RESPONSE TO 2009 WISCONSIN SENATE JOINT RESOLUTION 65

Prepared by the Wisconsin Childhood Lead Poisoning Elimination Implementation and Oversight Committee

December 29, 2010

Children with lead poisoning were three times more likely to fail fourth grade reading tests when compared to children with minimal lead exposure.

Miranda et al.The relationship between early childhood blood lead levels and performance on end of grade tests. Environmental Health Perspectives 2007

TABLE OF CONTENTS

Report highlights ..... Pages 2-3

Background ..... Pages 4-6

Legislative Report Request 1: *Propose ways that Wisconsin can evaluate costs borne by our educational and criminal justice systems attributable to childhood lead poisoning* ..... Page 7

Legislative Report Request 2: *Propose alternative methods to prevent lead poisoning, including strategies to accelerate Wisconsin's progress at evaluating and abating lead paint hazards in housing* ..... Pages 8-10

Legislative Report Request 3: *Identify various proposed sources of funds* .... Pages 11-12

In closing ..... Page 13

Appendix A..... Page 14

References ..... Pages 15-16

Membership of the Implementation and Oversight Committee ..... Page 17

REPORT HIGHLIGHTS

Childhood lead poisoning is a costly problem for Wisconsin. However, this problem has a readily identifiable solution: remove or fix lead paint hazards in older homes.

Establish a sustainable funding source to control lead paint hazards.

The Wisconsin Childhood Lead Poisoning Elimination Implementation and Oversight Committee (IOC) recommends that Wisconsin create a statewide revolving loan program to assist property owners by offering them no- or low-interest loans to fix lead paint hazards in older homes. Wisconsin should couple the fund with a widespread community awareness campaign to promote the loan program and increase public awareness of the risks of lead poisoning and ways to reduce these risks.

Where children get lead poisoned

- Most children are lead poisoned in their homes due to lead-contaminated dust from deteriorating paint.
- Approximately 90 percent of lead poisoned children in Wisconsin reside in dwellings built before 1950. Dwellings built before 1950 are the highest risk for lead paint hazards because lead-free latex paints were not yet available.
- There are more than 400,000 existing dwellings built before 1950 that have lead paint hazards across all 72 counties in Wisconsin.

Lead poisoning is a concern to our society and Wisconsin taxpayers

Wisconsin children have among the highest lead poisoning rates in the nation. More than 46,000 children under age 6, **enough to fill Miller Park**, were reported lead poisoned since 1996; more than 1,500 children in 2009 alone. Every county in the state is affected. There is no safe level of lead in the human body. Lead exposure decreases the life-long potential of affected children by damaging the human brain — reducing a child's ability to learn and causing behavioral problems — and life-long health problems.

What lead poisoning is costing Wisconsin

- A linkage has been firmly established between lead-poisoned children and failure in school as well as later criminal and violent behavior. Children who were lead-poisoned are three times more likely to fail standardized tests and are more likely to be arrested for a violent crime as a young adult.

- Lead poisoning costs a fortune. Each year Wisconsin spends over $5 billion on school aids including $375 million for special education and $1 billion for corrections. Some percentage of these costs is attributable to lead poisoning.
- If each Wisconsin child age 0-6 today were protected from any lead exposure, the improvement in the state high school graduation rate and the reduction in crime across the state would save Wisconsin **$28 billion**. These savings[1] would multiply each year as new children are born in Wisconsin.

Report recommendations

Create a sustainable loan program accessible to all owners of pre-1950 properties to fix lead paint hazards and thus create lead-safe housing for children. An annual investment of at least $20 million a year would allow for lead paint hazards to be addressed in at least 2,000 additional homes each year.

In concert with establishing a loan fund:
- Dedicate resources for ongoing evaluation of lead poisoning elimination efforts.
- Implement a strategic community awareness campaign for lead-safe housing.

Funding recommendations include:
- Authorize a paint surcharge.
- Establish bonding authority.
- Create a voluntary contribution on the Wisconsin income tax forms and match it with general purpose revenue.

Nearly one of every 20 children entering the Wisconsin school system in the fall of 2006 was known to have been lead poisoned.

WI Department of Health Services. Legacy of Lead: Report on Childhood Lead Poisoning in Wisconsin 2008

BACKGROUND

Lead poisoning is particularly tragic because, as a housing-based disease, it is **completely preventable**. Lead-based paint is the primary source of lead in children's environments. Although lead was banned from household paint in the United States in 1978, old lead paint and varnish (hereafter referred to as "paint") still coat the walls, windows, doors, floors, ceilings, porches, and stairs of many older homes. Old paint deteriorates over time due to friction, impact, moisture, and temperature fluctuations. Chipping and peeling lead coatings create dust on windows, floors, stairs, and porches where young children crawl and play. The lead dust gets on children's hands and into their mouths.

Homes built prior to 1950, before the widespread use of lead-free latex paint, contain the greatest lead paint hazards. Ninety percent of lead-poisoned children in Wisconsin live in homes built prior to 1950. In Wisconsin, more than 400,000 homes built before 1950 have hazardous single-pane, lead-painted windows. Because weather and friction cause coatings on windows to deteriorate faster than other painted surfaces, window replacement is well documented as an effective housing strategy to help prevent lead poisoning[2]. A simple solution to dramatically lower blood lead levels in Wisconsin children is to replace deteriorating windows, plus lead-painted siding, porches, doors and trim that pose a hazard.

Wisconsin consistently ranks among the top ten states for the number of children found to be lead poisoned. More than 46,000 children under age 6, **enough to fill Miller Park**, were reported lead poisoned since 1996 — more than 1,500 children in 2009 alone. Every county in the state is affected. The actual numbers are likely higher since fewer than half of the high risk children received the recommended pediatric blood lead tests.

While over 100 years of rigorous research and studies have documented the detrimental effects of lead exposure in children, more recent advances in technology make it clear that low levels of lead, once thought to be safe, actually cause considerable damage to childhood developmental processes which have both immediate and lasting effects throughout a child's life and on subsequent generations.

Some effects of childhood lead poisoning include:

As children:

- Neurological disruptions[3] resulting in lowered IQ[4], learning disabilities[5], hearing loss and developmental delays such as speech and language abnormalities[6].
- Greater likelihood of behavioral problems like aggression and other antisocial behavior[5] and attention disorders such as hyperactivity and distractibility as in Attention Deficit Hyperactivity Disorder[7].
- Poor school performance as children who were lead poisoned are three times more likely to fail fourth grade reading tests[8]. Exposure to lead is a more powerful predictor of poor school performance than either poverty or class size[9].

As teens:

- School disciplinary problems[10]; lead poisoning also is linked with higher rates of high school dropout, teen pregnancy and juvenile delinquency[11, 12].
- A greater likelihood of poor upright balance, coordination and other motor skills therefore increasing long-term injury risk[13].
- Depression, panic attacks[14] and kidney disease[15] in adolescence.

As adults:

- A person who was lead poisoned as a child is 50 percent more likely to be arrested for a violent crime as a young adult[16].
- Lead can cause problems with reproductive functions in both men and women who were lead poisoned as children. Men can suffer from reduced libido and testicular dysfunction[17] and women can develop hypertension when pregnant[18].
- Women who were lead poisoned as children are at greater risk for adverse birth outcomes such as increased risk of spontaneous abortion and preterm delivery[19, 20] and their infants can suffer from low birth weight[21] and can be lead poisoned in the womb[22, 23].
- Childhood lead exposure is linked to adult kidney disease[24], diabetes[25], depression and panic attacks[14], cognitive deficits such as memory loss and Alzheimer's disease[26], and increased adult risk of death from stroke[27] and heart attack[25].

These impacts come at a great cost, both economic and social, to the individuals and families affected by lead poisoning and to society overall. There is strong and growing evidence in the scientific community that the societal benefits of preventing lead poisoning vastly exceed the costs of not addressing the problem[28, 29, 30, 31].

Currently, Wisconsin has approximately 540,000 children age 0-6. For these children, eliminating any exposure to lead would save Wisconsin **$7 billion** in direct costs while experiencing an increase in productive capacity and earnings of **$21 billion**. These figures are inferred costs for Wisconsin based on a detailed analysis conducted in New Jersey[32] that examined direct medical costs, special education costs, crime and juvenile delinquency costs, reduced high school graduation, and the effects on lifetime earning and costs to state government.

A 2005 Wisconsin report[33] examined the costs and benefits of window replacement in homes built before 1950 where children under the age of 6 reside. Windows are the locations that typically have the highest lead dust measurements of any surface in a house. Wisconsin participated in an earlier national study that concluded that window replacement is an effective lead poisoning prevention strategy. The report demonstrated that the total heath benefit per child is $45,000 if the child was never exposed to lead. The health benefits considered were increased lifetime earnings, reduced neonatal mortality, avoided direct medical costs, and reduced special education, juvenile delinquency and crime costs. These results are similar to the New Jersey estimate in factors and value. In addition to health benefits, there are energy and market benefits due to window replacement, such as reduced heating and cooling costs and increased home value. The report estimated the cost for Wisconsin in 2005 was $3.1 billion for those known to be lead poisoned, based on a conservative estimate of I.Q. points lost, multiplied by loss of lifetime earnings. Since these costs are from a single year (2005), similar monetary losses will occur for each year the Wisconsin housing stock is not made lead-safe.

The bottom line is homes that poison children with lead cause Wisconsin to pay significant costs due to medical, educational, and criminal justice expenses. For example, Wisconsin spends $5.3 billion per year on education, including $375 million for special education and over $1 billion on corrections. A portion of these costs can be attributed to lead poisoning. Other costs arising from lead poisoning are paid initially by individuals and ultimately by society as a whole as a result of increased crime, especially violent crime, and decreased productivity and earning capacity of citizens affected by lead as children. It is a serious problem that has a readily identifiable solution — remove lead paint hazards from older homes.

LEGISLATIVE REPORT REQUEST 1:

Propose ways that Wisconsin can evaluate costs borne by our educational and criminal justice systems attributable to childhood lead poisoning

Wisconsin has well documented the prevalence and severity of the lead poisoning problem in the state, notably in the award-winning report *The Legacy of Lead*[34]. That knowledge coupled with extensive research and comprehensive cost analyses from other states is the basis for the IOC recommendation that attention be paid to eliminating the root cause of lead poisoning. However, ongoing collaborative data efforts are warranted to better track and evaluate the success of lead poisoning elimination efforts.

Currently there are limited resources to conduct tracking and data analyses and evaluation, and additional resources are needed for the Wisconsin Department of Health Services (DHS) and partner agencies. It will be important to evaluate short and long term outcomes produced by a revolving loan fund that is proposed in the next section. In the short term, we will need to measure the success of the revolving loan program and the educational campaign, in terms of the number of loans, the number of homes fixed, the number of children protected, the number of educational events and the number of persons educated. Over the long term, as more homes are fixed and more children are protected from lead paint hazards, we will need to measure the impact on society and benefits to Wisconsin taxpayers in terms of changes in educational outcomes, reductions in special education enrollment, and decreases in crime and delinquency. This will enable the Wisconsin Legislature to better assess the value of ongoing investments to prevent childhood lead poisoning.

Recommendation: Dedicate resources for ongoing evaluation of lead poisoning elimination efforts, to allow different data systems to communicate, to analyze data and to interpret the results of statistical studies so Wisconsin can better track the impact of lead poisoning elimination efforts.

A person who was lead poisoned as a child is 50 percent more likely to be arrested for a violent crime as a young adult.

Wright et al. Association of prenatal and childhood lead concentrations with criminal arrests in early adulthood. PLOS Medicine 2008

LEGISLATIVE REPORT REQUEST 2:

Propose alternative methods to prevent lead poisoning, including strategies to accelerate Wisconsin's progress at evaluating and abating lead paint hazards in housing

Earlier this paper notes the immense personal, family, and societal costs of lead poisoning in Wisconsin. Senate Joint Resolution 65 makes note that lead poisoning is preventable and requests the IOC to propose alternative methods to prevent lead poisoning, including strategies to accelerate Wisconsin's progress at evaluating and abating lead paint hazards in housing.

In October 2004, the U.S. Centers for Disease Control and Prevention (CDC) Advisory Committee on Childhood Lead Poisoning Prevention (ACCLPP) developed a multifaceted primary prevention approach that focuses on housing as the primary vector of the disease[35]. The intent of this approach is to accelerate progress in eliminating childhood lead poisoning. In that plan, the CDC ACCLPP included the following recommendations specifically for legislators:

- Fund the development of more safe and affordable housing (e.g., develop financing and subsidy strategies at the federal, state, and local levels).
- Provide adequate resources for lead poisoning prevention efforts (e.g., develop strategies to encourage everyone, including property owners, families, and lenders to acknowledge the value of lead-safe housing and to take action to make sure children are protected).

There are more than 400,000 homes built in Wisconsin since 1950 with existing lead paint hazards. Currently Wisconsin communities use HUD lead hazard control grants and other limited federal housing funds, (e.g., CDBG and HOME), to replace windows and complete other rehab to address lead paint hazards in about 3,000 to 5,000 older homes per year. In addition, about 5,000 older homes with lead paint hazards are demolished each year. Unfortunately, federal funds have not been sufficient to address all the lead paint hazards in Wisconsin housing. At our current rate of progress of fixing lead paint hazards in Wisconsin housing, it will take many decades to fix all these homes, during which time thousands of children will be poisoned. By creating options to eliminate exposure of children to lead, Wisconsin government can substantially reduce the social and economic costs now burdening Wisconsin taxpayers. The IOC advises the Wisconsin legislature to take action to establish a sustainable funding source for lead-safe housing.

Recommendation: Create a revolving loan program. The IOC recommends the creation of a sustainable statewide no- or low-interest revolving loan program accessible to all owners of pre-1950 properties. The program should have a dedicated source of funding to fix lead paint hazards and thus create lead-safe housing for children. The prevalence of childhood lead poisoning reflects the large number of houses with lead paint hazards and the limited financial resources of many home- owners to eradicate lead paint hazards in their homes. Eliminating lead poisoning requires fixing the houses with lead paint hazards — predominantly in those houses built before 1950. This approach would strategically target Wisconsin's highest risk dwellings since approximately 90 percent of Wisconsin's children who are lead poisoned reside in dwellings built before 1950. Wisconsin's experience with HUD-funded lead hazard control grant programs demonstrates that replacing old lead-painted windows combined with other targeted lead hazard reduction strategies effectively reduces lead dust exposure and blood lead levels in children[2].

A revolving loan program to fix lead paint hazards would have two significant economic impacts in Wisconsin: 1) create expanded product demand positively affecting many Wisconsin businesses in the window, door and siding manufacturing industries, and 2) create jobs for people who are in the home remodeling trades. For example, Wisconsin already sells in excess of $1 billion in windows annually; many more windows would be sold and installed as a result of a revolving loan fund to fix lead paint hazards, thereby stimulating economic growth. A program to replace windows and other lead-contaminated building components in older homes will create jobs, save energy, improve local property values and local tax bases, *and* protect children from lead paint hazards. The National Association of Home Builders has developed statistical models that project the positive impact of construction sector spending on local economies both directly and through what economists call the "ripple effects" of such investments[36]. Investing in these projects will have a positive impact on small businesses since, in the current economy, Wisconsin contractors are in need of work. In addition to health benefits, there are energy and market benefits due to window replacement, such as reduced heating and cooling costs and increased home value. Investment in lead poisoning prevention is not only a public health imperative — one owed to Wisconsin's children and society — it is good business sense.

An adequately funded revolving loan program would accelerate Wisconsin's progress at abating lead paint hazards in housing by providing a resource to fix these properties. Lead hazard control activities, consisting of window replacement and full paint stabilization, are estimated by HUD at a mean cost of approximately $10,000 per home[2], based on actual lead hazard reduction programs. Actual costs vary by dwelling. An immediate investment of approximately $4 billion could address lead paint hazards in all of the 400,000 pre-1950 homes with lead paint hazards, thus rapidly eliminating lead poisoning. A more realistic strategic, targeted approach would make older dwellings that are currently occupied by families with young children a first priority. At any one time, about 110,000 Wisconsin homes with lead paint hazards are likely to be occupied by families with young children; these higher risk homes could be the priority focus for a revolving loan program. An annual investment of at least $20 million a year would allow for lead paint hazards to be addressed in at least 2,000 additional homes each year.

A recent survey found that revolving loan funds work best when they have a clear mission, start with solid initial capitalization and are simple and user friendly[37]. For a revolving loan fund to be effective, it should:

- Focus funds on dwellings built before 1950, targeting resources to high risk dwellings. (Data is available to enable initial targeting to the most high risk dwellings.)
- Keep interest rates as low as possible in order to make it attractive to and feasible for borrowers.
- Establish a mechanism to determine eligibility requirements.
- Cover administrative and operational costs in the loan.
- Make participation simple with a minimal application fee or a small percentage of the funds requested.
- Make loans available in ways that maximize access to persons of all income levels.
- Allow local communities to use the revolving loan fund to correct lead paint hazards in properties where lead poisoned children reside when owners have not complied with work orders to promptly correct identified lead paint hazards.
- Be evaluated regularly for loan performance, fund balance and demand.

There are several state agencies that could administer these funds, including the Division of Housing and Community Development and the Wisconsin Housing and Economic Development Authority (WHEDA). These agencies could contract with banks, credit unions and non-profit housing agencies as well as local units of government to administer these loans and ensure that funds are widely available to all eligible owners.

As an added benefit, a state funded program model would enable the state to more successfully compete for the limited federal dollars available for lead hazard control. These grant funded federal programs typically require between 25 percent and 35 percent matching funds. Thus, new state funds to address lead paint hazards could multiply their impact by three to four times if the state were able to receive additional federal grant funds. This is especially important as there is clear and compelling evidence that Wisconsin gets less than its fair share of federal housing funds. A report published by the Federal Reserve Bank of Chicago found that Wisconsin received 42 federal dollars per capita compared to the national average for all states of 82 dollars per capita in federal funding for housing and community development over a 25 year period[38]. This discrepancy puts Wisconsin at a disadvantage when it comes to protecting children from lead paint hazards. The Wisconsin legislature could urge the Wisconsin congressional delegation to correct the inequities in federal funding formulas that allows Wisconsin to receive less than its fair share of federal housing funds.

Recommendation: Implement a strategic community awareness campaign for lead-safe housing. The IOC recommends the creation of a public education *kids unLEADed* campaign which is critical for both informing the general public about existing lead paint hazards and motivating action to fix lead paint hazards by utilizing the low interest loan fund.

- The Wisconsin Apartment Association has been a very strong partner in educating their membership of the dangers of lead paint hazards by conducting seminars on preventing lead poisoning at local chapter meetings and their annual conferences. They are advocates for a loan program to eliminate lead paint hazards. They also are poised to take part in a campaign to inform people of the loan fund as property owners often are "asset-rich" but "cash poor" and would welcome an accessible resource for these urgent repairs to remove lead paint hazards.
- In 2010, the EPA published a new rule called the *Renovation, Repair and Painting* (RR&P) Rule which Wisconsin adopted and put into effect April 22, 2010. DHS is implementing this rule by working with associations throughout Wisconsin that represent building contractors, property owners, child care providers and schools.

The efforts outlined above provide a foundation for a broader public education campaign regarding the revolving loan fund through networks of certified lead-safe renovators, schools, landlords and child care providers. In addition, a voluntary income tax donation as defined in the next section is another way to raise public awareness about lead paint hazards in the home and the revolving loan fund as a resource.

LEGISLATIVE REPORT REQUEST 3:
Identify various proposed sources of funds

The IOC has identified three sources of funding that the Wisconsin State Legislature should advance to implement the recommendations noted in Section 2: 1) authorize a paint surcharge; 2) establish additional bonding authority; and 3) create opportunities for voluntary contributions by taxpayers when filing Wisconsin income tax forms.

1) **Authorize a paint surcharge.** The IOC recommends the Wisconsin State Legislature authorize a surcharge of a minimum $1 per gallon of paint sold in Wisconsin to be used for the revolving loan fund. Based on U.S. Census data on paint ("architectural coatings") sales, $1 per gallon is expected to generate approximately $15 million per year in Wisconsin[39]. Such an approach is reasonable since paint and other coatings provide temporary short term protection from lead paint hazards. A surcharge on coatings can then be used to support more permanent solutions to the problem of lead paint on older dwellings.

2) **Establish bonding authority.** The IOC recommends that the Wisconsin State Legislature create additional bonding authority as a dedicated source of funding for the revolving loan fund. The Legislature has already authorized WHEDA and the Department of Veterans Affairs to issue bonds for sale to investors to generate funds that would support safe and affordable housing in Wisconsin.

   Investors buy bonds on the promise that they will be paid back with interest. Funds obtained from selling these bonds to investors are used to issue loans for housing (including housing purchase and housing rehabilitation loans). The interest that borrowers pay on the loans is then used to both pay back the investors who purchased the bonds and pay interest on these investments. The investors get their initial investment back plus interest; this interest is typically exempt from federal income tax.

   There are two types of bonds, general obligation bonds and revenue bonds. Loans made from revenue bonds are expected to pay back the investors in full while general obligation bonds are used when the interest on loans may not be sufficient to fully pay the investors. State issued bonds guarantee that investors will be repaid on a predictable schedule.

   The Legislature has provided WHEDA with bonding authority and state funds and has authorized WHEDA to guarantee loans for a variety of purposes besides housing, including small business loans, agricultural development, tourism, non-point source pollution, agricultural chemical clean up, clean air loan guarantees, stratospheric ozone protection, farm asset reinvestment, safe drinking water and recycling. Through June of 2008, WHEDA issued $9 billion in bonds for its programs, of which $3 billion was still outstanding. The legislature also authorized bonds for veterans housing enabling the Department of Veterans Affairs to issue $2.6 billion in housing loans to Wisconsin veterans through 2008. Many other states also issue general obligation bonds to fund housing programs.

The IOC also recommends the Legislature seriously examine whether the general obligation bond program could provide funds to non-profit corporations, units of government, property owners and/or licensed builders in the private sector for lead hazard reduction. The Legislature would need to statutorily structure this bonding authority to ensure fiscal accountability and compatibility with the intent of the revolving loan fund to provide deferred low interest loans.

3) **Create a voluntary contribution on the Wisconsin income tax forms and match it with general purpose revenue.** The IOC recommends the Wisconsin State Legislature authorize a change to Wisconsin income tax forms to allow voluntary payments from individual taxpayers to be submitted with their Wisconsin income tax payments for the revolving loan fund to abate lead paint hazards in homes. This voluntary donation could be used to fund the *kids unLEADed* public education campaign.

   A report on voluntary contributions via the 2007 Wisconsin income tax forms indicated that total contributions collected for individual causes ranged from $50,000 to $400,000. The number of taxpayers that contributed per cause ranged from 6,000 to 25,000. In the case of the Endangered Species Fund, all gifts (up to a total of $364,000) are matched dollar-for-dollar by state general purpose revenue. The Wisconsin Legislature should consider a similar matching program for the revolving loan fund contributions. While this voluntary funding mechanism is not expected to create a large volume of funds, if the legislature provided matching funds, this would serve as a model for public-private partnerships to address the problem. This voluntary contribution also would be a tool to inform the public of the existence of the revolving loan fund to make older homes lead-safe and provide a way to engage the public in solving the problem.

Wisconsin received 42 dollars per capita compared to the national average for all states of 82 dollars per capita in federal funding for housing and community development over a 25-year period.

Federal Reserve Bank of Chicago

IN CLOSING

The legacy of lead poisoning in Wisconsin includes thousands of children who are brain damaged, increased crime rates and increased public costs in our schools, medical and criminal justice systems. In addition, billions of dollars are lost in productivity and earnings. Lead poisoning of children can end if leaders in Wisconsin decide to take collective action to accelerate progress at removing lead paint hazards in older homes.

The IOC is deeply grateful the Wisconsin Legislature, through Senate Joint Resolution 65, has decided it is time to protect Wisconsin's children, communities, and taxpayers from the devastating outcomes brought on by lead poisoning. The IOC is honored to present this report with its carefully researched and practical recommendations for Wisconsin to establish the mechanisms and resources that will lead to the removal of lead paint hazards in homes. Without a doubt, these actions will save the lives and futures of children and improve the health and productivity of Wisconsin's citizens. The IOC stands ready to work with the legislature to advance these efforts.

APPENDIX A

Thus far, state agencies have responded positively to the legislative directive (State Joint Resolution 65) urging state agencies to collaborate to identify and evaluate the burden imposed by lead poisoning on Wisconsin. Wisconsin agencies, by continuing to collaborate to examine the impact of childhood lead poisoning on educational and correctional outcomes, will enable DHS, the IOC and partner agencies to better track and evaluate the progress of lead poisoning elimination efforts.

DHS and the IOC are seeking to compare Wisconsin statewide blood lead data on tested children with other agency's data to statistically evaluate the impact of lead poisoning in the areas of education, juvenile delinquency and criminal justice. Inter-agency collaborative efforts are underway to share information with careful protection of the confidential nature of personal records.

The committee has been working with the following agencies to begin identifying data that will allow us to better evaluate lead costs, impact and lead poisoning elimination progress.

- Department of Public Instruction
- Department of Children and Families
- Department of Corrections Division of Juvenile Corrections
- Wisconsin Court System
- State Prosecutor's Office

REFERENCES

[1] Based on a cost/benfit analysis in The social costs of childhood lead exposure in New Jersey, Muennin P., Bao P. prepared in December 2009 for the New Jersey Department of the Public Advocate.

[2] U.S. Department of Housing and Urban Development. Evaluation of the HUD Lead-based Paint Hazard Control Grant Program; 2004.

[3] Brubaker CJ, Schmithorst VJ, Haynes EN, Dietrich KN, Egelhoff JC, Linquist DM, Lanphear BP, Cecil KM. Altered myelination and axonal integrity in adults with childhood lead exposure: A diffusion tensor imaging study. Neurotoxicology 2009; 30: 867-75.

[4] Bellinger DC, Stiles KM, Needleman HL. Low-level lead exposure, intelligence, and academic achievement: a long-term follow-up study. Pediatrics 1992; 90: 855-61.

[5] Chandramouli K, Steer CD, Ellis M, Emond AM. Effects of early childhood lead exposure on academic performance and behavior of children. Archives of Disease in Childhood, 2009; 94(11): 844-8.

[6] Yuan W, Holland SK, Cecil, KM, Dietrich KN, Wessel SD, Altaye M, Hornung RW, Ris MD, Egelhoff JC, Lanphear BP. The impact of early childhood lead exposure on brain organization: A functional magnetic resonance imaging study of language function. Pediatrics, 2006; 118: 971-7.

[7] Nigg JT. Confirmation and extension of association of blood lead with attention-deficit/hyperactivity disorder (ADHD) and ADHD symptom domains at population-typical exposure levels (2010). Journal of Child Psychiatry, 51(1): 58-65.

[8] Miranda ML, Dohyeong K, Overstreet Galeona MA, Paul CJ, Hull AP, Morgan SP. The relationship between early childhood blood lead levels and performance on end-of-grade tests. Environmental Health Perspectives, 2007; 115(8): 1242-7.

[9] Zahran S, Mielke HW, Weiler S, Berry KJ, Gonzales C. Children's blood lead and standardized test performance response as indicators of neurotoxicity in metropolitan New Orleans elementary schools. NeuroToxicity 2009; 30: 888-97.

[10] Denno DW. Biology and violence: From birth to adulthood. Cambridge University Press, 1990; NY, NY.

[11] Nevin R. How lead exposure relates to temporal changes in IQ, violent crime, and unwed pregnancy. Environmental Research Section A, 2000; 83: 1-22.

[12] Lane SD, Webster NJ, Levandowski BA, Rubinstein RA, Keefe RH, Wojtowycz CA, Kingson JEF, Aubry RH. Environmental injustice: Childhood lead poisoning, teen pregnancy and tobacco. Journal of Adolescent Health, 2008; 42 (1) 43-9.

[13] Kincl LD, Dietrich KN, Bhattacharya A. Injury trends for adolescents with early childhood lead exposure. Journal of Adolescent Health, 2006; 39 (4): 604-6.

[14] Bouchard MF et al; Blood lead levels and major depressive disorder, panic disorder and generalized anxiety disorder in US young adults. Archives of General Psychiatry, 2000; 66(12): 1313-9.

[15] Fadrowski JJ, Navas-Acien A, Tellez-Plaza M, Guallar E, Weaver VM, Furth SL. Blood lead level and kidney function in US adolescents. Archives of Internal Medicine, 2010; 170(1): 75-82.

[16] Wright JPO, Dietrich KN, Ris MD, Hornung RW, Wessel SD, Lanphear BP, Ho M, Rae MN. Association of prenatal and childhood lead concentrations with criminal arrests in early adulthood. PLOS Medicine 2008; 5: 732-40.

[17] Rodamilans M, Osaba MJ, To-Figueras J, Rivera Fillat F, Marques JM, Perez P, Corbella J. Lead toxicity on endocrine testicular function in an occupationally exposed population. Human Toxicology, 1988; 7(2): 125-8.

[18] Yazbeck C, Thiebaugeorges O, Moreau T, Goua V, Debotte G, Sahuquillo J, Forhan A, Foliguet B, Magnin G, Slama R, Charles MA, Huel G. Maternal blood lead levels and the risk of pregnancy-induced hypertension: The EDEN cohort study. Environmental Health Perspectives, 2009; 117(10): 1526-30.

[19] Borja-Aburto VH, Hertz-Picciotti I, Rojas Lopez M, Farias P, Rios C, Blanco J. Blood lead levels measured prospectively and risk of spontaneous abortion. American Journal of Epidemiology, (1999) 150(6): 590-7.

[20] Jelliffe-Pawlowski LL. Effect of magnitude and timing of maternal pregnancy blood lead (Pb) levels on birth outcomes (2006). Journal of Perinatology, 2006; 26(3): 154-62.

[21] Zhu M, Fitzgerald EF, Gelberg KH, Lin S, Druschel CM. Maternal low-level lead exposure and fetal growth. Environmental Health Perspectives, 2010, 118; 10: 1471-5.

[22] Schnaas L, Rothenberg SJ, Flores MF, Martinez S, Hernandez C, Osorio E, Velasco SR, Perroni E. Reduced intellectual development in children with prenatal lead exposure. Environmental Health Perspectives 2006; 114: 791-7.

[23] Hu H, Tellez-Rojo MM, Bellinger D, Smith D, Ettinger AS, Lamadrid-Figueroa H., Schwartz J, Schnaas L, Mercado-Garcia A, Hernandez-Avila M. Fetal lead exposure at each stage of pregnancy as a predictor of infant mental development. Environmental Health Perspectives, 2006; 114 (11): 1730-5.

[24] Kim R, Rotnitsky A, Sparrow D, Weiss S, Wager C, Hu H. A longitudinal study of low-level lead exposure and impairment of renal function. Journal of American Medical Association, 1996; 275(15): 1177-81.

[25] Menke A, Muntner P, Batuman V, Silbergeld EK, Guallar E. Blood lead level below 10mcg/dL and mortality among US adults. Epidemiology, 2006; 114: 1388-94.

[26] Shih RA, Glass TA, Bandeen-Roche K, Carlson MC, Bolla KI, Todd AC, Schwartz BS. Environmental lead exposure and cognitive function in community dwelling older adults. Neurology, 2006; 67 (9): 1536-7.

[27] Lee TH, Tseng MC, Chen CJ, Lin JL. Association of high lead body store with severe intracranial carotid atherosclerosis. NeuroToxicology 2009; 30: 876-80.

[28] Grosse SD, Matte TD, Schwartz J, Jackson RJ. Economic gains resulting from the reduction in children's exposure to lead in the United States. Environmental Health Perspectives 2002; 110: 563-569.

[29] Korfmacher KS. Long-Term costs of lead poisoning: How much can New York save by stopping lead? University of Rochester 2003; available at http:/www.sehn.org/tccpdf/lead%20costs%20NY.pdf.

[30] Salkever DS. Updated estimates of earnings benefits from reduced exposure to environmental lead. Environmental Research 1995; 70:1-6.

[31] Schwartz J. Societal benefits of reducing lead exposure. Environmental Research 1994; 66:105-124.

[32] Muennig P., Bao P. The social costs of childhood lead exposure in New Jersey, December 2009; Report to the New Jersey Department of the Public Advocate.

[33] Jacobs DE, Nevin R. Benefits and social costs of residential lead paint hazard control and window replacement in Wisconsin, June 2006.

[34] Legacy of Lead: Report on childhood lead poisoning in Wisconsin 2008; Department of Health Services.

[35] Centers for Disease Control and Prevention, preventing lead exposure in young children: a housing-based approach to primary prevention of lead poisoning. Atlanta: CDC 2004.

[36] Emrath P. Economic impact of remodeling; January 2006. Available at http://www.nahb.org/generic.aspx?sectionID=734&genericContentID=50525&channelID=311.

[37] Rose AL, Holden C. Best practices in revolving loan funds for rural affordable housing. Housing Assistance Council; 2003.

[38] Cashin D, Gerenrot J, Paulson A. Determinants of federal and state community development funding spending: 1981-2004. Profitwise News and Views, October 2007.

[39] The U.S. Census reports that the volume of paint and allied products used for architectural coatings and sold in the U.S. varied between 617 to 777 million gallons per year during the period from 2005 to 2009. See http://www.census.gov/manufacturing/cir/historical_data/mq325f/. Wisconsin's share of the national market for architectural coatings is 2%. This is reasonable since Wisconsin has about 2% of the nation's housing units according to the U.S. Census. Thus Wisconsin paint sales will be between 12 and 15 million gallons per year. Therefore a surcharge on paint of $1 per gallon would generate from $12 to $15 million per year.

MEMBERSHIP OF THE IMPLEMENTATION AND OVERSIGHT COMMITTEE

Acheson, Lisa, *Milwaukee Health Department*
Anderson, M.D., *Henry A. Wisconsin Division of Public Health*
Berger, Nicholas, *Wisconsin Division of Public Health*
Bielefeldt, Bill, *Private citizen*
Bruce, Shelley, *Wisconsin Division of Public Health*
Campbell, Pam, *Wisconsin Division of Public Health*
Clippert, Thomas, *City of Beloit Division of Housing Services*
Closson, Cheryl, *Unity Health Insurance*
Coons, Margie, *Wisconsin Division of Public Health*
Daniels, Daphne, *Unity Health Insurance*
De Felice, David, *6th Senate District (Senator Coggs)*
Duffey, Ada, *Milwaukee Lead and Asbestos Information Center, Inc.*
Evanson, Marty, *Wisconsin Department of Commerce*
Easton, Darren, *WI Housing and Economic Development Authority*
Fernholz, Marcia, *City of Racine Health Department*
Freundlich, Kris, *Wisconsin Department of Health Services*
Fritsche, Tracy, *Wisconsin State Laboratory of Hygiene*
Gaines, Carola, *Unity Health Insurance*
Gramling, Ben, *Sixteenth Street Community Health Center*
Halverson, Jon, *Lead-Safe Services*
Hausbeck, John, *Public Health for Madison and Dane County*
Havlena, Jeff, *Wisconsin Division of Public Health*
Hippensteel, Dale, *Sheboygan County Human Services*
Horan, Dick, *Assurance Inspection Services*
Imm, Pam, *Wisconsin Division of Public Health*
Jensen, Ramona, *Social Development Commision – HeadStart*
Jones, Bob, *Wisconsin Community Action Program*
Kaiser, Sue, *Cardinal Environmental Inc.*
Lins, Meredith, *Wisconsin Division of Public Health*
McClung, Daniel, *Wisconsin Division of Public Health*
McCreery, Anna, *Kenosha County Health Department*
McGinnis, Diane, *Wisconsin Division of Public Health*
McLemore, Deborah, *Kenosha County Health Department*
Mokler, Mike, *Mokler Properties, Inc.*
Moeser, Jim, *Wisconsin Council on Children and Families*
Ordinans, Karen, *Co-chair, Children's Health Alliance of Wisconsin*
Simpson, Brittany, *Unity Health Insurance*
Schirmer, Joe, *Wisconsin Division of Public Health*
Stanton, Noel, *Wisconsin State Laboratory of Hygiene*
Stone, Caryn, *Wisconsin Department of Commerce*
Sukanen, Clyde, *Private citizen*
Thomas-Cramer, Chris, *Board for People with Developmental Disabilities*
Tran Inzeo, Paula, *Population Health Institute, UW Madison*
Walsh, Reghan, *Wisconsin Division of Public Health*
Warzecha, Chuck, *Co-chair, Wisconsin Division of Public Health*
Werra, Garry, *US HUD – Milwaukee Field Office*
Whitmore, Tim, *City of Waukesha Community Development*
Zwiefelhofer, Kristi, *Wisconsin Division of Public Health*

Wisconsin Childhood Lead Poisoning Elimination Implementation and Oversight Committee
Department of Health Services
1 West Wilson Street
Box 2659
Madison, WI 53701-2659