



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
WASHINGTON, D.C. 20460

AUG 23 2012

THE ADMINISTRATOR

Pamela Shubat, Ph.D.  
Co-Chairwoman  
Children's Health Protection Advisory Committee  
Minnesota Department of Health  
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Dear Dr. Shubat:

Thank you for your letter and for the Children's Health Protection Advisory Committee's Lead Workgroup recommendations regarding the U.S. Environmental Protection Agency's efforts to safeguard children from lead exposures. The EPA is taking a coordinated, multimedia approach to reducing children's exposures to lead, and we appreciate the advisory committee's thoughts on ways we can further strengthen our efforts.

As you know, the committee's recommendations fall within four overarching areas. First, the committee recommends that the agency adopt a unified approach across EPA actions regarding target blood-lead levels. Second, it calls on the EPA to identify emerging sources of lead exposure and children who may be at risk for these exposure sources. Third, the committee recommends working to eliminate the production of residential lead-based paint and the production of other sources of lead exposure in other countries. Finally, the committee encourages engagement with other federal agencies and stakeholders to implement lead-poisoning prevention actions and communication strategies.

Enclosed are the EPA's responses to the recommendations. These responses encompass intra-agency and interagency actions that are currently under way and are part of a greater effort across the federal government to reduce children's exposures to lead. In the future, we will continue to seek the committee's views and recommendations on the EPA's strategy for protecting children from environmental health risks, including lead.

Please accept my appreciation for your dedication to children's environmental-health issues and your partnership with the EPA. Should you have any questions, please contact Peter Grevatt, director of the EPA's Office of Children's Health Protection, at (202) 564-8954 or [grevatt.peter@epa.gov](mailto:grevatt.peter@epa.gov).

Sincerely,

Lisa P. Jackson

Enclosure

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## Children's Health Protection Advisory Committee (CHPAC) Recommendations

### **I. CHPAC Recommends that EPA adopt a unified approach across EPA actions regarding target blood lead levels.**

**Ia. CHPAC recommends that EPA revise its Integrated Exposure Uptake Biokinetic (IEUBK) model for estimating children's blood lead levels associated with different and multiple exposure pathways.** Historically, EPA has used the IEUBK model to attempt a unified approach to estimating potential blood lead levels from environmental and other data. While the IEUBK model has been helpful in the past, there are important limitations that CHPAC believes can be overcome in part by simultaneous consideration of epidemiological data, consistent with recommendations made by EPA's SAB. An important limitation of the model is the lack of a dust lead loading metric. Instead, the model only permits input of dust lead concentration (loading refers to lead mass divided by surface area ( $\mu\text{g}/\text{ft}^2$ ) while concentration refers to lead mass divided by total sample weight ( $\text{mg}/\text{kg}$ )). Dust lead exposure has been shown to be one of the most significant sources of exposure to children and loading is the most appropriate metric for exposure. The lack of the loading metric in the IEUBK model means that conversion factors needed to be developed for use in the model, which introduces another potential source of error. The model also necessitates the use of default terms that may or may not be relevant to a specific regulatory action. CHPAC agrees with the SAB recommendation that epidemiological studies should be evaluated as well, because they do not require the use of conversion factors or default assumptions. This recommendation will enable EPA policymakers to understand all scientific evidence from both the IEUBK model and epidemiological data.

Response: EPA agrees that both loading and concentration metrics are important for estimating lead exposure from household dust. Currently, the IEUBK model only allows concentration information as an input to perform the calculations. The Office of Solid Waste and Emergency Response (OSWER) regulates soil lead exposure based on blood lead concentration; therefore, all inputs to the IEUBK model are intake concentrations (e.g., milligrams lead/ milligrams dust). While there are data and methods available for converting dust lead loading to dust lead concentration, the results are highly variable among residences and communities. Therefore, the results in one residence or community cannot reliably predict the results in another residence or community.

When indoor dust lead information is desired for site-specific risk assessment, EPA's Review Workgroup (TRW) Lead Committee Technical 2008 Indoor Residential Dust sampling guidance generally recommends that dust lead concentration be measured for use in the IEUBK model. In addition, dust loading information may be collected during site investigation where indoor dust loading information may be used in support of other programs (e.g. US Housing and Urban Development (HUD)) and in support of risk management decisions to prioritize cleanup activities. EPA also appreciates the recommendation of the CHPAC that epidemiological studies should be evaluated as well, though we note that these data are frequently unavailable for use at contaminated sites.

**I.b. CHPAC recommends that EPA adopt an incremental approach to specifying target blood lead levels.** Ideally, regulations should be crafted to eliminate exposures entirely and that should be an expressed goal in all EPA regulations. Because it is not possible to eliminate all exposures, EPA regulatory actions should produce consistent results by using an incremental rather than a static target blood lead level. The blood lead metric is both a measure of exposure and a measure of toxicity. Traditionally, EPA has set an exposure limit for dust that is expected to achieve a static target blood lead level, such as 1 or 5 or 10 µg/dL. The alternative is to select and use incremental levels in dust, soil, food, water, air and other relevant media that result in a corresponding incremental change in blood lead level, such that the incremental change is no greater than 1 or 2.5 µg/dL. CHPAC believes that an incremental approach to exposure assessment is superior, because it is more likely to be able to account for measured and estimated contributions to exposures from all exposure pathways. However, programs across EPA must also agree on the overall limit for an incremental change in blood level (this will be based on the corresponding decrement in a health or cognitive measure such as IQ). This recommendation is consistent with EPA's SAB<sup>14</sup> and its Clean Air Science Advisory Committee.

Response: EPA has been considering a possible revision of the residential lead dust hazard standards as well as the development of lead dust hazard standards for public and commercial buildings. In November 2010 EPA consulted with its Science Advisory Board (SAB) on proposed approaches for developing these lead dust hazard standards. In July 2011 the SAB provided to EPA a recommendation, among others, to include an incremental approach in assessing how dust lead translates into blood lead levels. EPA is currently evaluating all of the SAB recommendations and notes that the CHPAC also recommends this approach.

**I.c. CHPAC recommends that EPA collect data from its Environmental Lead Proficiency Analytical Testing Program (ELPAT) and assess feasibility for reliably measuring low environmental lead levels and also analyze housing data to assess the feasibility of meeting lower residential dust lead exposure limits.** An important consideration for lead poisoning prevention regulations is whether a given exposure limit can be reliably measured and is achievable and is sustainable, because there is little benefit to setting a regulatory standard that no one can meet or cannot be measured. CHPAC recommends that EPA assess the ability of laboratories to detect levels of lead in environmental samples as an essential component of its ELPAT. This program provides standardized approaches for assessing proficiency (e.g., blind testing of samples with known quantities of lead) and assesses specific laboratory performance. CHPAC recommends that EPA collect data on laboratory detection and reporting limits as part of its ELPAT program to inform its regulatory efforts as they apply to feasibility. With regard to cost-effectiveness, CHPAC recommends that EPA consider the health impact of regulatory decisions and the costs associated with decrements to health, not just the cost associated with compliance. EPA should also analyze new data from long-term follow-up studies of the HUD Lead Hazard Control Grant Program to determine the feasibility of meeting lower exposure limits for lead dust. EPA should revise the Renovation, Repair and Painting rule to include clearance testing, which at this time is the only validated

method that has been correlated with children's blood lead levels, and it is the only method that has a quality control system in place (the ELPAT).

Response: EPA recognizes that evaluating the feasibility of reliably measuring lower environmental lead levels would be necessary should the Agency lower the current regulatory dust-lead hazard standards. The Agency will consider the CHPAC recommendation regarding the use of the ELPAT program as we proceed with the determination of whether the dust-lead hazard standards should be lowered.

EPA has recently acted on the recommendation to require clearance testing. In 2010, EPA proposed a rule, the "Clearance Rule" to amend to the 2008 Lead Renovation, Repair, and Painting Program (RRP) rule, including a proposal to impose additional "clearance" requirements. In the final Clearance Rule, published on July 15, 2011, the Agency did not impose additional "clearance" requirements because EPA concluded that following lead-safe work practices and a post-renovation cleaning protocol, as required in its 2008 RRP rule, effectively reduces lead dust hazards in homes and child-occupied facilities.

EPA will continue to identify opportunities to leverage the work of other federal partners in our efforts to reduce exposures to lead, including taking advantage of valuable information that comes available through the HUD Lead Hazard Control Grant Program.

**I.d. CHPAC recommends developing new, evidence-based health protective lead dust standards.** Perform research and/or analyze existing data to determine what dust loading standards are, in fact, health protective. Develop laboratory methodologies to permit routine, precise and accurate dust loading measurements in the necessary range. Incorporate the new-standards into ongoing lead management education programs.

Response: In August, 2009, EPA received a petition requesting the Agency to lower lead dust hazard standards promulgated under Toxic Substances Control Act sections 401 and 403. In October 2009, EPA responded to the petition, agreeing to revisit the current dust-lead hazard standards. As a first step in this process, EPA developed approaches for developing lead dust hazard standards and had these approaches reviewed by the Agency's SAB. With the SAB recommendations in hand, EPA is actively working on re-evaluating the dust-lead hazard standards.

**I.e. CHPAC recommends that EPA review hazard control studies across EPA actions, including revisions to the Lead and Copper Rule.** Durability of exposure controls should be examined by EPA as it considers revisions to its Lead and Copper Rule for drinking water. Specifically, EPA should examine the long-term effectiveness of managing hazards from lead service lines through drinking water chemistry interventions intended to reduce lead content in drinking water. CHPAC also recommends that any revised regulation for drinking water end the practice of partial lead pipe replacements, which has been shown to at least temporarily increase lead in drinking water. Any new regulation should provide the legal foundation to permit leaded drinking water lines to be replaced completely, not only up to the property line.

Response: EPA will consider the CHPAC's recommendations as it develops proposed revisions to the Lead and Copper Rule (LCR), which requires public water systems to treat water to minimize corrosion of lead and copper from distribution and household plumbing materials into drinking water. As a part of the LCR review, EPA is examining ways in which the treatment technique requirements under the LCR can better prompt states and water systems to select and operate corrosion control treatment systems that are optimized for that system's water and distribution system characteristics.

EPA is also preparing revisions to the requirements for lead service line replacements. Water systems that cannot maintain low drinking water lead levels at the taps currently must undertake lead service line replacement programs. The LCR requires these systems to replace the portion of lead service lines that the systems own and offer to replace the customer's portion at the customers' cost. When customers choose not to pay the costs of replacing the private portion of the line, the systems must perform a partial lead service line replacement. EPA is evaluating options to eliminate the partial lead service line replacements and encourage full lead service line replacement.

## **II. CHPAC Recommends that EPA engage other federal agencies and stakeholders on implementing lead poisoning prevention actions and communication strategies.**

**II.a. CHPAC recommends that the EPA Administrator and the Secretary of Health and Human Services convene a cabinet-level meeting of the Interagency Task Force on Children's Environmental Health and Safety Risks to develop and coordinate strategies to advance childhood lead poisoning prevention through enforcement, training and education of public health and health care professionals, communication strategies, and engagement of other stakeholders.** CHPAC believes that one of the biggest areas of untapped opportunity in lead poisoning prevention involves concerted and coordinated enforcement of existing laws with the Department of Justice (DOJ), State Attorneys General, local prosecutors and local health, environmental and housing advocates. EPA should partner with the Health Resource Service Administration (HRSA) and CDC, Health Maintenance Organizations (HMOs) and health insurance companies to ensure that funds available for prevention, such as those in the Affordable Care Act are used in a way that incorporates lead hazard control activities. There are also important steps that other agencies, such as CDC, the Food and Drug Administration (FDA) and the Consumer Product Safety Commission (CPSC), can take to protect children and families from contaminated consumer products, especially those imported from other countries. For example, FDA and other agencies should take action to prevent contaminated food, herbal remedies, and pottery from entering the country and prevent lead shot fragments in the food chain. CPSC should ensure that products recalled due to lead contamination are not allowed to be sent to other countries where they could poison children. EPA should work with the Occupational Safety and Health Administration (OSHA) to ensure workers do not inadvertently take home lead on contaminated work clothing, vehicles, or other work items and to conduct workforce training. CDC should continue to provide increased technical assistance to countries battling epidemics of childhood lead poisoning, such as the recent catastrophe in Nigeria that resulted in hundreds of children's deaths from lead poisoning.

Response: EPA agrees that with the CHPAC that further progress on preventing lead exposures will require a coordinated interagency effort. EPA and HHS co-chair the President's Task Force on Environmental Health Risks and Safety Risks to Children, and EPA co-chairs, with HUD, the Federal Interagency Lead-Based Paint Task Force. EPA will continue to use these forums to exchange information, coordinate cross-agency activities, and to conduct joint projects aimed at reducing childhood exposure to lead from multiple sources in the environment through enforcement, training and education of public health and health care professionals, communication strategies, and engagement of other stakeholders. EPA will also identify opportunities to work with stakeholders and other federal agencies to take greater advantage of coordinated outreach strategies to protect children from lead poisoning

**II.b. CHPAC recommends that EPA engage health and other professionals who can play an important role in providing information for families and communities regarding other sources of lead exposure such as take-home lead from the workplace (renovation sites, battery manufacturers, etc.), hobbies, sporting equipment (making lead weights for fishing lines at home), and reloading of ammunition used for hunting.** CHPAC recommends that EPA work with other federal agencies, such as HHS and its Maternal and Child Health Bureau (MCHB) and HUD, to standardize training of non-traditional workers and utilize them to implement evidence-based lead exposure reduction strategies and educate residents at the community level. CHPAC recommends that EPA provide guidance for training of residents and practicing physicians as well as other healthcare providers about the harmful effects of lead exposure and avoidance practices. EPA should partner with American Academy of Pediatrics, American Academy of Family Practitioners, American College of Obstetricians and Gynecologist, and CDC to create a module for maintenance of certification on lead exposure, lead monitoring and avoidance practices. EPA should partner with HHS operating divisions (CDC, HRSA, and MCHB) to create a training module for physicians, nurse practitioners, and allied health professional that can be integrated into medical training.

Response: EPA appreciates the CHPAC recommendation to expand our interagency partnership efforts to provide outreach and training to a diverse group of health care providers to maintain awareness of the harmful effects of lead exposure and effective avoidance practices. EPA — along with the Ad Council, the Coalition to End Childhood Lead Poisoning, and HUD — have been reaching out to parents and caregivers of children under six with a lead poisoning prevention campaign that urges “Let’s Make All Kids Lead-Free Kids.” This multimedia effort in English and Spanish points citizens and health care professionals to the campaign's website and EPA’s National Lead Information Center for more information. The campaign secured donated media support in TV, radio, print, and outdoor billboard public service announcements, and the effort includes guides for medical professionals as well as parents, pregnant women, do-it-yourselfers, educators, landlords, contractors or renovators, and the press.

As part of implementing the 2008 Renovation, Repair and Painting (RRP) rule, EPA continues to educate the health care providers and their patients (homeowners and consumers) about the hazards of lead-based paint and the importance of using lead-safe certified renovators when

performing renovating, repairing or painting jobs in their homes. EPA's Office of Pollution Prevention and Toxics and Office of Children's Health Protection are currently collaborating to extend this RRP message within the health care professional community.

EPA appreciates CHPAC's recommendations for improving accessibility of information on families' lead exposures through the workplace and recreational equipment. EPA and the President's Task Force on Environmental Health Risks and Safety Risks to Children will seek to further leverage interagency partnership opportunities to expand dissemination of these messages to the medical and public health community.

**III. CHPAC recommends that EPA identify emerging sources of lead exposure to children and women who are or may become pregnant or who are breastfeeding.**

Further research is needed to identify emerging sources of lead exposure, such as those in consumer products. The nation still has no good assessment of exposures related to consumer products containing lead, like toys, jewelry, cosmetics, pottery, and batteries, especially those from other countries. For example, it is not known whether new lead-based residential paint now being manufactured in China, India, Nigeria and other countries is being imported into the US. Research is needed to determine if lead stabilizers used in plastics and other products is being released. Fate and transport studies are needed to determine sources of lead production and use in commercial products. Further research is needed to estimate exposures from commercial buildings. Sampling protocols to reliably measure lead in water in different building configurations is needed, and policy research is needed to determine the best way to stop partial replacement of lead drinking water lines. Specifically, the current practice is for public utilities to replace only the portion of the lead drinking water line on public property, with the owner expected to pay for the pipe replacement on the private property, which often cannot occur because owners do not have adequate resources.

Response: On May 6, 2010, EPA announced the commencement of proceedings to propose lead-safe work practices and other requirements for renovations on the exteriors of public and commercial buildings and to determine whether lead-based paint hazards are created by interior renovation, repair, and painting projects in public and commercial buildings. If EPA determines that lead-based paint hazards are created by interior renovations, EPA will propose regulations to address the hazards.

CPSC is an active participant in the President's Task Force on Environmental Health and Safety Risks to Children, and EPA will continue to work closely with CPSC to identify emerging sources of lead exposure to children and women who are or may become pregnant or who are breastfeeding. CPSC has a long history of protecting children from excess exposure to lead from consumer products, including banning lead-containing paints, children's products and certain other products that bear lead-containing paint and the use of lead in metal cores of candle wicks. CPSC initiates recalls and other actions to keep hazardous products from children and has issued guidance on use of lead in children's products. In the past, CPSC staff investigated imported non-glossy vinyl miniblinds for the presence of lead-containing dust and recommended that parents with young children remove such products from their homes.

In 2008, CPSC staff hosted a forum for stakeholders to discuss potential uses of lead in products and issues related to legislation, enforcement, and testing. Subsequently, in 2009, CPSC began enacting requirements, specified in the Consumer Product Safety Improvement Act of 2008, for lead content in most component parts of most children's products (defined as products primarily designed and intended for children 12 years of age or younger), including toys and jewelry. In 2009, CPSC also enacted a reduction in the limit for lead in paint to 0.009 percent (90 ppm) from 0.06 percent (600 ppm). In 2011, CPSC established the current limit of 100 parts per million in each part of children's products manufactured after August 14, 2011. CPSC will periodically review the established lead limits and, as appropriate, revise them downward to the lowest level that is technologically feasible. Exemptions to the lead content limits (not including paints) may only be applied to certain electronic devices, to component parts that are not accessible to a child during use of the product, and to certain products that the Commission determines meet strict criteria, including that the presence of lead in the product will have no measurable adverse effect on public health or safety, and that the component part is not likely to be placed in the mouth or ingested

Based on many years of testing and evaluating children's products, CPSC staff indicate that the use of lead in children's products at concentrations significantly greater than 100 ppm has never been widespread; further, for activities and interactions with products such as touching and handling, testing products with lead content up to 10 percent shows that potential lead exposure is likely well below 1 microgram per day. CPSC staff note that currently, only certain component parts of certain children's electronic products, inaccessible component parts, and certain parts of a children's ride-on toy tractor may contain more than 100 ppm lead (see staff briefing package concerning a children's ride-on toy tractor with up 300 ppm in certain component parts: <http://www.cpsc.gov/LIBRARY/FOIA/FOIA12/brief/ertl.pdf>).

EPA will continue to work closely with CPSC to ensure that we are identifying opportunities to further reduce exposures to lead in children or women who may become pregnant or are breastfeeding.

**IV. CHPAC recommends that EPA work to eliminate production of residential lead-based paint and the production of other sources of lead exposure in other countries.**

EPA should continue to provide financial and technical support for the Global Alliance to Eliminate Lead in Paints through the United Nations Environment Programme (UNEP) and the World Health Organization (WHO). EPA should also support voluntary compliance programs for lead production activities in developing nations, such as BEST (Better Environmental Sustainability Targets). EPA should work with the State Department, WHO and UNEP to help prevent lead exposures to refugees and others, and to promote international trade agreements and other instruments to eliminate the unnecessary use of lead in consumer and other products, as recommended by the American Public Health Association.

Response: EPA continues to participate, with United Nations Environment Programme (UNEP) and World Health Organization (WHO), to support the Global Alliance to Eliminate Lead in Paints. EPA is an active member of the Global Alliance and serves as the lead for its Environmental Focal Area, providing technical expertise to the objective to establish common



guidelines on best environmental practices using best available technologies on lead content in paint and on how to minimize or eliminate exposures from lead in paint.

Regarding global partnership with the UN and WHO, EPA will ensure that all of the issues addressed in this recommendation are raised with the President's Task Force on Environmental Health Risks and Safety Risks to Children.