

The Global Lead Advice and Support Service (GLASS) provides information and referrals on lead poisoning and lead contamination prevention and management, with the goal of eliminating lead poisoning globally and protecting the environment from lead.
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global lead advice
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Lead Legislation: The World's Best and Worst Practice Regulating Lead in Paint

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Summary

This research presents a time-line of national government regulations on lead in paint. Specific regulations in the United States, and in some cases Australia, provide a model for world's best practice.

An analysis of the specific legislations of countries, including the United States, Australia and India demonstrates the different ways governments have regulated lead in paint. The research also illuminates the regulation in the United States via the *Lead Based Poisoning and Prevention Act* ("Title X") as the world's best practice. India is an example of world's worst practice: *"The Centre for Science and Environment tested popular paints in India for lead content. It found 72 per cent of the samples had lead much higher than the voluntary limit specified by the Bureau of Indian Standards. Only the Dulux brand of ICI was lead-free; Asian Paints cleaned up later. What implications does it have for our health? Why is no one limiting harmful chemicals in household products?" (Dutta, 2009)*

The Global Alliance to Eliminate Lead in Paint (GAELP) has developed particular action points that need to be addressed in order to achieve its goal. (A meeting in May 2010 in Geneva of the Global Alliance to Eliminate Lead in Paint (GAELP) recommended a limit of 90ppm [0.009%] in paint)

This research explores global regulation that already covers several of GAELP's points.

The fact remains that lead can be eliminated from paint without impacting upon the aesthetics or function of the paint, at a cost comparable to current paint production prices. The final point this research will explore is why countries have failed to introduce this vital legislation.

Introduction

Since its discovery in 6500 BC, lead has been used for various purposes, most notably as an additive in paint. Since 200 BC, there has been an acknowledgement of its detrimental health impacts, including diminished mental health, physical defects, behaviour problems, as well as infant death. In contemporary society there has been substantial research

conducted on the impacts of lead, particularly on children's neurodevelopment. It has been recognised as one of the most serious environmental health issues facing children today (AAP 2005, 1036), with even a small presence of lead having an extremely detrimental impact on infant development. Furthermore, it has been recognised that "The source of most lead poisoning in children now is dust and chips from deteriorating lead paint on interior surfaces," (AAP 2005, 1037).

Despite this, most national governments have failed to regulate the removal of old leaded paint, as well as the use of lead as an additive in new paints.

Research conducted by Scott Clark of the University of Cincinnati, and reported by Amanda Harper, is the most effective in demonstrating the severity of lead contamination in paints, worldwide. (Harper, A 2009)

In 12 countries tested, with at least 10 samples from each country, results showed:

- Several countries had large percentages of paints with lead levels above 600ppm: (A meeting in May 2010 in Geneva of the Global Alliance to Eliminate Lead in Paint (GAELP) recommended a limit of 90ppm [0.009%])
- Of the samples tested, China had 32.8% with lead levels above 600ppm, Singapore - 36.6%, Thailand - 90.6%, and Nigeria - 96%.
- Countries such as Ecuador were still producing paints with alarmingly high levels of lead (averaging 31,960ppm).
- In several countries, low lead paints were available at a comparable cost to the leaded paints.

This prompts the question that if unleaded paints are available, why are they unused? It comes down to two major points: lack of government regulation, combined with public ignorance, which allow leaded paints to remain on the market and be purchased.

"Lead makes the mind give way"

(Dioscorides 200BC)

Major developments of legislation regarding lead in paint by national governments

1909

- France, Belgium and Austria ban white-lead interior paint.
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1922

- League of Nations bans white-lead interior paint.
 - Tunisia and Greece ban white-lead interior paint.
 - The Health Acts Amendment Act in Queensland Australia dictates that no paint containing more than 5% soluble lead should be used on or within four feet of buildings accessed by children under the age of fourteen (GLASS 2008).
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1926

- Great Britain and Sweden ban white-lead interior paint.
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1927

- Poland bans white-lead interior paint.
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1931

- Spain and Yugoslavia ban white-lead interior paint.
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1955

- United States CPSC (Consumer Product Safety Commission) lowers limit of allowable lead in paint to 1.0%.
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1971

- United States *Lead Based Poisoning and Prevention Act Passed* (Title X, spoken as “Title Ten”).
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1978

- United States bans white-lead paint (limit below 0.06% for lead in paint).
-

1991

- Canadian Paint and Coatings Association voluntarily agrees to limit lead content in consumer paint to 0.06%.
-

1992

- Maximum lead content of paint in Australia reduced to 0.25%.
-

1996

- Organisation for Economic Co-operation and Development (OECD) declares lead highest priority for country specific management plans.
-

1997

- Maximum lead content of domestic paint in Australia drops to 0.1%.
-

2004

- World Health Organisation/Europe (WHO) Europe include lead on the list of hazardous chemicals.
-

More recent government legislation introduced by the United States and Australia are investigated below, as well as the lack of legislation by numerous governments internationally.

World's Best Practice in Regulating Lead in Paint

American Regulation

The United States has long been recognised as having the world's best practice in regulating lead in paint. This is ultimately due to the unparalleled regulations contained in the Title X (pronounced "Title Ten") Act.

Title X- United States Lead Based Poisoning Act

The most consequential regulation regarding lead in paint was the United States Lead Based Poisoning Act (Title X) introduced in 1971. The legislation was targeted specifically at government housing. This included government-owned buildings to which children have prolonged exposure, such as schools. It also attempted to reduce the risks posed by houses already contaminated by lead-based paints. The Title X Act was updated in 1992 with the Residential Lead-Based Paint Hazard Reduction Act of 1992, which extended previous legislation to include private housing. In addition to the Federal level regulations enforced by Title X, American states also commonly have in place further legislation. Zajac et al. explored this in a 2009 study of American legislation regarding neuro-developmental disability, finding that nearly all states had at least some blood-lead levels screening program in place (See Appendix 1).

The Global Alliance to Eliminate Lead in Paint (GLAEP) has highlighted several areas that need to be addressed (see Appendix 2) by countries in developing legislation to eliminate lead in paint. These action points provide a crucial scaffolding tool for countries developing new legislation, as well as highlighting areas in which existing legislation can be improved.

Following are examples of national legislation that covers areas highlighted in Appendix 2 of the Annex

9- A

(iv) Encouraging nations to monitor health to estimate the prevalence of lead in human blood.

The monitoring of blood-lead levels is already regulated in America, contained in the Title X act:

Sec. 405- Lead Abatement and Measurement

(c) Exposure Studies: "conduct a study of the sources of lead exposure in children who have elevated blood lead levels."

Sec. 1011- Grants for Lead Based Paint Hazard Reduction in Target Housing

(e) Eligible Activities

6- "Monitor the blood-lead levels of workers involved in lead hazard reduction activities funded under this section."

9- "test... the blood-lead levels of children under the age of six residing in housing after lead-based paint hazard reduction activity has been conducted."

Although America is the best-case scenario for testing of lead levels in blood, the testing of children's blood is decreasing. This is largely due to a decrease in the incidence of lead poisoning, further confirming the successes of the Title X legislation. However, blood-lead testing also serves

the purpose of highlighting particular areas and socio-economic groups that are at risk. The American Academy of Pediatrics notes, "Although concentrations have decreased in all children, black children and poor children continue to have higher blood-lead concentrations," (2005, 1037). Ultimately, until the threat of lead poisoning has been completely eliminated from the environment of young children it is crucial to maintain regular testing of blood.

(xiii) Developing guidelines for establishing national standards, including those that would permit the use only of lead-free paints

Currently, the United States has the world's best standards for lead in residential paints, capped at 90ppm in August 2009. Other countries regulations have remained fairly standard since the majority of nations banned white-leaded paint from 1909 onwards.

Australia doesn't limit the lead content in paints, it simply bans the addition of all 14 lead compounds known to have been previously added to paint (and ink) (NICNAS 2008).

This development of policy that addresses this issue is crucial, as it is at these base levels that the spread of lead poisoning can be abated. The failure of countries to do this also elucidates the lack of knowledge, and indeed governmental concern, on lead hazards, as there are commercially viable options available.

(xiv) Encouraging nations to require that only lead-free paint may be used in government-funded construction or renovation

Since 1971 the United States has banned the use of lead-based paint. Title X prohibited "the use of lead-based paint on homes constructed or rehabilitated by the federal government or with federal assistance in any form after January 13, 1971," (Hersh and Mosley 1995, page 2205). However, Sec. 1002 of the updated Title X of 1992 found that,

"despite the enactment of laws in the early 1970's requiring the Federal Government to eliminate as far as practicable lead-based paint hazards in federally owned, assisted and insured housing the Federal response to this national crisis remains severely limited," (8 [1]).

The American government in 1992 reiterated these laws, and since has seen significant decreases in blood-lead levels, although there are still improvements to be made.

The renovation and maintenance of heritage-listed buildings in Europe has also sparked controversy. "The European Union in 1988 banned lead carbonate and sulphate pigments in paints. But a year later it eased the ban by allowing leaded paints to be used for restoration and maintenance of works of Art and Historic buildings." (Dutta et al. 2009, 7). This use of leaded paint has been seen as unnecessary by many critics,

"current government policy permitting its (lead based paint) use on Grades 1 and 11 star buildings in England and Wales, Category A in Scotland, is outdated and difficult to justify in light of the substantial and growing body of scientific and medical evidence," (Wilmot 2010, 2).

This further exemplifies the success of American policy in dealing with lead as a toxic substance in paint.

(xviii) Exchanging information and providing international support to strengthen and harmonize existing national legislation that focuses on protecting public health in relation to the phase-out of lead paint

The most worthwhile strategic move that could be made by international organisations is to follow the example of American legislation in dropping the permissible levels of lead in paint.

This is explicitly covered in the Title X legislation,

Sec. 1003- Purposes:

“to develop a national strategy to build the infrastructure necessary to eliminate lead-based paint hazards in all housing as expeditiously as possible”

American legislation also uses technological means to share and distribute information:

Sec. 405

(e)The Clearinghouse shall--

"(A) collect, evaluate, and disseminate current information on the assessment and reduction of lead-based paint hazards, adverse health effects, sources of exposure, detection and risk assessment methods, environmental hazards abatement, and clean-up standards;

"(B) maintain a rapid-alert system to inform certified lead-based paint activities contractors of significant developments in research related to lead-based paint hazards; and

"(C) perform any other duty that the Administrator determines necessary to achieve the purposes of this Act.

"(2) Hotline. Not later than 6 months after the enactment of this subsection, the Administrator, in cooperation with other Federal agencies and with State and local governments, shall establish a single lead-based paint hazard hotline to provide the public with answers to questions about lead poisoning prevention and referrals to the Clearinghouse for technical information.

The dangers of lead as a neuro-toxin have been known for more than a century.

(xxxi) Exchanging information on safe methods to conduct repair or renovation activities on the interior and exterior of homes and other buildings that contain lead paint to minimize exposures to residents and workers and to minimize releases to the environment (including from wastes) that may contribute to future exposures

The United States is also recognised as having the best regulations on renovation and remodeling of houses suspected of containing lead- based paint hazards. These particular guidelines are contained in Sec. 402- Lead-Based Paint Activities Training and Certification.

This also applies to other sections of the Annex (including **(xxxiii) Discussing steps to teach renovators, painters and other professionals how to minimize children’s exposure to lead from lead paint**).

This section is substantial, including key features such as: Guidelines to reduce the risk of exposure in renovation activities, study the extent to which workers are exposed as well as determine whether a category is required to certify workers in this industry.

(xxxv) Exchanging information to promote general public awareness of the hazards of lead paint

One of the most significant facets of the Title X legislation is the focus on public education, including the requirements for tenant knowledge of lead hazards in rental properties.

Sec. 405- Lead Abatement and Measurement

(d) Public Education-

“sponsor public education and outreach activities to increase public awareness of --

"(A) the scope and severity of lead poisoning from household sources;

"(B) potential exposure to sources of lead in schools and childhood day care centers;

"(C) the implications of exposures for men and women, particularly those of childbearing age;

"(D) the need for careful, quality, abatement and management actions;

"(E) the need for universal screening of children;

- "(F) other components of a lead poisoning prevention program;
- "(G) the health consequences of lead exposure resulting from lead-based paint hazards;
- "(H) risk assessment and inspection methods for lead-based paint hazards; and
- "(I) measures to reduce the risk of lead exposure from lead-based paint."

Additionally, nation-wide and state pamphlets have been developed to inform and educate people on lead in paint. One example of these is produced by the New York state health department: "What homeowners need to know about removing lead based paint."

Various other countries, including Australia, have also produced these but few are backed up by such thoroughgoing national regulation.

Conclusions and Policy Recommendations

This research has aimed to give an overview of the world best practices in regulating lead in paint. It does not intend to have shown a global breakdown of policy, rather elucidating the best regulations. The example of the United States Title X legislation provides a framework for policy development in other countries. Major points of interest that have been illuminated in this research include:

- The truth that there are viable options to replace lead in paint that have not been adopted globally, despite relatively low costs to industry.
- Global awareness and action is required, particularly to assist developing countries as they are identified as having the highest levels of lead in paint.
- There are a plethora of Non-Government Organisations worldwide that have a specific goal of bringing public attention about lead, as well as encouraging governments to take action on these issues. Organisations such as the Global Lead Advice and Support Service (GLASS) can be utilised by governing bodies to assist in policy building.

The Global Alliance to Eliminate Lead in Pain (GAELP) has highlighted several points in its Annex that need to be addressed by governments in order to attain their ultimate goal of eliminating lead in paint. This has particular implications for Australian regulatory bodies, significantly that new policies need to be developed to meet the standard set by the United States. Steps that need to be taken in Australia include:

- Adding to our regulation that the maximum permissible lead levels in paint is 90ppm. This is the standard set by the United States and is deemed as a 'safe' level. (Conceivably an unscrupulous paint manufacturer or importer could currently exceed this level legally by simply using a lead compound in the paint formulation that is **NOT** one of the banned lead compounds.
- To spread knowledge about the extent of the problem of lead poisoning due to unsafe renovation practices, a national blood lead survey of all ages followed by a policy to test all at-risk children under 6 for blood-lead concentration needs to be introduced and enforced. This will not only highlight the extent of the problem but also identify problem groups (as shown in the US by research where certain groups such as African-American children and those from poorer areas have been found through national blood lead surveys repeated every several years, to be at greater risk).
- Developing a program to test for lead hazards in housing built pre-1992, particularly government housing. Furthermore, the guidelines for lead abatement practices need to be widely distributed and adopted to ensure minimal risk when renovating homes.
- Training of professionals who deal with lead abatement, to ensure work is carried out with minimal risk to workers and residents.

One of the most shocking results of this research is the lack of knowledge on the part of the public about the risks that lead poses. A public education program is essential to spreading knowledge about lead poisoning. This not only includes brochures, as have been distributed by law in America, but a widespread awareness campaign.

Appendix 1:

Zajac. L et al. 2009, 'A systematic review of US state environmental legislation and regulation with regards to the prevention of neurodevelopmental disabilities and asthma,' *Environmental Health*, vol. 8, no. 9.

"Most states statutorily require the tracking of elevated lead levels: some states require the reporting of all results, while others require the reporting only of elevated lead levels, often defined as $\leq 10 \mu\text{g}/\text{dL}$. Statutes in California and New Jersey require that databases contain geographical data that can be used to map locations where lead poisoning has occurred, which permits further targeting for lead hazard abatement efforts and primary prevention. A number of states also have implemented legislation that is likely to be extremely effective in preventing childhood lead poisoning, ranging from tax credits to grants and loans for lead abatement (Rhode Island, Massachusetts, Missouri and Minnesota). Many states have limited or banned the use of lead paint in common products that are accessible to children, such as toys, but these efforts are less likely to reduce the burden of lead poisoning than programs to eliminate lead-based paint hazards in homes."

Appendix 2:

Global Alliance to Eliminate Lead in Paint: (GAELP)

Annex

Activities that may be undertaken by the Global Alliance are based on the proposed list presented to the International Conference on Chemicals Management, Geneva, May 2009 (ICCM2)

9. Partnership activities may include

(a) Actions proposed to tackle lead in paint, including the significant exposures that result from previous lead paint applications on buildings

- (i) Exchanging information on the effects of lead on health
- (ii) Exchanging information on pathways of exposure to lead paint for children and adults
- (iii) Providing technical expertise in the design and implementation of studies to estimate the distribution of levels of lead in blood in the populations of other nations
- (iv) Encouraging nations to monitor health to estimate the prevalence of lead in human blood
- (v) Building capacity and sharing information to monitor health to estimate the prevalence of lead in human blood
- (vi) Building capacity and providing training to develop and maintain high-quality laboratory testing for lead in blood;
- (vii) Encouraging nations to conduct monitoring to estimate the prevalence of lead in the environment (for example, in water, soil and animals)

- (viii) Exchanging information on lead levels in paints in various countries
- (ix) Exchanging information on national, provincial, State and local regulations and legislation on lead concentrations in paints permitted in various countries
- (x) Exchanging information on labelling and certification systems with regard to the presence and concentrations of lead in paint
- (xi) Discussing and providing technical assistance on steps that could be taken to phase out lead from paints and surface coatings such as lacquers, veneers and powder coatings worldwide
- (xii) Encouraging the use of financial incentives to support the use of lead-free paints
- (xiii) Developing guidelines for establishing national standards, including those that would permit the use only of lead-free paints
- (xiv) Encouraging nations to require that only lead-free paint may be used in construction activities or renovations being supported with government funds
- (xv) Providing guidance for and information on effective enforcement of national standards, including on how to avoid smuggling of lead paint
- (xvi) Building the legal enforcement capacity of environmental health officers in ministries, local authorities and mines
- (xvii) Providing international support to developing countries by devising further methods to enact comprehensive legislation to phase out lead paint completely
- (xviii) Exchanging information and providing international support to strengthen and harmonize existing national legislation that focuses on protecting public health in relation to the phase-out of lead paint
- (xix) Sharing knowledge on the availability of substitutes to replace lead compounds in paints
- (xx) Assessing the hazards of substitutes for lead compounds in paint
- (xxi) Assessing the feasibility of the voluntary phase-out of the production of lead in paint in cooperation with business and industry, including at the (sub)regional level
- (xxii) Encouraging wholesalers and retailers to halt sales of lead paints
- (xxiii) Encouraging nations to conduct housing surveys to estimate the prevalence of lead paint in their housing stock
- (xxiv) Developing guidelines with descriptions of simple analytical methods and test kits to identify lead paints
- (xxv) Building capacity and providing information and knowledge in human and laboratory equipment to facilitate laboratory tests for lead paint
- (xxvi) Building capacity and providing information and knowledge to help officials in a range of ministries to test for lead paint
- (xxvii) Exchanging information on methods to make housing and other buildings with lead paint safe for occupancy by children and pregnant women
- (xxviii) Minimizing risks of previously applied lead paint in buildings by using effective containment
- (xxix) Enhancing the elimination of lead paint in schools and other buildings where children will be present, given children's susceptibility to lead
- (xxx) Exchanging information on suggestions for warning labels on new cans of paint alerting users to the health risks that could result if the surfaces being prepared for repainting contain lead paints
- (xxxi) Exchanging information on safe methods to conduct repair or renovation activities on the interior and exterior of homes and other buildings that contain lead paint to

- minimize exposures to residents and workers and to minimize releases to the environment (including from wastes) that may contribute to future exposures
- (xxxii) Discussing and building capacity on how to reach health providers, caretakers and parents on how to minimize children's exposure to lead from lead paint hazards as part of efforts to minimize exposures to all sources of lead exposure in the household
- (xxxiii) Discussing steps to teach renovators, painters and other professionals how to minimize children's exposure to lead from lead paint
- (xxxiv) Exchanging information on steps to warn workers of their vulnerability and exposure to lead in small-sized and medium-sized enterprises, in particular in developing countries
- (xxxv) Exchanging information to promote general public awareness of the hazards of lead paint
- (xxxvi) Exchanging information on safe disposal of lead paint waste
- (xxxvii) Developing approaches to manage and store waste containing lead paints

10. Activities will be developed and implemented following the lead sponsor approach. The lead sponsor(s) for each activity in collaboration with interested partners will prepare a workplan, timeline, budget and fund-raising plan

11. The global partnership will develop and implement a monitoring mechanism for tracking progress on activities undertaken through and by the partnership

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