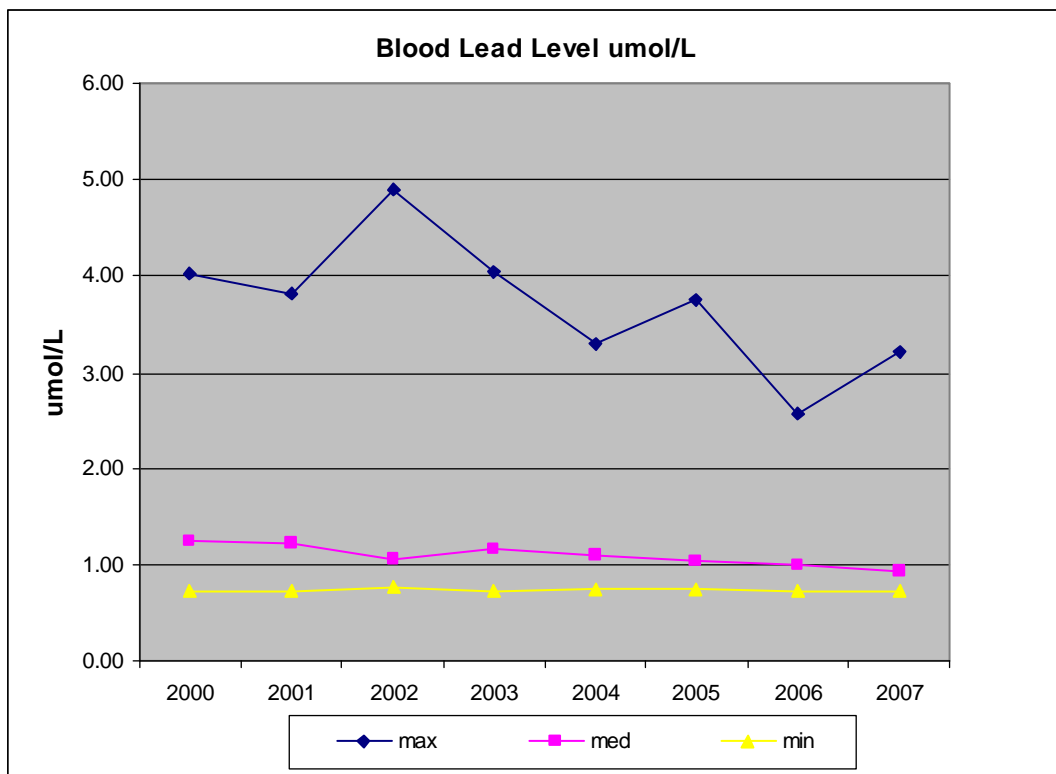
Data relating to total notifications, blood level concentrations and causes of exposure, were captured from 2000 and analysed to see if any trends could be determined.

Analysis of the total notifications over time determined that the data is too variable to draw conclusions on the trend (Graph 1). More data overtime is required in order to predict a trend.

Graph 1: Total Non-Occupational Notifications 2000-2007

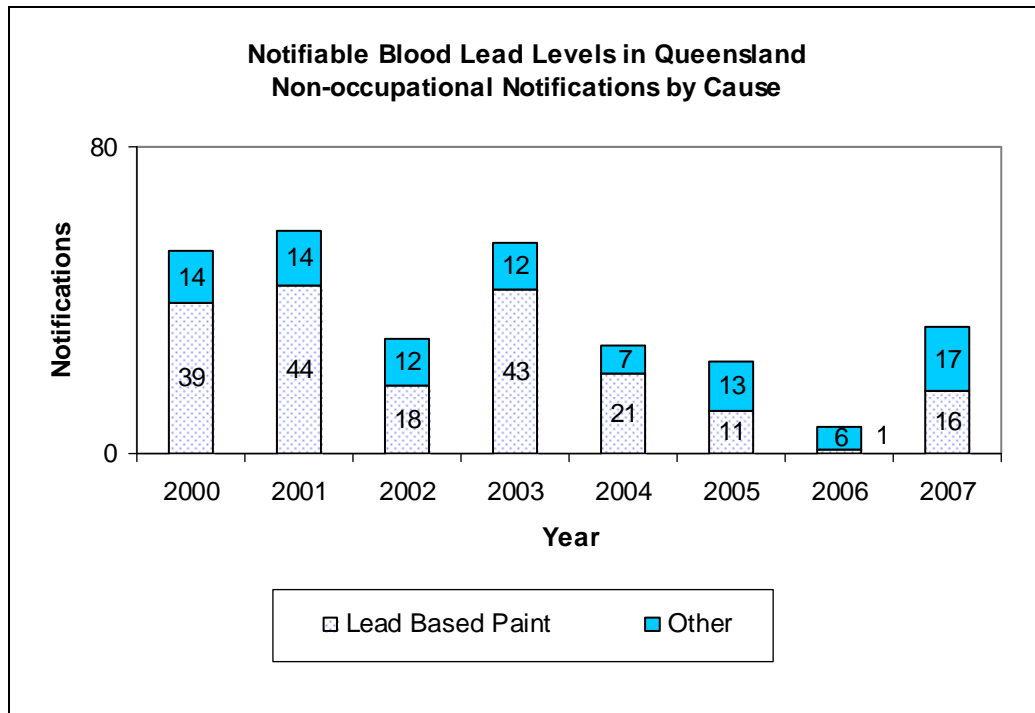


Graph 2: Non-Occupational Blood Lead Levels 2000-2007



Graph 2 illustrates a decrease in the maximum blood lead level concentrations from 2000 – 2007.

Graph 3: Sources of Blood Lead 2000-07

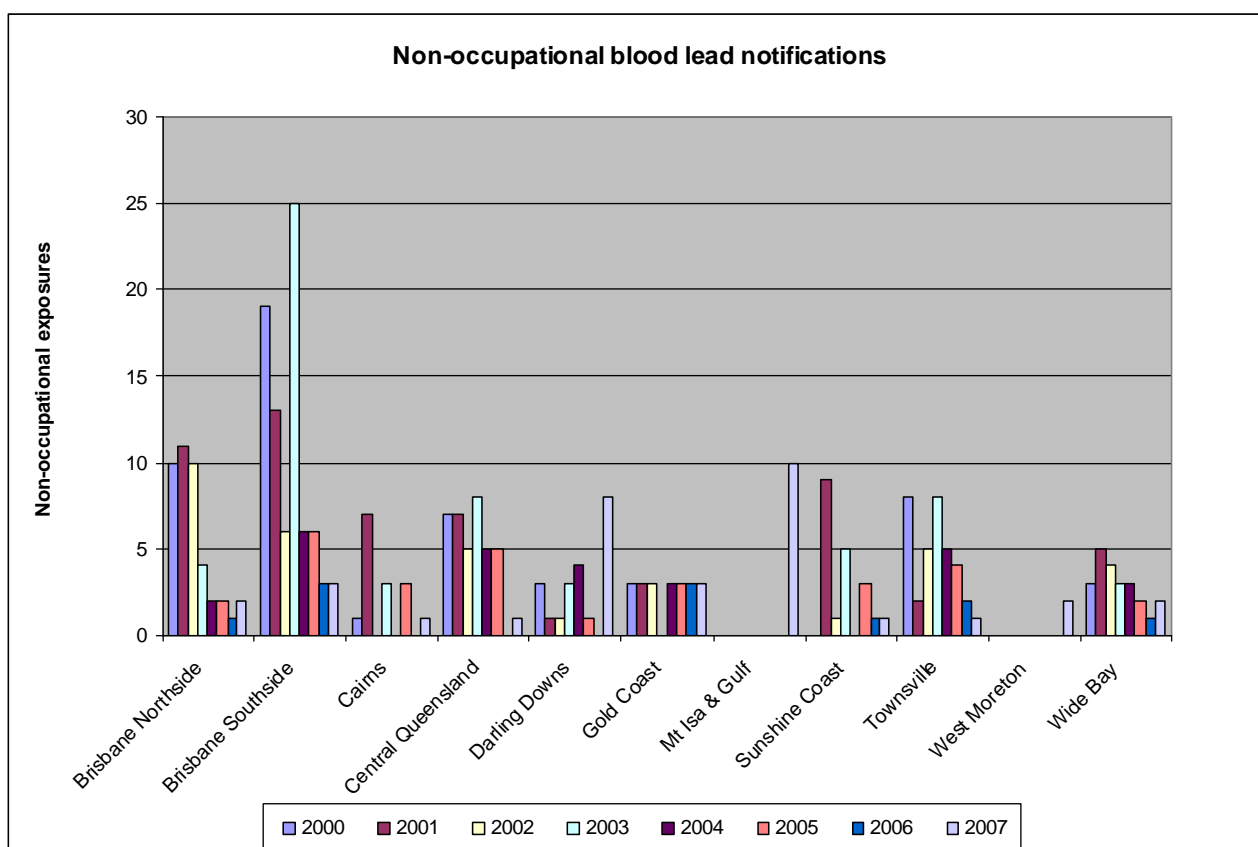


From 2000, a significant proportion of elevated blood lead levels were attributed to exposure from lead based paint as opposed to all other causes of lead exposure (graph 3). More data is required over time to determine if there is a downward trend.

Notifications per Public Health Unit

The number of notifications recorded per Public Health Unit is varied throughout Queensland. Mt Isa Public Health Unit reported the highest number of lead notifications (10). The Darling Downs Public Health Unit recorded the next highest number of notifications at eight. Graph 4 indicates the distribution of non-occupational blood lead level notifications recorded for each Public Health Unit.

Graph 4: Location - Non-Occupational Blood Lead Notifications*



*Prior to 2007, Mt Isa & Gulf was included with Townsville data and West Moreton was included within data for Brisbane Southside