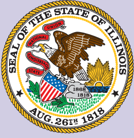

State of Illinois
Illinois Department of Public Health

Illinois Lead Program
2014 Annual Surveillance Report

October 2015 Edition

IDPH
Illinois Department of Public Health

525-535 West Jefferson Street • Springfield, Illinois 62761-0001 • www.dph.illinois.gov

October 2015

Dear Colleagues,

The Illinois Department of Public Health is pleased to present the 2014 annual surveillance report on childhood lead poisoning prevention activities within the state. Primary prevention, early detection, and monitoring of children exposed to lead sources remains the primary goal of the Illinois Lead Program.

Lead poisoning is one of the most prevalent, yet preventable environmental health hazards that can affect any family, regardless of race or socioeconomic status. Illinois law requires reporting of all blood lead tests for children younger than 16 years of age.

There is no safe level of lead in the body. Children exposed to high lead levels tend to suffer from life-long complications that affect their ability to think, learn, or behave. Of the approximately 270,000 Illinois children tested in 2014, more than 18,000 had blood lead levels at the federal reference value for public health intervention. Case management included identification of the sources of lead and committed efforts to prevent or eliminate further lead exposure.

The burden of Illinois childhood lead poisoning remains one of the highest in the nation. In 2014, environmental inspections were conducted in regulated facilities of children to identify the sources of lead poisoning. Deteriorating lead-based paint is a primary source of lead poisoning in houses built prior to the residential lead paint ban of 1978. An estimated 2 million of the 5.2 million housing units in Illinois have a prevalence of lead-based paint.

This report is intended to serve as a standard public reference for legislators, decision-makers, community-based organizations, city, state, and federal agencies, as well as health professionals and researchers who seek information on lead poisoning prevention in Illinois.

As we diligently work together to prevent childhood lead poisoning, the Illinois Lead Program looks forward to a continued collaboration with local health departments, its advisory council, and other partners at the federal, state, and local levels.

Very truly yours,

Nirav D. Shah, M.D., J.D.
Director

Prepared by

Frida D. Fokum, M.S., Ph.D.
Quality Assurance Manager

Eddie Simpson, BSB
Illinois Lead Program Data System Administrator

Kert McAfee
Illinois Lead Program Manager

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Corresponding Author: Frida Fokum at Frida.Fokum@illinois.gov

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To report the results of all blood lead tests or for more information about the elimination of childhood lead poisoning, contact the Illinois Lead Program at 866-909-3572 or 217-782-3517 or visit http://www.dph.illinois.gov
The hearing impaired may dial 800-547-0466.

Scope of the Illinois Lead Program Surveillance

- *Estimate the extent of elevated blood-lead levels among Illinois children*
- *Monitor and promote the follow-up of children with elevated blood-lead levels*
- *Identify potential sources of lead exposure and other housing related health hazards*
- *Help allocate resources for lead poisoning prevention activities*
- *Provide information for education and policy*

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Acronyms and Symbols used in this Annual Report

ABLR	Adult Blood Lead Registry
BLL	Blood Lead Level
CDC	U.S. Centers for Disease Control and Prevention
CLIA	Clinical Laboratory Improvement Amendments
CLRQ	Childhood Lead Risk Questionnaire
IDPH	Illinois Department of Public Health
DHS	Illinois Department of Human Services
EBLL	Elevated Blood Lead Level
HFS	Illinois Department of Healthcare and Family Services
HP2020	Healthy People 2020
HUD	United States Department of Housing and Urban Development
IQ	Intelligence Quotient
OSHA	Occupational Safety and Health Administration
Program	Illinois Lead Program
U.S. EPA	United States Environmental Protection Agency
µg/dL	Micrograms per deciliter
WIC	Women, Infants, and Children Nutrition Program
≥	Equal to or greater than

Definitions

Capillary blood draw: Blood samples collected by finger-stick method

Children: Six years of age and younger. Note that the children tested in 2014 also include about 3 percent who are 7 through 15 years of age

Intervention level: A venous drawn blood lead level of 10µg/dL or greater

Evaluation: Administration of the CLRQ to the parent by a health care provider

Housing unit: A house, apartment, mobile home, group of rooms, or single room that is occupied or intended for occupancy (U.S. Census Bureau)

Percent of children tested: The number of children tested for blood lead divided by the population of children multiplied by 100 (U.S. Census Bureau)

Reference Value: Current recommended federal public health intervention level of ≥5µg/dL of lead in blood

Regulated facility: a residential building or child care facility

Test: Any blood lead draw (capillary, venous or unknown sample type) on a child with quantifiable data and analyzed by a CLIA-certified facility or an approved portable device. A blood lead test may be collected for testing, confirmation or follow-up (CDC).

Executive Summary

This is the Illinois Lead Program's 21st annual surveillance report, which portrays childhood lead poisoning prevention activities within the state from January through December 2014. This report is intended to serve as a standard reference for legislators, community-based organizations, city, state and federal agencies, as well as healthcare professionals and researchers who seek information on lead poisoning prevention in Illinois. The report provides information on childhood lead poisoning prevention activities within the state by county, age, gender, race, and poverty status.

The Illinois Lead Poisoning Prevention Act [410 ILCS 45] passed by the Illinois General Assembly authorized the Department's Office of Health Protection, Division of Environmental Health to create the Lead Program to promulgate, administer, and enforce the Illinois Lead Poisoning Prevention Code (77 IL. Admin Code 845). Following the Code, the IDPH approves local health departments as delegate agencies to administer and enforce the Act in accordance with written cooperative agreements. In 2014, the IDPH had grant agreements with 86 delegate agencies to provide case management care for lead-poisoned children in 90 of 102 counties. Additionally, 19 of the delegate agencies also had grant agreements to provide environmental investigation services. In the 12 counties with no delegate agency agreements, case management and environmental investigation services were provided by the IDPH.

Problem: There is no safe level of lead in the body. Lead poisoning is one of the most prevalent, preventable, environmental health hazards. Lead exposure can affect any family regardless of race or socioeconomic status. Lead poisoning can affect almost any organ system in children and adults especially the brain and the nervous system. Among the many maladies, lead poisoning is known to contribute to violent behavior problems, learning disabilities, and developmental delays.

Lead Burden: The burden of Illinois childhood lead poisoning remains one of the highest in the nation. In 2014 alone, 2,279 children had blood lead levels of 10µg/dL or greater and 18,412 Illinois children had blood lead levels at the reference value.

Children at highest risk for lead exposure include those with persistent oral behaviors; poor hygiene; poor nutrition; low-income households; children exposed to lead-containing imported products; children with low iron; and those residing in deteriorating pre-1978 housing units. Fifty-nine percent of pre-1978 housing units have lead-based paint prevalence and 41 percent have significant lead-based paint hazards.

Mission: The mission of the Program is to eliminate the incidence of childhood lead poisoning.

Vision: The vision of the Program is to provide a lead-safe environment for all children.

Illinois Lead Program 2014 Annual Surveillance Report

Goals:

- Prevent childhood lead poisoning through community education and public awareness campaigns
- Identify lead-poisoned children and provide prompt interventions to reduce blood lead levels and improve health and developmental outcomes

Funding: The program is currently supported by the Lead Poisoning Screening, Prevention, and Abatement Fund; CDC Prevention and Public Health Funds; Illinois State General Revenue Funds and the U.S. EPA.

Highlights of 2014 Childhood Blood Lead Surveillance: There was an estimated 1.13 million Illinois children 6 years of age and younger and 15 percent of them were 6 years of age.

- A total of 298,042 blood lead test results were received for 269,230 (23.7%) children. Approximately 98 percent were children 6 years of age and younger at the time of testing. About 57 percent of children tested had at least one venous blood lead test.
- Approximately 17 percent of the blood specimens obtained from Illinois children were analyzed at the IDPH's laboratory.
- Blood lead levels in children averaged 2.4µg/dL (geometric mean of 1.96µg/dL).
- One in 177 children tested was confirmed with a venous blood lead level of 10µg/dL or greater, the current level for public health intervention in Illinois.
- One in 22 children tested was confirmed with a venous lead level of 5µg/dL or greater, the recommended federal reference value for public health intervention. Of the 18,412 (6.8 percent) children tested in 2014 with blood lead levels at the reference value:
  - 68 percent had confirmatory venous test
  - 53 percent were males
  - 52 percent were younger than 3 years of age
  - 82 percent benefited from programs administered by Medicaid
  - 88 percent had lead levels in the 5 - 9µg/dL range and 12 percent had lead levels ≥10µg/dL
  - Only 14 percent of race/ethnicity status was reported to the IDPH
- A total of 7,142 children (2.7 percent) tested had blood lead levels of 6µg/dL or greater.
- Environmental inspections were performed by health department personnel in regulated facilities to identify the sources of lead poisoning for children identified with BLLs greater than the intervention level.

The burden of Illinois childhood lead poisoning remains one of the highest in the nation.
http://www.cdc.gov/nceh/lead/data/Website_StateConfirmedByYear_1997_2014_12092015.htm

Figure 1: Lead Program Logic Model: Input, Activities, Output and Outcome

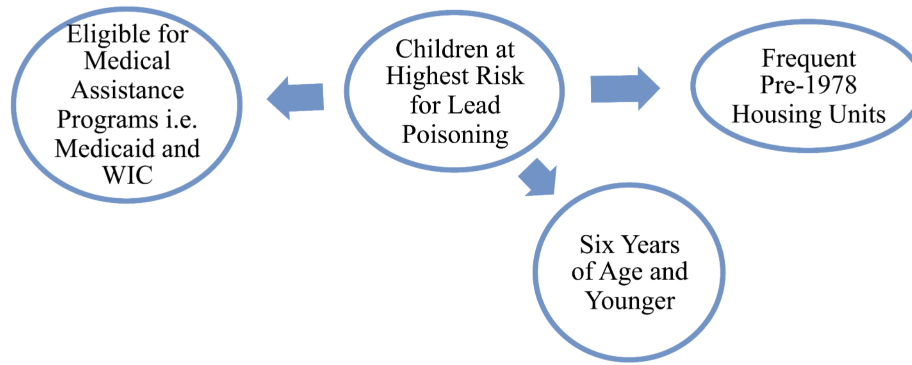
STAKEHOLDERS

- **General Public** - Local Government, Local Health Departments, Housing Authority, Schools, Hospitals, Churches, Organizations, Businesses
- **Federal Government** - Congress, CMS/EPA, HHS-CDC, HUD, USDA,
- **State Government** - General Assembly, Governor, Attorney General, IDPH, DHS, HFS, IEPA, ESBE, IDCEA, IDFPR
- **Public Universities** - UI, SIU, UIS, NWU, UC

INPUTS	ACTIVITIES	OUTPUT	OUTCOME	GOALS
• Strategic Plan• Illinois Lead Elimination Advisory Council and committees • Delegate agencies • Local Health Departments • Financial resources, HFS, DHS, Interagency Data Sharing Agreement	• Convene quarterly advisory council meetings • Execute subcommittees' goals and objectives • Establish and adhere to Intra/interagency agreements and MOUs • Partner with with CDC, delegate agencies, local health departments and other community based organizations	• Partnership results in positive interventions for elimination of childhood lead poisoning especially among the underserved and at-risk population	• Mutual and strategic partnership established for collaboration and intervention	**SHORT TERM GOALS** Identify lead poisoned children, provide prompt interventions, reduce blood lead levels, improve health and developmental outcomes
• Illinois Lead Poisoning Prevention Code/Act • HP2020 • High risk ZIP codes, • Lead poisoning and Healthy Home Training Course by Department Staff • Public Health Home Visit Environmental Health Assessment forms, site visits chart reviews	• Primary: Regional education campaigns to train public, health care providers and housing professionals about lead poisoning • Intervention: Identify and screen at-risk population • Contact lead poisoned children for follow-up nurse home visit; Identify, assess, prevent, refer or remediate sources of lead hazards through housing rehabilitation by inspectors and risk assessors, identify and link family to available resources, Develop case closure criteria, and chelate	• Vulnerable population identified and screened • Follow-up for medical case Management • Lead source remediation • Children's development and IQ improvement • More productive and quality lives	• Primary prevention and intervention plans available • Case managed • Become aware of home lead hazards and available intervention and resources	
• CENSUS • CDC surveillance support • ILP Lead Surveillance data • IT • CDC variable list • Staff • Interagency Agreement with HFS (Medicaid) and DHS (WIC) • Enterprise Data Warehouse • Adult Blood Lead Epidemiology and Surveillance (ABLES) • www.cdc.gov/nceh/lead • GIS Software • SAS	• Use STELLAR • Implement HHLPSS and collaborate with CDC for technical assistance • Train staff on HHLPSS • Send quarterly data to CDC • Mandate electronic data reporting • Clean data • Interface with other databases for Medicaid, WIC, CENSUS, Refugees, housing • Manage, analyze, and interpret data by region, county, city, and ZIP Codes • Identify emerging lead sources • Identify at-risk children and geographies• Create annual surveillance report for web site that includes blood tests, follow-ups, lead hazard identification and control and abatement activities • Send adult lead information to ABLES	• Trained staff • Surveillance system functional • Data cleaning plan • Surveillance report • Web site	• Surveillance report published on Department's Website serves as standard reference for legislators, community-based organizations, city, state and federal agencies, and health researchers	**LONG TERM GOALS** Prevent childhood lead poisoning through community education and public awareness campaigns and intervention
	• Surveillance system collects address-specific and child-specific data • HHLPSS or equivalent adopted • Blood lead data reported to CDC and Website • Blood lead data is 100% electronic reporting • Data to CDC 95% error-free • Data-sharing agreement with housing, education, Medicaid and WIC • Annual blood lead reports available • Referrals to appropriate agencies • Followup effective • Justified high-risk designation • Lead level decreases • Professional action for underserved at-risk population	• Timeliness and efficacy of case management services • Strategic plan to remove or reduce lead sources • Inspectors and risk assessors ensure safe living environment	• Program evaluation procedures/ measures	
• Existing IL statutory laws, regulations, and policies on lead	• Identify and partner with regulatory authorities to develop plan of action to enforce housing and health codes (HUD, EPA) • Review and enact electronic reporting of blood and environmental lead tests regulations • Identify and address pertinent policies, procedures and regulations that control or eliminate lead sources in children's environment • Identify and plan reinforcement	• Improved enforcement of housing and health codes • Improved compliance with federal, state and local laws	• Housing and health codes enforcement plan	**IMPACT** Achieve elimination of elevated blood lead levels in children and reduction in lead hazard exposures and consumer product

Children at Highest Risk for Blood Lead Exposure

Figure 2: Children at Highest Risk for Blood Lead Exposure



- **Young children and those with persistent oral behaviors:** Lead ingestion from exposure to surfaces with lead-contaminated dust (e.g., crawling on the floor, playing at a window). Of the 269,230 children tested in 2014, 18,412 (6.8 percent) had blood lead levels of 5µg/dL or greater and 12,571 (4.7 percent) were confirmed with a venous test.
- **Children in low-income households:** Among Illinois children enrolled in Medicaid, WIC, Head Start, and All Kids, 7.1 percent had blood lead levels of 5µg/dL or greater in 2014.
- **Children exposed to imported products containing lead:** Such products include imported toys, cosmetics (surma, kohl), medicine (folk remedies), pottery, candies, and spices. Visit ***https://www.cpsc.gov/en/***
- **Children with compromised nutritional status:** Absorption of lead increases in iron deficient individuals.
- **Lead prevalence and pre-1978 housing:** Homes in deteriorating condition continue to be the leading cause of lead poisoning cases in Illinois. Based on a national survey, 59 percent of pre-1978 housing units have a prevalence of lead-based paint and 41 percent have significant lead-based paint hazards (Table 1). A scorecard for counties with potential lead hazards or the percentage of children younger than 5 years of age below poverty has been ranked at the Pollution Information Site below.
- For additional information on housing lead hazard, read scorecard at: ***http://scorecard.goodguide.com/env-releases/lead/***

Lead Source Consumer Warning: ***Bo Ying Compound*** *manufactured by Eu Yan Sang, Ltd., and marketed for treatment of various ailments in infants and children may contain excessive levels of lead.*

Table 1: Estimates of Pre-1978 Housing Units with Lead Hazards in Illinois

Year Structure Built	Illinois Estimate	Significant Lead-based Paint Hazard[1]		Prevalence of Lead-based Paint[2]	
		% with Lead	Illinois Units with Lead Hazards	% with Lead	Illinois Units with Lead
1960 to 1977	1,235,094	7.7	95,102	23.8	293,952
1940 to 1959	1,049,273	48.7	510,996	73.7	773,314
Pre-1940	1,205,932	68.5	826,063	82.6	996,100
Pre-1978	**3,490,299**	**41.0**	**1,432,162**	**59.1**	**2,063,366**

Source: U.S. Census Bureau, 2009-2013 American Community Survey 5-year estimate, [1]Table 5-1 and [2]Table 4-1, American Healthy Homes Survey, 2011: ***http://portal.hud.gov/hudportal/documents/huddoc?id=AHHS_REPORT.pdf***

Deteriorating lead-based paint remains the primary source of lead exposure to children. Approximately 66 percent of Illinois housing units were built prior to the residential lead paint ban of 1978 (Table 2).

As required by the **Act** (410 ILCS 45/7), health care providers and directors of clinical laboratories shall report all blood lead analyses to the IDPH. The total number of children tested and reported here are the actual numbers reported to the IDPH. If a child had multiple tests, the highest venous result was selected. If there was no venous test on a child, the peak capillary blood lead result was selected.

Some laboratories are not certified to report a blood lead level less than 5ug/dL due to their level of detection. Therefore the number of children with a BLL of ≥5µg/dL may be disproportionately inflated. The reporting of BLLs of ≥6µg/dL reflect the actual blood lead burden. While the current acceptable error range is ±4µg/dL, most laboratories that do blood lead analyses perform at an error range within ±2µg/dL. The portable desktop blood-lead analyzers operate within a ±3µg/dL error range.

Table 2 shows that 55 percent of Illinois children tested for lead are younger than three years of age and account for 52 percent of the children with lead levels at the federal reference value. Based on the current Illinois intervention level, 67 counties and delegate agencies have a blood lead prevalence higher than the state average.

Table 2: Pre-1978 Occupied Housing Units and Children Younger than Three Years of Age with Blood Lead Levels at the Federal Reference Value by County or Delegate Agencies:

Illinois/County/City/ Delegate Agencies	Total Housing Units (N)	Pre-1978 Housing Units Estimates	All BLLs of Children Younger than 3 Years of Age at Time of Testing			
		(%)[a]	Tested (N)	Tested ≥ 5 µg/dL (%)	Tested ≥ 6 µg/dL (%)	Tested ≥ 10 µg/dL (%)
Illinois	**5,291,704**	**66**	**147,545**	**6.5**	**2.7**	**0.9**
Adams	29,836	71	821	10.7	8.3	4.5
Alexander	3,999	72	57	3.5	3.5	3.5
Bond	7,079	55	206	4.4	1.5	1.0
Boone	19,930	45	604	2.0	1.0	0.2
Brown	2,457	70	38	5.3	5.3	0.0
Bureau	15,679	79	275	6.9	5.1	2.5
Calhoun	2,825	57	42	7.1	7.1	2.4
Carroll	8,416	71	118	8.5	7.6	2.5
Cass	5,818	74	202	10.4	8.4	4.5
Champaign	87,926	55	1,971	2.0	1.1	0.3
Christian	15,535	75	348	4.3	4.3	1.1
Clark	7,747	67	198	3.5	2.0	0.0
Clay	6,376	61	201	7.0	3.0	1.0
Clinton	15,354	56	303	2.0	1.7	0.7
Coles	23,424	69	688	4.5	3.3	1.5
Cook w/o Chicago	983,476	71	24,998	5.8	1.3	0.4
Chicago	1,192,790	82	49,311	9.3	2.8	0.9
Crawford	8,656	71	194	4.6	2.6	1.0
Cumberland	4,874	65	127	1.6	1.6	0.8
DeKalb	40,983	53	733	2.2	1.1	0.3
DeWitt	7,527	72	113	5.3	2.7	0.9
Douglas	8,378	70	237	4.2	3.0	2.5
DuPage	356,217	52	4,976	2.0	1.1	0.4
Edgar	8,780	76	158	7.6	4.4	1.3
Edwards	3,175	70	69	4.3	1.4	0.0
Effingham	14,647	57	275	6.9	5.1	2.5
Fayette	9,266	67	279	4.7	2.9	0.7
Ford	6,259	79	116	11.2	6.9	2.6
Franklin	18,462	69	296	5.1	3.7	1.0
Fulton	16,176	80	205	10.7	7.8	2.9
Gallatin	2,743	65	67	7.5	6.0	3.0
Greene	6,373	74	194	10.3	6.2	1.0
Grundy	20,027	46	254	5.1	2.4	0.4
Hamilton	4,092	63	80	2.5	2.5	2.5
Hancock	9,261	76	232	7.8	4.3	0.9
Hardin	2,376	63	21	9.5	4.8	0.0
Henderson	3,824	69	50	4.0	4.0	2.0
Henry	22,127	77	553	8.1	4.7	2.2
Iroquois	13,452	74	250	7.6	3.6	2.0
Jackson	28,555	59	675	2.1	0.7	0.1
Jasper	4,328	66	88	3.4	1.1	0.0
Jefferson	16,882	58	446	4.5	3.1	1.1
Jersey	9,881	55	332	3.3	2.4	0.6

Illinois/County/City/ Delegate Agencies	Total Housing Units (N)	Pre-1978 Housing Units Estimates	All BLLs of Children Younger than 3 Years of Age at Time of Testing			
		(%)[a]	Tested (N)	Tested ≥ 5 µg/dL (%)	Tested ≥ 6 µg/dL (%)	Tested ≥ 10 µg/dL (%)
Jo Daviess	13,558	60	67	28.4	1.5	0.0
Johnson	5,564	50	68	5.9	5.9	2.9
Kane	182,145	49	7,142	4.3	3.0	1.1
Kankakee	45,135	63	1,518	3.2	1.6	0.5
Kendall	40,415	27	573	1.0	0.9	0.0
Knox	23,965	81	571	13.1	10.3	3.9
Lake	260,338	47	4,802	1.5	0.8	0.3
LaSalle	49,905	70	823	6.6	4.0	1.8
Lawrence	5,579	77	219	3.7	2.7	0.0
Lee	15,035	76	100	5.0	4.0	2.0
Livingston	15,851	72	375	7.5	5.6	2.4
Logan	11,942	79	275	3.3	2.5	1.5
McDonough	14,381	71	326	8.0	5.8	2.1
McHenry	116,254	39	1,215	3.1	2.0	0.5
McLean	69,979	50	2,371	3.2	2.3	0.8
Macon	50,425	74	1,396	5.6	3.6	1.1
Macoupin	21,556	68	480	7.5	5.4	2.7
Madison	117,305	66	2,575	3.5	2.1	0.8
Marion	18,201	64	570	5.6	4.4	2.1
Marshall	5,905	76	154	9.1	3.9	1.3
Mason	7,043	78	182	10.4	6.6	1.1
Massac	7,090	61	77	5.2	2.6	0.0
Menard	5,643	61	84	4.8	2.4	0.0
Mercer	7,370	77	195	8.7	5.1	0.5
Monroe	13,495	38	266	7.9	6.0	0.4
Montgomery	12,795	70	346	5.2	4.3	1.7
Morgan	15,464	72	409	7.8	5.4	2.2
Moultrie	6,274	71	149	3.4	0.7	0.0
Ogle	22,558	63	236	4.7	3.0	1.7
Peoria	83,162	74	2,991	9.0	5.9	2.3
Perry	9,414	67	233	2.6	1.7	0.4
Piatt	7,294	67	112	3.6	3.6	1.8
Pike	7,929	77	206	5.8	3.4	0.5
Pope	2,585	58	13	0.0	0.0	0.0
Pulaski	3,139	70	34	17.6	14.7	11.8
Putnam	3,084	65	35	2.9	0.0	0.0
Randolph	13,692	69	297	5.7	4.4	2.0
Richland	7,503	67	166	7.8	5.4	2.4
Rock island	65,720	79	2,269	11.2	7.8	1.8
St. Clair w/o ESHD	104,068	56	1,789	3.6	2.5	0.6
Saline	11,670	67	390	5.6	4.1	2.8
Sangamon	90,038	61	1,930	6.5	4.2	1.6
Schuyler	3,439	76	51	9.8	9.8	3.9
Scott	2,447	74	60	8.3	3.3	0.0
Shelby	10,438	73	241	2.5	1.7	0.8
Stark	2,663	84	83	9.6	9.6	1.2

Illinois/County/City/ Delegate Agencies	Total Housing Units (N)	Pre-1978 Housing Units Estimates	All BLLs of Children Younger than 3 Years of Age at Time of Testing			
		(%)[a]	Tested (N)	Tested ≥ 5 µg/dL (%)	Tested ≥ 6 µg/dL (%)	Tested ≥ 10 µg/dL (%)
Stephenson	22,007	76	657	15.8	11.1	3.7
Tazewell	57,608	71	1,849	3.7	2.3	1.0
Union	7,901	65	131	7.6	5.3	1.5
Vermilion	36,181	80	1,024	4.2	2.9	1.2
Wabash	5,559	70	158	8.9	4.4	1.3
Warren	7,686	83	248	8.9	6.9	2.8
Washington	6,533	69	88	3.4	2.3	1.1
Wayne	7,934	65	198	10.6	6.1	1.0
White	7,154	72	160	11.9	8.8	1.9
Whiteside	25,711	77	714	4.1	3.1	1.5
Will	237,806	38	5,737	2.7	1.5	0.4
Williamson	30,442	57	541	5.0	3.5	1.5
Winnebago	125,784	64	3,861	5.4	3.6	1.6
Woodford	15,207	62	462	3.7	3.0	1.7
Egyptian[1]	21,567	69	617	5.2	7.5	2.6
ESHD[2]	12,748	83	1,852	7.3	5.0	1.3
Evanston	31,819	84	998	2.4	1.1	0.5
Oak Park	24,001	90	717	4.6	2.8	1.4
Skokie	25,090	85	544	5.1	1.8	0.0
Southern Seven[3]	32,654	62	401	7.0	5.2	2.5
Stickney	2,747	85	49	0.0	0.0	0.0

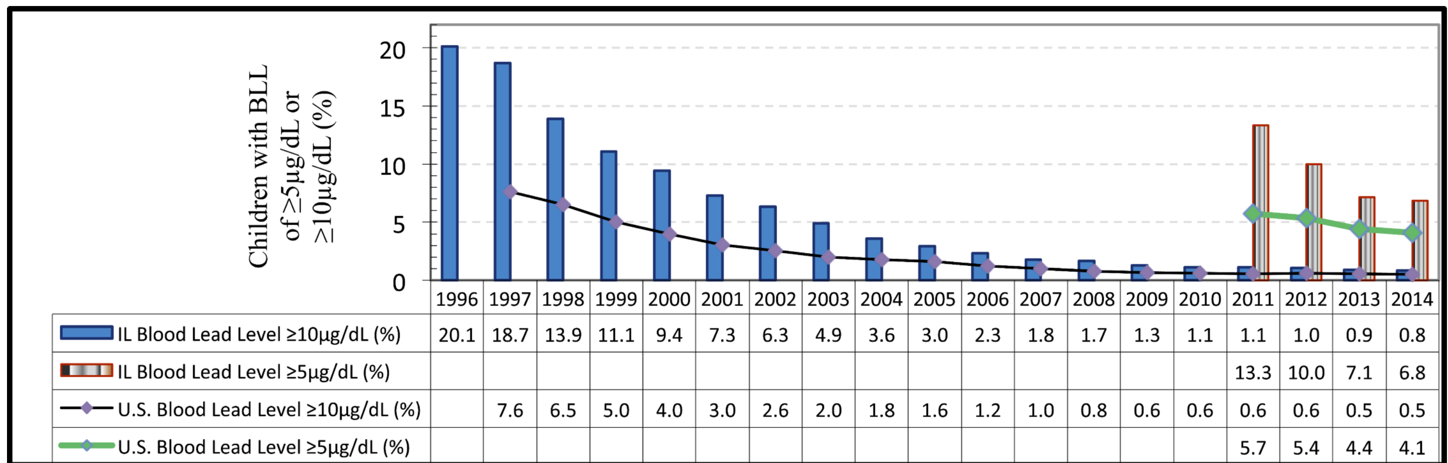
Source: [a]Pre-1978 housing unit was estimated from U.S. Census Bureau, 2009-2013 5-Years American Community Survey, Table B25034-Year Structure Built

[1] Egyptian Counties: Galatin, Saline, and White

[2] ESHD or East Side Health District includes the cities of Alorton, Brooklyn, Cahokia, Centreville, East St. Louis, Lovejoy, National Stock Yards, Sauget, Washington Park and Fairmont City.

[3] Southern Seven Counties: Alexander, Hardin, Johnson, Massac, Pope, Pulaski and Union

Figure 3: Illinois and U.S. Children Tested with Blood Lead Levels at the Federal Reference Value and at the Illinois Public Health Intervention Level 1996 – 2014



	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
IL Blood Lead Level ≥10µg/dL (%)	20.1	18.7	13.9	11.1	9.4	7.3	6.3	4.9	3.6	3.0	2.3	1.8	1.7	1.3	1.1	1.1	1.0	0.9	0.8
IL Blood Lead Level ≥5µg/dL (%)																13.3	10.0	7.1	6.8
U.S. Blood Lead Level ≥10µg/dL (%)		7.6	6.5	5.0	4.0	3.0	2.6	2.0	1.8	1.6	1.2	1.0	0.8	0.6	0.6	0.6	0.6	0.5	0.5
U.S. Blood Lead Level ≥5µg/dL (%)																5.7	5.4	4.4	4.1

Source: Illinois Lead Program Surveillance Data, 1996-2014, The United States average is based on the data reported by the CDC at: ***http://www.cdc.gov/nceh/lead/data/Website_StateConfirmedByYear_1997_2014_12092015.htm*** Venous BLLs of 10µg/dL or greater triggers a public health intervention in Illinois.

Illinois continues to make progress in addressing childhood blood lead poisoning. Figure 3 shows the percentage of Illinois children at the reference value for public health intervention. BLLs ≥10µg/dL, the current level for public health intervention in Illinois has significantly decreased from 20.1 percent in 1996 to 0.8 percent in 2014. However, despite the increased number of children tested and fewer identified with EBLLs, the percentage of Illinois children at the federal reference value still exceeds the national estimate across the years.

Based on 2013 data from the CDC, 0.6 percent of children tested in the United States had BLLs at the federal reference value compared to 1.1 percent in Illinois in the same year. The number of Illinois children tested is under-reported by CDC due to unidentifiable information and blood lead tests not reported by health care providers.

In 2014 alone, 2,279 Illinois children were identified with a lead level ≥10µg/dL. Of those, 967 were tested for the first time and a total of 594 (61 percent) were venous confirmed cases.

Illinois and US Blood Lead Testing Activities: 1996 - 2014

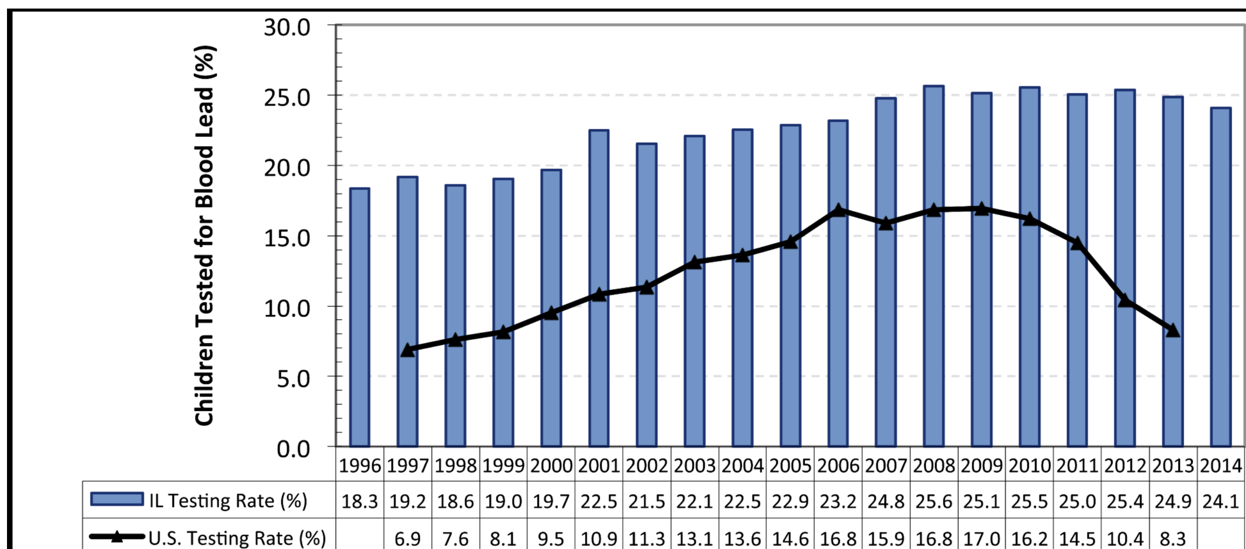
The only way to know that a child is lead poisoned is to perform a blood lead test. The Act requires children 6 years of age and younger to be tested for lead poisoning if they reside in an area defined as high-risk; or evaluated for risk using the **Childhood Lead Risk Questionnaire** (CLRQ) if they reside in areas defined as low risk by the IDPH. The IDPH is authorized to maintain a system for the collection and analysis of childhood blood lead data. Illinois statute is more stringent than the CDC and requires follow-up of children 15 years of age and younger.

Lead testing is required for:
- Children residing in high-risk areas for lead exposure or who answer "YES" or "I DO NOT KNOW" to any question on the CLRQ
- Children receiving services from Medicaid, Head Start, All Kids, Women, Infants and Children (WIC)

Evaluation is performed:
- Using CLRQ
- On children before they attend a licensed day care, school, or kindergarten as required by law

The testing rate for blood lead in Illinois is shown below on Figure 4. The CDC reported a national blood lead testing rate of 8.3 percent for 2013 compared to a 24.9 percent testing rate in Illinois in the same year.

Figure 4: Childhood Blood Lead Testing Rates: 1996-2014

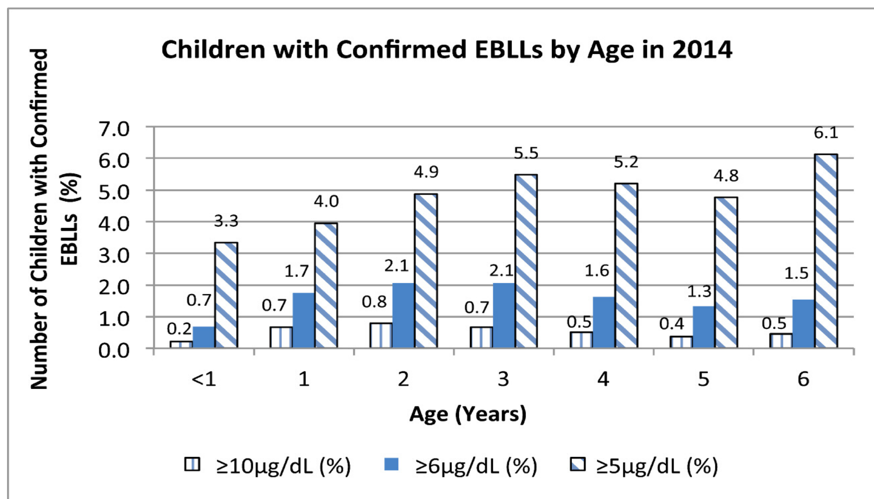


Source: Illinois Lead Program Surveillance Data, 1996-2014; Illinois population of six years of age and younger from CDC WONDER; United States average is based on data reported to CDC at: ***http://www.cdc.gov/nceh/lead/data/Website_State ConfirmedByYear_1997_2013_10162014.htm***

CDC only reported blood lead data for children younger than 5 years of age so caution is advised when making comparisons with Illinois data.

Blood Lead Levels and Age

Figure 5: Children with Confirmed Blood Lead Levels for Public Health Intervention versus Federal Reference Value by Age in 2014



Source: Illinois Lead Program Surveillance Data, 2014

Illinois law requires physicians to perform a lead test on all children who live in high-risk areas through 6 years of age (Figure 5 and Table 3).

Illinois law also requires parents or legal guardians to provide a statement of evaluation from a physician or health care provider before attending a licensed daycare, kindergarten, or school. A child must be evaluated for lead risk, if residing in a low-risk area, or tested for blood lead exposure if living in a high-risk area.

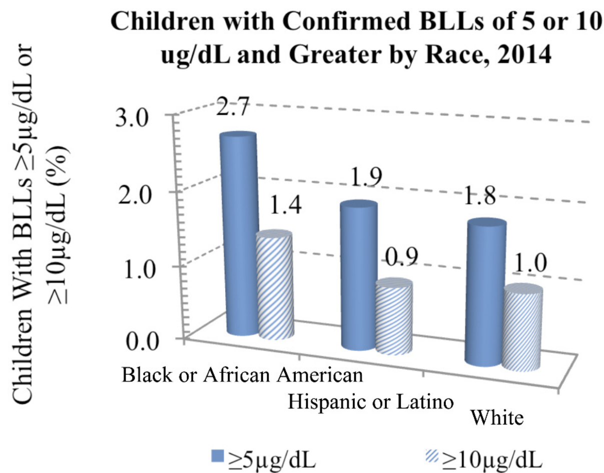
Table 3: Children Tested for Blood Lead by Age from January 1 to December 31, 2014

Age (Years)	Estimated Population[b]	Children Tested											Geomean Blood Lead Level, µg/dL
		Total Tested		<5 µg/dL		≥5 µg/dL			≥6 µg/dL	≥10 µg/dL			
		n	%	n	%	n		%	%	n		%	
						Capillary	Venous			Capillary	Venous		
<1	15,6134	36,691	23.5	34,724	94.6	743	1,224	5.4	1.4	75	80	0.4	1.99
1	156,360	63,245	40.4	59,149	93.5	1,595	2,501	6.5	3.1	247	424	1.1	
2	158,115	47,096	29.8	43,625	92.6	1,172	2,299	7.4	3.3	165	368	1.1	
3	159,663	36,800	23.0	33,943	92.2	841	2,016	7.8	3.2	100	247	0.9	1.98
4	160,413	37,002	23.1	34,401	93.0	677	1,924	7.0	2.5	82	188	0.7	
5	160,525	31,385	19.6	29,371	93.6	519	1,495	6.4	2.0	55	119	0.6	
6	165,901	8,895	5.4	8,219	92.4	131	545	7.6	2.1	11	41	0.6	1.96
others[a]		8,116		7,386	91.0	206	524	9.0	2.5	10	67	0.9	1.97
Total	**1,117,111**	**269,230**	**24.1**	**250,818**	**93.2**	**5,884**	**12,528**	**6.8**	**2.7**	**745**	**1,534**	**0.8**	**1.98**

Source: Illinois Department of Public Health - Illinois Lead Program Surveillance Database, 2014. [a]Children 7 years of age or older and unidentified; Data includes one venous blood lead test result per child by age; if there was no venous test, then the highest capillary test results were used. [b]Population data compiled from bridged-race Vintage 2014 (2010-2014) postcensal population estimates (released by NCHS 6/30/2015). Accessed at ***http://wonder.cdc.gov/bridged-race-v2014.html*** on September 15, 2015.

Blood Lead Level and Race

Figure 6: Childhood BLLs by **Race** in 2014



Source: Illinois Lead Program Surveillance Data, 2014

While the information about a child's race and ethnicity is requested in the mandatory reporting process, much of this data is unreported, likely because such information is not transmitted to the laboratories or is not systematically recorded in the child's medical record. Based on the Uniform Racial Classification Act (20 ILCS 50/5), more than 80 percent of the 269,230 children tested in 2014 were not racially classified. Race status was only reported for 6.4 percent Whites, 3.6 percent Blacks or African Americans and 4.4 percent Hispanic or Latino. Of the 9,619 Black or African American children identified, 2.7 percent had confirmed lead levels of ≥5µg/dL. Of 17,158 White children identified as tested, approximately 1.8 percent had confirmed blood lead levels of ≥5µg/dL. Of 11,841 Hispanic or Latino children identified, approximately 1.9 percent had confirmed blood lead levels of ≥5µg/dL. Figure 6 and Table 4 show that Black or African American children are disproportionately burdened by lead poisoning compared to their White or Hispanic counterparts. Less than one percent of the 65,593 estimated populations of Asian or Pacific Islanders children were reported as tested for blood lead.

Table 4: Children Tested for Blood Lead by **Race/Ethnicity** - January 1 to December 31, 2014

Racial Classification	Estimated Population[a]	Children Tested											Geomean Blood Lead Level, µg/dL
		Total Tested		<5 µg/dL		≥5 µg/dL			≥6 µg/dL	≥10 µg/dL			
		n	%	n	%	n Capillary	n Venous	%	%	n Capillary	n Venous	%	
Black or African American	198,133	9,619	4.9	8,772	91.2	587	260	8.8	6.7	145	139	3.0	1.56
White	843,948	17,158	2.0	15,982	93.1	859	317	6.9	5.0	219	178	2.3	1.47
Hispanic or Latino	280,528	11,841	4.2	11,265	95.1	355	221	4.9	3.5	112	108	1.9	1.35
Others[b]		2,344		2,022	86.2	103	219	13.7	12.3	49	178	9.5	2.09
Unidentified[c]		228,268		212,777	93.2	3,937	11,554	6.8	2.2	220	936	0.5	2.09
Total	1,117,111	269,230	10.9	250,818	93.2	5,841	12,571	6.8	2.7	745	1,534	0.8	1.98

Source: Illinois Department of Public Health - Illinois Lead Program Surveillance Database, 2014. [a]Population data compiled from bridged-race Vintage 2014 (2010-2014) postcensal population estimates (released by NCHS 6/30/2015). Accessed at ***http://wonder.cdc.gov/bridged-race-v2014.html*** on September 14, 2015. Data includes one venous blood lead test result per year; if there was no venous test, then the highest capillary test results were used. Races with small numbers were suppressed to prevent identification of individuals. [b]Includes mixed races and; [c]children whose racial information were unavailable.

Table 5: Children Tested for Blood Lead by **Gender** - January 1 to December 31, 2014

Gender	Estimated Population[a]	Children Tested in 2014											Geomean Blood Lead Level, µg/dL
		Total Tested		<5 µg/dL		≥5 µg/dL			≥6 µg/dL	≥10 µg/dL			
		n	%	n	%	n Capillary	n Venous	%	%	n Capillary	n Venous	%	
Female	548,202	129,469	23.6	120,911	93.4	2,639	5,919	6.6	2.5	341	733	0.8	1.97
Male	568,909	135,960	23.5	126,206	92.8	3,154	6,600	7.2	2.8	399	788	0.9	2.01
Gender unidentified		3,801		3,701	97.4	48	52	2.6	1.9	5	13	0.5	1.63
Total	1,117,111	269,230	24.1	250,818	93.2	5,841	12,571	6.8	2.7	745	1,534	0.8	1.98

Source: Illinois Department of Public Health - Illinois Lead Program Surveillance Database, 2014. [a]Population data compiled from bridged-race Vintage 2014 (2010-2014) postcensal population estimates (released by NCHS 6/30/2015). Accessed at ***http://wonder.cdc.gov/bridged-race-v2014.html*** on September 14, 2015. Data includes one venous blood lead test result per child by race; if there was no venous test, then the highest capillary test result was used.

Table 5 shows that 50 percent of the children tested in 2014 were males and 53 percent of children with lead levels at ≥5µg/dL were males. Approximately 1.4 percent of children tested had no gender data collected and are therefore classified as gender unidentified.

Table 6: Blood Lead Tests by **Laboratory** - January 1 to December 31, 2014

Laboratory	BLLs by Laboratory and Level in 2014											Geomean Blood Lead Level, µg/dL
	Total		<5 µg/dL		≥5 µg/dL			≥6 µg/dL	≥10 µg/dL			
	n	%	n	%	n Capillary	n Venous	%	%	n Capillary	n Venous	%	
Public Health Laboratory	49,647	16.7	46,231	93.1	2,525	891	8.0	5.0	610	359	2.0	1.40
Private Laboratories	248,395	83.3	228,086	91.8	5,348	14,961	9.0	3.3	909	2,315	1.3	2.12
All Laboratories	298,042		274,317	92.0	7,873	15,852	8.8	3.6	1,519	2,674	1.4	1.98

Source: Illinois Department of Public Health - Illinois Lead Program Surveillance Database, 2014. Data includes one venous blood lead test result per child; if there was no venous test, then the highest capillary test result was used.

*The **Illinois Lead Program** maintains a surveillance system of blood lead results on **children 15 years of age and younger.** Illinois law requires reporting of **all** blood lead tests by physicians, laboratories, hospitals, clinics and other health care facilities to the Illinois Lead Program.*

A total of 298,042 blood lead samples collected from 269,230 children were analyzed by 253 laboratories as reported to the IDPH. Approximately 17 percent of the blood lead tests were analyzed at the State laboratory accounting for 14 percent of children with lead levels of ≥5µg/dL (Table 6).

For delegate agencies there is a financial advantage for sending blood samples to be analyzed for lead at the IDPH's Division of Laboratories. These grantees are compensated for each blood specimen submitted to the IDPH laboratory to be analyzed for lead.

About 57 percent of children tested for lead exposure had at least one venous blood lead test with a geometric mean BLL of 2.05µg/dL (Table 7).

Table 7: Children Tested for Blood Lead by **Collection Method** - January 1 to December 31, 2014

Blood Specimen Type	Blood Lead Tests Reported to IDPH[1]		Children Tested									Range	Geometric Mean[3]
			Total		<5 µg/dL		≥5 µg/dL		≥6 µg/dL	≥10 µg/dL			
	n	%	n	%	n	%	n	%	%	n	%		
Venous	169,658	56.9	154,254	57.3	141,683	91.9	12,571	8.1	2.9	1,534	1.0	1-105	2.05
Capillary[2]	128,384	43.1	114,976	42.7	109,135	95.0	5,841	6.0	2.4	745	0.6	1-104	1.90
Total	298,042		269,230		250,818	93.2	18,412	6.8	2.7	2,279	0.8	1-94	1.98

Source: Illinois Department of Public Health - Illinois Lead Program Surveillance Database, 2014. Data includes one venous blood lead test result per child; if there was no venous test, then the highest capillary test result. [1]Data includes multiple tests per child; [2]Capillary also includes unknown blood specimen type; [3]geometric mean is a measure of central tendency defined as nth root (n is number of lead levels) of the product of the lead levels.

Approximately 82 percent of lead tests were reported to the IDPH electronically. Electronic reporting included blood lead data ≥10µg/dL, and incomplete records entered by IDPH staff when received by phone, mail or fax (Table 8).

Table 8: Number of Blood Lead Tests By **Methods of Reporting** - January 1 to December 31, 2014

Blood Lead Tests Reported to IDPH in 2014	Blood Tests Reported in 2014	
	n	%
Paper reported (mail or fax) below 10µg/dL	54,186	18
Electronic reporting	243,856	82
Total	298,042	

Source: Illinois Department of Public Health - Illinois Lead Program Surveillance Database, 2014

The Program contracted with an agency to perform the data entry for 54,186 paper-reported blood lead test results <10µg/dL received by mail or fax. The number of results reported by mail or fax will diminish when the automated processing system is implemented for LeadCare users.

Estimated Population and Children Tested for Blood Lead by County and Delegate Agencies: In 2014, blood lead levels in children ranged from 1.0µg/dL to 101µg/dL with a mean of 2.4µg/dL, median of 2.0 and mode or most frequent level of 1.0µg/dL. Table 9 shows the number of children tested for the first time in 2014 as well as those retested for follow-up by county, lead level, and blood specimen collection type.

Illinois Lead Program 2014 Annual Surveillance Report

Table 9: Children Tested for Blood Lead by County and Delegate Agencies in 2014

All Children Tested by County, Blood Collection Type and Lead Level

Illinois/ County/ Delegate Agency	Estimated Population 6 Years of Age and Younger[a]	All Children Tested in 2013				All Children Tested in 2014				
		Total Tested 2013	Capillary and Venous in µg/dL (%)[b]			Total Tested 2014		Capillary and Venous in µg/dL (%)[b]		
			<5	5-9	≥10	N	(%)[a]	<5	5-9	≥10
Illinois	**1,154,225**	**277,669**	**92.8**	**6.3**	**0.9**	**269,230**	**24**	**93.2**	**6.0**	**0.8**
Adams	5,894	1,261	87.0	9.7	3.3	1,279	22	88.5	7.7	3.8
Alexander	731	151	92.1	6.6	1.3	133	18	95.5	2.2	2.3
Bond	1,313	258	95.0	3.1	1.9	238	18	95.8	3.4	0.8
Boone	4,936	1,054	96.1	3.3	0.6	943	19	98.4	1.5	0.1
Brown	403	71	84.0	10.4	5.6	71	18	91.5	7.1	1.4
Bureau	2,739	462	89.0	8.6	2.4	503	18	94.4	3.8	1.8
Calhoun	390	65	90.8	7.7	1.5	73	19	93.2	4.1	2.7
Carroll	988	263	92.0	6.5	1.5	244	25	92.6	5.8	1.6
Cass	1,192	422	89.0	7.2	3.8	403	34	90.8	5.5	3.7
Champaign	16,001	2,928	97.3	2.4	0.3	2,639	16	97.7	2.1	0.2
Christian	2,935	571	93.2	4.7	2.1	533	18	95.7	3.4	0.9
Clark	1,248	343	97.7	1.7	0.6	267	21	97.0	3.0	0.0
Clay	1,210	275	88.0	9.8	2.2	254	21	94.5	4.7	0.8
Clinton	3,010	362	97.8	1.6	0.6	362	12	98.1	1.3	0.6
Coles	3,832	892	96.1	3.2	0.7	837	22	95.5	3.2	1.3
Cook w/o Chicago	224,944	45,662	95.7	3.8	0.5	47,712	21	95.4	4.0	0.4
Chicago	253,669	109,022	90.0	9.3	0.7	100,733	40	89.6	9.6	0.8
Crawford	1,424	293	93.9	4.1	2.0	270	19	95.2	2.9	1.9
Cumberland	965	160	91.2	7.5	1.3	156	16	97.4	2.0	0.6
DeKalb	8,828	1,610	96.5	3.1	0.4	1,504	17	97.6	2.2	0.2
DeWitt	1,272	164	90.0	8.8	1.2	159	13	96.2	3.2	0.6
Douglas	1,930	305	96.1	3.2	0.7	322	17	95.7	1.8	2.5
DuPage	79,302	8,756	97.9	1.8	0.3	8,889	11	97.8	1.8	0.4
Edgar	1,423	243	95.5	3.3	1.2	285	20	94.0	5.3	0.7
Edwards	517	135	92.6	6.7	0.7	108	21	96.3	3.7	0.0
Effingham	3,169	454	91.2	7.0	1.8	467	15	93.6	4.3	2.1
Fayette	1,730	336	94.0	5.1	0.9	317	18	95.6	3.8	0.6
Ford	1,149	131	90.1	9.9	0.0	171	15	88.9	8.8	2.3
Franklin	3,317	540	96.1	3.3	0.6	503	15	95.8	3.0	1.2
Fulton	2,684	339	90.0	6.8	3.2	366	14	89.9	7.9	2.2
Gallatin	409	104	96.2	2.8	1.0	110	27	95.5	2.7	1.8
Greene	1,088	341	91.8	6.4	1.8	330	30	92.1	7.0	0.9
Grundy	4,945	550	96.4	3.2	0.4	477	10	97.1	2.7	0.2
Hamilton	704	119	91.6	6.7	1.7	119	17	95.0	1.6	3.4

Children Tested for Blood Lead for the First Time in 2014

Illinois/ County/ Delegate Agency	Children Tested for the First Time in 2014	≤6 years (%)	By Blood Draw Type and Level, µg/dL					
			Venous (%)[c]			Capillary (%)		
			<5	5-9	≥10	<5	5-9	≥10
Illinois	**125,011**	**98.4**	**45.4**	**2.9**	**0.5**	**49.0**	**1.9**	**0.3**
Adams	849	98.4	15.5	1.4	1.4	75.6	4.4	1.6
Alexander	84	100	70.2	1.2	2.4	26.2	0.0	0.0
Bond	162	100	13.0	0.6	0.6	82.1	3.1	0.6
Boone	404	98.3	52.2	0.2	0.0	46.5	0.8	0.2
Brown	57	100	22.8	0.0	0.0	73.7	3.5	0.0
Bureau	333	99.4	49.8	0.3	0.9	45.6	3.0	0.3
Calhoun	48	100	20.8	0.0	0.0	70.8	4.1	4.2
Carroll	148	100	33.1	1.4	0.0	62.8	2.7	0.0
Cass	202	98.0	20.3	2.5	2.0	70.3	4.0	1.0
Champaign	1,807	99.1	34.0	0.4	0.2	63.9	1.4	0.1
Christian	315	99.7	44.8	0.7	0.3	52.7	1.3	0.3
Clark	164	99.4	18.9	1.2	0.0	78.7	1.2	0.0
Clay	169	98.2	4.7	0.0	0.0	88.2	5.9	1.2
Clinton	237	98.7	34.2	0.9	0.8	63.3	0.8	0.0
Coles	515	99.2	10.7	0.4	0.6	85.4	2.7	0.2
Cook w/o Chicago	21,366	96.2	50.8	8.6	0.5	37.3	2.8	0.2
Chicago	36,604	96.8	71.0	3.4	0.5	24.4	0.5	0.1
Crawford	183	96.2	6.6	0.0	0.5	91.3	1.6	0.0
Cumberland	97	99.0	15.5	0.0	0.0	81.4	2.1	1.0
DeKalb	781	99.4	34.6	0.8	0.1	63.0	1.4	0.1
DeWitt	121	97.5	24.0	0.0	0.0	71.9	3.3	0.8
Douglas	205	99.0	19.5	0.5	1.5	76.1	1.4	1.0
DuPage	5,381	96.3	40.5	0.9	0.1	57.3	0.9	0.2
Edgar	191	99.5	47.1	1.1	0.5	47.6	3.2	0.5
Edwards	66	98.5	12.1	0.0	0.0	83.3	4.5	0.0
Effingham	255	99.6	22.7	0.0	1.2	71.4	3.5	1.2
Fayette	203	100	6.4	0.0	0.5	90.6	2.5	0.0
Ford	116	99.1	19.0	3.5	1.7	69.0	6.0	0.9
Franklin	387	98.4	30.5	0.5	0.0	66.1	2.0	0.8
Fulton	276	98.9	13.8	2.2	1.1	78.3	4.7	0.0
Gallatin	64	100	18.8	1.6	0.0	75.0	1.6	3.1
Greene	137	99.3	10.2	0.8	0.7	83.2	5.1	0.0
Grundy	312	97.1	30.8	1.6	0.0	65.4	2.2	0.0
Hamilton	73	100	8.2	0.0	0.0	91.8	0.0	0.0

Illinois Lead Program 2014 Annual Surveillance Report

All Children Tested by County, Blood Collection Type and Lead Level

Illinois/ County/ Delegate Agency	Estimated Population 6 Years of Age and Younger[a]	All Children Tested in 2013: Total Tested 2013	All Children Tested in 2013: Capillary and Venous in µg/dL (%)[b] <5	5-9	≥10	All Children Tested in 2014: Total Tested 2014 N	(%)[a]	All Children Tested in 2014: Capillary and Venous in µg/dL (%)[b] <5	5-9	≥10
Illinois	**1,154,225**	**277,669**	**92.8**	**6.3**	**0.9**	**269,230**	**24**	**93.2**	**6.0**	**0.8**
Hancock	1,516	332	92.5	5.7	1.8	336	22	93.5	5.9	0.6
Hardin	319	56	94.6	5.4	0.0	64	20	93.8	4.7	1.6
Henderson	432	86	89.0	7.5	3.5	80	19	93.8	3.8	2.5
Henry	4,114	901	90.0	7.4	2.6	879	21	92.0	6.2	1.8
Iroquois	2,254	479	95.8	3.8	0.4	394	17	93.7	5.0	1.3
Jackson	4,270	959	96.9	2.1	1.0	995	23	97.8	2.0	0.2
Jasper	781	107	91.6	7.5	0.9	107	14	97.2	2.8	0.0
Jefferson	3,374	548	93.2	5.5	1.3	613	18	95.9	3.3	0.8
Jersey	1,694	459	94.1	3.1	2.8	432	26	97.0	2.3	0.7
Jo Daviess	1,633	201	70.0	29.5	0.5	126	8	77.8	22.2	0.0
Johnson	842	158	91.8	6.3	1.9	129	15	94.6	3.1	2.3
Kane	54,752	14,521	94.3	4.3	1.4	14,151	26	95.9	3.2	0.9
Kankakee	10,414	2,619	96.0	3.0	1.0	2,581	25	96.4	2.9	0.7
Kendall	13,436	1,074	97.8	1.7	0.5	920	7	99.1	0.9	0.0
Knox	3,746	836	87.0	9.4	3.6	863	23	85.7	9.4	4.9
Lake	64,247	9,591	98.4	1.3	0.3	9,180	14	98.5	1.2	0.3
LaSalle	9,053	1,410	90.4	8.0	1.6	1,450	16	94.1	4.0	1.9
Lawrence	1,198	312	95.5	3.2	1.3	269	22	95.2	4.1	0.7
Lee	2,645	201	91.0	7.5	1.5	195	7	94.9	3.6	1.5
Livingston	3,118	581	93.3	5.8	0.9	569	18	93.3	5.1	1.6
Logan	2,170	391	93.6	5.1	1.3	395	18	96.7	2.3	1.0
McDonough	2,097	405	92.8	5.2	2.0	399	19	92.7	5.5	1.8
McHenry	26,939	2,191	96.9	2.8	0.3	2,145	8	96.5	3.2	0.3
McLean	14,780	3,473	94.9	3.9	1.2	3,155	21	96.3	2.9	0.8
Macon	9,661	2,695	92.9	5.0	2.1	2,430	25	93.7	5.1	1.2
Macoupin	3,766	728	89.0	9.1	1.9	710	19	91.7	5.9	2.4
Madison	22,545	4,031	95.6	3.6	0.8	4,296	19	96.7	2.5	0.8
Marion	3,512	785	93.5	5.0	1.5	773	22	94.7	3.4	1.9
Marshall	968	170	91.8	6.4	1.8	214	22	89.3	9.3	1.4
Mason	1,002	269	91.8	7.1	1.1	307	31	91.5	7.5	1.0
Massac	1,325	197	95.4	3.6	1.0	196	15	93.9	5.1	1.0
Menard	1,026	102	97.1	0.9	2.0	113	11	96.5	3.5	0.0
Mercer	1,295	288	89.0	7.5	3.5	313	24	92.0	7.7	0.3
Monroe	2,704	328	95.4	4.0	0.6	358	13	93.6	6.1	0.3

Children Tested for Blood Lead for the First Time in 2014

Illinois/ County/ Delegate Agency	Children Tested for the First Time in 2014	≤6 years (%)	By Blood Draw Type and Level, µg/dL: Venous (%)[c] <5	5-9	≥10	Capillary (%) <5	5-9	≥10
Illinois	**125,011**	**98.4**	**45.4**	**2.9**	**0.5**	**49.0**	**1.9**	**0.3**
Hancock	220	99.5	20.0	0.9	0.5	73.6	4.5	0.5
Hardin	46	97.8	32.6	4.3	2.2	60.9	0.0	0.0
Henderson	55	100	41.8	1.9	3.6	50.9	1.8	0.0
Henry	548	99.3	15.0	0.9	0.7	77.6	4.7	1.1
Iroquois	253	99.2	33.2	0.4	0.4	60.9	4.7	0.4
Jackson	594	99.5	35.7	0.3	0.2	63.1	0.7	0.0
Jasper	74	100	1.4	0.0	0.0	95.9	2.7	0.0
Jefferson	406	99.0	15.5	0.0	0.5	82.0	2.0	0.0
Jersey	237	99.6	16.9	1.7	0.4	79.7	1.3	0.0
Jo Daviess	91	98.9	47.3	22.0	0.0	25.3	5.5	0.0
Johnson	83	100	16.9	0.0	0.0	83.1	0.0	0.0
Kane	5,764	98.7	26.3	1.3	0.6	69.9	1.7	0.3
Kankakee	1,286	98.3	15.7	0.5	0.3	81.3	2.1	0.2
Kendall	596	98.2	65.4	0.0	0.0	34.1	0.5	0.0
Knox	564	98.4	42.0	3.5	2.0	45.9	5.2	1.4
Lake	4,871	98.5	55.8	0.8	0.2	42.6	0.6	0.0
LaSalle	973	99.1	42.4	1.0	0.7	52.4	2.5	0.9
Lawrence	163	100	9.2	0.6	0.0	88.3	1.8	0.0
Lee	124	96.8	71.8	0.8	1.6	25.0	0.8	0.0
Livingston	300	98.7	2.7	0.0	0.3	89.7	5.6	1.7
Logan	287	98.6	18.5	0.7	0.7	78.0	1.8	0.3
McDonough	262	98.9	43.5	3.1	1.1	49.6	2.3	0.4
McHenry	1,251	98.2	19.4	0.4	0.2	77.1	3.0	0.0
McLean	1,925	99.1	3.4	0.3	0.2	93.5	2.3	0.4
Macon	1,079	99.4	24.5	0.3	0.1	72.3	2.3	0.6
Macoupin	451	98.9	23.5	0.7	1.1	69.4	4.2	1.1
Madison	2,487	99.5	37.4	1.1	0.2	59.5	1.4	0.4
Marion	456	98.7	8.3	0.7	1.5	87.3	2.0	0.2
Marshall	140	97.9	6.4	0.0	0.0	82.9	10.0	0.7
Mason	149	100	6.7	0.0	0.7	87.9	4.0	0.7
Massac	145	98.6	66.2	2.1	0.7	27.6	2.7	0.7
Menard	73	100	45.2	1.4	0.0	49.3	4.1	0.0
Mercer	183	96.7	15.8	0.0	0.0	77.6	6.1	0.5
Monroe	234	98.7	28.6	0.9	0.0	65.4	4.7	0.4

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All Children Tested by County, Blood Collection Type and Lead Level

Illinois/ County/ Delegate Agency	Estimated Population 6 Years of Age and Younger[a]	All Children Tested in 2013				All Children Tested in 2014				
		Total Tested 2013	Capillary and Venous in µg/dL (%)[b]			Total Tested 2014		Capillary and Venous in µg/dL (%)[b]		
			<5	5-9	≥10	N	(%)[a]	<5	5-9	≥10
Illinois	**1,154,225**	**277,669**	**92.8**	**6.3**	**0.9**	**269,230**	**24**	**93.2**	**6.0**	**0.8**
Montgomery	2,270	485	92.0	6.4	1.6	470	21	94.3	4.4	1.3
Morgan	2,680	779	90.1	7.3	2.6	768	29	91.1	6.7	2.2
Moultrie	1,355	155	98.1	1.3	0.6	213	16	94.4	5.6	0.0
Ogle	4,215	518	96.7	2.7	0.6	408	10	95.8	3.0	1.2
Peoria	17,952	2,071	81.0	12.9	6.1	3,886	22	89.7	7.8	2.5
Perry	1,602	320	95.0	3.1	1.9	331	21	97.6	2.1	0.3
Piatt	1,245	182	96.7	3.3	0.0	181	15	96.7	2.2	1.1
Pike	1,396	273	93.0	5.9	1.1	281	20	94.3	5.3	0.4
Pope	266	33	97.0	0.0	3.0	34	13	94.1	5.9	0.0
Pulaski	485	70	92.9	2.8	4.3	57	12	86.0	5.2	8.8
Putnam	404	73	90.4	9.6	0.0	60	15	98.3	1.7	0.0
Randolph	2,343	416	92.5	5.1	2.4	370	16	94.1	3.7	2.2
Richland	1,363	224	90.0	6.4	3.6	196	14	92.3	5.1	2.6
Rock Island	13,148	4,542	89.0	9.4	1.6	4,488	34	89.2	8.9	1.9
St. Clair w/o ESHD	25,228	3,003	95.7	3.0	1.3	2,863	11	96.9	2.5	0.6
Saline	2,082	668	97.3	1.8	0.9	620	30	94.2	3.4	2.4
Sangamon	17,285	3,166	94.2	4.3	1.5	3,087	18	93.4	5.1	1.5
Schuyler	540	103	95.1	3.9	1.0	82	15	90.2	7.4	2.4
Scott	416	97	96.9	3.1	0.0	91	22	92.3	7.7	0.0
Shelby	1,727	296	93.9	4.4	1.7	298	17	97.7	1.6	0.7
Stark	423	114	77.0	17.7	5.3	130	31	86.2	10.7	3.1
Stephenson	3,844	1,246	89.0	8.8	2.2	1,162	30	85.5	10.9	3.6
Tazewell	11,875	1,600	95.0	3.9	1.1	2,131	18	96.0	3.0	1.0
Union	1,389	293	94.9	4.8	0.3	219	16	94.1	4.5	1.4
Vermilion	7,615	1,715	95.9	3.5	0.6	1,590	21	95.7	3.1	1.2
Wabash	958	251	89.0	9.4	1.6	201	21	90.5	7.0	2.5
Warren	1,450	358	91.1	6.4	2.5	368	25	89.4	7.9	2.7
Washington	1,088	116	91.4	3.4	5.2	140	13	97.1	1.5	1.4
Wayne	1,396	269	86.0	9.5	4.5	254	18	90.9	7.9	1.2
White	1,283	256	94.5	4.3	1.2	255	20	91.8	6.6	1.6
Whiteside	4,832	1,208	96.3	2.7	1.0	1,168	24	96.2	2.8	1.0
Will	66,207	10,930	96.8	2.5	0.7	10,543	16	97.2	2.4	0.4
Williamson	5,576	872	93.7	5.4	0.9	873	16	95.8	3.1	1.1
Winnebago	26,795	6,800	94.6	4.5	0.9	5,874	22	94.3	4.2	1.5

Children Tested for Blood Lead for the First Time in 2014

Illinois/ County/ Delegate Agency	Children Tested for the First Time in 2014	≤6 years (%)	By Blood Draw Type and Level, µg/dL					
			Venous (%)[c]			Capillary (%)		
			<5	5-9	≥10	<5	5-9	≥10
Illinois	**125,011**	**98.4**	**45.4**	**2.9**	**0.5**	**49.0**	**1.9**	**0.3**
Montgomery	301	100	19.9	1.3	0.7	75.7	2.0	0.3
Morgan	412	99.5	26.2	1.5	1.7	64.6	5.4	0.7
Moultrie	130	98.5	10.8	2.3	0.0	83.8	3.1	0.0
Ogle	262	98.5	46.9	0.7	0.4	50.8	0.7	0.4
Peoria	2,981	99.7	1.1	0.2	0.4	90.0	7.0	1.3
Perry	204	100	25.0	0.5	0.5	73.5	0.5	0.0
Piatt	129	98.4	61.2	2.3	0.0	36.4	0.0	0.0
Pike	188	100	12.2	0.6	0.5	83.0	3.7	0.0
Pope	22	100	50.0	9.1	0.0	40.9	0.0	0.0
Pulaski	39	97.4	66.7	0.0	5.1	23.1	2.5	2.6
Putnam	46	100	47.8	0.0	0.0	52.2	0.0	0.0
Randolph	241	99.6	14.5	0.8	0.4	80.1	2.9	1.2
Richland	132	99.2	1.5	0.0	0.8	93.9	3.8	0.0
Rock Island	2,071	99.1	20.9	1.0	0.6	70.0	6.6	0.8
St. Clair w/o ESHD	2,854	99.5	17.3	0.9	0.3	77.7	3.2	0.6
Saline	354	99.7	7.3	0.0	0.6	88.1	2.0	2.0
Sangamon	1,809	99.6	26.6	0.3	0.6	67.5	4.2	0.7
Schuyler	45	95.6	17.8	0.0	0.0	75.6	6.7	0.0
Scott	56	100	25.0	0.0	0.0	67.9	7.1	0.0
Shelby	184	100	17.4	0.0	0.5	79.9	1.7	0.5
Stark	82	97.6	4.9	1.2	1.2	85.4	6.1	1.2
Stephenson	528	99.2	52.3	4.1	2.3	36.7	3.6	0.9
Tazewell	1,607	99.5	0.7	0.0	0.1	95.8	2.6	0.8
Union	126	99.2	65.1	1.6	0.8	29.4	2.4	0.8
Vermilion	1,061	99.2	72.3	1.4	0.7	24.8	0.7	0.1
Wabash	113	99.1	3.5	1.8	0.9	87.6	5.3	0.9
Warren	221	97.3	42.1	3.1	1.4	48.0	5.4	0.0
Washington	94	98.9	25.5	1.1	0.0	70.2	1.1	2.1
Wayne	179	98.9	6.1	0.5	0.6	86.0	6.7	0.0
White	164	100	20.1	2.4	0.6	71.3	4.9	0.6
Whiteside	643	99.5	21.9	0.0	0.8	75.7	1.4	0.2
Will	5,149	98.0	32.9	0.7	0.2	64.6	1.6	0.1
Williamson	643	98.9	28.3	0.4	0.2	68.3	2.5	0.3
Winnebago	2,865	99.4	54.5	1.6	0.7	41.2	1.5	0.6

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All Children Tested by County, Blood Collection Type and Lead Level

Illinois/ County/ Delegate Agency	Estimated Population 6 Years of Age and Younger[a]	All Children Tested in 2013				All Children Tested in 2014				
		Total Tested 2013	Capillary and Venous in µg/dL (%)[b]			Total Tested 2014		Capillary and Venous in µg/dL (%)[b]		
			<5	5-9	≥10	N	(%)[a]	<5	5-9	≥10
Illinois	**1,154,225**	**277,669**	**92.8**	**6.3**	**0.9**	**269,230**	**24**	**93.2**	**6.0**	**0.8**
Woodford	3,573	444	95.3	3.8	0.9	547	15	96.3	2.1	1.6
Egyptian[1]	3,774	1,028	93.6	5.4	1.0	985	26	93.7	4.2	2.1
ESHD[2]	6,611	3,597	92.8	5.7	1.5	3,487	167	92.5	6.0	1.5
Evanston	6,043	1,531	96.3	3.2	0.5	1,556	26	95.3	4.0	0.7
Oak Park	4,837	996	93.1	6.2	0.7	1,043	22	95.0	3.8	1.2
Skokie	4,980	913	92.8	6.9	0.3	903	18	93.7	6.7	0.1
Southern Seven[3]	5,357	958	93.9	4.8	1.3	832	16	93.8	4.3	2.0
Stickney	583	135	95.6	4.4	0.0	130	22	92.3	0.0	0.0

Source: Illinois Department of Public Health – Illinois Lead Program Surveillance Database 2013 and 2014. [a]National Center for Health Statistics, Vintage 2012; [b]Capillary or finger sticks blood draw or venous blood draw. cConfirmed test in Illinois is a venous blood draw. Actual numbers are available at the Department.

[1] Egyptian Counties: Galatin, Saline, and White

[2] ESHD or East Side Health District includes the cities of Alorton, Brooklyn, Cahokia, Centreville, East St. Louis, Lovejoy, National Stock Yards, Sauget, Washington Park and Fairmont City. Source: U.S. Census Bureau, 2010 Census. Single Years of Age and Sex: Summary File 1, Table PCT12. QT-P2.

[3] Southern Seven Counties: Alexander, Hardin, Johnson, Massac, Pope, Pulaski and Union

Children Tested for Blood Lead for the First Time in 2014

Illinois/ County/ Delegate Agency	Children Tested for the First Time in 2014	≤6 years (%)	By Blood Draw Type and Level, µg/dL					
			Venous (%)[c]			Capillary (%)		
			<5	5-9	≥10	<5	5-9	≥10
Illinois	**125,011**	**98.4**	**45.4**	**2.9**	**0.5**	**49.0**	**1.9**	**0.3**
Woodford	394	100	3.3	0.2	0.8	93.4	1.3	1.0
Egyptian[1]	582	99.8	12.2	0.9	0.5	82.0	2.8	1.7
ESHD[2]	1,348	99.6	15.8	0.7	0.4	77.2	4.8	0.7
Evanston	865	97.0	55.5	4.4	0.5	38.8	0.6	0.2
Oak Park	601	98.7	29.1	1.3	0.3	66.1	2.3	0.8
Skokie	49	95.9	59.8	7.8	0.2	31.6	0.8	0.0
Southern Seven3	545	99.1	55.6	1.8	1.3	39.3	1.4	0.6
Stickney	525	94.9	55.1	0.0	0.0	44.9	0.0	0.0

Portable Desk Top Blood Analyzer: LeadCare* is a CLIA-waived capillary blood lead test portable system with a maximum reading of 65µg/dL that operates within ±3.3µg/dL error range. Approximately 18 percent (54,213) of all blood lead tests reported to the IDPH in 2014 were from LeadCare users. In 2014, there were 316 LeadCare users in Illinois with 423 units. Among the users, 203 reported at least one blood lead test and 113 users had not reported any blood lead tests. Of those who were reporting, 75 percent (152 users) recorded BLL results ≥5µg/dL and 61 percent (123 users) recorded BLL results ≥10µg/dL. A follow-up confirmatory venous test is recommended following an elevated capillary BLL.

Lead Testing Activities in Illinois, Chicago and the United States: 2013-2014

Table 10: Blood Lead Burden in Illinois, Chicago and United States: 2013 - 2014

	2013		2014	
Illinois				
All Children Tested	277,669	%	269,230	%
≥ 10µg/dL (Illinois intervention level)	2,434	0.9	2,279	0.8
≥ 6µg/dL	7,743	2.8	7,142	2.7
Federal Reference Value ≥ 5µg/dL	20,110	7.2	18,412	6.8
Illinois without Chicago	171,207		168,497	
≥ 10µg/dL	1,553	0.9	1,496	0.9
≥ 6µg/dL	4,997	2.9	4,473	2.7
Federal Reference Value ≥ 5µg/dL	13,811	8.1	7,933	4.7
Chicago	**106,462**		**100,733**	
≥ 10µg/dL	881	0.8	783	0.8
≥ 6µg/dL	2,746	2.6	2,669	2.6
Federal Reference Value ≥ 5µg/dL	6,299	5.9	10,479	10.4
United States[1]				
Lead poisoning rate ≥ 10µg/dL	11,152	0.6		
Federal Reference Value ≥ 5µg/dL	86,743	4.3		

Source: Illinois Lead Program Surveillance Data, 2013-2014 queried with SAS and U.S. Centers for Disease Control and Prevention (CDC) Blood Lead Surveillance Data, 2013; Note [1]Only 2013 CDC lead data is available at this time at: ***http://www.cdc.gov/nceh/lead/data/Website_StateConfirmedByYear_1997_2013_10162014.htm*** (Downloaded September 29,2015); The 2012 NCHS Vintage estimated population of Illinois children 6 years of age and younger was 1,134,192.

Data in Table 10 include capillary and venous tests for all children whose blood lead results were reported to the IDPH in the specified year. The data also include test results obtained with a portable desk top blood lead analyzer that operates within a +/- 3µg/dL error range.

The federal reference value includes blood lead data of ≥5µg/dL. Due to strict data reporting requirements, Illinois data with missing core address fields are often under-reported nationally, leading to a denominator differential of Illinois data reported by CDC.

Children's products. *Effective January 1, 2010, no person, firm, or corporation shall sell, have, offer for sale, or transfer the items… that is more than 0.004% (40 parts per million) but less than 0.06% (600 parts per million) by total weight or a lower standard for lead content as may be established by federal or State law or rule unless that item bears a warning statement…shall contain at least the following: "WARNING: CONTAINS LEAD. MAY BE HARMFUL IF EATEN OR CHEWED. COMPLIES WITH FEDERAL STANDARDS."* ***(410 ILCS 45/6) (from Ch. 111 1/2, par. 1306) Sec. 6.b)***

Lead Levels of Children Who Benefited from Medical Assistance Programs

Medical assistance programs refer to the authorized Social Security Acts of Title XIX that include Medicaid, All Kids, FamilyCare, and Moms & Babies and are all administered by HFS.
http://www2.illinois.gov/hfs/MedicalCustomers/MaternalandChildHealthPromotion/Pages/Screening.aspx

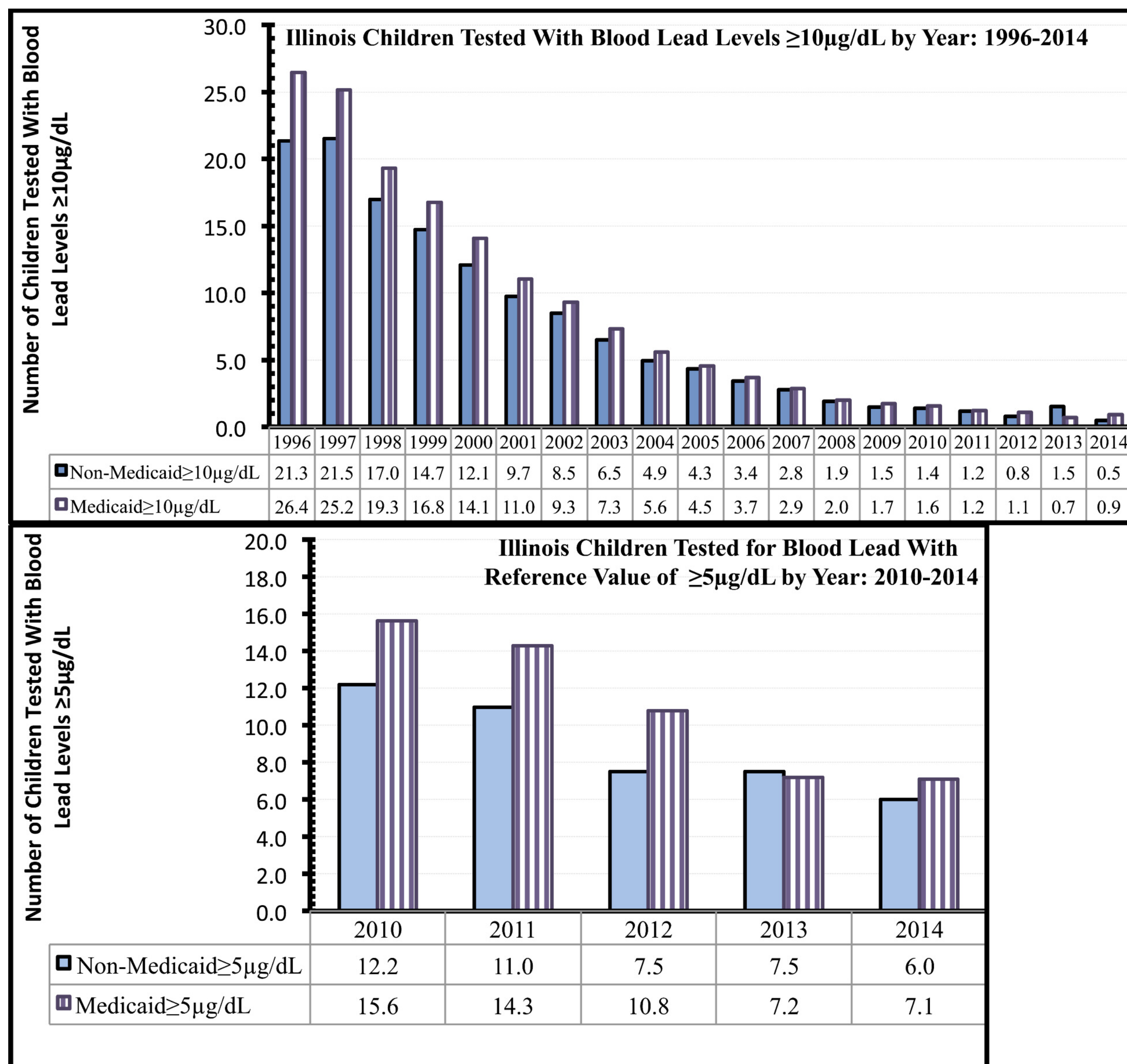
The only way to know that a child has been exposed to lead is through a blood test. State and Federal mandates require that all children enrolled in HFS' medical programs be considered at risk for lead poisoning and receive a blood lead test at age 12 and 24 months. If a child is 3-6 years of age and has not been tested, a blood lead test is required. All children enrolled in the HFS Medical Programs are expected to receive a blood lead test regardless of where they live.
http://www2.illinois.gov/hfs/sitecollectiondocuments/hk200.pdf

Bonus payment for High Performance: The revised 2014 HFS Illinois Health Connect (IHC) benchmark states that any primary care provider who tested 72.26% for 50th percentile and 82.24% for 75th percentile of their qualifying patients for blood lead poisoning (capillary or venous test) in 2014 on the IHC roster would receive a bonus payment. The bonus payment was determined by the number of children who receive at least one capillary or venous blood lead test by the age of 24 months as of December 1, 2014.

For specific questions about the lead test performance bonus measure go to the IHC website or call the IHC Provider Services Help Desk at 1-877-912-1999.

Medicaid and Non-Medicaid Eligible Children: Of all children tested in 2014, 82 percent with lead levels at the federal reference value of ≥5µg/dL were medical assistance program recipients. Based on all the children in the medical assistance program tested, 7.1 percent had lead levels at the reference value compared to 6.0 percent among non-participants. Figure 7 shows that there has been a significant decrease in childhood lead poisoning among Illinois children.

Figure 7: Elevated Blood Lead Level of Medicaid and Non-Medicaid Eligible Children: 1996-2014



	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Non-Medicaid≥10µg/dL	21.3	21.5	17.0	14.7	12.1	9.7	8.5	6.5	4.9	4.3	3.4	2.8	1.9	1.5	1.4	1.2	0.8	1.5	0.5
Medicaid≥10µg/dL	26.4	25.2	19.3	16.8	14.1	11.0	9.3	7.3	5.6	4.5	3.7	2.9	2.0	1.7	1.6	1.2	1.1	0.7	0.9

	2010	2011	2012	2013	2014
Non-Medicaid≥5µg/dL	12.2	11.0	7.5	7.5	6.0
Medicaid≥5µg/dL	15.6	14.3	10.8	7.2	7.1

Source: Illinois Department of Public Health-Illinois Lead Program Surveillance Database: 1996-2014 and the Illinois Department of Healthcare and Family Services Enterprise Data Warehouse

Table 11, below, shows that 79 percent of children tested for lead poisoning in 2014 were participating in medical assistance programs provided by the HFS or were enrolled in WIC programs provided by DHS. Of all children tested, 87 percent with lead levels of ≥10µg/dL were medical assistance program recipients. Of all the medical assistance program recipient children tested, 0.9 percent had blood lead levels of ≥10µg/dL compared to 0.5 percent non-participants.

Table 11: Percentage of Children Tested for Blood Lead in 2014 Eligible for Medical Assistance

County	Total Number of Children Tested in 2014	Medicaid Eligible Children (%)			Non Medicaid Eligible Children (%)		
		Children Tested Who Were Medicaid-Eligible (%)	Percentage of Medicaid-Eligible Children Tested At		Children Tested Who Were Non-Medicaid-Eligible (%)	Percentage of Non Medicaid-Eligible Children Tested At	
			≥ 10 µg/dL	≥ 5 µg/dL		≥ 10 µg/dL	≥ 5 µg/dL
Illinois	**269,230**	**79.4**	**0.9**	**7.1**	**20.6**	**0.5**	**6.0**
Adams	1,279	79.3	4.0	13.0	20.7	2.6	5.7
Alexander	133	96.2	2.3	4.7	3.8	0.0	0.0
Bond	238	90.8	0.9	4.6	9.2	0.0	0.0
Boone	943	88.0	0.1	1.6	12.0	0.0	1.8
Brown	71	62.0	2.3	13.6	38.0	0.0	0.0
Bureau	503	75.0	1.9	6.1	25.0	1.6	4.0
Calhoun	73	67.1	4.1	10.2	32.9	0.0	0.0
Carroll	244	73.8	2.2	6.7	26.2	0.0	9.4
Cass	403	81.6	3.3	8.8	18.4	5.4	10.8
Champaign	2,639	73.8	0.3	2.6	26.2	0.1	1.7
Christian	533	82.0	1.1	5.3	18.0	0.0	0.0
Clark	267	77.9	0.0	3.8	22.1	0.0	0.0
Clay	254	87.8	0.9	6.3	12.2	0.0	0.0
Clinton	362	77.3	0.7	2.5	22.7	0.0	0.0
Coles	837	75.0	1.8	5.1	25.0	0.0	2.9
Cook	148,035	79.6	0.7	8.5	20.4	0.5	8.4
Crawford	270	79.3	1.9	5.6	20.7	1.8	1.8
Cumberland	156	77.6	0.8	3.3	22.4	0.0	0.0
De Kalb	1,504	78.7	0.2	2.5	21.3	0.3	2.2
De Witt	159	58.5	1.1	5.4	41.5	0.0	1.5
Douglas	322	73.9	3.4	5.5	26.1	0.0	1.2
Du Page	8,889	67.2	0.4	2.1	32.8	0.4	2.5
Edgar	285	80.0	0.0	6.1	20.0	3.5	5.3
Edwards	108	73.1	0.0	3.8	26.9	0.0	3.4
Effingham	467	92.7	2.3	6.9	7.3	0.0	0.0
Fayette	317	90.9	0.7	4.9	9.1	0.0	0.0
Ford	171	80.1	2.9	13.1	19.9	0.0	2.9
Franklin	503	82.3	1.4	4.6	17.7	0.0	2.2
Fulton	366	78.1	2.8	11.5	21.9	0.0	5.0
Gallatin	110	84.5	2.2	5.4	15.5	0.0	0.0
Greene	330	79.1	1.1	9.2	20.9	0.0	2.9
Grundy	477	59.1	0.4	2.5	40.9	0.0	3.6
Hamilton	119	81.5	4.1	6.2	18.5	0.0	0.0
Hancock	336	77.1	0.4	7.7	22.9	1.3	2.6

County	Total Number of Children Tested in 2014	Medicaid Eligible Children (%)			Non Medicaid Eligible Children (%)		
		Children Tested Who Were Medicaid-Eligible (%)	Percentage of Medicaid-Eligible Children Tested At		Children Tested Who Were Non-Medicaid-Eligible (%)	Percentage of Non Medicaid-Eligible Children Tested At	
			≥ 10 µg/dL	≥ 5 µg/dL		≥ 10 µg/dL	≥ 5 µg/dL
Illinois	**269,230**	**79.4**	**0.9**	**7.1**	**20.6**	**0.5**	**6.0**
Hardin	64	87.5	1.8	7.1	12.5	0.0	0.0
Henderson	80	77.5	1.6	4.8	22.5	5.6	11.1
Henry	879	72.5	2.5	9.7	27.5	0.0	3.3
Iroquois	394	73.4	1.7	6.9	26.6	0.0	4.8
Jackson	995	86.6	0.1	2.2	13.4	0.8	2.3
Jasper	107	86.0	0.0	3.3	14.0	0.0	0.0
Jefferson	613	89.4	0.7	4.2	10.6	1.5	3.1
Jersey	432	67.6	0.7	2.4	32.4	0.7	4.3
Jo Daviess	126	65.1	0.0	11.0	34.9	0.0	43.2
Johnson	129	79.8	1.9	4.9	20.2	3.8	7.7
Kane	14,151	88.2	0.9	4.3	11.8	0.6	3.2
Kankakee	2,581	79.5	0.8	3.8	20.5	0.2	2.6
Kendall	920	67.0	0.0	0.8	33.0	0.0	1.0
Knox	863	78.7	5.3	15.9	21.3	3.3	8.2
Lake	9,180	73.4	0.3	1.6	26.6	0.2	1.1
La Salle	1,450	75.6	2.0	6.9	24.4	1.7	2.8
Lawrence	269	88.1	0.8	5.1	11.9	0.0	3.1
Lee	195	74.9	1.4	4.8	25.1	2.0	6.1
Livingston	569	83.7	1.9	7.1	16.3	0.0	4.3
Logan	395	80.8	0.9	3.8	19.2	1.3	1.3
McDonough	399	76.4	2.3	7.5	23.6	0.0	6.4
McHenry	2,145	69.9	0.3	3.4	30.1	0.2	3.9
McLean	3,155	66.2	0.8	3.5	33.8	0.7	4.0
Macon	2,430	82.3	1.3	7.0	17.7	0.7	3.0
Macoupin	710	76.2	3.0	10.0	23.8	0.6	3.0
Madison	4,296	74.8	0.9	3.6	25.2	0.6	2.4
Marion	773	91.5	1.8	5.5	8.5	3.0	3.0
Marshall	214	79.0	1.8	13.6	21.0	0.0	0.0
Mason	307	92.2	1.1	9.2	7.8	0.0	0.0
Massac	196	93.4	1.1	5.5	6.6	0.0	15.4
Menard	113	77.0	0.0	4.6	23.0	0.0	0.0
Mercer	313	76.7	0.4	8.8	23.3	0.0	5.5
Monroe	358	53.9	0.5	8.3	46.1	0.0	4.2
Montgomery	470	83.0	1.5	6.4	17.0	0.0	2.5
Morgan	768	84.2	2.6	9.9	15.8	0.0	3.3
Moultrie	213	79.3	0.0	6.5	20.7	0.0	2.3

County	Total Number of Children Tested in 2014	Medicaid Eligible Children (%)			Non Medicaid Eligible Children (%)		
		Children Tested Who Were Medicaid-Eligible (%)	Percentage of Medicaid-Eligible Children Tested At		Children Tested Who Were Non-Medicaid-Eligible (%)	Percentage of Non Medicaid-Eligible Children Tested At	
			≥ 10 µg/dL	≥ 5 µg/dL		≥ 10 µg/dL	≥ 5 µg/dL
Illinois	**269,230**	**79.4**	**0.9**	**7.1**	**20.6**	**0.5**	**6.0**
Ogle	408	72.8	1.0	4.4	27.2	1.8	3.6
Peoria	3,886	76.8	2.8	12.2	23.2	1.4	4.3
Perry	331	84.9	0.4	2.5	15.1	0.0	2.0
Piatt	181	55.2	2.0	5.0	44.8	0.0	1.2
Pike	281	82.6	0.4	6.5	17.4	0.0	2.0
Pope	34	91.2	0.0	6.5	8.8	0.0	0.0
Pulaski	57	93.0	9.4	15.1	7.0	0.0	0.0
Putnam	60	61.7	0.0	2.7	38.3	0.0	0.0
Randolph	370	85.1	2.5	5.7	14.9	0.0	7.3
Richland	196	91.8	2.8	8.3	8.2	0.0	0.0
Rock Island	4,488	84.6	1.9	11.1	15.4	1.9	9.2
St. Clair	6,350	88.0	1.1	5.8	12.0	0.9	3.4
Saline	620	86.6	2.6	6.3	13.4	1.2	2.4
Sangamon	3,087	84.4	1.7	7.2	15.6	0.6	3.5
Schuyler	82	82.9	2.9	11.8	17.1	0.0	0.0
Scott	91	81.3	0.0	6.8	18.7	0.0	11.8
Shelby	298	84.2	0.8	2.4	15.8	0.0	2.1
Stark	130	71.5	4.3	18.3	28.5	0.0	2.7
Stephenson	1,162	82.3	3.9	15.9	17.7	2.4	7.8
Tazewell	2,131	65.1	1.0	4.5	34.9	1.1	3.1
Union	219	83.1	1.6	7.1	16.9	0.0	0.0
Vermilion	1,590	84.7	1.4	5.0	15.3	0.0	0.8
Wabash	201	80.6	1.9	9.9	19.4	5.1	7.7
Warren	368	81.8	2.0	10.6	18.2	6.0	10.4
Washington	140	74.3	1.9	3.8	25.7	0.0	0.0
Wayne	254	85.0	1.4	9.7	15.0	0.0	5.3
White	255	82.7	1.9	10.0	17.3	0.0	0.0
Whiteside	1,168	83.0	1.2	4.5	17.0	0.0	0.0
Will	10,543	78.4	0.5	3.1	21.6	0.3	1.9
Williamson	873	78.6	1.2	4.5	21.4	1.1	3.2
Winnebago	5,874	89.0	1.6	6.0	11.0	0.5	3.3
Woodford	547	52.5	1.7	3.8	47.5	1.5	3.5

Source: Illinois Department of Public Health – Illinois Lead Program Surveillance Database and Illinois Department of Healthcare and Family Services Enterprise Data Warehouse, 2013 through an interagency data agreement. The SAS (statistical analysis software) and SQL (Structured Query Language) codes were used to query databases

Research indicates that children with iron and calcium deficiencies, older substandard housing units, and the difficulty maintaining homes with deteriorated lead-based paint have all been associated with lead poisoning.

Based on all children tested, the percentage of children with blood lead levels ≥10µg/dL was 0.7 percent for Medicaid and 0.1 percent for non-Medicaid eligible children in 2014. Approximately 5.6 percent of Medicaid eligible children tested exhibited lead levels at the reference value of ≥5µg/dL, compared to only 1.2 percent among children who did not participate in any medical assistance program. The overall geometric mean blood lead level in 2014 was about 2µg/dL irrespective of Medicaid eligible status (Table 12).

Table 12: Percentages of Children Tested in 2014 and Mean Blood Lead Level

Characteristic	All Children Tested	Percentage of Children Tested for Lead Exposure[1]							Geometric Mean Blood Lead Level
		<10 µg/dL			≥5 µg/dL			≥6 µg/dL	
	(n)%	Venous %	Capillary %	Total N	Venous %	Capillary %	Total %	Total %	
All Children Tested	**(269,230)**	**0.6**	**0.3**	**0.8**	**4.7**	**2.2**	**6.8**	**2.7**	**2.0**
Medicaid	79.4	0.5	0.3	0.7	3.9	1.7	5.6	2.3	2.0
Non-Medicaid	20.6	0.1	<0.1	0.1	0.7	0.5	1.2	0.3	2.1

Source: Illinois Department of Public Health - Illinois Lead Program Surveillance Data 2014; [1]All denominators based on the total 269,230 children tested in 2014. Due to rounding, decimals may not add up exactly.

Blood Lead Levels in Refugee Children

The Illinois Lead Program collaborates with the IDPH's Minority Health Program, which manages the Refugee Health Assessment Program. The Refugee Health Assessment Program evaluates the testing of refugee children for blood lead poisoning following CDC guidelines for children 6 months to 16 years of age as part of the initial health assessment.

Refugee children 6 years of age and younger at time of testing who had their first testing date in 2014 with pending or missing blood lead result were matched to lead program data using a name/date of birth algorithm. The first report of blood lead level in the lead database was reported as the initial health assessment lead level.

Lead Prevalence and Refugee Status: In 2014, there were 396 refugee children six years of age and younger at the time of testing who completed the initial health assessment in Illinois. Of those assessed, 80 percent (317 of 396) had a blood lead level recorded and 65 percent (207 children) had a BLL ≥5 μg/dL. Six percent (19 children) had a BLL ≥6μg/dL.

Recommendations for Refugee Children Post-Arrival Lead Testing

1. *Check BLL of all refugee children* ***6 months–16 years of age*** *upon their arrival in the United States (generally within 90 days, preferably within 30 days of arrival).*
2. *Within 3–6 months post-resettlement, a follow-up blood lead test should be conducted on all refugee children aged* ***6 months–6 years of age****, regardless of the initial testing blood lead level result.*
3. *Within 90 days of their arrival in the United States, children aged* ***6 months–6 years of age*** *should also undergo nutritional assessment and testing for hemoglobin or hematocrit level with one or more of the following: mean corpuscular volume (MCV) with the red cell distribution width (RDW), ferritin, transferrin saturation, or reticulocyte hemoglobin content. A routine complete blood count with differential is recommended for all refugees following their arrival in the United States, and these red cell parameters are included in this testing.*
4. *Provide daily pediatric multivitamins with iron to all refugee children aged* ***6 months through 6 years of age****.*

Source: Adapted from ***http://www.cdc.gov/immigrantrefugeehealth/guidelines/lead-guidelines.html***

For more information on the Refugee Health Assessment Program, go to
http://www.dph.illinois.gov/topics-services/life-stages-populations/minority-health

Adult Blood Lead Registry

Figure 8: Illinois Blood Lead Surveillance Programs

The Program and the ABLR comprise the Illinois blood lead surveillance systems (Figure 8).

There is no safe level of lead in the body. Approximately 99 percent of lead absorbed by an adult can be excreted within a couple of weeks compared to only a 33 percent excretion by children. Lead exposure in adults may lead to short or long term cognitive dysfunction, adverse reproductive outcomes, and cardiovascular or kidney damage. Adults can suffer from complications during pregnancy, high blood pressure, or nervous system disorders.

The **ABLR** maintained by Division of Epidemiologic Studies collects blood lead data for adults 16 years of age and older and notifies federal enforcement agencies to trigger inspections and/or interventions. Laboratories are now mandated to report levels of ≥10 µg/dL.

According to the 2014 Illinois ABLR annual report:

- ABLR made 38 referrals to OSHA for 17 companies with employees who had blood lead levels ≥40µg/dL in calendar year 2014. These quarterly ABLR reports to OSHA led to one safety inspection that resulted in fines totaling $10,800 for violation of OSHA rules. Three other employer referrals were already under OSHA investigation due to employee complaints.
- ABLR notified OSHA within 24 hours of any case with an elevated blood lead level ≥60 µg/dL.
- Data collection and OSHA notification continues at the ≥40µg/dL blood lead level.
- **Funding and other resources** In 2013, NIOSH cancelled all contracts to fund state ABLES programs in accordance with the Budget Control Act of 2011. Starting in 2014, due to lack of funding, ABLR staff only recorded cases of ≥40µg/dL to refer employers who have employees with elevated blood lead levels ≥40µg/dL to OSHA per the memorandum of understanding. Reports for cases between 10µg/dL and 40µg/dL were archived.
- In 2015, Division staff developed a new Access database that automated the entry of electronic reports and streamlined the manual data entry of paper reports. As a result, all the backlog of 2014 electronic and manual lab reports were entered in FY15. For calendar year 2014, 2,329 lab reports were added to the ABLR database.

For more information on the Illinois Adult Blood Lead Registry visit:

Adult Blood Lead Registry ***http://dph.illinois.gov/data-statistics/epidemiology/occupational-disease-registry***
Illinois Health and Hazardous Substances RegistryAnnual Reports ***http://www.idph.state.il.us/about/epi/ihhsr.htm***
Adult Blood Lead Registry ***http://dph.illinois.gov/sites/default/files/publications/publicationsoppstrends-eblls-adults.pdf***

Dentin and Lead Poisoning

*Contributed by **Alan D'Souza**, MPH Graduate Public Service Intern, University of Illinois at Springfield*

According to CDC, at least four million households include children who are being exposed to high levels of lead. There are approximately half a million U.S. children ages 1-5 with BLLs ≥5µg/dL.[1] The purpose of this section was to review some historical dentine studies that contributed to the knowledge of childhood lead poisoning and its health effects.

Lead exposure can affect nearly every system in the body[1,2,3] and the tooth is one of the parts of the body where lead gets deposited. Four main parts of the tooth are enamel, dentin, pulp and cementum. Dentin is the part of the teeth which is most affected by the lead poisoning.[4,5,6,7] Dentin analyses have provided information about sources of lead exposures and its impact on mental health.[8] Dentin lead levels have been used to predict bone lead levels.[9] Dentin lead content analyzed before unleaded gasoline was higher compared to present.[10]

Lead gets into the dentin via absorption and assimilation.[11] The rate of absorption depends on nutritional status, health, and age. Lead is absorbed into the lower respiratory tract as an aerosol or ingested in the intestines as organic lead. Once lead is absorbed into the body through the lungs or intestines it is assimilated into the:

- Blood
- Soft tissues (lungs, liver, kidneys, heart, spleen brain and muscles)
- Teeth and bones (mineralized tissues- holds the major burden of absorbed lead)

Lead in teeth and bone is not uniformly distributed. In children, bones and teeth contain approximately 73 percent of their total body burden of lead compared to 94 percent in adults. Lead tends to accumulate in bone regions undergoing the most active calcification thereby interfering with the production of blood cells and the absorption of calcium. Calcium is essential for strong bones and teeth, muscle contraction, and nerve and blood vessel function.

The inner bone structure can either be spongy or compact. Known calcification rates of bones in childhood and adulthood suggest that lead accumulation occurs predominately in spongy (trabecular) bone during childhood, and in both compact (cortical) and spongy bone in adulthood.

Several studies were conducted to determine the effects of early childhood dentin lead levels and school performance.[12,13,14] Children with early elevated lead levels had poorer reading abilities or dropped out of school without any qualifications, or had lower levels of success in school examinations. The effects which persisted through adolescence[15] increased with lead level,[16] age and gender[17] and level of risk exposure.[18]

Dentin lead levels were measured in asymptomatic school children from one school district in a high risk area and another school from a low risk area. Black children living in deteriorated housing and white children residing close to lead paint factories all had elevated lead levels.[19]

Summary: Lead in children measured from shed deciduous teeth (dentin) has contributed significantly to the knowledge of the health effects of lead poisoning on intelligence quotient deficiencies, reading and learning disabilities.

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Economically, the elimination of lead poisoning leverages large payoffs for the state of Illinois (Gould, 2009[1]). Educational costs could be substantially increased because lead poisoning irreversibly damages a child's brain, thereby making it more difficult for a child to learn. Additionally, the child's decreased abilities mean he or she will earn substantially less over their lifetime when they enter the workforce than those not affected by lead poisoning. In 2007, it was estimated that children born in 2002 and exposed to lead, would earn more than $3 billion less over their lifetimes (Illinois Department of Public Health, 2007[2]). Furthermore, these children would require an extra $31 million to cover the added educational needs and medical expenses resulting from lead exposure.

[1] *Gould E. Childhood lead poisoning: conservative estimates of the social and economic benefits of lead hazard control. Environ Health Perspect. 2009 Jul;117(7):1162-7. doi: 10.1289/ehp.0800408. Epub 2009 Mar 31.*

[2] *Illinois Department of Public Health. 2007. Illinois Lead Safe Housing Advisory Council Recommendation. Report to the Illinois General Assembly pursuant to P.A. 93-789.*

Lead Poisoning Prevention Activities

Childhood lead exposure can be minimized or prevented through increased public awareness.

- Apply lead-safe work practices when disturbing lead-based paint
- Keep the play, study and living areas of children clean
- Children should eat a healthy diet that includes calcium and iron
- A road map of educational interventions for children affected by lead has been developed by the National Center for Environmental Health by an expert panel of CDC and non-CDC authors. See Figure 2 on page 44 of the link below:

http://www.cdc.gov/nceh/lead/publications/Educational_Interventions_Children_Affected_by_Lead.pdf

- A blueprint for lead poisoning prevention strategies intergrating health, affordable housing, and education was developed by the National Center for Healthy Housing.

A. Educational Activities

The role of public health professionals is integral in the prevention of childhood lead poisoning and education is important to primary prevention. The Program's regional nurses and the education coordinator conducted one-day lead poisoning prevention training sessions at five of the six regional offices of the IDPH. A total of 45 health care professionals were trained on lead poisoning in 2014 and Continuing Education Credits (CEUs) were accorded to qualifying participants. Topics covered in the training included:

- Case management and case follow-up
- Health effects and treatment of lead poisoning
- Specimen collection, submission and analysis at the IDPH's Division of Laboratories
- Environmental case follow-up and compliance investigations for lead-poisoned children
- Healthy Homes Initiative

Additionally, seven workshops were conducted to assist all agencies conducting lead poisoning prevention activities and explain the STELLAR program for a better utilization of the data collection and analysis software provided by the Centers for Disease Control and Prevention. Forty-four staff members from 30 health departments attended the training.

For more information on either of the one-day lead poisoning prevention training sessions, contact the Program at 217-524-2081. For more lead poisoning prevention tips, visit CDC at ***http://www.cdc.gov/nceh/lead/tips.htm***

B. CLEAR-Win

The Comprehensive Lead Education, Reduction and Window Replacement Program (CLEAR-Win) is a prevention-focused pilot program aimed at replacing mostly original wood-sashed/painted windows in approximately 600 low-income, pre-1978 homes. The project's focus was on reducing potential lead hazards and providing on-the-job training for community members in the two pilot communities of Englewood/West Englewood (Chicago) and Peoria County. Chicago completed its projects during the fiscal year; however, Peoria required another fiscal year to complete its projects. There will be a comprehensive report which will detail health benefits, hazards alleviation, home value after window improvement, and energy savings.

For more information on the CLEAR-Win, contact the Illinois Lead Program at 217-782-5830.

C. Lead Licensees

The IDPH requires any person who wishes to conduct lead services in a regulated facility in Illinois to be appropriately licensed. The Illinois Lead Program reviews and issues lead licenses for the following persons/entities; abatement workers, abatement supervisors, inspectors, risk assessors, abatement contractors and training course providers. Licenses expire annually and must be renewed. Risk assessor and inspector licenses expire on December 31; worker and supervisor licenses expire March 31; contractor licenses expire May 31; and training course provider certifications expire October 15 (Table 13).

Table 13: Lead Licenses Issued in 2013-2014

License Type	2013			2014		
	Total	New	Renewed	Total	New	Renewed
Worker	**1,107**	320	787	**871**	247	624
Supervisor	**545**	43	502	**406**	20	386
Inspector	**97**	3	94	**62**	9	53
Risk Assessor	**554**	24	530	**308**	16	292
Contractor	**196**	21	175	**164**	15	149

Source: Illinois Department of Public Health - Illinois Lead Program Surveillance Data 2013-2014

In 2014, a total of 29 training course providers were approved to teach 118 approved classes compared to 33 providers for 114 classes in 2013. Table 14 shows the breakdown in the number of approved Training Course Providers and the classes they were approved to teach.

Table 14: Total Number of Approved Training Courses and Providers in 2013-2014

Courses and Provider	2013	2014
Approved Training Course Providers	**33**	**29**
Number of approved classes for training course providers		
Worker Initial	11	13
Worker Refresher	11	12
Spanish Worker Initial	3	3
Spanish Worker Refresher	2	2
Polish Worker Refresher	0	2
Supervisor Initial	12	11
Supervisor Refresher	13	13
Inspector Initial	4	5
Inspector Refresher	6	6
Risk Assessor Initial	4	5
Risk Assessor Refresher	6	7
RRP Initial	27	23
RRP Refresher	15	16
Total	**114**	**118**

Source: Illinois Department of Public Health - Illinois Lead Program Surveillance Data 2013-2014

Lead training course providers were required to submit notification of all upcoming lead courses to the IDPH no later than 7 calendar days prior to the start of all IDPH-approved courses.

Table 15: Total Number of Notifications and Actual Lead Courses Held in 2013-2014

Class notifications and courses held*	2013	2014
Notifications of upcoming lead courses received by the IDPH	388	408
Actual number of lead lead courses held	181	207

Source: Illinois Department of Public Health - Illinois Lead Program Surveillance Data 2013-2014.
*These numbers do not include RRP courses

A total of 632 notifications of lead abatement or lead mitigation projects were received by the IDPH in 2014 compared to 930 received in 2013. Lead abatement contractors were required to submit notification to the IDPH of any lead abatement or mitigation projects conducted at regulated facilities at least 7 calendar days prior to commencement (Table 15).

All new license applicants for supervisor, inspector and risk assessor licenses, all applicants are required to take and pass the third party examination administered by the IDPH (Table 16).

Table 16: Total Number of Third Party Examinations

Lead License Type	2013	2014
Supervisor	64	65
Inspector	5	8
Risk Assessor	40	26

Source: Illinois Department of Public Health - Illinois Lead Program Surveillance Data 2013-2014.

D. Intervention - Case Management of Lead-Poisoned Children

Comprehensive case management is initiated for children with a confirmed venous blood lead level of ≥10 μg/dL. Once a child is identified, a Public Health Nurse (PHN) visits the child's residence to evaluate factors that may affect the child's blood lead levels. Case management activities include information about sources of lead, nutrition, access to services, family interaction and making appropriate referrals. Follow-up venous and capillary blood lead testing is encouraged by using the recommendations from the CDC and American Academy of Pediatrics.

The IDPH had grant agreements during 2014 with 86 delegate agencies to provide case management care for lead-poisoned children in 90 of 102 counties. Medical case management activities include education, nurse home visits and referrals for related services such as medical, nutritional supplementation and developmental testing. In collaboration with the IDPH, these delegate agencies provide outreach education to health care providers, families of lead-poisoned children and the general public. Each of the delegate agencies used STELLAR (Systematic Tracking of Elevated Lead Levels and Remediation) data processing system to maintain records for case management of children in their jurisdiction.

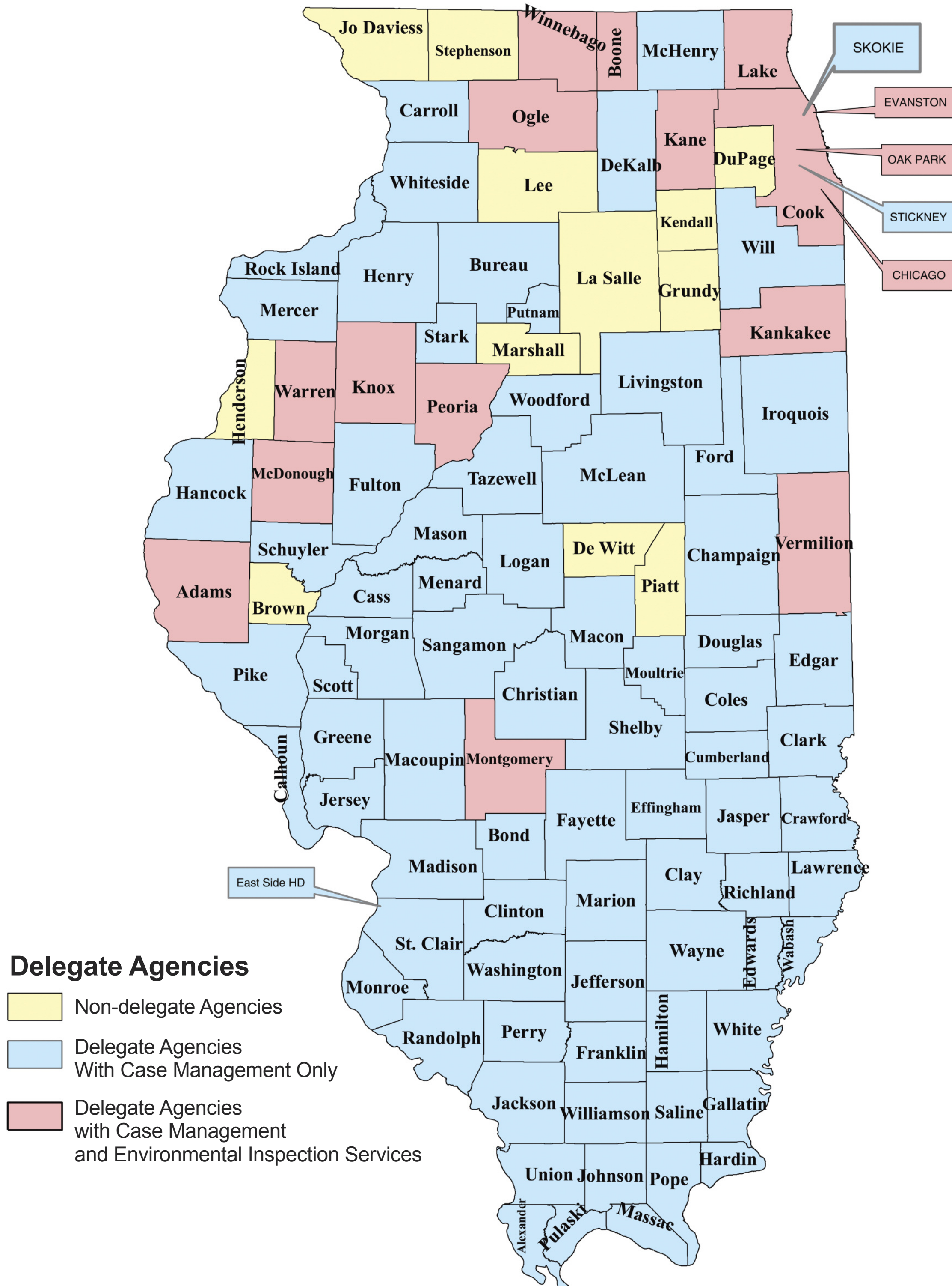
Local health departments without a delegate agency agreement are designated as non-delegate agencies. There were 12 non-delegate agencies where case management was provided by the Illinois Lead Program regional nurse consultants (Table 17 and Figure 9).

Table 17: Non-delegate Agencies with Case Management Services provided by IDPH's Nurse Consultants in 2014

Brown County Health Department	Grundy County Health Department	Kendall County Health Department	Marshall County Health Department
Dewitt-Piatt Bi-County Health Department	Henderson County Health Department	La Salle County Health Department	Stephenson County Health Department
DuPage County Health Department	Jo Daviess County Health Department	Lee County Health Department	

Note: Dewitt and Piatt are bicounty health departments under the same grant agreement

Figure 9: Illinois Lead Program Delegate and Non-delegate Agencies in 2014



Source: Illinois Leads Program Surveillance Database, 2014.
Created 09/15/2015.

During nursing case management visits, families of affected children were provided educational materials related to lead exposure and prevention. Families were also provided the smoking Quitline referral number (1-866-QUIT-YES) for those interested in cessation of the use of tobacco products as well as other educational materials relating to the prevention of home hazards.

Capillary blood draw also known as 'finger stick', is a blood sample collected by pricking the skin. Capillary blood draws are performed as a preliminary assessment only. A confirmatory test with a blood draw from the vein is required before case management begins. Table 18 shows the recommended testing schedule for follow-up of children with capillary blood lead results to obtain a venous confirmatory test. Venous blood draw is most preferred by the IDPH in order to avoid false positive results.

The higher the blood lead level, the more urgent the need for confirmatory testing as outlined on Table 19. The IDPH recommends follow-up testing for 10 – 19 µg/dL at 1 – 3 months.

Table 18: Obtaining a Confirmatory (Venous) Test for Follow-up of Capillary Blood Draw

Blood µg/dL	Time to confirmation testing
≥ 5 – 9	1 – 3 months
10 - 44	1 week – 1 month
45 - 49	48 hours
60 - 69	24 hours
≥ 70	Urgently as emergency test

Source: ***http://www.idph.state.il.us/envhealth/Recommended_Schedule_for_Obtaining_Confirmatory_3-2014.pdf***

Table 19 also shows the recommended schedule for follow-up of children with different levels of confirmed venous blood lead tests. However, some case managers or physicians may choose to repeat blood lead tests on new patients within a month to ensure their blood lead level is not rising quicker than anticipated.

Table 19: Follow-up Blood Lead Testing After a Confirmatory (Venous) Blood Draw

Venous Blood Lead level µg/dL	Early follow-up testing (2-4 tests after identification)	Later follow-up testing after blood lead level is declining
≥ 5- 9	3 months*	6 – 9 months
10 - 19	1 – 3 months*	3 – 6 months
20 - 24	1 – 3 months*	1 – 3 months
25 - 44	2 weeks – 1 month	1 month
≥ 45	As soon as possible	As soon as possible

Source: Recommended Schedule for Follow-up of Blood Lead Draw. Some case managers or physicians may choose to repeat blood lead tests on new patients within a month to ensure their BLL level is not rising more quickly than anticipated. **NOTE:** 1) Reference value 5 µg/dL.

The IDPH has six environmental health regions as shown on Table 20. Based on 2014 data, 594 children were identified for the first time with confirmed venous blood lead levels of ≥10µg/dL. There were 4,253 children tested for the first time in 2014 with blood lead level of ≥5µg/dL.

Table 20: Children Tested for Blood Lead for the First Time and Regulatory Activities in 2014 by Region

Children Tested for Blood Lead for the **FIRST TIME** in 2014		Central Office	Champaign Region	Marion Region	Edwardsville Region	Peoria Region	Rockford Region	West Chicago Region	**TOTAL (N)**
Total Number of Children Tested for the **FIRST TIME**			8,277	5,427	10,263	13,261	5,846	81,937	**125,011**
Confirmed cases of blood lead identified for the first time in 2014 (**Incidence**)	≥10 µg/dL		27	30	46	88	42	361	**594**
	≥5 µg/dL		75	60	134	199	140	3,645	**4,253**

Source: Illinois Department of Public Health – Illinois Lead Program Surveillance Databases 2014 and Environmental Health Monthly Activity Reporting System (MARS) - Field Activity.

E. Intervention - Environmental Follow-up of Children with Lead in their Blood

The local or regional health department conducts environmental lead investigations to identify lead hazards. The health department risk assessor develops a letter and report that are provided to the owners who are then required to submit a mitigation plan to the IDPH or local health department for review and approval.

In calendar year 2014, the IDPH had grant agreements with 19 delegate agencies to provide environmental inspection services in addition to case management services (Table 21 and Figure 8).

Table 21: Delegate Agencies with Case Management and Environmental Investigation Services in 2014

Adams County Health Department	Boone County Health Department	Champaign-Urbana Health District	Chicago Department of Public Health
Cook County Health Department	East Side Health District	Evanston Health Department	Kane County Health Department
Kankakee County Health Department	Knox County Health Department	Lake County Health Department	McDonough County Health Department
Montgomery County Health Department	Oak Park Health Department	Ogle County Health Department*	Peoria County Health Department
Vermilion County Health Department	Warren County Health Department	Winnebago County Health Department	

*Note: Ogle County Health Department environmental inspection services are performed by Boone County

Local health departments not covered by a delegate agency agreement are served by the Program regional lead risk assessors housed in the regional offices of the IDPH. The six environmental regional offices of the IDPH each have lead risk assessors who conduct home inspections for children with blood lead at the Illinois intervention level in accordance with the Act.

Environmental services included home inspections and risk assessment, follow-ups, complaint and on-site contractor investigations. Remediation is required by law when a lead hazard has been identified in a home where a child with an elevated blood lead level lives or regularly visits.

Environmental remediation is necessary because the child can be re-exposed when they return to the lead hazards that have not been mitigated or abated. Children who receive medical chelation and who return to the lead hazards are at even greater risk for exposure.

A total of 85 cases were completed and compliance certificates issued by IDPH regional risk assessors. A total of 30 environmental assessment cases were closed in 2014 for any of the following reasons:

- No lead hazard identified
- Venous blood-lead level was below 10µg/dL
- Residence or occupant not located
- Regulated facility demolished or
- Other residence investigated

In 2014, a total of 649 investigations were conducted by delegate agency risk assessors providing environmental services at regulated facilities where children with elevated BLLs reside or spend significant amounts of time.

Illinois Lead Poisoning Elimination Advisory Council

The Illinois Lead Poisoning Elimination Advisory Council (Council) met quarterly with the mission to develop and implement a comprehensive statewide strategic lead poisoning prevention plan, foster partnerships, and collaborate in primary prevention, intervention, surveillance, and evaluation.

The Program has utilized the Council since 1998. There are currently 40 members on the council from many different disciplines and backgrounds consisting of pediatricians, local health department staff, representatives from housing agencies, nonprofit and faith-based organizations, universities, hospitals, and representatives from Federal, State, and Municipal governments. The private sector is represented by the Illinois Association of Plumbing and Heating Contractors, Elevate Energy, and Public Health and Safety, Inc.

The council has been used extensively for recommendations for direction and improvement in lead poisoning prevention throughout the state. The council is composed of three sub-committees:

1) Education and Outreach:
2) Policy and Regulations, and
3) Data and Evaluation.

At least one member from the Program sits on a subcommittee which has a non-Program facilitator. The Council provides direction to the Program on outreach activities, training for identification of lead related hazards, referral directions and other partnership recommendations. The Council continues to evolve into a dynamic group seeking to improve the quality of life for those affected by lead hazards.

The Program has collaborated with groups such as the Regional Superintendents of Schools, District Realtor Associations, Regional Home Builder/Remodeler groups, Window Manufacturing/Assembly companies, and Municipal Code Enforcement for additional sources to further educate the private sector regarding lead hazards and reduce the incidence of lead poisoning. Partnerships such as these result in positive interventions for elimination of childhood lead poisoning, especially among the underserved and at-risk population.

For more information on the Council, contact the Division of Environmental Health at 217-782-3517.

Illinois Lead Program Professionals

ILLINOIS LEAD PROGRAM MANAGER
Kert McAfee
525 W. Jefferson St., Springfield, IL 62761
Phone: 217-557-4519 Fax: 217-557-1188
E-mail: kert.mcafee@illinois.gov

DATA SYSTEM SECTION ADMINISTRATOR
Eddie Simpson, B.S.B.
525 W. Jefferson St., Springfield, IL 62761
Phone: 217- 785-2366 Fax: 217-557-1188
E-mail: eddie.simpson@illinois.gov

COMPLIANCE INVESTIGATOR
John Fee, Environmental Health Specialist III
525 W. Jefferson St., Springfield, IL 62761
Phone: 217-558-2048 Fax: 217-557-1188
E-mail: john.fee@illinois.gov

REGIONAL NURSE CONSULTANT – NORTHERN REGION
Roxane Fleming, R.N., RD, M.A., LPC
Peoria Regional Office
5415 N. University St., Peoria, IL 61614
Phone: 309-693-5133 Fax: 309-693-5118
E-mail: roxane.fleming@illinois.gov

REGIONAL NURSE CONSULTANT – SOUTHERN REGION
Nichole Jones, R.N., B.S.N, CCRN
525 W. Jefferson St., Springfield, IL 62761
Phone: 217-785-3045 Fax: 217-557-1188
E-mail: nichole.jones@illinois.gov

EDUCATION COORDINATOR
Eleanor Davis, B.S.
525 W. Jefferson St., Springfield, IL 62761
Phone: 217-524-2081 Fax: 217-557-1188
E-mail: eleanor.davis@illinois.gov

OFFICE COORDINATOR
Tammy Pritchett
525 W. Jefferson St., Springfield, IL 62761
Phone: 217-524-0791 Fax: 217-557-1188
E-mail: tammy.pritchett@illinois.gov

QUALITY ASSURANCE MANAGER
Frida Fokum, M.S., Ph.D.
525 W. Jefferson St., Springfield, IL 62761
Phone: 217-558-3502 Fax: 217-557-1188
E-mail: frida.fokum@illinois.gov

CLEARWIN PROJECT MANAGER
Jon L. Pressley, M.A.
525 W. Jefferson St., Springfield, IL 62761
Phone: 217-558-1095 Fax: 217-557-1188
E-mail: jon.pressley@illinois.gov

OFFICE ASSOCIATES
Aubrey Dove, B.A.
525 W. Jefferson St., Springfield, IL 62761
Phone: 217-524-5802 Fax: 217-557-1188
E-mail: aubrey.dove@illinois.gov

Kathy Kassing, B.A.
525 W. Jefferson St., Springfield, IL 62761
Phone: 217-524-9690 Fax: 217-557-1188
E-mail: kathy.kassing@illinois.gov

GRADUATE PUBLIC SERVICE INTERN (GPSI)
Alan R. J. D'Souza, M.P.H. Candidate
University of Illinois at Springfield

REGIONAL ENVIRONMENTAL PROFESSIONALS

Rockford Region Phone: 815-987-7511
Dan Guif, E-mail: daniel.guif@illinois.gov
Steve Johnson, E-mail: steve.j.johnson@illinois.gov

Peoria Region Phone: 309-693-5360
Scott Bell, E-mail: scott.bell@illinois.gov

West Chicago Region Phone: 630-293-6800
Tom Baughman,PhD E-mail: tom.baughman@illinois.gov
Sam Davis, E-mail: sam.davis@illinois.gov

Edwardsville Region Phone: 618-656-6680
Raymond Stottler, E-mail: raymond.stottler@illinois.gov
Ismay Daly, E-mail: ismay.daly@illinois.gov

Champaign Region Phone: 217-278-5900
Wayne Matthews, E-mail: wayne.matthews@illinois.gov

Marion Region Phone: 618-993-7028
Stephanie Cline, E-mail:stephanie.cline@illinois.gov

Contact Information

Illinois Lead Program
Illinois Department of Public Health
525 W. Jefferson St.
Springfield, Il 62761
Phone: 866-909-3572 or 217-782-3517
The hearing impaired can dial 800-547-0466
http://dph.illinois.gov/topics-services/environmental-health-protection/lead-poisoning-prevention
http://dph.illinois.gov/childhood-Lead-Poisoning-surveillance

U.S. Centers for Disease Control and Prevention (CDC)
http://www.cdc.gov/nceh/lead/
Phone: 800-CDC-INFO (800-232-4636)
http://www.cdc.gov/nceh/lead/publications/Educational_Interventions_Children_Affected_by_Lead.pdf

National Center for Healthy Housing (NCHH)
http://www.nchh.org
Phone: 877-312-3046
http://www.nchh.org/Portals/0/Contents/lead.pdf

U.S. Environmental Protection Agency (U.S. EPA)
http://www.epa.gov/
Phone: 800-424-LEAD (1-800-424-5323)

U.S. Department of Housing and Urban Development (HUD)
http://www.hud.gov/

Illinois Public Health Association (IPHA)
http://www.ipha.com

American Public Health Association (APHA)
http://www.apha.org

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Illinois Department of Public Health
Illinois Lead Program
525 West Jefferson Street
Springfield, Illinois 62761
866-909-3572 or 217-782-3517
TTY 800-547-0466 (hearing impaired use only)

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