
**Report to
The Vermont Legislature**

**Lead Poisoning Prevention:
Report on 2014 Program Outcomes and Activities**

In Accordance with 18 V.S.A. §§ 1755 (b) and 1756 (b)

Submitted to: Vermont General Assembly

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Lead Poisoning Prevention Report on 2014 Program Outcomes and Activities

Introduction

The Vermont Department of Health is pleased to submit this progress report on the status of childhood lead poisoning prevention efforts in 2014 pursuant to 18 V.S.A. § 1756. This annual report documents the Health Department's efforts over the past year to prevent lead poisoning in young children. It presents the latest data on the number and percentage of Vermont children less than 6 years old who have been tested for lead, with a special focus on 1- and 2-year-old children. Historical data on screening are also presented. In addition, the report describes 2014 outreach and education activities intended to improve screening rates and provide estimates of the annual public and private costs incurred in 2014 to prevent lead poisoning.

Over the last ten years, the percentage of young children who have been screened for lead poisoning has increased, and the percentage of children with elevated blood lead levels has decreased. In 2007, the Commissioner of Health established 5 micrograms per deciliter (5µg/dL) as the blood lead level of concern for alerting parents and guardians that their children may have been exposed to lead. Then in 2008, Vermont became the first state to pass legislation that defined 5µg/dL as an elevated blood lead level. In 2012, the Centers for Disease Control's (CDC) Advisory Committee on Childhood Lead Poisoning published a report which declared that NO blood level of lead is safe and has stopped using terms such as "level of concern" and "action level." Instead, the CDC calculated a reference value based on the 97.5 percentile of the blood lead level distribution among children age 1 to 5 in the United States. The current reference value aligns with Vermont's definition of an elevated blood lead level at 5µg/dL.

In September 2012, federal funds from the CDC were cut nationwide for lead poisoning prevention programs. Because the Department of Health has demonstrated a strong commitment to the prevention of lead poisoning, the Department continued to support the program by

combining it with a federally-supported Healthy Homes program to create the Healthy Homes Lead Poisoning Prevention Program (HHLPPP). Rather than have a singular approach to home health hazards, the program expanded to address related health problems that are potentially caused or increased by the home.

In October 2014, advocates for the reinstatement of federal funding to support state lead poisoning programs were successful in securing \$11 million in new funding from the CDC for lead poisoning prevention. The HHLPPP submitted a successful grant application and has entered in a cooperative agreement with the CDC. The HHLPPP has received a grant in the amount of \$349,704 yearly for a 3-year period (2014-2017).

The funding will help to monitor childhood lead levels to prevent childhood lead poisoning in communities and will use data to identify the highest risk areas and implement appropriate population-based prevention interventions wherever needs are identified. Examples of such interventions include housing rehabilitation, enforcement of housing and health codes, engagement with health care systems, public and health care provider education campaigns related to lead contamination through other sources (e.g., imported items), and other educational and public health activities.

Measuring Progress

Testing young children for lead in blood is a critical step in the process of reducing the incidence of elevated blood lead levels. A child's exposure to lead can easily be identified through testing, and appropriate interventions can be initiated to prevent further exposure to this harmful toxin. In addition, testing helps inform the development of lead poisoning prevention policies by giving the Department of Health the opportunity to track statewide trends in childhood exposure to lead. The Healthy Homes Lead Poisoning Prevention Program continues to work toward the goal of universal testing of 1- and 2-year-old children in Vermont. Table 1 presents 2014 data on the number of young children who were tested for blood lead levels and the results of those screenings.

Table 1
Blood Lead Tests and Results for Vermont Children ages 0-<6 years, 2014*

Age	Population	# of Tests	% Tested	# <5 µg/dL	% < 5 µg/dL	# 5-9 µg/dL	% 5-9 µg/dL	# ≥10 µg/dL	% ≥10 µg/dL
Under 1	5911	260	4.4%	229	88.1%	24	9.2%	7	2.7%
1	6067	4969	81.9%	4680	94.2%	245	4.9%	44	0.9%
2	6098	4395	72.1%	4154	94.5%	207	4.7%	34	0.8%
3	6210	350	5.6%	301	86.0%	42	12.0%	7	2.0%
4	6438	192	3.0%	165	85.9%	24	12.5%	*	*
5	6580	89	1.4%	73	82.0%	12	13.5%	*	*

*Notes:

* Indicates fewer than 6 cases in a category that year; when counts and percentages are based on only a few cases, it is impossible to distinguish random fluctuation from true changes in data. Small numbers are also suppressed to prevent identification of individuals.

Ages: < 1 year: <11 months, 1 year: 11-22.99 months, 2 years: 23-34.99 months, 3 years: 35-46.99 months, 4 years: 47-58.99 months, 5 years: 59-70.99 months.

Population is the average of census estimates or counts from the 3 previous years (2011, 2012, 2013).

Data include one blood lead test per child by age; the highest venous test result or if there is no venous test, then the capillary test result. This may result in a child having two tests per calendar year. For example, a child may be born in December 2013, have their one-year old test in January 2014, and then have their two-year old test in December 2014.

Figure 1

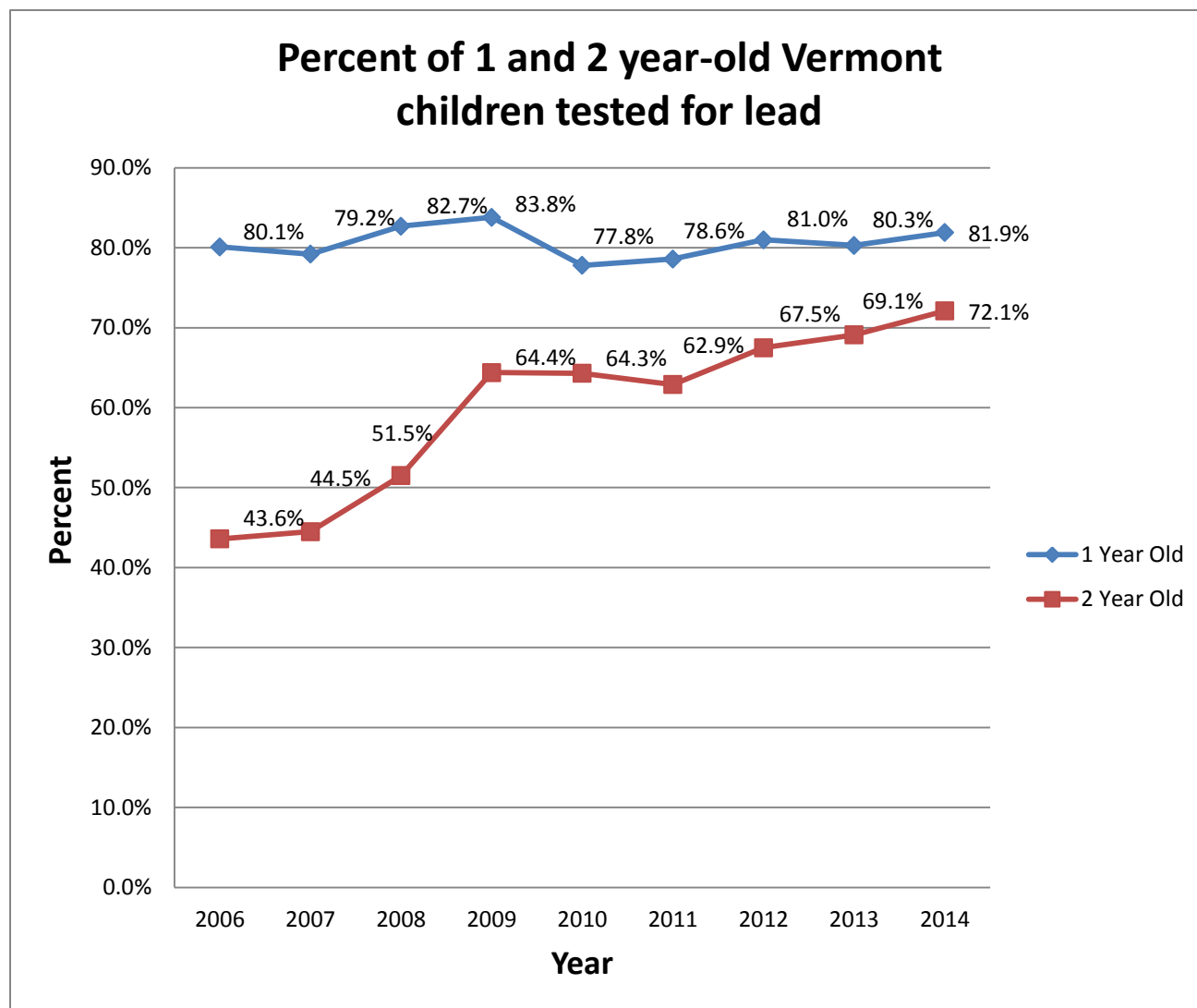


Figure 1 shows the percent of 1-year olds and the percent of 2-year olds tested each year from 2006 through 2014. For 1-year olds, the trend has held steady at about 80% for the time period. For 2-year olds, the trend jumped more than 20% between 2006 and 2009, from 43.6% to 64.4%, and overall has steadily increased from 2009 through 2014.

Figure 2

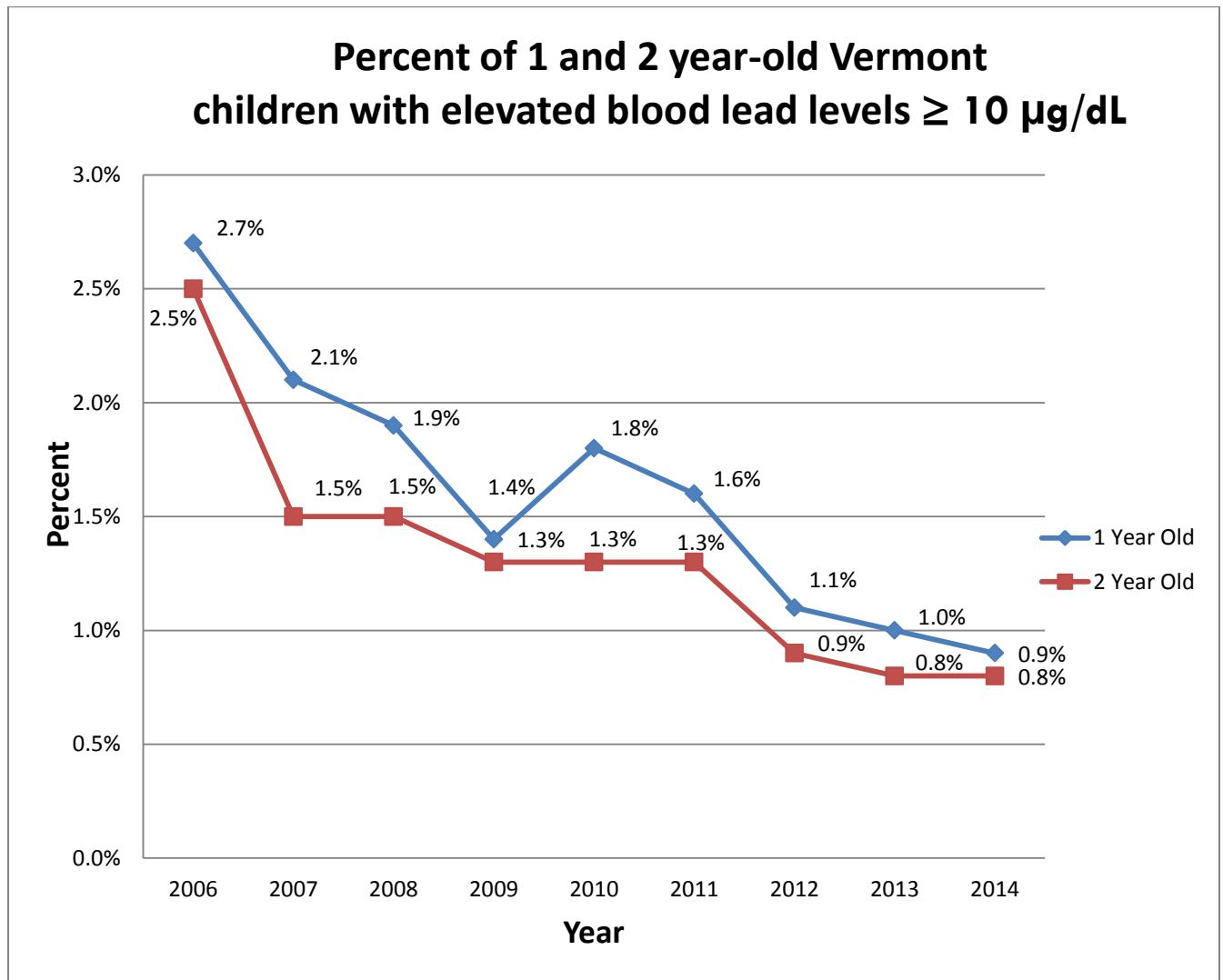


Figure 2 shows the percent of Vermont 1- and 2-year olds tested whose lead level was greater than or equal to $10 \mu\text{g/dL}$ during the period from 2006 through 2014. These data indicate a continued lowering of high blood lead levels in Vermont.

Barriers to Universal Screening

A number of barriers to the testing requirements have been identified and continue to persist. When surveyed, providers have indicated that difficulty obtaining blood samples from infants and young children poses a barrier to testing.

Providers have also voiced concerns about inadequate cost reimbursement for lead screening and a lack of insurance coverage for the procedure. There have also been some inaccurate beliefs about who is at risk for lead poisoning and who is not at risk. Finally, parental opposition to testing poses another barrier to universal testing. Lead screening of 1- and 2-year olds is a nationally recognized standard of pediatric care, and Vermont's universal testing requirement is consistent with this standard. The Department of Health's efforts to educate providers and parents about the health risks of lead are discussed in the next section.

2014 Education and Outreach Activities

The Vermont Department of Health conducts a variety of lead education and outreach activities targeted to multiple audiences and designed to prevent lead poisoning, encourage lead screening of 1- and 2-year-old children, and support case management for children with elevated blood lead levels.

Programmatic Activities

- The ultimate goal of the HHLPPP has been to reduce lead exposure in children and adults. An integral part of our program is outreach and support to healthcare providers and education to the public. As part of this effort, providers and the HHLPPP program are now able to run a provider practice-specific lead screening report as part of the immunization registry. This screening report allows providers and the HHLPPP to see the children associated with their practice and identifies them as being due or overdue for the 1 and 2 year old test. It also identifies children ages 3 to 6 who never have had a test and provides a summary at the end for a quick snap-shot of how their practice is doing. By providing this crucial information, it enables providers to access the information to improve their testing rates and also enables the HHLPPP to offer assistance to practices that may be struggling. In November, the HHLPPP sent out letters to all the practices serving children in Vermont informing them of these new functions. For many providers it has been a wake-up call, and they have called inquiring about how to improve their testing rates. It is hoped that this new function will raise awareness for providers, increase testing, and help us get to our goal of testing 100% of 1- and 2-year olds.

Targeted Education

- All children with a confirmed blood lead level of 10 µg/dL or greater are visited by the Healthy Homes Lead Poisoning Prevention case manager. In 2014, the case manager visited the homes of 42 new children, and conducted 70 follow-up visits on existing cases. In addition to investigating the home for lead hazards, the case manager also looks for asthma triggers and safety and poisoning dangers.
- Postcards reminding parents and guardians to have their children tested for lead are sent to families of 10-month-old children (5,422 postcards in 2014) and 22-month-old children (5,628 postcards in 2014) who were born in Vermont.
- Educational materials and testing recommendations are sent to parents whose child has a blood lead level in the range from 5 µg/dL through 9 µg/dL (603 packets in 2014). The materials include a request form for a free dust wipe kit that enables families to send floor and windowsill dust samples to a laboratory to test for lead. Lab results are sent directly back to the families accompanied by appropriate lead poison prevention literature.
- An ongoing separate dust wipe kit project that functions as an identification tool is used by district offices, some Head Start home visitors, and an external partner, Lead Safe and Healthy Homes in Bellows Falls. By identifying lead in dust before a child is crawling or walking, families can take steps to remove or minimize exposure to lead dust hazards.

Screening Outreach

- In collaboration with Dr. Wendy Davis, a pediatrician and a leader in the provider community, the importance of lead testing was presented in 2014 to providers during Grand Rounds to Fletcher Allen, Porter, Copley, Central Vermont, and Plattsburgh Hospitals.
- The Health Department continues to work with the Vermont Chapters of the American Academy of Pediatrics under a grant to provide the purchase of in-office lead testing machines, known as *Lead Care II*, for selected pediatric and family practices. The grant supports not only purchase of the machines but also peer-to-peer education with the goal of further reducing known barriers to blood lead screening.
- Health Department district office programs encourage parents to make sure their children are tested. At appropriate Women, Infants and Children (WIC) appointments, WIC staff

distribute lead factsheets and remind parents to have children tested at the 12-month and 24-month Well Child visits with their health care provider. As a back-up measure, children in WIC who were not tested by their providers at 12- and 24-months may be tested by district staff at their 18-and/or 30-month WIC appointments.

- The Early and Periodic Screening, Diagnosis and Treatment (EPSDT) program routinely sends letters advising parents that age-appropriate screening tests are recommended and covered by Medicaid. Lead screening tests are listed in this EPSDT information sent to parents.

Future of Vermont's Lead Program and Recommendations

In 2015, the Health Department will continue to work in the areas outlined in this section to prevent lead poisoning by making homes safer for children and to increase blood lead testing for 1- and 2-year olds by educating parents, giving technical assistance to providers, and enforcing the lead testing rules.

- Continue the activities listed above in the Education and Activities section.
 - Offer dust wipe kits
 - Provide outreach to families with children who have tested between 5 and 9 µg/dL
 - Conduct environmental investigations and case management of children with a blood lead level at or above 10 µg/dL
 - Send reminder postcards with lead testing information to all families whose child was born in Vermont at ages 10- and 22-months
- Use the web-based immunization registry and new reports to help identify medical providers who have not been testing 1- and 2-year olds.
- A special project will focus on the refugee population in Vermont and their particular needs.
- Compile "Lead-Safe Kids for a Healthy Future," a comprehensive data report with lead poisoning, screening, case management, and housing information.

This report will feature county-level data with lead poisoning, screening, case management and housing information. It will include geographic information system (GIS) maps featuring areas of elevated blood lead levels, older housing stock, and poverty.

- Collaborate with District Offices to identify medical providers who have not been testing 1- and 2-year olds.
- Maintain and create partnerships with internal and external partners, such as:
 - Vermont Housing and Conservation Board
 - Children's Integrated Services
 - Burlington Lead Program
 - Lead Safe and Healthy Homes in Bellows Falls
 - Head Start
 - Environmental Public Health Tracking Program
 - Asbestos and Lead Regulatory Program
- Work with Town Health Officers regarding their role in identifying lead hazards in their communities.
- Build a solid primary prevention initiative based upon the successful aspects of the ob/gyn campaign previously developed. In 2007, the dust wipe kit program included a campaign targeted to ob/gyn offices. Before families renovate their homes in preparation for a new baby, it is important to educate on the dangers of lead-based paint and lead-safe work practices. A letter was sent to ob/gyn providers including a poster, educational materials, and free dust wipe kits.
- Assess the burden of childhood lead poisoning among children residing in Chittenden County (the county with the largest refugee population) who have immigrated to the United States or who have resettled to Vermont as refugees.

The Environmental Health Division in the Health Department is completing a research project with the primary goal to understand what proportion of children with elevated lead levels in Vermont immigrated to the United States, especially those that immigrated with refugee status.

- Coordinate with the Health Department's Refugee Health Committee to determine how best to approach the issue of possible lead paint in housing where incoming refugees may live. HHLPPP will collect data about which refugee groups are currently coming to Vermont and what their particular needs might be. This information will assist in determining which languages might be best suited in printed materials to help build awareness about lead or if other approaches might be better to reach the refugee population. The resulting materials will then be targeted to the refugee centers, clinics with refugee clients, and WIC clinics.

Estimates of Public and Private Costs

Private Costs

It is extremely difficult to estimate the costs incurred since 1993 by the public and the private sector to prevent lead poisoning. The following algorithm is used to estimate the costs incurred by landlords to ensure their rental properties comply with Essential Maintenance Practices (EMP).

- Among the 4,879 rental properties and child care centers for which EMP affidavits were filed in 2014, 25% of these properties were in good condition, 50% were in fair condition, and 25% were in poor condition. Properties in good condition require an estimated \$200 in annual maintenance costs to comply with EMP requirements; properties in fair condition likely require \$340 in annual maintenance costs; and properties in poor condition entail approximately \$520 in annual maintenance costs. This results in an estimated cost of \$1,707,650.
- 615 properties filed a compliance statement for the first time in 2014. First-time filing of a compliance statement likely incurs start-up costs to bring a property into compliance (e.g., installing window well inserts and buying a HEPA vacuum). The algorithm assumes an average of \$625 for each new property being brought into compliance. Additional start-up costs for new properties being brought into compliance is \$384,375.

- Therefore, a conservative estimate for the total cost to landlords for all properties that complied with the Lead Law in 2014 is \$2,092,035.

Public Costs

In the public sector, the Healthy Homes Lead Poisoning Prevention Program expended about \$367,143 in 2014. The Vermont Housing and Conservation Board expended about \$1,200,000 from the Department of Housing and Urban Development (HUD) for lead poisoning prevention in 2014, and the Burlington Lead Program spent about \$530,502 in HUD Lead Hazard Control funds. Therefore, from these organizations, roughly \$2,097,645 in federal and state funds was spent on reducing lead poisoning in 2014.

In addition, a study¹ completed by Dartmouth College as part of the *Get the Lead Out of Vermont* Task Force Report in 2006 estimated direct health care costs of all children with elevated blood lead levels at \$51,814 per year and special education costs at \$219,841 a year (considered to be an underestimate because special education costs were calculated only for those children with blood lead levels 25 µg/dL or greater). The Dartmouth report also estimated more than \$79 million per year in lost future earnings of children whose blood lead levels are 5 µg/dL or greater. Screening costs incurred by families, insurers, and providers are not represented in these cost estimates.

Conclusion

The mission of the Vermont Department of Health Healthy Homes Lead Poisoning Prevention Program (HHLPPP) is to improve the health and safety of all Vermont home environments through surveillance, collaboration, education, and implementation of comprehensive policies and coordinated programmatic activities.

Over the past 20 years, Vermont has made steady progress in reducing the number of children with blood lead levels at or above the current CDC reference value. Vermont HHLPPP also has many internal and external partners working together on lead poisoning prevention, providing an infrastructure from which to try new prevention strategies. This infrastructure includes both Vermont's Lead Law that requires owners of pre-1978 rental properties to perform Essential Maintenance Practices and a regulation requiring health care providers to test all 1- and 2-year-old children for lead.

The strategies that the HHLPPP will use to move toward these long-term outcomes include ongoing activities such as working with HUD-funded partners to reduce lead hazards in the homes of lower income families, targeting physicians who are not currently testing, and conducting educational outreach to parents of young children, emphasizing the importance of lead screening. The HHLPPP will not only combat childhood lead poisoning by continuing with strategies that have proved effective in the past but will also move in new directions focusing on primary prevention, surveillance, and education.

¹Carlson, C., Y. Feng, D. McClurg, and J. Trummel. "The Costs of Lead Poisoning in Vermont." Dartmouth Center for Evaluative Clinical Sciences (CECS) (2006): 1-27. <<http://ago.vermont.gov/assets/files/The%20Cost%20of%20Lead%20Poisoning%20in%20Vermont.pdf>>