Queensland Government
Queensland Health

Non-Occupational Blood Lead Notifications in Queensland

2009

Introduction

In Queensland, blood lead levels are notifiable when the level meets the notification criteria of 0.48 µmol/L (~10 µg/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 0.48 µmol/L (~10 µg/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 information relating to all non-occupational blood lead level notifications recorded for 2009.

Methods

Data on notifiable cases of blood lead levels from the Queensland Health Notifiable Conditions System (NOCS) were analysed for the period from 01 January to 31 December 2009.

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 result in a notification.

Data Analysis

There were a total of 287 notifications made for the period: 42 were recorded for non-occupational exposure including 14 notifications for children aged from 0 to 4 years. Table 1 displays the breakdown of the non-occupational exposure by sex. The results indicate that males recorded more notifications for elevated lead levels than females. Children aged from 0-4 years accounted for 33% of the non-occupational exposures.

Table 1: Total Non-Occupational Exposure to Lead—2009

Non-Occupational Exposure to Lead: Total		
Male	27	64%
Female	15	36%
Total	42	100%

Table 2: Non-Occupational Exposure Level - 2009

Exposure Level (μmol/L**)**	
Max	5.58
Median	0.73
Min	0.48

The median blood lead level was 0.73 μmol/L with a maximum of 5.58 μmol/L (Table 2). The maximum exposure level was associated with making lead sinkers or toy soldiers.

Table 3: Causes of Non-Occupational Lead Exposure 2009

Causes of Lead Exposure	Cases	%	Children 0-4 years	%
Removal of Lead-Based Paint From Domestic Buildings	9	21%	1	7%
Mount Isa Resident - General Non-Specific Environmental Lead Exposure	7	17%	7	50%
Exposure at Indoor/ Outdoor Rifle Range	6	14%	0	0%
Making Lead Sinkers, Lead Toy Soldiers	2	5%	0	0%
Others*	5	12%	2	14%
Unknown Source of Exposure	13	31%	4	29%
Total	**42**	**100%**	**14**	**100%**

* Others included: lead lighting manufacture; exposure during maintenance or demolition; use of lead based medicine preparation; and ingestion of lead sinker.

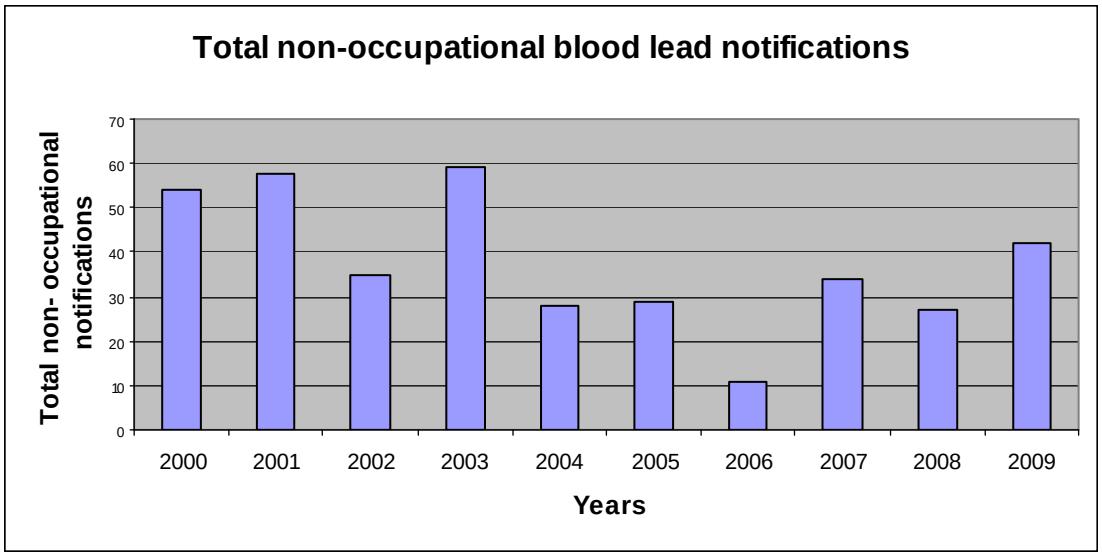
The most common cause of non-occupational exposure in 2009 was associated with the removal of lead based paint from domestic buildings (21%). The next most common cause was associated with non specific environmental lead exposure of Mt Isa residents (17%) all of which were children aged from 0-4 years. Approximately one third of the causes could not be determined (31%).

Trend Analysis

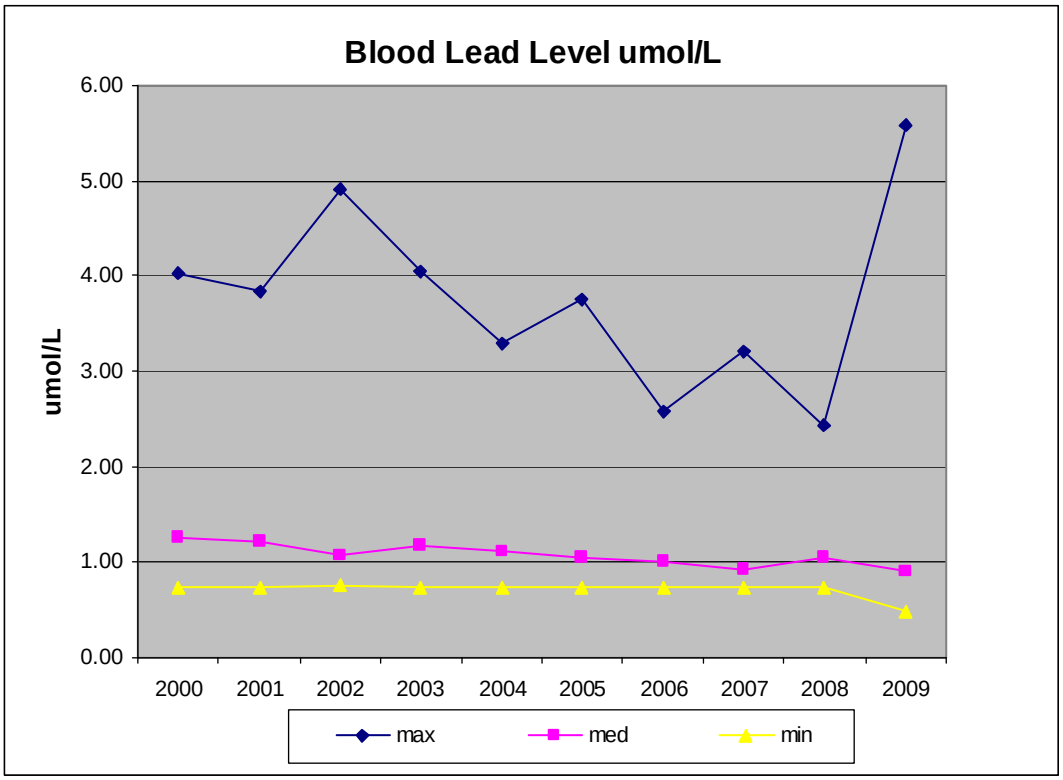
Data relating to total notifications, blood level concentrations and causes of exposure, were captured from 2000 and analysed to see if any trends could be determined.

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 for non-occupational blood lead notifications.

Graph 1: Total Non-Occupational Notifications 2000 - 2009

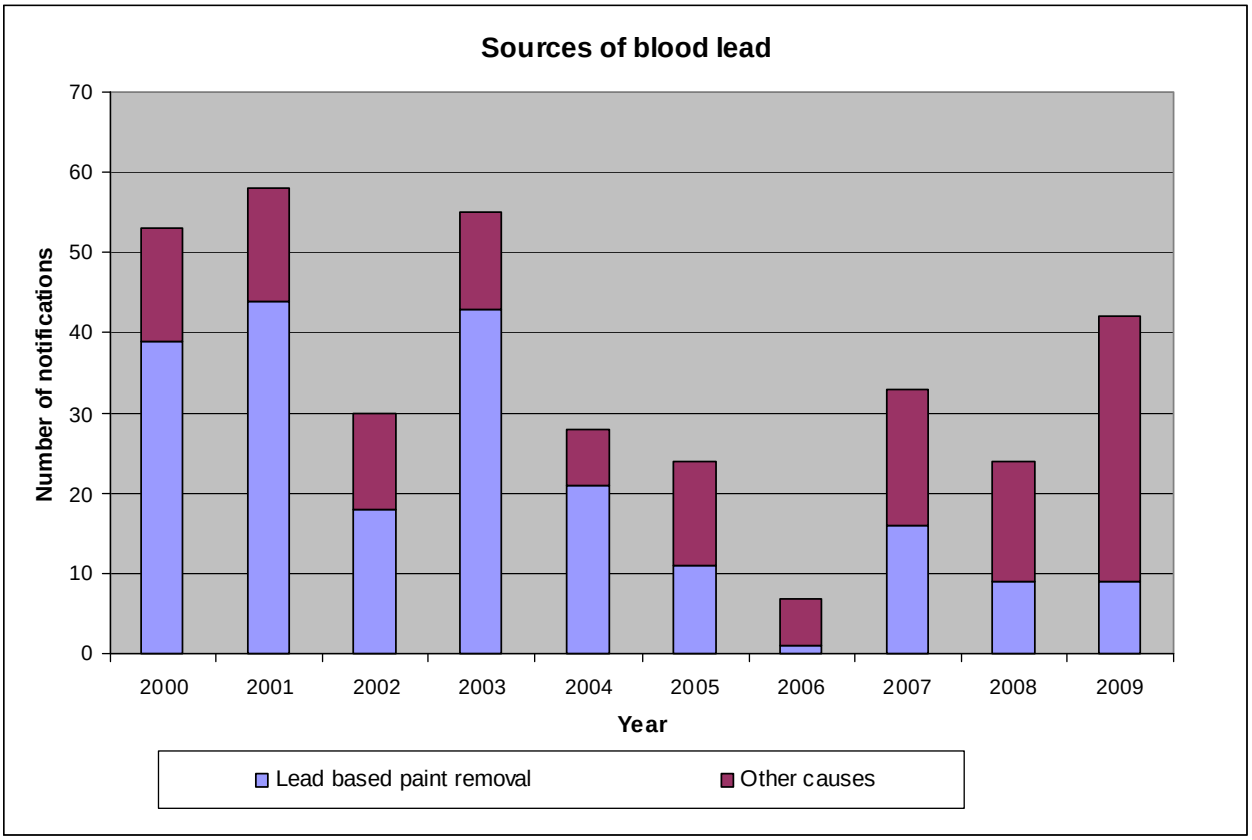


Graph 2: Non-Occupational Blood Lead Levels 2000-2009



Analysis of blood lead levels over time indicates that there is a decrease in the blood lead levels as illustrated by Graph 2. The decrease in the minimum blood lead level for 2009 is due to a change in the notifiable level prescribed in the *Public Health Act 2005*. The notifiable level was reduced from 0.73 µmol/L to 0.48 µmol/L.

Graph 3: Sources of Blood Lead 2000-2009

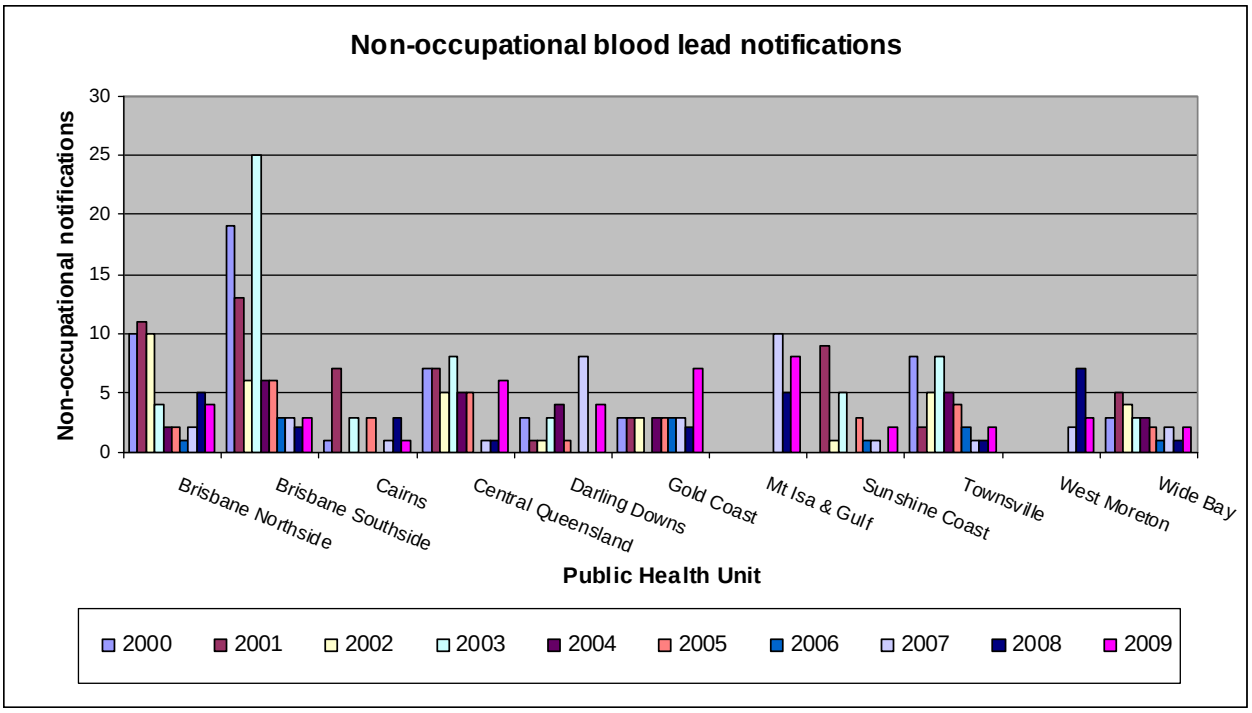


Lead based paint removal continues to remain a significant source of exposure as illustrated by Graph 3. More data is required over time to determine if there is a downward trend.

Notifications per Public Health Unit

The number of notifications recorded per Public Health Unit is varied throughout Queensland. Mount Isa and Gulf Public Health Unit reported the highest number of lead notifications with eight notifications. The Gold Coast Public Health Unit recorded the next highest number with seven notifications followed by Central Queensland Public Health Unit with six notifications. 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