

Children in a Toxic World:
A Working Paper on Community
Efforts to End Childhood Lead Poisoning

Third Forum on the Child
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I. The Problem

Lead poisoning is a potentially devastating, but entirely preventable, disease.¹ It is the number one environmental threat to children's health in the United States. The most current national survey shows that nearly one million children are lead poisoned.²

The number of lead-poisoned children in Illinois is among the highest in the nation. Children in Cook County account for 79% of the children with elevated blood lead levels in Illinois.³ The percentage of children with lead poisoning in Cook County is six times higher than the national average. One out of every seven children ages six and younger screened for lead in Cook County has elevated blood lead levels of 10 µg/dL (micrograms of lead per deciliter of blood) or above.⁴ In Chicago, one out of every five children screened tests positive.

Lead has no positive value to the human body and has not been shown to be safe at any level.⁵ The effects of lead on the child's developing brain and nervous system often are permanent. At high levels, lead poisoning causes damage to the child's nervous system, kidneys, and reproductive system.⁶ Even at low and moderate elevated levels, lead poisoning can cause learning disabilities, problems with speech, shortened attention span, hyperactivity, and behavioral problems.⁷ Research links low levels of lead exposure to lower IQ scores and possibly to juvenile delinquency.⁸

Lead is the most hazardous to the nation's twenty-four million children under the age of six. Children ages one to three are at particular risk because of normal hand-to-mouth activity and the increase in mobility, which makes lead hazards more accessible. In addition, children absorb up to 50% of the lead they ingest, compared to adults who retain only 10%.⁹

Lead also can be transmitted to a fetus if the mother ingests lead while pregnant or has been exposed to lead in the past.¹⁰ During pregnancy, the lead stored in bones is released into the blood stream, and lead easily crosses the placental barrier throughout the gestation period, including the period during which the central nervous system is formed.¹¹

The Centers for Disease Control (CDC) has defined an elevated blood lead level as ≥ 10 µg/dL. Recent research, however, suggests that lead is toxic at concentrations in blood even lower than 10 µg/dL and may affect cognitive abilities, including arithmetic skills, reading, nonverbal reasoning and short-term memory.¹² The dramatic decline in blood lead levels of U.S. children aged one through five years old from the late 1970s through the early 1990s resulted primarily from the phase-out of leaded gasoline and the resulting decrease in lead emissions; lead poisoning also decreased because lead is no longer used in paint, water pipes, and other products. However, since lead is not biodegradable, it can

continue to be a source of lead poisoning in children if it is not properly removed or contained. For this reason, soil is still a potential source for lead poisoning. And the primary source of childhood lead exposure is deteriorated lead paint and lead contaminated dust in older housing.

Most children are lead poisoned in their own homes through exposure to contaminated lead dust or paint chips from lead paint surfaces that have deteriorated or been disturbed during home renovation and repainting. Often of greatest risk is lead-contaminated dust generated from the friction of opening and closing windows and doors.¹³ Because older homes are more likely to fall into disrepair and have lead paint on their walls, the age of housing stock affects the risk of children's exposure to lead hazards. The State of Illinois ranks tenth out of the fifty states in the age of its housing stock. More than 50% of the housing units in Chicago were built before 1950;¹⁴ approximately 43% of the housing units in Cook County were built before 1950.

The risk of lead poisoning falls disproportionately on low-income and minority children. The General Accounting Office estimates that one in twelve children on Medicaid have elevated blood levels; 81% of Medicaid children are not getting screened. In Chicago, African-American children are more than three times as likely to have elevated blood levels than Caucasian children.¹⁵

II. Significant issues related to childhood lead poisoning

A. Mitigation v. Abatement¹⁶

The debate continues over whether mitigation or abatement of lead hazards in buildings is the best course. Mitigation means reducing the hazard so that children are not immediately exposed to the lead. Abatement is the removal or encapsulation of lead, and is considered the more permanent solution. Illinois allows either mitigation or abatement of lead hazards.

The decision to mitigate or abate hinges, in part, on the type of lead contaminated surface. For example, most would agree that mitigation in an area such as a windowsill, where there is constant friction, is not a solution; a fresh coat of paint on a lead-contaminated windowsill will deteriorate over time as the window is opened and closed and will eventually become a source of lead contaminated dust. Abatement, in this case window replacement, eliminates the lead problem permanently.

For other surfaces, however, abatement may not be the best solution. In areas where lead paint is intact, some consider mitigation the best course as long as the surface is maintained in good condition and is not disturbed. For example, placing vinyl siding over the outside of a house covered with lead paint is more cost effective and potentially safer than removing the lead paint.

Even where surfaces are at risk of friction or abrasion, mitigation often is the chosen course because it is a less expensive way to fix the problem immediately. However, proponents of abatement counter that mitigation is a temporary fix; over time, even an intact surface will deteriorate and become a source of exposure to lead. The reality for many homeowners and landlords in Chicago is that where resources are limited, mitigation is often the only feasible course.

B. Screening

Illinois law requires that every physician and health care provider either screen or assess children six months through six years of age for lead poisoning. Screening involves determining a child's blood lead level by means of a blood test.

Assessing refers to using the Childhood Lead Risk Assessment Questionnaire developed by the Illinois Department of Public Health. The primary goal of lead poisoning assessment and screening is to identify lead-poisoned children and to intervene as quickly as possible to reduce their blood lead levels.

Whether a child should be tested, rather than only assessed for elevated blood lead levels, depends on whether the child lives in a "high risk" zip code. Consistent with Illinois' Lead Poisoning Prevention Act, each zip code in Illinois has been classified as either high or low risk for lead poisoning. All of Chicago's zip codes are classified as high risk. To determine the level of risk for zip codes throughout the state, the total number of residents living at or below the poverty level, and the age of housing stock, especially housing built before 1960, were the criteria. In addition, a child is considered to be at high risk if he/she is enrolled in WIC or Medicaid or has had a previous elevated blood lead level.

Children who live in low risk areas must be assessed using the Risk Assessment Questionnaire. A child residing in a low risk area, whose caretaker provides a positive response to the Assessment Questionnaire, must be screened with a blood test.¹⁷

The directors of laboratories performing the analyses must report results of all blood lead tests to the Illinois Department of Public Health's (IDPH) Childhood Lead Poisoning Prevention Program. Blood lead levels ≥ 10 $\mu\text{g}/\text{dL}$ also must be reported by physicians, hospital administrators, local health department administrators and directors of laboratories that do not perform blood lead analyses.¹⁸ In either case, results must be reported to the IDPH Childhood Lead Poisoning Reporting System. All negative results must be reported within thirty days. The IDPH Childhood Lead Poisoning Prevention Program notifies the appropriate local health department or regional health office where the child resides so that appropriate public health measures can be initiated.

Under Illinois law, before a child may be admitted to a daycare center, daycare home, preschool, nursery school, kindergarten, or other licensed childcare facility a parent or guardian of a child between the ages of six months through six years is required to provide a statement from a physician or health care provider certifying

the child has been screened/assessed for lead poisoning.¹⁹ This statement must be provided prior to admission and subsequently, in conjunction with required physical examinations.

However, in many communities, the number of children tested for lead is still shockingly low. Reasons more children are not tested include:²⁰

- The lack of phlebotomy or lab facilities on site at some health clinics.
- Families referred to local hospitals to have their children's blood drawn face difficulties in making the appointments, including more lost time from work and travel expenses.
- Families do not have access to well-child care programs.
- There is a perception in some communities that lead poisoning is no longer a problem.
- Lack of awareness.
- Cost: the State lab charges \$25 to analyze a blood sample; doctors' offices also charge between \$15 and \$35 to draw blood. Some insurance plans, as well as Medicaid, however, do cover the cost of testing.

III. Information about the targeted communities*

A. Austin

1. Statistics²¹

Austin's lead poisoning rate is higher than the city average of 20%. In 1999, there were 14,138 children age six and under residing in Austin. Only 4,736 of those children, or 33.5%, were screened for lead poisoning. Approximately 35% of the children screened were reported to have blood lead levels at or greater than 10 µg/dL.

2. Efforts underway

a. Lead education and awareness

- i. Westside Health Authority's (WHA) Lead Awareness and Prevention project targeted the Austin and Garfield Park communities. The project, funded through a U.S. Environmental Protection Agency grant, involved training ten students to do outreach to area parents. The students demonstrated proper cleaning techniques, and showed parents how to

* The information compiled for this section includes efforts undertaken by groups in attendance at Loyola University's 2001 Forum on the Child. We understand it is not a complete reflection of efforts undertaken in these three communities and hope the Forum will provide a further source of information for this section.

maintain a lead-free environment. The project also trained and certified community residents in lead abatement practices. The Great Lakes Center for Occupational Safety and Health at the University of Illinois Chicago (UIC) provided the training for both the students and community residents.

The high school students organized a lead exposition (Lead Expo) at the Garfield Park Conservatory the week before Easter 2001. They invited health service agencies to provide community members with information about lead issues. Prior to the conference, the youth went door-to-door, handing out fliers about the Expo. The youth also went door-to-door to inform the community about lead issues and offer free cleaning demonstrations. Cleaning demonstrations included free cleaning supplies specifically intended to reduce the amount of lead in the home.

The community was very responsive to the project because it provided a venue through which area young people could do something positive for the community. The Lead Expo, however, proved to be a better means of demonstrating cleaning techniques (compared to the door-to-door demonstrations) because, understandably, residents were not always eager to have teenagers clean their homes for demonstration purposes. Funding for the project ran out in May 2001.²²

ii. Bethel New Life, a group that formerly worked only in West Garfield Park but is also now working in Austin, received an EPA Region 5 grant of \$36,860 to implement a UIC-developed lead curriculum program for fourth-through sixth-graders in local schools. In addition, a \$45,000 grant from the Chicago Department of Public Health (CDPH) was used to offer education on lead hazards to about 200 residents in about 100 homes. Hands-on education about reducing lead hazards also was done in about fifty area homes.

Bethel New Life also used a three-year, \$350,000 grant from the U.S. Department of Health and Human Services to provide lead education and outreach, conduct blood-lead screening, and train forty people to be lead workers and five contractors to do lead abatement.²³

b. Screening

i. Currently, Circle Family Health Center and Austin Family Clinic conduct lead screening in Austin.

ii. Westside Family Access Clinic screens infants between nine and twelve months, at two years, and when the child enters preschool.²⁴

B. North Lawndale

1. Statistics²⁵

North Lawndale's lead poisoning rate is higher than the city average of 20%. In 1999, there were 6,514 children age six and under residing in North Lawndale. Of those, only 3,129, or 48.04%, were screened for lead poisoning. Approximately 31% of the children screened were reported to have blood lead levels at or greater than 10 µg/dL.

2. Efforts underway

a. Lead education and awareness²⁶

i. Steans Family Foundation is funding a case manager at Lawndale Christian Health Center (LCHC) to do outreach to families whose children have blood lead levels higher than 15 µg/dL.

The Foundation also has funded research being conducted by the Center for Impact Research. The project involves conducting research with medical providers to document barriers to screening and increase providers' Knowledge about the effects of lead poisoning and the requirements for screening. The goal is to increase the percentage of children screened within the first two years of their lives.

b. Screening

i. LCHC screens infants between nine and twelve months and again at fifteen months, twenty-four months, three years, and then as required by schools. The group is responsible for the largest number of screenings in North Lawndale.

ii. WHA serves Austin as well as North Lawndale. In North Lawndale, WHA screens infants between nine and twelve months, at two years, and when the child enters preschool. The Cook County Pediatric Clinic screens at six, twelve, eighteen, twenty-four months, and every year thereafter. However, the WIC clinic does not screen. Also, the emergency room at Cook County screens if a child shows symptoms of lead poisoning.²⁷

iii. Dr. Bruce Rowell of Lawndale Christian Health Center has developed a database for LCHC that includes more than 6,981 children screened for lead.²⁸ The database was created for the purpose of recording and accessing the results of lead screens. Since lead screen results are received in paper form, the database provides a means of tracking and following up with patients.²⁹

C. Rogers Park

1. Statistics

In 1999, there were 6,138 children age six and under residing in Rogers Park. Of those, only 2,605, or 42.44%, were screened for lead poisoning. Approximately 11% of the children screened were reported to have blood lead levels at or greater than 10 $\mu\text{g}/\text{dL}$.³⁰

2. Efforts underway

a. Lead education and awareness

Sullivan High School has instituted a Medical Career Academy that prepares students for careers in medicine and related fields. The high school has partnered with hospitals, universities, and pharmacies; health care professionals also teach some Academy classes. The school may include lead safety and awareness in the Academy curriculum.³¹

b. Screening

Uptown Health Clinic screened approximately 2,000 children last year. Because of a large immigrant population or fear of eviction, many Rogers Park residents resist pursuing lead problems.³²

IV. Innovative efforts

A. Elementary/University collaboration³³

Alanah Fitch, professor of chemistry and director of environmental studies and sciences at Loyola University Chicago, spearheaded a collaborative effort that brought together her chemistry students and students at Orozco Community Academy, in Pilsen. Professor Fitch's chemistry students began by teaching the elementary students about the dangers of lead and showing them how to test for lead in their own homes via dust sampling.

The students learned how to take dust samples from household surfaces (both wet-cleaned and dirty) and then learned how to test small items such as toys, pottery with lead glazes, printing blocks and fishing weights. Students followed up by sampling their own homes. The chemistry students then analyzed the samples collected by the children. Following receipt of the results, the chemistry students met with the elementary students to graph the results of the lead tests. Charting focused on how much lead could be removed from the students' homes and the most effective cleaning techniques for removal of lead dust. The graphs showed unclean surfaces had higher amounts of lead than the wet-cleaned

surfaces. Prof. Fitch believes the project is replicable in other communities and has compiled educational materials toward that end.

B. Indiana window replacement program³⁴

The State of Indiana, via the Family and Social Services Administration, and in conjunction with the Indiana Governor's office, has proposed a window replacement program aimed at improving children's health and reducing the long-term consequences of lead poisoning in children. In older housing stock, window replacement dramatically reduces the amount of lead dust; another health benefit may be the reduction of asthma attacks due to the elimination of mold in and around windows. Window replacement also improves energy efficiency. Under the proposed program, accompanying outreach would include education about causes, prevention, and treatment of lead poisoning.³⁵

After the windows in the home had been replaced, the home would be evaluated according to HUD evaluation protocols to ensure the work was done properly. Monies for the project would come from Title XXI reallocation funding under the State Children's Health Insurance Program. An independent group, such as a private firm or a university, would complete evaluation of the entire project.

(Note: Unfortunately, due to the events of Sept. 11, 2001, the project has been effectively tabled due to the identified funding being redirected.)

C. Point-of-purchase poster program³⁶

The Rutgers Cooperative Extension, a New Jersey organization, in collaboration with the local health department, sought to improve lead awareness by bringing its lead program directly to its audience. The goal of the project was to "change awareness and attitudes about lead paint and to change behaviors of those doing repair, remodeling and repainting projects." The group distributed literature in the form of point-of-purchase poster displays to small paint and hardware stores in one, predominantly rural county in New Jersey with a population of about 122,000. The poster displays targeted lead paint remodeling hazards, with one brochure geared toward homeowners and another toward contractors.

Follow up was done by a field worker who visited the stores at one to two week intervals to replenish brochures or to reposition the poster displays that had been pushed out of sight. On her first visit, the field worker offered some initial education to store personnel about lead paint. Additional educational outreach occurred when the field worker returned to the stores, sometimes responding to questions relayed from customers to store personnel after reading the brochures.

The group distributed 1,391 brochures over a two-year period. Although no impact evaluation was done, store personnel reported an increase in questions from contractors and consumers about lead hazards as well as in requests for lead

test kits as a result of the brochure program. Rapport also developed between the store personnel and the field worker. There was a change in attitude from the beginning of the program when store personnel were wary about the project, to the end when store personnel and the field worker discussed lead paint hazards and discussed questions posed by customers. Pamphlet distribution also served as a marker for the success of the project.

D. California Childhood Lead Poisoning Prevention Act of 1991³⁷

A 1991 California law imposes fees on manufacturers that, historically, have been major contributors to environmental lead contamination in the state of California. Primarily, these fees have been assessed on gas producers, paint distributors, and smoke stack industries. (Section 105310 of the California Childhood Lead Poisoning Act of 1991.)

The money collected is distributed to counties based on the number of children poisoned, the level of screening done, and the amount of pre-1950s housing stock in the county. About 10 to 15% of the fees are used by the state for administration of the program; the remainder of the money goes primarily to improve outreach and education about lead poisoning, as well as for screening in each county. The fee system also has allowed the state to create regulations requiring physicians to report test results showing elevated blood levels to the state. The state then notifies the county so the county can do an environmental investigation of the child's home.

Difficulties encountered by the state include follow-up on the county programs, determining the effect of local outreach and screening, and defining the fee structure. On the other hand, positive effects have included a virtually undetectable increase in the cost to consumers of gas and paint products. It is estimated that consumers pay less than one-tenth of a penny more for each gallon of gas and about a penny more for each gallon of paint. However, the result is approximately \$12 million being returned to the state from the fees annually.

E. Neighborhood Knowledge Los Angeles (NKLA)³⁸

Neighborhood Knowledge Los Angeles (NKLA) is a web site "dedicated to preventing housing and neighborhood deterioration." The site, found at <http://nkla.sppsr.ucla.edu>, does this by tracking the status of the housing stock throughout the city. It provides information that marks properties in danger of decline, including code complaints, contact nuisance abatements, tax delinquencies, and utility liens. Also available is census data that provides demographic characteristics of different neighborhoods where particular housing stock is located.

The University of California-Los Angeles Advanced Policy Institute maintains the web site, which has been online since 1996. It is available both in English and

in Spanish and can be used by anyone: city officials, residents, community organizations and policymakers. Computer technology centers also are available to provide hands-on assistance to users. The site can be searched via zip code, census tract, council district, address, or by specific criteria such as properties with pending code complaint cases. There also is a how-to kit on the site for communities interested in replicating the idea in their areas. Future plans for the site include adding a database that will feature maps and neighborhood assets, as determined by residents of those neighborhoods.

Initial cost of the web site was approximately \$40,000. Currently, two people work full-time on training and outreach and one person works full time updating and maintaining the web site. As of September 1999, the site received approximately 5,000 hits each day.

V. Who to contact for more information:

Illinois Department of Public Health

<http://www.idph.state.il.us>

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| Childhood Lead Poisoning Prevention Program | 217-782-0403 |
| Information and Referral Hotline | 800-545-2200 |
| TTY (hearing impaired use only) | 800-547-0466 |

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| Childhood Lead Poisoning Clearinghouse/Education Materials | 217-782-0403 |
| Division of Environmental Health | 217-782-3517 |

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| Childhood Lead Test Reporting | 217-785-9464 |
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| For information about licensed lead inspectors or lead abatement contracts contact the Illinois Department of Public Health Lead Abatement Program | 217-783-3517 |
| TTY (hearing impaired use only) | 800-547-0466 |

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| State Lab—Springfield | 217-782-6562 |
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Chicago Illinois Lead Poisoning Resource

<http://www.chicagolead.org>

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| Chicago Department of Public Health Childhood Lead Poisoning Prevention | 312-746-LEAD |
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| National Lead Information Center Hotline | 800-LEAD-FYI |
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<http://www.epa.gov/lead/nlic>

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| Alliance to End Childhood Lead Poisoning | 202-543-1147 |
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<http://www.aeclp.org>

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- ² Centers for Disease Control and Prevention, "Update: Blood Lead Levels-United States 1991-1994," *Morbidity and Mortality Weekly Report*, U.S. Department of Health and Human Services, Vol. 46, No. 7, Feb 21, 1997, p.141-146 and erratum in Vol. 46, No. 26, p.607, July 4, 1997. See also Centers for Disease Control and Prevention, *Screening Young Children for Lead Poisoning: Guidance for State and Local Public Health Officials* 13 (November 1997).
- ³ According to the Illinois Department of Public Health, 18,286 lead-poisoned children lived in Cook County in 1999. This was 79% of Illinois' 23,063 lead-poisoned children. Childhood Lead Poisoning Surveillance Report, <http://www.idph.state.il.us> 9/25/01.
- ⁴ According to the Illinois Department of Public Health, of the 134,963 Chicago children under age six who were tested in 2000, 18,286 had blood lead levels at or above 10 µg/dL. Childhood Lead Poisoning Surveillance Report, <http://www.idph.state.il.us> 9/25/01.
- ⁵ Richard M. Stapleton, *Lead is a Silent Hazard*, 2 (Walker and Co., January 1994).
- ⁶ Centers for Disease Control and Prevention, Lead Poisoning Prevention Program, <http://www.cdc.gov/nceh/lead/factsheets/leadfcts.htm>. 3/27/01.
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- ⁸ Needleman HL, Riess JA, Tobin MJ, Biesecker GE, Greenhouse JB, "Bone Lead Levels and Delinquent Behavior," *J Am Med Assoc* 275: 363-369, Feb 7, 1996.
- ⁹ Stapleton at 2.
- ¹⁰ Alliance to End Childhood Lead Poisoning, <http://www.aeclp.org>. 4/20/01.
- ¹¹ *Id.*
- ¹² Bruce P. Lanphear, "Cognitive Deficits Associated with Blood Lead Concentrations \geq 10 µg/dL in U.S. Children and Adolescents," *Public Health Reports* 115: 521-529 (2000).
- ¹³ Binns, Helen J., "Lead Poisoning: Still a Common Problem in Chicago," *Journal of Children's Memorial Hospital Chicago* (Spring 2001), found at <http://www.childsdoc.org/spring2001/leadpoisoning.asp>.
- ¹⁴ City of Chicago 1990 Census Information, found at <http://www.ci.chi.il.us>.
- ¹⁵ U.S. General Accounting Office Reports, found at http://www.access.gpo.gov/su_docs/aces/aces160.shtml. 10/18/01.
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- ¹⁷ The Illinois Lead Poisoning Prevention Act, 410 Ill. Comp. Stat. Section 45/6.2 (2001).
- ¹⁸ The Illinois Lead Poisoning Prevention Act, 410 Ill. Comp. Stat. Section 45/7 (2001); 77 Ill. Admin. Code 845.

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- ²⁰ Anne Evens, Program Director of the Childhood Lead Poisoning Prevention Program, Chicago Department of Public Health.
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- ²² Sheila Cochran, Westside Health Authority.
- ²³ Tom Yeates, SEE Program, WPTD, A paper on “Report of Lead Pollution Activities in the Greater Chicago Area,” p.9 (October 1997).
- ²⁴ Susan Munro, Steans Family Foundation, A paper on “A Systemic Approach to Lead Poisoning in North Lawndale,” p.7, April 16, 2001.
- ²⁵ 1998 statistics provided by the U.S. Environmental Protection Agency.
- ²⁶ Susan Munro, Steans Family Foundation.
- ²⁷ Munro at 7.
- ²⁸ Munro at 8.
- ²⁹ Dr. Bruce Rowell, Lawndale Christian Health Center. 10/10/01.
- ³⁰ 1998 statistics provided by the U.S. Environmental Protection Agency.
- ³¹ Alderman Patrick O’Connor, 40th Ward, Fall Newsletter (October 2001).
- ³² Barbara Kopala, Public Health Nurse, Chicago Department of Public Health. 7/11/01.
- ³³ Alanah Fitch, Director of Environmental Studies/Sciences, Loyola University Chicago Department of Chemistry, “Ethics and Instrumental Analysis,” (August 2001), found at <http://www.luc.edu/depts/chem/fitchgroup/orozco/sld001.htm>.
- ³⁴ State of Indiana, Section 1115 Waiver Request of Title XXI, “Concept and Proposal Summary Window Replacment Project,” p.1-2, 5-6.
- ³⁵ The Illinois Lead Safe Housing Task Force is exploring the possibility of establishing a loans and grants program to fund window replacement in Illinois.
- ³⁶ Joseph T. Ponessa, Rutgers Cooperative Extension, “Educational Outreach in a Large Retail Chain: Opportunities, Challenges and Suggested Approaches,” p.1-2, 4-5.
- ³⁷ Dan Scannell, California Department of Health Services.
- ³⁸ Alliance to End Childhood Lead Poisoning, “Innovative Strategies for Addressing Lead Hazards in Distressed and Marginal Housing: A Collection of Best Practices.” <http://www.aeclp.org/>. Revised 10/1/01.