



# mount isa community

## [LEAD SCREENING PROGRAM 2006~7]

*A summary of the report into the results of a blood-lead screening program of 1-4 year old children in Mount Isa, Queensland.*

### LEAD IN MOUNT ISA

There is a long history of lead mining in Mount Isa. Along with the naturally occurring lead in the area, this means there are elevated levels of lead in parts of the environment of Mount Isa.

The presence of lead in Mount Isa and its potential to elevate blood lead levels in people living and working in the city has been acknowledged for many years.

### HOW CAN LEAD AFFECT YOUR HEALTH?

Exposure to lead occurs mainly through ingestion and inhalation of dust and air contaminated by lead. Children commonly play in dirt and dust, and their hand-to-mouth behaviour can be a common pathway for the ingestion of lead.

Population studies have shown associations between elevated blood lead levels in early childhood and impaired cognitive development, as measured by IQ tests, and behavioural problems, including reduced attention span, reduced spatial skills, and poorer performance at school. The level of effect was related more to the average lifetime blood lead level of the children in the studies rather than individual blood lead levels at any one point in time.

Although there is no current specific health guideline in Australia for blood lead levels, Queensland Health has adopted the public health goal of achieving blood lead levels below 10 µg/dL (micrograms of lead per 100 millilitres of blood).

This is the standard recognised by the World Health Organization, although at blood lead levels less than 20 µg/dL, clinical symptoms or signs of acute toxicity would still not be expected.

### WHY WAS A LEAD SCREENING STUDY UNDERTAKEN IN MOUNT ISA?

In September 2006, due to increasing interest from the general Mount Isa community, Queensland Health commenced a study of Mount Isa children between one

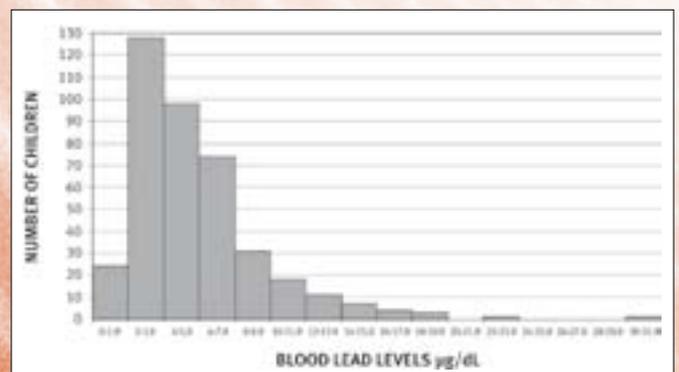
and four years old in order to determine blood lead levels in this age group.

The main aims of the study were to identify children who had elevated blood lead levels, to work with the families of these children to reduce their blood lead level, and provide key data to drive further community action.

Children were recruited by invitation and the target of 400 children was reached in December 2007. The 400 recruited for the study were found to be representative of the general population of one to four year olds in Mount Isa in terms of age, sex and Indigenous status. Children were encouraged to be tested over a period of 14 months through an extensive media campaign titled 'Get Bled for Lead'.

### WHAT WERE THE RESULTS OF THE STUDY?

Results of the study show that the average blood lead level for the children tested was 5.0 µg/dL, the lowest with 1.3 µg/dL and the highest with 31.5 µg/dL. Forty-five children (11.3% of those in the study group) had blood lead levels greater than or equal to 10 µg/dL. Of these, two children (0.5% of the study group) had blood lead levels greater than 20 µg/dL.



## WHAT DO THESE RESULTS MEAN?

The results of the study reveal significant links between blood lead levels greater than 10 µg/dL and Indigenous status and age. Indigenous children were about four times more likely to have a blood lead level of at least 10 µg/dL than non-Indigenous children.

The results also showed that for all children tested, those aged under three years were much more likely to record an elevated blood lead level than children aged three years or over. Age is a common influence and relates to general play activities and hand-to-mouth behaviour (e.g. playing in soil and sand, and with pets).

The results also showed no real links between elevated blood lead levels and gender, or length of time living in Mount Isa.

Household tests carried out for children with elevated blood lead levels (greater than 10 µg/dL) showed that chewing, sucking or eating non-food items, living in a property with bare soil, and owning a pet were common in this group. These factors have been often linked to elevated blood lead levels in children in similar studies around the world.

## WHAT HAS BEEN DONE FOR CHILDREN WITH ELEVATED BLOOD LEAD LEVELS?

On the basis of the results of the study, Queensland Health has undertaken a range of individual follow-up activities, as well as improving lead awareness for the Mount Isa community.

For those households where children had elevated blood lead levels, individual follow-up activities will continue to focus on:

- testing of environments and collection of soil/paint/dust samples at other places where the child spends significant time
- advice with changing the home environment, and looking at child hand-to-mouth behaviours which may lead to exposure
- dietary advice (dietary factors, including a low intake of calcium and iron, can be an influence leading to elevated blood lead levels)
- referral to a paediatric specialist when blood lead results are above 20 µg/dL
- additional blood testing to see if the above methods are reducing blood lead levels.

*Note: It may take an extended period of time before lead levels drop significantly, and it is not unusual for levels to rise before they drop.*

## WHAT HAPPENS NOW?

Following the completion of the lead screening survey, Queensland Health has provided a series of recommendations:

### *Recommendation 1*

Queensland Health will continue to monitor the results of routinely collected blood lead levels in Mount Isa through the free blood lead testing service at Queensland Medical Laboratory Pathology Services. It will also actively manage elevated blood lead levels at 10 micrograms per decilitre and above.

### *Recommendation 2*

Queensland Health will undertake a follow-up study of the blood lead levels in children in Mount Isa in 2012.

### *Recommendation 3*

The Mount Isa community needs to continue to work together to reduce lead exposure as much as possible. Queensland Health recognises the importance of this and will continue to promote health messages through education and improved parental and child awareness of how to live safely with lead.

### *Recommendation 4*

Queensland Health will work closely with the *Living with Lead Alliance*, including the development of more comprehensive mitigation strategies, including dust-control measures. The Alliance is a group of key partners formed early in 2008 to provide a forum for guiding and driving action on the issue of lead in the community of Mount Isa into the future.

## FURTHER INFORMATION

A copy of the full report is available online at [www.health.qld.gov.au](http://www.health.qld.gov.au)

For more information, please contact the Tropical Population Health Network on 4744 4846.

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