

Children's Health Protection Advisory Committee

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February 14, 2013

Acting Administrator Bob Perciasepe
United States Environmental Protection Agency
1200 Pennsylvania Ave, NW
Washington, DC 20460

RE: Childhood Lead Poisoning Prevention

Dear Acting Administrator Perciasepe:

The Children's Health Protection Advisory Committee (CHPAC) has been asked by the Office of Children's Health Protection (OCHP) to provide advice in three broad areas related to childhood lead poisoning prevention (see Attachment A). CHPAC sent a letter to your predecessor (dated March 29, 2012) that contained four recommendations: (1) Adopt a unified approach across US Environmental Protection Agency (EPA) actions that target blood lead levels; (2) Engage other federal agencies and stakeholders in implementing lead poisoning prevention actions and communication strategies; (3) Identify emerging sources of lead exposure and children who may be at risk for these exposure sources; and (4) Eliminate production of residential lead-based paint and the production of other sources of lead exposure around the world. The letter closed with a concern that federal efforts must continue—not abandon—the battle to protect children from lead. We thank your predecessor for the response to that letter and the commitment that she voiced to work for the resources the nation needs to eliminate this preventable disease.

EPA asked for further advice from the CHPAC on: updating the 2000 President's Task Force report titled "Eliminating Childhood Lead Poisoning,"¹ the implications of the replacement of the US Centers for Disease Control and Prevention's (CDC's) "Level of Concern" of 10 µg/dL set in 1991 with the new CDC "Reference Value" of 5 µg/dL,² and research needs. The CHPAC's focus in this letter is the reduction (or preferably elimination) of the sources and pathways of lead exposure associated with childhood lead poisoning; we choose to include the term lead poisoning as a reminder of the consequences of not taking action.

CHPAC has considered this request and makes the following recommendations, which are detailed in the pages that follow.

¹ President's Task Force on Environmental Health Risks and Safety Risks to Children. 2000. Eliminating Childhood Lead Poisoning: A Federal Strategy Targeting Lead Paint Hazards. February. Washington, DC. Available: [http://yosemite.epa.gov/ochp/ochpweb.nsf/content/pdf13.htm/\\$File/leadhaz.pdf](http://yosemite.epa.gov/ochp/ochpweb.nsf/content/pdf13.htm/$File/leadhaz.pdf)

² CDC (Centers for Disease Control and Prevention). 2012. Advisory Committee on Childhood Lead Poisoning Prevention (ACCLPP). Available: http://www.cdc.gov/nceh/lead/ACCLPP/acclpp_main.htm

CHPAC recommends:

1. EPA, together with other federal agencies, should establish new goals for childhood lead poisoning and exposure prevention, because the nation did not meet the 2010 goal and to date no new goal has been established;
2. EPA's outreach, education, training and enforcement strategies should incorporate the new CDC reference value so that all federal agencies have a common, consistent and effective message;
3. EPA should lead efforts to regulate and reduce lead-contaminated imports into the US and exports from the US, and should actively contribute to the dialogue of reducing lead exposures globally.
4. EPA should focus ongoing and new research and regulation on remaining sources and pathways of exposure and should accelerate enforcement of the Renovation, Repair and Painting Rule; and
5. EPA should focus ongoing and new research on new technologies that can cost-effectively determine lead levels in environmental media below current detection limits, because these lower levels of contamination may contribute to childhood lead poisoning and adverse health effects.

Background

President William Jefferson Clinton issued Executive Order 13045 on April 21, 1997, directing each federal agency to make it a high priority to identify, assess, and address those risks associated with lead exposure, among other issues. In issuing this order, the President also created the Task Force on Environmental Health Risks and Safety Risks to Children, co-chaired by the Secretary of the US Department of Health and Human Services (DHHS) and the Administrator of the EPA. In February 2000, the President's Task Force on Environmental Health Risks and Safety Risks to Children released its report, "Eliminating Childhood Lead Poisoning: A Federal Strategy Targeting Lead Paint Hazards." Fourteen cabinet-level representatives signed the 2000 report.

The 2000 strategy provided a set of recommendations with these two goals: "Eliminate Lead-Based Paint Hazards In Housing Where Children Live" and "By 2010, Elevated Blood Lead Levels in Children Will be Eliminated." The recommendations in the proposed 10-year plan, running from 2001-2010 would have created 2.3 million lead-safe homes for low-income families with children, thereby resulting in net benefits of \$8.9 billion, as estimated by the US Department of Housing and Urban Development (HUD). These numbers were generated by a model, fully described in the Appendix to the report, which has since been validated using empirical data.³

In response to the Task Force's interagency budget request (the first such request to do so for lead poisoning prevention), the President's FY2001 Budget:

- Increased federal funding for several agencies, including EPA, HUD and the Department of Justice;
- Provided for a large increase in lead hazard control grants issued by HUD; and

³ Jacobs DE and Nevin R. 2006. Validation of a 20-year forecast of US childhood lead poisoning: Updated prospects for 2010, Environ Res 102(3) 352-364.

- Maintained the current level of funding for lead programs at the DHHS.

The 2000 Report called for tripling the budget for enforcement and stated that “[w]ithout this increased enforcement, the full benefits of lead paint regulations will not be realized. Increased enforcement will raise awareness of the precautions that can be taken to protect children from lead poisoning and to reduce both lead paint hazards and children’s exposure to lead.” The report contained many specific suggestions related to strengthening enforcement.

In the past year, the CDC’s leadership has discontinued funding for state and city Childhood Lead Poisoning Prevention Programs (see Figure 1, Attachment B). In its most recent budget justification, EPA reports the number of children with blood lead levels that exceed 10 µg/L and states, “These results, together with other recent data suggest that the federal government’s goal of eliminating the incidence of childhood blood lead concentrations at that level [$\geq 10\mu\text{g/dL}$] by 2010 has essentially been achieved.”

In 2012, the CDC Advisory Committee on Childhood Lead Poisoning Prevention recommended that CDC adopt a new reference value of 5 µg/dL and focus on eliminating exposures to lead before they occur. CDC accepted these recommendations. EPA has not conducted a comprehensive analysis of the incidence and prevalence of children’s blood lead levels, or of opportunities to eliminate exposures to lead before they occur, in relation to the new recommendations concerning the health threat that lead presents to children. Lead exposure is still a critical problem that remains to be addressed.

CHPAC Recommendations

1. EPA, together with other federal agencies, should establish new goals for childhood lead poisoning and exposure prevention, because the nation did not meet the 2010 goal and to date no new goal has been established.

CHPAC believes that it is now time to update the 2000 President’s Task Force report. While some of the report’s recommendations were met (e.g., the development of a portable blood lead analyzer and conducting long-term follow-up of the durability of modern residential lead hazard control methods⁴), the most important ones were not.

Specifically, the nation did not achieve the 2010 goal of eliminating childhood lead poisoning, which at the time was defined as a childhood blood lead level of 10 µg/dL and higher. The most recent data from CDC show that for 2007-2010, there were 162,719 children with blood lead levels ≥ 10 µg/dL, a clear indication that the 2010 goal was not achieved. Furthermore, CDC data show that over 535,000 children have blood lead levels ≥ 5 µg/dL, the new CDC reference value (see Table 1, Attachment B). Together, these and other data show the problem remains large.

Moreover, research over the past few decades has clearly shown that even children with blood lead levels below 10 µg/dL are harmed and that there is no known safe level of lead in children’s blood. The March 29, 2012, letter from CHPAC describes new research and new concerns about the failure to establish a threshold of effects for the harmful effects of lead on

⁴ Dixon S, Jacobs DE, Wilson J, Akoto J, Clark CS. 2012. Window replacement and residential lead paint hazard control 12 years later, *Environ Res* 113: 14-20.

children. As a result, the new CDC recommendations for reducing all exposures to lead are not based on a specific “safe” blood lead level, but on reducing blood lead levels of all children, especially those at greatest risk. Federal agencies need to establish new goals for childhood lead exposure prevention because far too many children remain at risk of unnecessary exposure to lead.

The 2000 President’s Task Force report contained four general recommendations: 1) act before children are poisoned, 2) identify and care for lead-poisoned children, 3) conduct research, and 4) measure progress. CHPAC believes that these four general goals remain important ones. CHPAC believes that three additional general goals should be considered:

- Identify new sources and pathways of exposure;
- Conduct research (a) on new methods of testing lead content at lower levels in both new and existing sources and pathways, and (b) on new practices and technologies that can eliminate such sources and pathways; and
- Provide adequate resources from both public and private sector sources that will eliminate lead poisoning, a disease that is entirely preventable.

CHPAC believes that the Task Force report update should be substantial, and purposefully should help the nation fully grasp how large a problem childhood lead poisoning remains. The CHPAC has attached a detailed description of how the report should be developed (see Attachment C). CHPAC recommends that the report should address the following:

- New Target Date – Select a new date for meeting newly stated goals, such as 2020.
- Quantify the Housing Problem – Starting with the most recent estimates from HUD (i.e., the 2006 estimate released in 2011⁵) and project future trends, as outlined below.
- Provide a New Cost-Benefit Analysis – Update the net monetary benefits shown in the 2000 Report by using the new estimates of the cost of lead hazard control and new estimates of the net present value of total monetary benefits, as calculated by Gould (2009).⁶
- Estimate How Many Children Are at High Risk – Use the new NHANES data to project the number of children above the CDC reference value.
- Estimate Prevalence of Other Sources of Lead Exposure.
- Produce an Interagency Budget – Request an integrated budget that should include appropriations for lead hazard control needed by the Department of Energy, which funds weatherization programs that impact residential lead-based paint hazards, the Department of Education, and others. The interagency budget request should address non-residential sources and pathways of exposure. For example, CDC should be funded to examine the role of lead in diet and educational outcomes of lead exposure.
- Quantify the Impact of Not Taking Action.
- Think Globally – Provide recommendations on actions the US can take to prevent both new and existing sources and exposures from occurring at the global level, through the Global Alliance to End Lead Paint and other international conventions, treaties and organizations.

⁵ HUD (U.S. Department of Housing and Urban Development). 2011. American Healthy Homes Survey: Lead and Arsenic Findings. Available: http://portal.hud.gov/hudportal/documents/huddoc?id=AHHS_REPORT.pdf

⁶ Gould E. 2009. Childhood lead poisoning: Conservative estimates of social and economic costs of lead hazard control. Environmental Health Perspectives 117:1162-1167.

CHPAC believes that the failure to establish new goals and to articulate the needs of EPA and other federal agencies should be corrected and calls upon the Administrator to issue a new report from the President's Task Force. The recent publication of the asthma disparities report is an example of how important such documents can be in focusing the attention of the nation on problems that have solutions but remain unsolved.

2. EPA's outreach, education, training and enforcement strategies should incorporate the new CDC reference value so that all federal agencies have a common, consistent and effective message.

CHPAC recommends three key actions in using the new CDC reference value. First, develop a message consistent with CDC and useful for every EPA program that regulates or evaluates lead uses, emissions, exposures, or poisoning. Second, make full use of the outreach and education networks that EPA and other federal agencies have developed. Third, support the efforts of local government and public health partners working on childhood lead exposure.

EPA should clearly articulate a unified message that is consistent with its responsibilities for preventing childhood lead poisoning. As stated in the CHPAC letter dated March 29, 2012, "no 'safe' threshold of exposure has ever been identified."

The message should:

- Describe the new CDC blood lead reference value (5 µg/dL) in a way that clearly explains that this value has been selected for use in targeting outreach and interventions to the families and health care providers of young children most exposed to lead;
- Emphasize that any level of lead exposure is associated with health risks;
- Make it clear that lead is a developmental toxin;
- Stress that all families, businesses, and government agencies should prevent emissions and exposures;
- Describe multiple sources of exposure and how all exposures contribute to health risk;
- Develop a cumulative exposure estimate from multiple regulated sources;
- Describe how specific EPA regulations and enforcement actions are going to decrease or prevent exposures.

Federal agencies have established methods of communication around lead exposures in children and adults. EPA should take full advantage of these established networks of education and outreach. Partnership and/or coordination with CDC, HUD, Consumer Products Safety Commission (CPSC), Food and Drug Administration (FDA), and other federal agencies are essential.

EPA's involvement should be helpful in enhancing messaging to the potential audiences of each agency, ensuring consistency of messages, and increasing coverage of potential audiences. EPA should review communication strategies that each agency has used in the past to reduce health impacts. This review should focus on how each agency has characterized blood lead levels, environmental lead levels and the need for intervention.

EPA's involvement and leadership, together with CDC and HUD, is critical in developing and sharing the new blood lead level information (for public environmental health intervention programs as well as regulatory programs) in ways that are consistent across agencies and

across programs within agencies. CDC has provided leadership in public education, and EPA has statutory authority to regulate lead exposures; both should be coordinated. EPA should work with regulatory partners at the CPSC, HUD, and FDA to ensure that the agencies produce coordinated and consistent risk assessments and risk communication. This is an opportune time to interact with partners as CHPAC believes that partners have not fully integrated their current guidance with the new CDC reference level.

In light of the lack of current CDC leadership's support for historic city and state Childhood Lead Poisoning Prevention Programs, CHPAC anticipates large gaps in the delivery of messages to audiences that have been served in the past by prevention programs. We recommend that EPA make support for outreach and education programs a greater priority and broaden outreach to audiences that may now have decreased access to lead poisoning prevention information, perhaps through an interagency agreement with CDC to maximize the strengths of both agencies. EPA should include new audiences historically served by CDC—such as health care providers—as a target audience for messaging. EPA should integrate lead poisoning prevention messages and target funding for lead prevention into EPA programs that support healthy homes and healthy environments.

Clinicians have historically relied on CDC for guidance on management and treatment of children exposed to lead. EPA should work with CDC to ensure that clinicians continue to receive the CDC guidance they require.

EPA should also work to ensure that its recent Integrated Science and Exposure Assessment for Lead⁷ is available to a wide audience.

EPA could utilize new communication tools to directly reach families and youth. CHPAC also anticipates a need for outreach and education on non-paint lead hazards in addition to continued attention to lead paint in homes. CHPAC anticipates greater interest in identifying imported consumer products, health remedies, and other exposures that may increasingly contribute to blood lead levels even as blood lead levels continue to fall. EPA and its research laboratories, together with other federal agencies, could have a growing role in recommending or conducting studies of lead in exposure sources that EPA currently does not regulate.

3. EPA should lead efforts to regulate and reduce lead-contaminated imports into the US and exports from the US, and should actively contribute to the dialogue of reducing lead exposures globally.

- EPA should promote revision of the “Action Plan for Import Safety” released by the Interagency Working Group on Import Safety⁸ to better protect consumers from the increasing volume of lead-contaminated imports entering the United States and also revise the National Strategy based on principles of prevention, intervention and response.
- EPA should also take further action to eliminate lead exposures from lead smelters, electronic waste, mining, and leaded motor vehicle and aviation gasoline. It should also support local regulatory actions.

⁷ Integrated Science Assessment for Lead: <http://cfpub.epa.gov/ncea/isa/recordisplay.cfm?deid=242655>

⁸ DHHS Interagency Working Group on Import Safety Action Plan for Import Safety: <http://archive.hhs.gov/importsafety/>

- EPA should specifically take focused action on recycled lead batteries going from the US to Mexico and to other developing countries.

EPA should support the date for certain targets outlined in a recent United Nations resolution and provide budget support for the Global Alliance to End Lead Paint. Furthermore, in 2010 the EPA instituted a reporting requirement under the Resource Conservation Recovery Act to better track exports of used lead batteries. The implementation of this program has proven to be a challenge for the EPA and exporters have not fully complied.⁹ Reports from Mexico have indicated that shipments of used lead batteries have been going to unauthorized lead recycling facilities and have been re-exported to other countries. Given these shortcomings with current efforts to track shipments of this hazardous waste, the EPA should adopt additional regulations to require all shipments of used lead batteries for export to be accompanied with a hazardous waste manifest that can be used to track batteries to their final destination.

4. EPA should focus ongoing and new research and regulation on the remaining sources and pathways of exposure and should accelerate enforcement of the Renovation, Repair and Painting Rule.

State and local surveillance systems provided a critical role in protecting children and served as an early warning system for new sources of lead so effective responses could be put in place. The loss of federal support for these systems means that high quality, lead-focused research and effective and enforced regulations are more important than ever.

EPA should reassess its enforcement and compliance assurance program in light of the residential Renovation, Repair and Painting (RRP) rule and should extend this rule to public and commercial buildings. As EPA makes this assessment, it should consider the following:

- Housing renovations have traditionally been a local government function in most states, with the important exception of federally assisted housing. Therefore, enforcement efforts need to be more closely tied with local and state health, environment and housing departments.
- The RRP rule made clear that the regulated community is dominated by very small businesses often with fewer than ten employees. It is essential that enforcement be part of a tightly integrated effort designed to reach this community.

Focus EPA compliance assurance on firms that are marketing renovation and remodeling services and that are not certified by EPA or states. Firms must be certified to market these services for pre-1978 housing and child-occupied facilities. By stemming marketing that violates the law, EPA can provide a powerful incentive for firms to become certified so that the agency can more effectively educate the firms and ensure compliance. In addition, EPA can undertake this effort from a central office using electronic services and can partner with services such as Angie's List and Checkbook that help market renovation and remodeling firms.

The Safe Drinking Water Act Lead and Copper Rule of 1991 was enacted to protect communities; however, it has been estimated that 10–20% of the total lead exposure in children

⁹ Coughlan, Laura et al. "The US EPA Spent Lead Acid Battery Export Rule: Challenges of Implementing Regulations with Transnational Impact" available online: http://inece.org/conference/9/papers/coughlan%20kreisler%20tatuml_USEPA_Final.pdf.

can be attributed to a waterborne route,¹⁰ through the consumption of contaminated water. Children are more vulnerable to lead poisoning because they consume more water per unit of body weight, and their bodies are developing. The former facilitates the bioaccumulation of lead and the latter makes expressed toxic effects more likely.

CHPAC believes that the EPA's surveillance system for lead in water in homes is not sufficient to detect risks before children are dangerously exposed. This is especially important to rectify given the rapid changes in municipal water treatment systems and the uncertainty surrounding the underlying water chemistry. A new, more robust sampling protocol should be implemented.

CHPAC encourages EPA to collaborate with organizations such as the "Get The Lead Out Plumbing Consortium" that will offer training program about Lead Free* plumbing products in 2013 to the industry.

CHPAC believes that EPA should ensure that the National Children's Study (NCS) maximizes resources and specifically encourages EPA funding of ancillary studies to determine sources and pathways of lead exposure for children in the study.

The NCS should include blood lead testing of enrolled children during early childhood, and environmental source and pathway testing should be conducted at intervals consistent with other blood and environmental sampling. The impact of blood lead on developmental status, academic performance and life success, including behavioral issues, school failure and delinquency, as measured in participants over time, should be examined. Effect modification by nutrition status, early childhood education and home environment are also important areas of study.

The NCS also offers an important opportunity to measure the impact of population blood lead levels during pregnancy and health outcomes for infants during their childhood and early adult life. Prenatal blood lead levels should be measured to allow for these later analyses.

5. EPA should focus ongoing and new research on new technologies that can cost-effectively determine lead levels in environmental media below current detection limits, because these lower levels of contamination may contribute to childhood lead poisoning and adverse health effects.

EPA should establish cost-effective laboratory and field analyses for measuring low lead concentrations in environmental media and determine how lead in various media and at various concentrations correlates with children's blood lead levels. The attributable fraction of lead in various media should be calculated to allow prioritization of interventions by addressing at the population level the most common and highest exposures first.

¹⁰ U.S. EPA (U.S. Environmental Protection Agency). 1991. National Primary Drinking Water Regulations for Lead and Copper. 40 CFR Part 141, under the Safe Drinking Water Act. Available: <http://www.epa.gov/safewater/lcmmr/index.html> [accessed 11 June 2007]. Revisions: Fed Reg 72 (195):57782– 57820.

Conclusion and Overall Recommendations

As CHPAC stated in its previous letter, lead poisoning continues to be a risk to a significant portion of the population, yet is entirely preventable. The new CDC reference value provides an opportunity for EPA and the nation to understand the magnitude of childhood lead exposure, and to take new action to eliminate lead exposure. CHPAC believes that children should not be used to identify sources and pathways of exposure; instead we should use environmental testing and then provide proven interventions to eliminate those sources and pathways, enabling our children to reach their full capacity. Furthermore, failure to take concerted action will have long-term implications for not only children, but for our entire society.

Sincerely,

/Signed/

Pamela Shubat, Ph.D.
CHPAC Co-Chair

/Signed/

Sheela Sathyanarayana, M.D., M.P.H.
CHPAC Co-Chair

Attachments:

Attachment A, EPA Charge Questions

Attachment B, Table and Figure

Attachment C, Detailed suggestions on updating the President's 2000 Task Force Report

cc: Jackie Mosby, Acting Director, Office of Children's Health Protection
Gina McCarthy, Assistant Administrator, Office of Air and Radiation
Steve Page, Office Director, Office of Air Quality Planning and Standards
Jim Jones, Acting Assistant Administrator, Office of Chemical Safety and Pollution Prevention
Wendy Cleland-Hamnet, Office Director, Office of Pollution Prevention and Toxics
Cynthia Gyles, Assistant Administrator, Office of Enforcement and Compliance Assurance
Pam Mazakas, Office Director, Office of Civil Enforcement
Mathy Stanislaus, Assistant Administrator, Office of Solid Waste and Emergency Response
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Nancy Stoner, Acting Assistant Administrator, Office of Water
Peter Grevatt, Office Director, Office of Ground Water and Drinking Water
Lek Kadeli, Acting Assistant Administrator, Office of Research and Development
Becki Clark, Acting Director, National Center for Environmental Assessment

Attachment A EPA Charge Questions

Charge Questions

1. Identify implications for EPA of an announcement by CDC replacing its blood lead level of concern with a reference value of 5 µg/dL. The CDC Advisory Committee for Lead Poisoning Prevention has recommended the elimination of the term level of concern.

How can EPA partner with CDC and HUD to have appropriate communication and public health messaging of the new reference value?

How can EPA most effectively respond to a new reference value for blood lead through regulations and outreach? Which actions are most time-sensitive or likely to have the most impact? How should EPA address them?

2. Identify opportunities to make additional progress on activities to reduce lead exposures described by the President's Task Force on Environmental Health Risks and Safety Risks to Children in its report, "Eliminating Childhood Lead Poisoning: A Federal Strategy Targeting Lead Paint Hazards."

Develop a progress report of current status toward meeting the Task Force's goals.

What are the next steps that EPA (and other federal agencies) can take to advance toward the goals?

What modifications to the Task Force goals would the CHPAC recommend, based on recommendations from the CDC Advisory Committee on Childhood Lead Poisoning Prevention and others?

3. How can future longitudinal cohort studies — including forthcoming phases of the National Children's Study — help address research gaps and address the health implications of ongoing exposures to lead?

What recommendations does the CHPAC have for ways that research questions on lead can be cost-effectively incorporated into these studies?

What are the other continuing research needs in this area?

Attachment B
Table and Figure

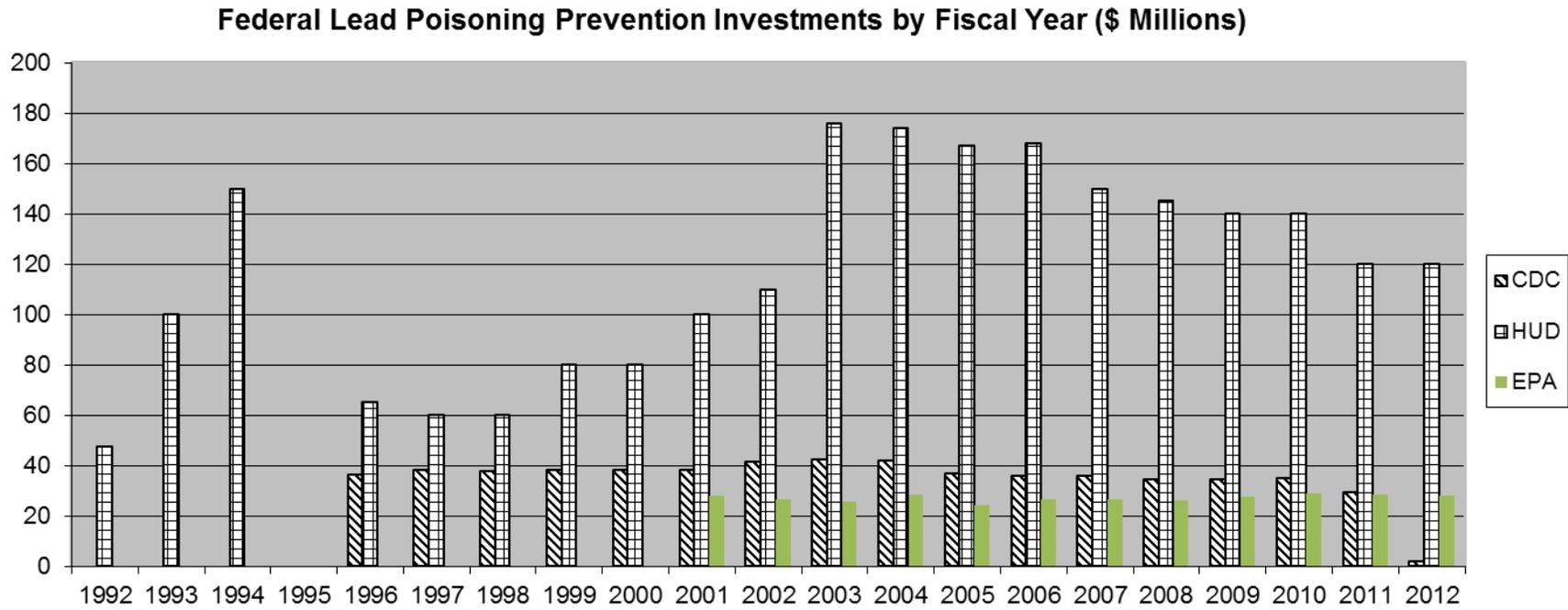
Table 1: Prevalence of Blood Lead Levels (BLL) at Selected Levels 2007-2010.

	Estimated Population Aged 1-5	95% Confidence Intervals
BLL \geq 10	162,719	(45,173; 352,248)
BLL \geq 5	535,699	(316,289; 810,677)
BLL 5-9	372,979	(251,663; 517,561)

Source: CDC National Health and Nutrition Examination Survey

Attachment B
Table and Figure

Figure 1: EPA, HUD and CDC Lead Poisoning Prevention Appropriations, 1991-2012.



Attachment C

Detailed Suggestions on updating the President's 2000 Task Force Report

CHPAC believes that updating the 2000 Task Force report should include the following steps, which will help the nation fully grasp how large a problem childhood lead poisoning remains:

- Select a new date for meeting newly stated goals, such as 2020. A “Vision 2020” report will provide a clear articulation of what is needed to eliminate childhood lead poisoning and exposure and provide a useful means of providing benchmarks for both federal government appropriations and leveraged private sector funding.
- Provide new estimates of the number of housing units with lead-based paint hazards, starting with the most recent estimates from HUD (2006 estimate released in 2011),¹ and then projecting the number of units projected to have lead-based paint hazards in 2020, after subtracting the effects of housing demolition, substantial rehabilitation and new regulation. New regulations should include the EPA RRP rule and the effect of innovative far-reaching primary prevention local regulations, such as those implemented by the District of Columbia and the City of Rochester, NY, since the 2000 Task Force Report was issued. The estimates should provide a trend analysis and projections for three scenarios: A baseline (if no action is taken), the effect of federal and local regulation, and a projection that would eliminate all housing units with lead based paint hazards by 2020. The validated model published by the Task Force in 2000 can provide a useful starting point.
- Provide new estimates of the cost of residential lead hazard control, drawn from both HUD and representative local data (these costs should include estimates of the incremental costs of lead hazard control, i.e., estimates that do not include the costs of associated housing repairs, as was done in the 2000 Task Force report).
- Update the net monetary benefits by using the new estimates of the cost of lead hazard control and new estimates of total monetary benefits, as calculated by Gould (2009).² These new estimates should not be limited to the effect of avoided loss of IQ and associated lost lifetime earnings, but should also include other well-documented effects of lead, such as crime, ADHD, hypertension, school performance, and others. The estimates should include calculations of net present values based on a discount rate that balances intergenerational transfers and the current market rates.
- Provide new estimates and projections of the number of children at risk, using both 10 µg/dL and the new CDC reference value of 5 µg/DI and 1 µg/dL, starting in 2010 and projecting them through 2020. These data can be drawn from the National Health and Nutrition Examination Survey.³
- Provide new estimates of the number of children at risk of exposure from non-residential sources and pathways of exposure, using a recently published review that estimated 70% of lead exposures were due to residential exposures, and the balance (30%) related to others.⁴
- Provide an interagency budget request, as was done in 2000, which integrates the resources needed by key agencies with their respective duties. Such a budget request should include resources needed by certain agencies not included in the 2000 Task Force Report, which included estimates for EPA, HUD, CDC, the Department of Justice, CPSC, and the Department of Defense. For example, an integrated budget request

should include appropriations for lead hazard control needed by the Department of Energy, which funds weatherization programs that impact residential lead based paint hazards, the Department of Education, and others. The interagency budget request should include needs to address non-residential sources and pathways of exposure. For example, the State Department should request resources to address exposures of immigrants to the US.

- Provide estimates of the economic impact of the failure to prevent childhood lead poisoning.
- Provide recommendations on actions the US can take to prevent new sources and exposures from occurring at the global level, through the Global Alliance to End Lead Paint and other international conventions, treaties and organizations.

¹ HUD (U.S. Department of Housing and Urban Development). 2011. American Healthy Homes Survey: Lead and Arsenic Findings. Available: http://portal.hud.gov/hudportal/documents/huddoc?id=AHHS_REPORT.pdf

² Gould E. 2009. Childhood lead poisoning: Conservative estimates of social and economic costs of lead hazard control. *Environmental Health Perspectives* 117:1162-1167.

³ CDC. National Health and Nutrition Examination Survey, 2007-2010.

⁴ Dixon S, Jacobs DE, Wilson J, Akoto J, Clark CS. 2012. Window replacement and residential lead paint hazard control 12 years later, *Environ Res* 113: 14-20.