Summary of Overarching Public Comments received on the draft Human Health State of the Science Report on Lead and the Proposed Risk Management Strategy for Lead

Comments on the draft Human Health State of Science Report (hereafter referred to as the Report) and Risk Management Strategy (hereafter referred to as the Strategy) for Lead were provided by: Association for Community Reform Now - Canada; Canadian Copper and Brass Association; Canadian Cosmetic, Toiletry and Fragrance Association; Canadian Institute of Plumbing and Heating; Canadian Nurses Association; Canadian Water and Wastewater Association; Learning Disabilities Association of Canada; Canadian Hospital of Eastern Ontario; Region of Peel; Ontario Nurses for the Environment Interest Group; Trail Health and Environment Committee; York Region; and, an individual citizen.

A summary of the comments and responses is included below, organized by topic.

- General
- Risk Assessment – Exposure
- Risk Assessment – Hazard
- Risk Management

Topic	Comment	Response
General		
	Overall, public comments were supportive of the conclusions in the draft Report and the draft Strategy. A comprehensive effort to better understand and manage lead exposures in Canadians was acknowledged as a welcome initiative.	Health Canada acknowledges the comments.
	To ensure that the most current and important data is used, the Report should be peer-reviewed.	The Report was subject to a comprehensive peer review by Health Canada research scientists and regulatory scientists. Unpublished studies included in the final Report underwent external peer review. Additionally, the conclusions in the Report are consistent with those of recent reviews conducted by other jurisdictions and organizations such as the European Food Safety Authority, the World Health Organization and the United States Environmental Protection Agency (US EPA).

Topic	Comment	Response
Risk Assessment – Exposure		
	Environmental health risks are not distributed equally among the population. Lead poisoning is a health issue predominantly affecting children of disadvantaged families.	Health Canada recognizes that several factors are associated with elevated blood lead levels. For example, the Report's Executive Summary notes that blood lead levels are higher in residents of households with lower household income levels than with those in higher income levels.
	House dust is an important source of lead exposure for infants and children. The Report does not provide sufficient attention to the Canadian House Dust Study (CHDS), a national survey of lead dust concentrations found in residential dwellings.	Health Canada agrees that household dust can be an important source of exposure for infants and children. The Report has been updated to include distributions and sources of lead in housedust from the Canadian House Dust Study (which were not available at the time of publication of the draft Report). Results from other Canadian studies examining the relationship between children's exposure to lead and levels of lead in dust and soil were also included in the final Report.
	The method that is generally used for testing drinking water for lead (after flushing the taps for 3 minutes) does not represent a worst case scenario for measuring exposure. First flush water is used for baby formula preparation and drinking water in many homes and should be the method of ascertaining levels of lead in drinking water.	Health Canada agrees that sampling with little or no stagnation period (i.e., flushed samples) may underestimate lead concentrations in drinking water. The data on levels of lead in drinking water, as presented in the Report, were not used to derive quantitative exposure estimates. Exposure estimates cited in the Report are based on blood lead levels measured in Canadians, and incorporate exposure from *all* sources.
	A rationale is required that explains why US National Health and Nutrition Examination Survey (NHANES) data for 0 to 6 year olds is used in the Report instead of Canadian data.	Currently, there is no national Canadian data on blood lead levels in children under six. As such, national US data, supported by data from several smaller Canadian studies, was used to represent blood lead levels (BLL) in Canadian children. Given the similarity of BLLs between Canada and the US for other age groups, results from NHANES for children less than 6 years of age is considered to be representative of Canadian children.
	The Report should better define the specific era of concern in the Canadian housing stock that poses the greatest risk to children (due to historic sources of lead exposure from old lead-based paint and lead service connectors).	Health Canada recognizes that historic sources of lead such as lead-based paint and lead water distribution lines found in older housing stock can be contributors to Canadian's lead exposure. For example, the Report notes that BLLs are significantly higher in individuals living in older homes (greater than 50 years) compared with newer homes. It is not possible to delineate a specific era of concern for Canadian housing stock.
	The primary source of chronic exposure for young children is deteriorating lead-based paint.	As is noted in the Report, recent exposure studies conducted in Canada did not identify a single predominate source of lead exposure for Canadian children. Overall, food, water, and ingestion of non-food items containing lead and lead-based paint are all considered to be the greatest sources of exposure to lead in the environment for infants and children.

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Risk Assessment – Hazard		
	A new toxicological reference value should be developed.	The purpose of the Report was to provide an update of recent scientific evidence on adverse health effects of lead below 10 µg/dL as well as to identify current levels of lead in the Canadian environment and the general population. This information may be used in the development of various guidance values.
	It is problematic to identify health effects as low as 1-2 µg/dL, due to the uncertainty related to the capacity to measure blood lead and IQ deficit at such low concentrations. Multiple confounding factors could also influence the outcome of IQ deficit.	The Report acknowledges the uncertainties associated with identifying adverse health effects at concentrations as low as 1 – 2 µg/dL. The Final Report was updated to further highlight these uncertainties.
	Several comments welcomed and supported statements in the Report which documents adverse effects between 1 and 10 µg/dL (below the current blood lead guidance value), recognizes that a threshold of effects has not been identified, and acknowledges that effects are associated with levels currently present in Canadians.	Health Canada acknowledges the comments.
	The State of the Science report does not comprehensively cover endpoints such as cancer, cardiovascular effects and neurological risks in adults.	The Report focuses on critical adverse health effects that have been observed at blood lead levels below 10 µg/dL.
Risk Management		
	The Strategy should include more proactive actions and policies to minimize exposure to lead, especially among vulnerable populations.	The Strategy continues to support existing management activities while outlining additional measures to reduce exposure to lead, and hence associated risks to Canadians, to the greatest extent practicable. The updated Strategy now highlights new activities such as: biomonitoring activities for children; health-based guidelines for dust in residential and commercial settings, and for lead in soil; and, revised guidance for managing elevated blood levels. The definition of “Susceptible Populations” in the Strategy has been elaborated upon and these groups are targeted as a primary focus for risk management action.
	A more detailed and comprehensive discussion of the socio-economic implications of exposure to lead should be included in the Strategy.	The Socio-Economic Considerations section of the Strategy has been elaborated upon (e.g., adding information regarding the economic and social benefits of minimizing exposure to lead, better explaining the basis for monetization of the health effects associated with lead).

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	The findings of the Canadian House Dust Study (CHDS), a national survey of lead dust concentrations found in residential dwellings, should be better integrated into the Strategy.	The Strategy now includes updated and expanded information on the findings and implications of the Canadian House Dust Study. National baseline values obtained from this study provide a foundation for comparison for local, residential or individual studies to inform implementing the Strategy. Health-based screening concentrations for lead in dust (in residential and commercial settings) is also under development.
	Lead-based paint in older homes remains a potentially significant source of exposure to lead in Canada.	The Strategy notes that regulatory and voluntary measures in Canada now strictly limit the lead content of consumer paints and surface coating materials. The ongoing need to reduce exposure to lead in paint is part of the Strategy (e.g., actions to control lead paint contaminated house dust and soil).
	Ways to limit exposure to lead in drinking water (including from lead bearing plumbing fittings) merit more attention in the Strategy.	Requirements under both Canadian and harmonized Canada-U.S.plumbing standards are being included to address potential exposure to lead in drinking water. The Strategy now notes that Health Canada is an active participant on the technical committee for Canadian Standards Association (CSA) and the American Society of Mechanical Engineers (ASME) standards. The standards focus on reducing the lead content in fittings (proposed as a weighted average of 0.25%) as a way to help reduce potential exposure to lead from fittings intended to convey or dispense water for human consumption. It is expected that the revised low-lead standard will be finalized in early 2013 and integrated into Canada's National Plumbing Code. In addition, a review of the Guidelines for Canadian Drinking Water Quality for Lead is being initiated, in collaboration with the Federal-Provincial-Territorial Committee on Drinking Water.
	Aviation fuel (which still contains lead) is a source of lead exposure, and efforts to reduce and eliminate lead from aviation fuel should be part of the Strategy.	A discussion on aviation fuel is now part of the Report and the Strategy. The Strategy notes that the Government of Canada supports international efforts to limit or reduce both domestic and international aviation emissions of air pollutants. Given the close linkage between the air transportation systems in Canada and the United States, a general policy of alignment with US Environmental Protection Agency (EPA) fuel quality requirements has been adopted. Both the US Federal Aviation Administration (FAA) and the EPA are presently reviewing the US aviation fuel situation.
	Emphasis must be placed on the identification and control of potential point sources of lead in the diet.	The Strategy has been expanded to explain that the Canadian Food Inspection Agency monitors the Canadian domestic food and imported food supply for multiple hazards, including substances such as lead.

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	More detail is needed in the Strategy on control for lead in fertilizers.	A consideration of lead uptake into plants and silage from fertilizer and supplement products including biosolids is now part of the Strategy. Fertilizer and supplement products when sold and imported into Canada are regulated under the *Fertilizers Act* and Regulations which are administered by the Canadian Food Inspection Agency.
	There is a need in Canada for improved surveillance of blood lead levels in children.	Health Canada has implemented a nationally representative chemical surveillance program in partnership with Statistics Canada's Canadian Health Measures Survey, which now includes children as young as three years of age. This program also includes blood lead. In addition, recent targeted studies have been conducted in three Canadian cities, which examined the relationship between blood lead levels in children under 7 years of age and environmental sources of lead in homes. As well, Health Canada is a research partner in the Maternal Infant Research on Environmental Contaminants Study, a national study of maternal and neo-natal exposure to environmental chemicals, currently monitoring contaminants including lead in blood.
	There should be significant emphasis on restriction of lead in consumer products (e.g., children's products, lead ammunition, cosmetics).	Consumer product safety is an important part of the Strategy. Stringent lead limits are in effect under the 2011 *Canada Consumer Product Safety Act* (CCPSA) for a variety of consumer products that pose the greatest exposure risk. In addition, any consumer products that pose a danger to human health or safety are subject to the CCPSA's General Prohibition. Health Canada's Lead Risk Reduction Strategy for Consumer Products includes further proposed action for stringent lead content limits in a variety of consumer products with which young children are most likely to come into contact. Efforts are also underway with industry to encourage greater use of lead alternatives (e.g., for lead ammunition, which is of particular concern in First Nations communities). Regarding cosmetics and personal care products, lead appears on the Cosmetic Ingredient Hotlist, which is an administrative tool to communicate to manufacturers and others that certain substances, when used in a cosmetic, may cause injury to the health of the user in contravention of section 16 of the *Food and Drugs Act.* This means that the intentional addition of lead is effectively prohibited in all cosmetics marketed in Canada. In addition, Health Canada also has published draft Guidance on Heavy Metal Impurities in Cosmetics, which sets a limit of 10 ppm total lead as an impurity for all cosmetics. Among other updates, the Strategy now also refers to work being undertaken by the International Cooperation for Cosmetics Regulations (ICCR) program to establish trace lead level limits for cosmetics products.

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	Public advice and education is needed regarding the hazard posed by lead in older homes and safe remediation practices, especially to protect children.	Educating Canadians about lead in homes and providing practical advice about actions that can be taken to reduce health risks is reflected in the Strategy. A host of related public education materials have been developed. Please consult the Health Canada publication Lead and Human Health (http://www.hc-sc.gc.ca/hl-vs/iyh-vsv/environ/lead-plomb-eng.php) and Hazardcheck Guide (http://www.hc-sc.gc.ca/ewh-semt/hazards-risques/index-eng.php). Hazardcheck is an environmental health guide and web site which includes practical, general information on how to help reduce potential health risks from lead in the home, especially for parents of young children. Educational sessions to raise awareness and promote action on common indoor environmental hazards (such as lead) have also been held across Canada at participating retail stores. Health Canada's work in this area has been informed by research by Canadian Housing and Mortgage Corporation regarding sources of lead in housing, detection methods and remedial measures that can be taken to reduce house-related exposure.
	An integrated approach to risk management must allow for periodic review and assessment to determine the effectiveness of current strategies.	Health Canada and Environment Canada will measure progress towards minimizing Canadians' exposure to lead. Performance reports to reflect outcomes and new data and/or data sources will be produced regularly to guide future risk management decisions.
	Health Canada's assessment of lead suggests that a more conservative blood lead action guideline than previously recommended is warranted. Health Canada should update blood lead guidance as part of the Strategy.	The proposed risk management objective for lead is to provide continuing support for existing federal management actions and to pursue additional management measures to reduce exposure to lead, and hence associated risks, to the greatest extent practicable. As outlined in the Strategy, Health Canada is working with the Federal-Provincial-Territorial (FPT) Committee on Health and the Environment and the Canadian Council of Chief Medical Officers of Health to revise the FPT blood level guidance set in 1994. The revised blood level guidance is intended to provide health care practitioners and public health officials with information on choosing actions that are appropriate for the management of specific blood lead levels. The report is under development.