



State of Illinois  
Illinois Department of Public Health

# Illinois Lead Program Annual Surveillance Report: 2012



December 2013 Edition



Pat Quinn, Governor  
LaMar Hasbrouck, MD, MPH, Director

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Dear Colleagues,

The Illinois Department of Public Health is pleased to present the 2012 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.

In recognition of the fact that there is no safe level of lead in the body, the U.S. Centers for Disease Control and Prevention (CDC) has lowered the standard blood lead level in a child that should trigger a public health intervention from 10 to 5 micrograms per deciliter. Based on this new reference value, approximately 500,000 U.S. children are implicated and about 30,000 of these children reside in the state of Illinois.

Children exposed to high lead levels tend to suffer from life-long complications such as lower intelligence quotient (IQ), hyperactivity, aggressive behavior problems and learning disabilities. The burden of Illinois childhood lead poisoning remains one of the highest in the nation. In 2012, case management services were provided to more than 3,000 lead poisoned children. Environmental inspections were performed at approximately 1,800 dwellings and common play areas of the 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. Approximately 2 million housing units in Illinois are estimated to have lead-based paint.

This report is intended to serve as a standard reference for legislators, community-based organizations, city, state and federal agencies, as well as health researchers who seek information on childhood 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.

Sincerely,

A handwritten signature in black ink, appearing to read "L. Hasbrouck", is written over a light blue circular stamp.

LaMar Hasbrouck, M.D., M.P.H.  
Director

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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.idph.state.il.us/illinoislead/index.htm>  
The deaf/hard of hearing may dial 800-547-0466.**

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## Acronyms and Symbols used in this Annual Report

<b>ABLR</b>	Adult Blood Lead Registry
<b>CDC</b>	U.S. Centers for Disease Control and Prevention
<b>Department</b>	Illinois Department of Public Health
<b>EBLLs</b>	Elevated Blood Lead Levels
<b>ESHD</b>	East Side Health District
<b>HUD</b>	United States Department of Housing and Urban Development
<b>IDPH</b>	Illinois Department of Public Health
<b>ILP</b>	Illinois Lead Program
<b>IQ</b>	Intelligence Quotient
<b>LRAQ</b>	Lead Risk Assessment Questionnaire
<b>NHV</b>	Nurse Home Visit
<b>OSHA</b>	Occupational Safety and Health Administration
<b>Program</b>	Illinois Lead Program
<b>RRP</b>	Renovation, Repair and Painting Rule
<b>U.S.EPA</b>	United States Environmental Protection Agency
<b>µg/dL</b>	Micrograms per deciliter
<b>WIC</b>	Women, Infants and Children

## Definitions

<b>Assessment</b>	Administration of the Childhood Lead Risk Assessment Questionnaire (LRAQ) to the parent by a health care provider
<b>Capillary blood</b>	Known also as “finger stick,” are blood samples collected by pricking the skin. Damage to blood vessels may lead to inaccurate results so a confirmatory test with a blood draw from the vein is required.
<b>Children</b>	Age 6 and younger; Note that the children tested in 2012 also include about 3 percent who are 7 through 15 years of age.
<b>Housing unit</b>	A house, an apartment, a mobile home, a group of rooms, or a single room that is occupied (or if vacant, is intended for occupancy) as separate living quarters (U.S. Bureau of the Census, 2010)
<b>Reference Value</b>	New public health intervention level of 5µg/dL or greater of lead in blood
<b>Test type</b>	Capillary or venous blood draw
<b>Confirmed Venous</b>	Illinois intervention level of 10µg/dL or greater of lead from venous drawn blood
<b>Lead poison</b>	Blood lead result at the level of concern
<b>Screening</b>	Refers to initial blood lead testing by venous or capillary methodology
<b>Testing</b>	A blood lead draw
<b>WIC</b>	Women, Infants and Children Nutrition Program

## Executive Summary

This is the Illinois Lead Program's 19th annual surveillance report since 1993 and it portrays childhood lead poisoning prevention activities within the state from January through December 2012. This report is intended to serve as a standard reference for legislators, community-based organizations, city, state and federal agencies, as well as researchers who seek information on lead poisoning prevention in Illinois.

The Illinois Lead Program (program) is an integral part of the Division of Environmental Health at the Illinois Department of Public Health (Department). The program is administered following the Illinois Lead Poisoning Prevention Code adopted July 15, 1976, with a revision effective November 25, 2008. The code is implemented and authorized by the Illinois Lead Poisoning Prevention Act [410 ILCS 45].

Following the code, the Department approves units of local government or health departments as delegate agencies to administer and enforce the act in accordance with written cooperative agreements. In 2012, the Department had grant agreements with 86 delegate agencies to provide case management care for lead poisoned children in 89 of 102 counties. Additionally, 16 of the delegate agencies also had grant agreements to provide environmental investigation services. Counties where no delegate agency agreements exist, case management and environmental investigation services are provided by the Department.

**Funding:** The program is currently supported in part by the Lead Poisoning Screening, Prevention and Abatement Fund.

**Problem:** There is no safe level of lead in the body. Lead poisoning is one of the most prevalent, yet preventable environmental health hazards that can affect any family, regardless of race or socioeconomic status. Lead poisoning can affect every organ system in children and adults including 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.

**Illinois Childhood Lead Burden:** The burden of Illinois childhood lead poisoning remains one of the highest in the nation. In 2012 alone, 3,035 Illinois children had blood lead levels of 10 micrograms per deciliter or greater. In recognition of the fact that there is no safe level of lead in the body, the U.S. Centers for Disease Control and Prevention (CDC) lowered the standard blood lead level in a child that should trigger a public health intervention from 10 to 5 micrograms per deciliter in 2012 on a federal level. Based on the new reference value, approximately 30,000 Illinois children have abnormal blood lead levels.

**Children at highest risk for lead exposure** include those with persistent oral behaviors; from low-income households; African-Americans; children exposed to imported products with excessive amount of lead; children with low iron; and those residing in pre-1978 housing units. There are more than 3.6 million pre-1978 housing units in Illinois and about 2 million are estimated to contain lead-based paint, the major source of childhood lead poisoning.

# Illinois Lead Program Annual Surveillance Report: 2012

**Mission:** The mission of the Department's Illinois Lead 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.

**Goal:** The goal of the program is to: 1. Prevent childhood lead poisoning through community education and public awareness campaign and 2. Identify lead poisoned children and provide prompt interventions to reduce blood lead levels and improve health and developmental outcomes.

## Highlights of 2012 Childhood Blood Lead Surveillance

- A total of 291,153 children were tested for blood lead poisoning from January through December 2012. About 97 percent of children tested were 6 years of age and younger at time of testing.
- Approximately one in 130 children tested was confirmed with a venous blood lead level of 10 micrograms per deciliter or greater, the current level for public health intervention in Illinois.
- Approximately one in 14 children (10 percent) tested was confirmed with a venous lead level of 5 micrograms per deciliter or greater, the recommended federal reference value for public health intervention.
- Of the 29,160 children tested in 2012 with blood lead levels of 5 micrograms per deciliter or greater;
  - 52 percent were males
  - 42 percent were children 1 and 2 years of age
  - 82 percent were receiving Medicaid benefits
  - 13.1 were black compared to 9.4 percent white

## Illinois Lead Program's 2012 Case Management Accomplishments

- Case management services were provided to more than 3,000 lead poisoned children.
- Environmental inspections were performed at approximately 1,800 dwellings and common play areas children to identify the sources of lead poisoning.

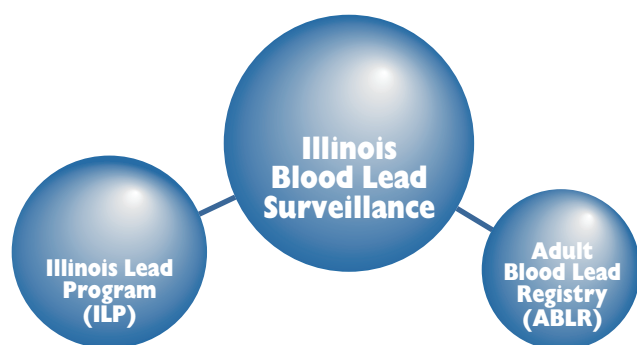
## Scope of the Illinois Lead Program Surveillance

- Estimate the extent of elevated blood-lead levels among Illinois children
- Assess 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



## Blood Lead Surveillance in Illinois

Figure 1: The Illinois Department of Public Health's Blood Lead Surveillance Programs



The Illinois Lead Program (ILP) and the Adult Blood Lead Registry (ABLR) comprise the Illinois blood lead surveillance systems.

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. If the age is 16 or older, the blood lead results are sent to the ABLR.

The Division of Epidemiologic Studies maintains the ABLR. The ABLR is a surveillance program of laboratory-reported adult blood levels. ABLR collects data on those who are 16 years of age and older and notifies federal enforcement agencies to trigger inspections and/or interventions. The purpose of ABLR is to accurately measure trends in adult blood lead levels and effectively intervene to prevent lead over-exposures. ABLR data for Illinois is published annually in the **Illinois Health and Hazardous Substances Registry Annual Report**.

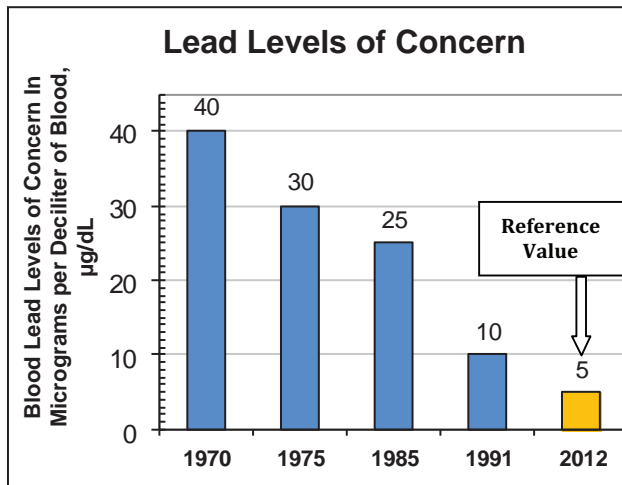
### Funding

Previously, the primary source of funding for the Illinois childhood lead poisoning prevention activities came from the CDC. The federal funding for the CDC Lead and Healthy Homes program dropped from \$29.3 million in fiscal year 2011 to less than \$2 million in fiscal year 2012, a more than 90 percent funding reduction. Consequently, CDC funding for the Illinois Program was terminated in 2012.<sup>1</sup> The Illinois Lead Program is currently supported in part by the Lead Poisoning Screening and Abatement Fund.

<sup>1</sup>[http://www.cdc.gov/nceh/information/healthy\\_homes\\_lead.htm](http://www.cdc.gov/nceh/information/healthy_homes_lead.htm)

## Changes in Blood Lead Levels for Public Health Intervention: 1970 - 2012

Figure 2: CDC Lead Level of Concern and Reference Values



Lead level of concern as established by the CDC, refers to the quantity of lead at which children were considered to have too much lead in their blood for a public health intervention. Figure 2 shows how the level of concern has evolved through the years.

In May 2012, CDC concurred with the recommendation of its Federal Advisory Committee on Childhood Lead Poisoning Prevention to change the “level of concern” of 10µg/dL to a “reference value” to be revised on a four-year cycle. Currently, the reference value is 5µg/dL or greater based on the 97.5th percentile of the National

Health and Nutritional Examination Survey (NHANES). That means 97.5 percent of the population of children aged 1 year to 5 years have blood lead levels below 5µg/dL and 2.5 percent have blood lead levels of 5µg/dL or above. These lower levels currently impact approximately 500,000 U.S. children and 29,108 of those children were identified in Illinois in 2012 through capillary and venous tests.

Based on the new reference value, any child with 5µg/dL or greater will be considered at risk. New administrative rules will have to be adopted to accommodate the reference value in Illinois.

For more information on the new reference value, visit the websites below:

[http://www.cdc.gov/nceh/lead/ACCLPP/Lead\\_Levels\\_in\\_Children\\_Fact\\_Sheet.pdf](http://www.cdc.gov/nceh/lead/ACCLPP/Lead_Levels_in_Children_Fact_Sheet.pdf)

[http://www.cdc.gov/nceh/lead/acclpp/cdc\\_response\\_lead\\_exposure\\_recs.pdf](http://www.cdc.gov/nceh/lead/acclpp/cdc_response_lead_exposure_recs.pdf)

<http://www.nchh.org/Portals/0/Contents/NCHH%20CDC%20ACCLPP%20Response%20Summary%20Chart.pdf>

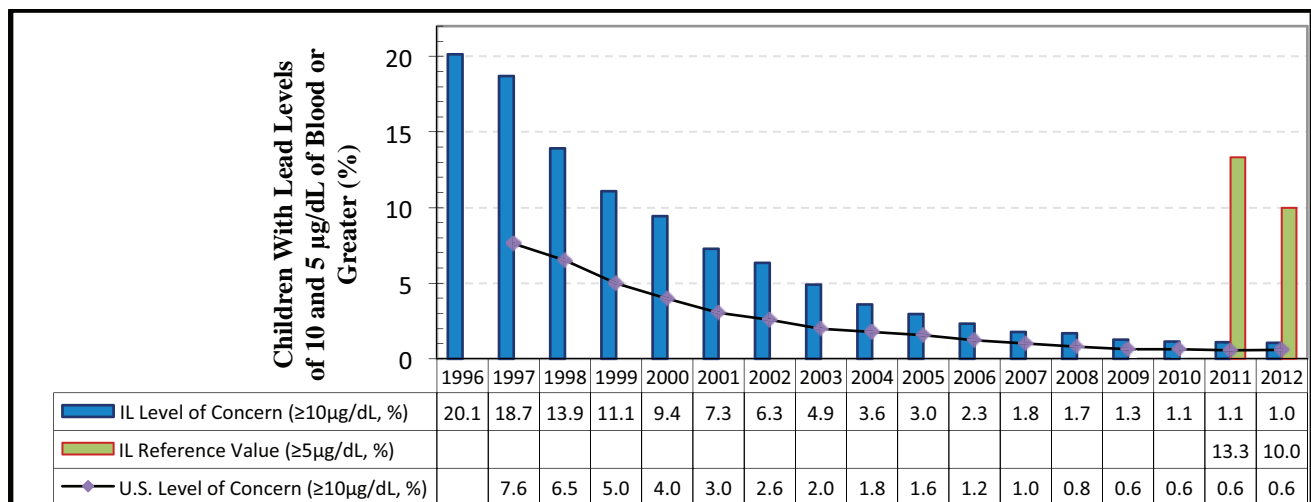
<http://www.cdc.gov/nceh/lead/>

- Preventing, controlling and eliminating lead exposures are critical because there is no safe blood lead level in children.
- Children with blood lead level greater than 5 µg/dL need ongoing monitoring and actions to reduce exposure to lead.
- Physicians should continue to use the current threshold for chelation therapy (blood lead level  $\geq 45\mu\text{g/dL}$ )

**Source:** U.S. Centers for Disease Control and Prevention

# Illinois Lead Program Annual Surveillance Report: 2012

**Figure 3: Illinois and U.S. Children Tested at Levels of Concern and Reference Value: 1996 – 2012**



**Source:** Illinois Lead Program Surveillance Data, 1996-2012. The United States average is based on the data reported by the CDC at: <http://www.cdc.gov/nceh/lead/data/St2teConfirmedByYear1997-2012.htm>  
 Level of Concern:  $10\mu\text{g/dL}$  or greater  
 Reference Value:  $5\mu\text{g/dL}$  or greater

Illinois has made a great deal of progress addressing childhood blood lead poisoning. Figure 3 shows the percentage of Illinois children at blood lead levels of concern and at the reference value. Blood lead levels of  $10\mu\text{g/dL}$  or greater significantly decreased from 20.1 percent in 1996 to 1.0 percent in 2012. However, despite the increased number of children tested and fewer identified with elevated blood lead levels, the percentage of Illinois children with the lead levels of concern still exceeds the national estimate across the years as shown in Figure 3.

Based on 2012 data from the CDC, 0.6 percent of children screened in the United States had lead levels of concern compared to 1.0 percent in Illinois in the same year. The number of Illinois children tested is underreported by CDC due to unidentifiable information and blood lead tests not reported by health care providers.

In 2012 alone, 3,035 children were identified in Illinois with the lead level of  $10\mu\text{g/dL}$  or greater based on venous and capillary blood lead tests. Of the 1,571 children tested for the first time in 2012 at blood lead levels of  $10\mu\text{g/dL}$ , a total of 1,045 were venous confirmed cases as shown on Table 3.

Lead poisoning prevention is one of the 10 great public health achievements of the decade  
[http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6019a5.htm?s\\_cid=mm6019a5\\_w](http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6019a5.htm?s_cid=mm6019a5_w)

## Illinois and U.S. Blood Lead Testing Activities: 1996-2012

The only way to know that a child is lead poisoned is to perform a blood lead test. The Illinois Lead Poisoning Prevention Act requires children 6 months through 6 years of age to be screened for lead poisoning if they reside in an area defined as high risk; or assessed for lead poisoning by a risk assessment procedure if they reside in areas defined as low risk by the Department. The Department 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 6 years of age and older.

**Active screening or lead testing** is required for:

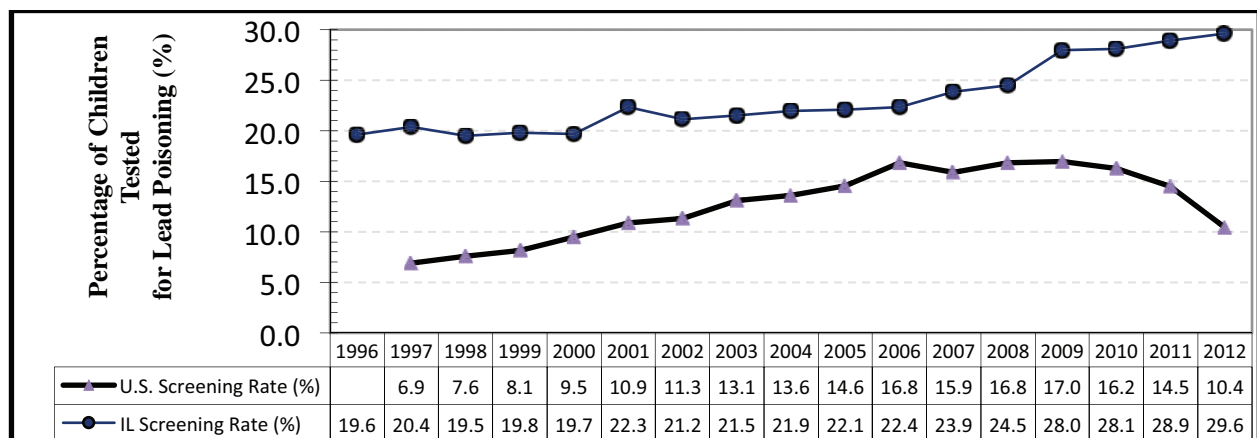
- Children residing in high risk areas for lead exposure or who answer “YES” or “I DO NOT KNOW” to the **Childhood Lead Risk Assessment Questionnaire (LRAQ)**
- Children receiving services from Medicaid, Head Start, All Kids, Women, Infants and Children (WIC)

**Assessment** is performed:

- Using LRAQ
- On children before they attend a licensed day care, school or kindergarten as required by law

As shown on Figure 4, the testing rate for blood lead in Illinois increased steadily from 19.6 percent in 1996 to 29.6 percent in 2012. The CDC reported a national blood lead testing rate of 14.5 percent for 2011 compared to a 28.6 percent testing rate in Illinois in the same year.

**Figure 4: Childhood Blood Lead Testing Rates: 1996-2012**



**Source:** Illinois Lead Program Surveillance Data, 1996-2012. <sup>2</sup>The United States average is based on the data reported by the CDC at: <http://www.cdc.gov/nceh/lead/data/StateConfirmedByYear1997-2012.htm>. <sup>2</sup>Numerator based on 2012 NCHS estimated population of Illinois children younger than 6 years of age (1,005,860)

## Blood Lead Testing Among Illinois Children in 2012

As required by the Illinois **Lead Poisoning Prevention Act** (410 ILCS 45/7) (from Ch. 111 1/2, par. 1307), health care providers and directors of clinical laboratories shall report all blood lead analyses to the Department of Public Health. The total number of children tested on Table 1 for 2012 are the actual numbers reported to the Department. 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.

**Table 1: Blood Lead Tests for Illinois Children Collected From January 1 to December 31, 2012**

Blood Specimen Type	Blood Lead Tests Reported to IDPH <sup>1</sup>		Children Tested <sup>2</sup>		Blood Lead Level, µg/dL		Children Tested by Lead Levels	
	N	%	N	%	Range	Geometric Mean <sup>3</sup>	≥ 10 µg/dL	≥ 5 µg/dL
Total	<b>325,183</b>		<b>291,153</b>		1 - 115	2.1	3,035	29,160
Venous	200,308	61.6	180,054	61.8	1 - 114	2.2	2,224	19,802
Capillary <sup>2</sup>	124,876	38.4	111,099	38.2			811	9,358

**Source:** Illinois Department of Public Health - Illinois Lead Program Surveillance Database, 2012

<sup>1</sup>Data includes multiple tests per child; <sup>2</sup>Capillary also includes unknown blood specimen type; <sup>3</sup>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

- According to the National Center for Health Statistics, NCHS 2012 Vintage Estimate, there were approximately 1.15 million Illinois children 6 years of age and younger. Of those children, 169,254 were 6 years of age.
- In 2012, approximately 325,183 blood lead test results were received for 291,153 (29.6%) Illinois children. Approximately 97 percent were children 6 years of age and younger at the time of blood lead testing.
- Approximately one in 130 children tested was confirmed with a venous blood lead level of 10µg/dL or greater.
- Approximately one in 14 children tested was confirmed with a venous lead level at the reference value of 5µg/dL or greater.

A blood lead of 10µg/dL or greater is the current level for public health intervention in Illinois.

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**Table 2: Illinois Children Tested for Blood Lead by Selected Characteristics in 2012**

Characteristic	All Children Tested	Children Tested With Blood Lead Levels					
		≥ 10 µg/dL			≥ 5 µg/dL		
	N	Venous %	Capillary <sup>2</sup> %	Total N	Venous %	Capillary <sup>2</sup> %	Total N
Total	291,153	73.3	23.7	3,035	67.9	32.1	29,160
<b>Gender</b>							
Male	145,597	72.9	27.1	1,633	67.5	32.5	15,200
Female	139,686	74.3	25.7	1,353	69.0	31.0	13,692
Unidentified <sup>1</sup>	5,870	59.2	40.8	49	37.3	62.7	268
<b>Age (Years)</b>							
< 1	35,759	59.3	40.7	172	63.8	36.2	2,806
1	66,906	72.1	27.9	789	59.9	40.1	6,521
2	50,150	70.9	29.1	711	66.0	34.0	5,711
3	42,677	75.0	25.0	536	71.0	29.0	4,759
4	41,460	77.4	22.6	368	72.6	27.4	4,329
5	33,892	73.4	26.6	259	72.7	27.3	3,109
6	8,526	84.2	15.8	57	81.3	18.7	892
7 and unidentified <sup>1</sup>	10,376	88.1	11.9	135	83.9	16.1	966
<b>Race</b>							
Black	11,820	58.3	41.7	515	41.6	58.4	1,552
White	26,096	44.1	55.9	497	18.9	81.1	2,461
Others	253,237	84.3	15.7	2,023	74.3	25.7	25,147
<b>Ethnicity</b>							
Hispanic	17,986	51.5	48.5	330	34.3	65.7	1,196
Non-Hispanic	27,787	46.2	53.8	809	22.9	77.1	3,161
Others	245,380	88.6	11.4	1,896	75.3	24.7	24,803
<b>Medicaid Enrollment Status</b>							
Medicaid	221,850	75.7	24.3	2,474	71.1	28.9	23,935
Non-Medicaid	69,303	62.6	37.4	561	53.2	46.8	5,225
<b>Laboratories Reporting Results</b>							
Public Health	51,458	51.5	48.5	742	27.5	72.5	4,367
Private	239,548	80.3	19.7	2,293	75.0	25.0	24,793

**Source:** Illinois Department of Public Health - Illinois Lead Program Surveillance Data, 2012 and the Department of Healthcare and Services Enterprise Data Warehouse; <sup>1</sup>Due to missing, incomplete, incorrect or unidentifiable addresses, the totals for each section may not add up to the total number of children tested. <sup>2</sup>There are 310 users of handheld capillary blood lead analyzers in Illinois, with 396 units in the field.

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- Sixty-two percent of children tested in 2012 had at least one venous blood lead test.
- Of all children tested, 261,993 (90.0 percent) had blood lead levels below 5µg/dL, and 29,160 (10.0 percent) were at or above this level.
- Of the 29,160 children tested in 2012 with blood lead levels of 5µg/dL or greater:
  - 52 percent were males
  - 42 percent were 1 or 2 years old
  - 82 percent were on Medicaid
- Nine percent (26,125) of the children tested had blood lead levels of 5 to 9µg/dL and 3,035 had 10µg/dL or greater (1.04 percent).
- Of all the blood lead results received in 2012, 87 percent had no information on race and 84 percent had no information on ethnicity.
- A total of 210 laboratories performed blood lead testing for 291,153 Illinois children. The blood specimens of 18 percent of all children tested was analyzed at the Illinois Department of Public Health Laboratory.
- There were 249,089 (86 percent) children tested in 2011 and 262,053 (90 percent) children tested in 2012 with lead levels below 5µg/dL, respectively.

Table 3 shows the number of children tested for the first time in 2012 as well as those retested for follow up by county, lead level and blood specimen collection type. Please be advised that some laboratories are unable to report less than 5 micrograms per deciliter of blood due to their level of detection. These differentials disproportionately inflate the number of children with blood lead levels of 5µg/dL through 9µg/dL. The current proficiency testing compliance error range is ±4µg/dL. Most laboratories that do blood lead analyses perform at an error range within ±2µg/dL. The handheld blood-lead analyzers operate within a ±3µg/dL error range.



The burden of Illinois childhood lead poisoning remains one of the highest in the nation.  
<http://www.cdc.gov/nceh/lead/data/StateConfirmedByYear1997-2012.htm>

**Table 3: Children Tested for Blood Lead by County and Delegate Agencies in 2012**

Illinois/ County/ Delegate Agency	Estimated 2012 Population 6 Years of Age and Younger <sup>a</sup>	Children Tested for Blood Lead for the <b>First Time</b> in 2012												All Children Tested by County, Blood Collection Type and Lead Level: 2011 - 2012											
		Children Tested for the First Time by Age in 2012				Children Tested for the First Time by Blood Specimen Collection Type <sup>b</sup> and Level (µg/dL)								Total Tested 2011	All Children Tested in 2011				Total Tested 2012	All Children Tested in 2012					
		Total Tested	<6 Years of Age	Age 6 Years	Age 7 - 15 Years and Age Not Identified	Confirmed (Venous)				Capillary					Capillary and Venous, µg/dL					Capillary and Venous, µg/dL					
						5 - 9	10- 14	15- 19	20 +	5 - 9	10- 14	15- 19	20 +		5 - 9	10-14	15-19	20+		5 - 9	10-14	15-19	20+		
<b>Illinois</b>	<b>1,154,225</b>	<b>161,486</b>	<b>153,577</b>	<b>2,620</b>	<b>3,936</b>	<b>7,058</b>	<b>636</b>	<b>198</b>	<b>211</b>	<b>5,308</b>	<b>349</b>	<b>89</b>	<b>88</b>	<b>290,862</b>	<b>35,609</b>	<b>1,812</b>	<b>660</b>	<b>692</b>	<b>291,153</b>	<b>26,080</b>	<b>1,873</b>	<b>569</b>	<b>578</b>		
Adams	5,894	893	869	14	9	25	15	4	1	19	2	1	0	635	58	11	6	2	1,076	66	28	6	3		
Alexander	731	143	137	5	1	7	2	1	0	13	1	0	0	177	16	6	5	2	195	26	4	1	1		
Bond	1,313	192	191	0	0	3	1	0	0	12	0	0	0	303	22	2	0	0	288	25	1	0	0		
Boone	4,936	659	632	7	7	3	0	0	0	79	1	0	1	898	89	7	3	6	1,161	152	4	1	1		
Brown	403	61	61	0	0	3	0	0	1	2	0	0	0	63	5	0	1	0	72	9	0	0	1		
Bureau	2,739	434	419	9	5	13	3	1	0	37	0	0	0	504	27	2	4	0	527	69	6	1	0		
Calhoun	390	63	58	1	2	1	0	0	0	9	0	1	1	77	4	0	0	0	93	11	1	1	1		
Carroll	988	185	182	3	0	1	0	2	0	9	0	0	0	296	12	2	1	3	272	19	0	4	2		
Cass	1,192	279	273	4	2	5	3	2	2	25	2	3	0	401	36	6	3	2	455	54	7	5	3		
Champaign	16,001	2,268	2,186	20	54	14	3	1	1	56	3	0	1	2,952	66	10	3	0	3,044	93	9	1	2		
Christian	2,935	431	423	5	3	2	3	0	0	16	1	0	1	683	45	8	1	6	620	32	7	1	1		
Clark	1,248	235	224	3	7	3	0	0	0	5	0	0	0	302	7	1	0	0	335	16	2	0	0		
Clay	1,210	168	163	2	3	0	1	0	0	16	0	0	0	295	19	2	1	2	272	33	2	0	0		
Clinton	3,010	252	247	2	2	0	1	0	0	2	2	0	0	347	10	3	0	0	364	6	3	0	0		
Coles	3,832	560	550	5	2	4	0	0	0	17	3	2	1	937	76	6	1	5	865	47	9	2	1		
Cook w/o Chicago	224,944	27,262	25,611	504	845	876	63	11	12	269	35	6	8	54,214	5,185	254	102	106	48,921	2,614	157	40	36		
Chicago	253,669	50,545	47,924	972	1,342	5,178	276	94	93	622	51	13	7	106,859	22,493	666	219	241	112,156	14,602	751	249	232		
Crawford	1,424	201	194	1	5	0	0	1	0	10	0	0	0	297	13	3	0	0	293	20	1	1	1		
Cumberland	965	116	110	1	5	0	0	0	0	5	1	0	0	207	11	4	0	0	179	11	1	0	0		
DeKalb	8,828	972	919	20	24	6	2	1	1	24	1	0	1	1,473	67	10	3	8	1,446	51	5	1	3		
DeWitt	1,272	136	129	3	4	0	1	0	0	15	1	0	1	177	14	3	2	2	183	24	2	0	1		
Douglas	1,930	265	250	9	5	1	0	0	0	9	1	0	0	350	19	6	1	0	337	15	2	1	0		
DuPage	79,302	6,678	6,204	120	319	60	13	2	4	61	5	1	0	9,442	191	26	3	12	9,667	182	23	8	5		
Edgar	1,423	217	208	4	3	6	3	1	0	12	0	0	0	241	14	1	1	3	273	23	5	2	1		
Edwards	517	72	71	0	0	0	0	0	0	1	0	0	0	114	5	3	2	0	119	4	1	0	0		
Effingham	3,169	371	351	2	18	2	0	0	0	21	3	0	0	697	23	2	0	3	542	40	3	2	0		
Fayette	1,730	279	276	1	2	3	2	0	0	8	1	0	0	395	14	7	0	0	429	22	8	0	0		
Ford	1,149	118	115	0	2	2	0	0	0	7	2	0	0	174	12	2	0	0	136	12	3	0	0		

Source: Illinois Department of Public Health – Illinois Lead Program Surveillance Database 2012.

<sup>a</sup>National Center for Health Statistics, Vintage 2012; <sup>b</sup>Capillary or finger sticks blood draw or venous blood draw. Confirmed test in Illinois is a venous blood draw.

Source: Illinois Department of Public Health – Illinois Lead Program Surveillance Database 2011 and 2012.

Children tested were 15 years of age or younger; in 2012 97 percent were children 6 years of age or younger.



Illinois/ County/ Delegate Agency	Estimated 2012 Population 6 Years of Age and Younger <sup>a</sup>	Children Tested for Blood Lead for the <b>First Time</b> in 2012												All Children Tested by County, Blood Collection Type and Lead Level: 2011 - 2012											
		Children Tested for the First Time by Age in 2012				Children Tested for the First Time by Blood Specimen Collection Type <sup>b</sup> and Level (µg/dL)								Total Tested 2011	All Children Tested in 2011				Total Tested 2012	All Children Tested in 2012					
		Total Tested	<6 Years of Age	Age 6 Years	Age 7 - 15 Years and Age Not Identified	Confirmed (Venous)				Capillary					Capillary and Venous, µg/dL					Capillary and Venous, µg/dL					
						5 - 9	10- 14	15- 19	20 +	5 - 9	10- 14	15- 19	20 +		5 - 9	10-14	15-19	20+		5 - 9	10-14	15-19	20+		
Franklin	3,317	477	456	3	9	5	2	0	0	58	2	0	0	483	19	3	1	1	599	68	4	0	0		
Fulton	2,684	343	336	1	5	10	5	2	1	27	0	1	0	484	40	8	3	3	422	48	6	3	2		
Gallatin	409	103	100	2	0	1	0	0	0	6	0	0	0	106	3	1	0	0	144	8	0	0	0		
Greene	1,088	176	175	0	1	1	0	0	2	11	0	0	0	348	24	4	0	0	337	30	2	0	3		
Grundy	4,945	391	362	10	14	11	0	0	0	5	0	0	0	550	16	0	2	0	515	18	0	0	0		
Hamilton	704	114	110	3	1	2	0	0	0	9	2	0	0	157	10	3	1	0	148	15	5	1	1		
Hancock	1,516	257	252	1	3	2	1	0	0	19	2	0	0	363	32	5	2	1	366	33	10	0	0		
Hardin	319	39	39	0	0	2	0	0	0	3	0	0	0	50	2	0	0	0	50	5	0	0	0		
Henderson	432	68	64	2	1	1	1	0	0	5	0	0	0	100	7	2	1	0	93	8	0	0	0		
Henry	4,114	611	600	6	5	4	4	1	0	62	2	1	0	979	96	12	6	3	890	103	15	2	1		
Iroquois	2,254	366	351	8	7	3	1	0	0	29	4	0	0	388	23	1	1	0	423	33	7	0	0		
Jackson	4,270	638	629	3	5	6	1	1	3	22	1	0	1	1,159	27	3	0	1	1,014	49	5	2	4		
Jasper	781	86	83	2	1	0	0	0	0	6	1	0	0	124	1	0	0	0	125	7	1	0	0		
Jefferson	3,374	350	344	1	5	2	3	0	1	31	1	0	0	567	18	5	1	4	485	36	7	0	2		
Jersey	1,694	282	274	3	2	0	2	0	0	4	2	0	0	405	20	0	0	2	439	13	4	0	0		
Jo Daviess	1,633	118	114	2	2	3	0	1	0	1	0	0	0	139	13	0	0	1	146	6	0	1	0		
Johnson	842	104	101	0	2	1	1	0	0	23	0	1	0	100	4	0	2	3	125	27	1	1	1		
Kane	54,752	7,545	7,201	151	170	83	17	8	7	319	34	8	10	14,548	622	70	30	36	14,568	774	100	30	30		
Kankakee	10,414	1,713	1,589	43	54	10	4	0	4	89	7	1	1	2,309	99	19	4	6	2,555	146	18	3	8		
Kendall	13,436	1,000	943	15	37	3	1	1	2	11	1	1	0	961	20	2	1	2	1,347	24	2	3	3		
Knox	3,746	643	625	1	15	30	8	3	0	71	9	1	0	952	158	16	5	7	892	150	22	4	6		
Lake	64,247	6,563	6,190	122	147	62	8	4	3	32	5	1	1	11,434	206	26	11	10	10,310	148	19	8	9		
LaSalle	9,053	1,267	1,218	13	14	19	5	3	1	188	2	1	3	1,466	124	16	7	2	1,663	267	11	4	6		
Lawrence	1,198	198	194	2	1	0	0	1	0	10	0	0	0	321	12	1	2	2	312	17	2	2	1		
Lee	2,645	177	170	2	5	8	3	0	1	2	1	0	0	192	13	2	2	3	205	13	4	1	1		
Livingston	3,118	432	423	2	6	1	0	0	0	53	3	2	0	781	85	13	1	3	719	97	8	3	0		
Logan	2,170	277	274	3	0	1	1	0	0	17	0	0	0	357	22	4	1	1	373	28	2	1	0		
McDonough	2,097	294	288	2	2	6	3	0	0	9	0	0	0	410	25	1	0	0	435	28	4	0	0		
McHenry	26,939	1,918	1,825	24	47	6	0	0	0	31	3	2	0	2,906	68	4	0	2	2,715	60	5	3	1		
McLean	14,780	2,347	2,312	15	17	11	7	2	2	237	7	3	3	2,632	294	17	13	8	3,419	344	21	7	9		

Source: Illinois Department of Public Health – Illinois Lead Program Surveillance Database 2012.

<sup>a</sup>National Center for Health Statistics, Vintage 2012; <sup>b</sup>Capillary or finger sticks blood draw or venous blood draw. Confirmed test in Illinois is a venous blood draw.

Source: Illinois Department of Public Health – Illinois Lead Program Surveillance Database 2011 and 2012.

Children tested were 15 years of age or younger; in 2012 97 percent were children 6 years of age or younger.

Illinois/ County/ Delegate Agency	Estimated 2012 Population 6 Years of Age and Younger <sup>a</sup>	Children Tested for Blood Lead for the <b>First Time</b> in 2012												All Children Tested by County, Blood Collection Type and Lead Level: 2011 - 2012											
		Children Tested for the First Time by Age in 2012				Children Tested for the First Time by Blood Specimen Collection Type <sup>b</sup> and Level (µg/dL)								Total Tested 2011	All Children Tested in 2011				Total Tested 2012	All Children Tested in 2012					
		Total Tested	<6 Years of Age	Age 6 Years	Age 7 - 15 Years and Age Not Identified	Confirmed (Venous)				Capillary					Capillary and Venous, µg/dL					Capillary and Venous, µg/dL					
						5 - 9	10- 14	15- 19	20 +	5 - 9	10- 14	15- 19	20 +		5 - 9	10-14	15-19	20+		5 - 9	10-14	15-19	20+		
Macon	9,661	1,460	1,390	15	48	6	26	7	8	60	4	0	1	2,941	157	42	12	6	2,635	158	44	9	12		
Macoupin	3,766	479	469	5	3	5	2	0	0	34	2	1	0	734	42	2	1	1	688	55	5	1	1		
Madison	22,545	2,781	2,698	34	18	44	12	2	2	52	8	0	2	4,113	178	27	15	8	4,191	192	33	8	5		
Marion	3,512	544	538	1	5	4	2	1	1	35	0	0	1	791	37	4	1	3	839	62	5	1	3		
Marshall	968	87	83	0	3	0	0	0	0	11	1	0	0	171	25	2	0	2	132	23	1	0	2		
Mason	1,002	149	149	0	0	0	0	0	0	12	2	0	2	279	13	5	0	4	228	24	3	1	2		
Massac	1,325	179	168	2	9	2	1	1	0	21	0	0	0	185	3	2	0	0	222	27	1	1	0		
Menard	1,026	104	99	3	2	1	0	0	0	4	0	0	0	151	6	0	0	0	137	8	0	0	0		
Mercer	1,295	195	190	3	2	3	0	0	1	18	4	0	0	299	34	5	1	0	303	37	4	1	1		
Monroe	2,704	269	260	4	2	1	1	0	0	9	0	0	1	406	12	1	5	1	372	15	1	0	1		
Montgomery	2,270	341	339	1	1	3	1	1	2	19	3	2	0	501	33	3	0	1	505	33	5	5	3		
Morgan	2,680	452	448	2	2	5	2	2	4	34	1	1	2	722	64	9	4	6	795	89	10	3	9		
Moultrie	1,355	132	127	3	2	0	0	0	0	7	0	0	0	187	20	1	0	0	194	15	0	0	0		
Ogle	4,215	319	297	12	4	2	1	2	0	23	0	0	0	460	35	7	0	2	430	38	2	2	0		
Peoria	17,952	743	720	4	14	30	14	8	8	167	30	3	5	1,915	332	69	36	32	1,110	311	71	28	26		
Perry	1,602	198	197	0	1	1	1	1	0	11	0	0	0	347	11	2	1	0	295	17	2	1	1		
Piatt	1,245	123	119	1	2	0	0	1	0	5	1	0	1	164	12	4	0	0	162	7	2	1	1		
Pike	1,396	197	197	0	0	2	1	0	0	12	0	0	1	334	27	1	1	0	302	25	4	0	1		
Pope	266	25	25	0	0	0	0	0	0	3	0	0	0	29	2	0	0	1	30	3	0	0	0		
Pulaski	485	74	70	1	2	1	2	1	0	6	0	0	0	99	11	2	0	0	102	7	4	1	1		
Putnam	404	42	40	1	0	1	0	0	0	7	0	0	0	54	5	0	0	0	56	8	1	0	0		
Randolph	2,343	298	290	2	5	4	3	0	1	21	1	0	1	476	19	1	2	3	451	40	4	1	3		
Richland	1,363	138	138	0	0	2	0	0	0	18	0	1	0	213	21	1	0	0	205	33	2	1	0		
Rock island	13,148	2,450	2,358	35	56	40	19	5	4	280	15	4	3	4,656	653	58	16	18	4,493	574	61	13	13		
St. Clair w/o ESHD	25,228	1,821	1,774	9	4	9	3	0	0	54	3	2	7	3,473	103	16	8	6	3,093	103	11	3	4		
ESHD <sup>1</sup>	3,144	1,686	1,637	21	31	17	6	2	2	101	12	6	2	4,213	319	31	5	10	3,759	327	45	14	15		
Saline	2,082	468	459	6	3	8	3	0	1	32	0	0	1	563	15	2	1	2	694	55	4	0	3		
Sangamon	17,285	2,220	2,169	13	17	24	8	2	3	111	10	7	5	3,497	224	39	18	10	3,363	219	34	16	9		
Schuyler	540	95	92	0	0	0	2	0	0	10	1	0	0	119	4	4	3	0	135	13	5	0	0		

Source: Illinois Department of Public Health – Illinois Lead Program Surveillance Database 2012.

<sup>a</sup>National Center for Health Statistics, Vintage 2012; <sup>b</sup>Capillary or finger sticks blood draw or venous blood draw. Confirmed test in Illinois is a venous blood draw.

<sup>1</sup>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: Illinois Department of Public Health – Illinois Lead Program Surveillance Database 2011 and 2012.

Children tested were 15 years of age or younger; in 2012 97 percent were children 6 years of age or younger.

<sup>1</sup>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.

Illinois/ County/ Delegate Agency	Estimated 2012 Population 6 Years of Age and Younger <sup>a</sup>	Children Tested for Blood Lead for the <b>First Time</b> in 2012												All Children Tested by County, Blood Collection Type and Lead Level: 2011- 2012											
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						5 - 9	10- 14	15- 19	20 +	5 - 9	10- 14	15- 19	20 +		5 - 9	10-14	15-19	20+		5 - 9	10-14	15-19	20+		
Scott	416	65	64	0	1	1	0	0	0	4	0	0	0	85	4	0	0	0	95	7	1	0	0		
Shelby	1,727	196	195	0	1	4	0	0	0	5	1	0	0	303	16	1	0	0	310	21	0	1	0		
Stark	423	52	50	0	2	0	0	1	1	12	1	0	0	117	26	2	1	1	74	18	1	2	1		
Stephenson	3,844	710	694	8	5	23	9	2	4	56	5	1	0	1,259	134	34	11	16	1,238	150	25	6	8		
Tazewell	11,875	534	520	5	4	0	2	0	0	50	4	0	0	1,339	91	11	4	0	688	85	9	0	0		
Union	1,389	205	203	1	1	2	1	0	0	14	1	0	0	337	21	4	2	1	320	25	3	0	0		
Vermilion	7,615	1,278	1,247	12	19	42	3	0	5	3	2	0	0	1,678	75	12	5	7	1,677	65	7	3	10		
Wabash	958	130	128	0	2	0	0	0	0	10	0	1	0	263	18	6	2	0	205	16	1	2	1		
Warren	1,450	268	260	6	2	17	3	1	3	2	0	0	0	388	32	5	3	2	386	29	4	1	4		
Washington	1,088	107	100	3	4	0	0	0	0	4	0	0	0	150	7	1	2	0	152	8	1	0	0		
Wayne	1,396	196	195	0	1	0	0	1	0	19	1	1	0	305	17	2	0	0	274	31	3	3	0		
White	1,283	215	214	1	0	1	1	0	0	14	1	0	1	355	29	3	0	0	336	29	2	0	1		
Whiteside	4,832	773	757	8	7	3	3	2	0	44	2	2	1	1,267	69	9	4	7	1,237	83	12	5	2		
Will	66,207	7,639	7,244	98	160	67	6	3	6	170	15	5	8	9,126	319	20	11	13	11,417	370	36	12	19		
Williamson	5,576	724	700	3	7	2	1	1	0	172	1	1	1	684	36	3	1	1	872	194	3	2	3		
Winnebago	26,795	3,898	3,735	59	49	96	27	2	13	480	7	1	1	6,251	952	58	24	21	6,748	983	62	14	27		
Woodford	3,573	208	203	2	3	4	0	0	0	15	5	0	0	329	29	4	0	0	301	25	6	0	1		
Egyptian <sup>2</sup>	3,774	786	773	9	3	10	4	0	1	52	1	0	2	1,024	47	6	1	2	1,174	92	6	0	4		
Evanston	6,043	1,098	1,014	9	75	25	3	1	1	7	2	0	0	1,555	60	6	3	1	1,599	56	7	1	2		
Oak Park	4,837	672	638	12	22	20	1	0	0	14	0	0	0	1,046	80	12	2	4	1,029	67	3	1	1		
Skokie	4,980	625	591	8	26	34	1	0	0	6	1	0	0	1,035	990	3	2	0	966	56	3	0	0		
Southern Seven <sup>3</sup>	5,357	769	743	9	15	15	7	3	0	83	2	1	0	977	59	14	9	7	1,044	120	13	4	3		
Stickney	583	88	83	4	1	4	0	0	0	0	1	0	0	147	23	0	0	0	177	14	1	1	0		

Source: Illinois Department of Public Health – Illinois Lead Program Surveillance Database 2012.

<sup>a</sup>National Center for Health Statistics, Vintage 2012; <sup>b</sup>Capillary or venous blood draw. Confirmed test in Illinois is a venous blood draw.

<sup>2</sup>Egyptian counties include Saline, Galatine and White.

<sup>3</sup>Southern Seven counties include Alexander, Hardin, Johnson, Massac, Pope, Pulaski and Union.

Source: Illinois Department of Public Health – Illinois Lead Program Surveillance Database 2011 and 2012.

Children tested were 15 years of age or younger; in 2012 97 percent were children 6 years of age or younger.

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# Burden of Lead Poisoning in Illinois Compared to Other U.S. States

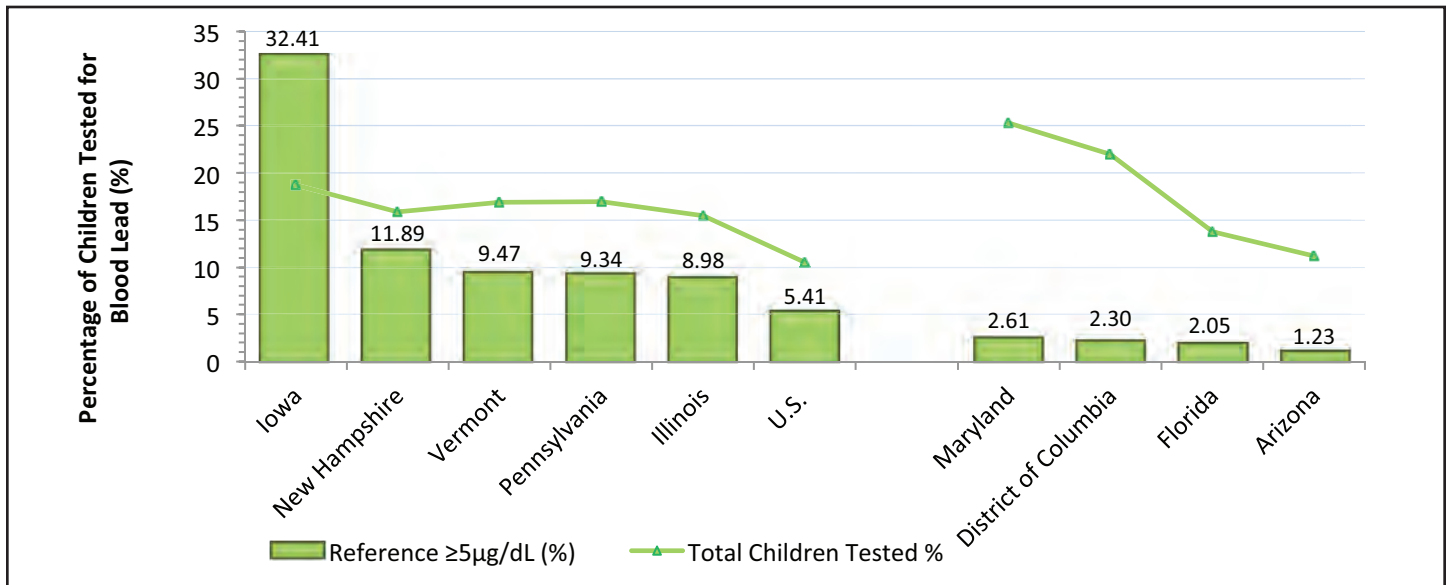
- Based on 2012 national data from CDC, Illinois is the fifth most populous child state accounting for 4.15 percent (1,005,860) of the U.S. population of children aged 5 years and younger. States more populous than Illinois include California, Texas, New York and Florida.
- Based on the Illinois Lead Program Surveillance database, Illinois tested 26.94 percent of children aged 5 years and younger in 2012. Please note that CDC reported incomplete data for Illinois. Other states reported by CDC that tested better than Illinois were: New York, Massachusetts, Rhode Island, Connecticut, and New Jersey.
- Illinois ranks second nationally with 1.35 percent of children with confirmed blood lead levels of  $10\mu\text{g}/\text{dL}$  or greater. Of the 15,685 children identified nationally with confirmed lead levels in 2012 13.45 percent were from Illinois (Figure 6).
- A total of 137,031 children were identified nationally in 2012 with lead levels at reference value of  $5\mu\text{g}/\text{dL}$  or greater and 10.2 percent of the children were from Illinois (Figure 5).

**Source:** CDC. Downloaded December 26, 2013  
<http://www.cdc.gov/nceh/lead/data/StateConfirmedByYear1997-2012.htm>



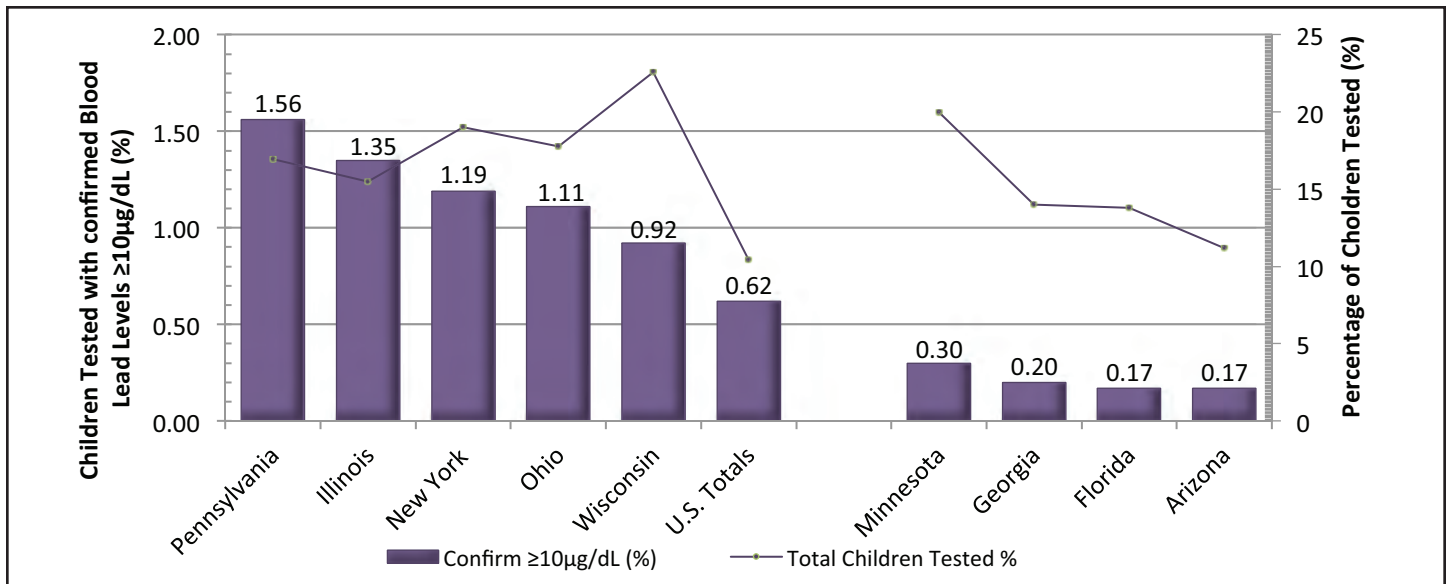
# Illinois Lead Program Annual Surveillance Report: 2012

**Figure 5: Children Tested With Blood Lead Levels at 5µg/dL or Greater by Most and Least Burdened States in 2012**



**Source:** CDC. <http://www.cdc.gov/nceh/lead/data/StateConfirmedByYear1997-2012.htm>  
 Data downloaded on December 26, 2013, based on states that tested at least 10 percent of children

**Figure 6: Children Tested With Confirmed Blood Lead Levels at 10µg/dL or Greater by Most and Least Burdened States in 2012**



**Source:** CDC. <http://www.cdc.gov/nceh/lead/data/StateConfirmedByYear1997-2012.htm>  
 Data downloaded on December 26, 2013, based on states that tested at least 10 percent of children.

### Children at Highest Risk for Lead Exposure

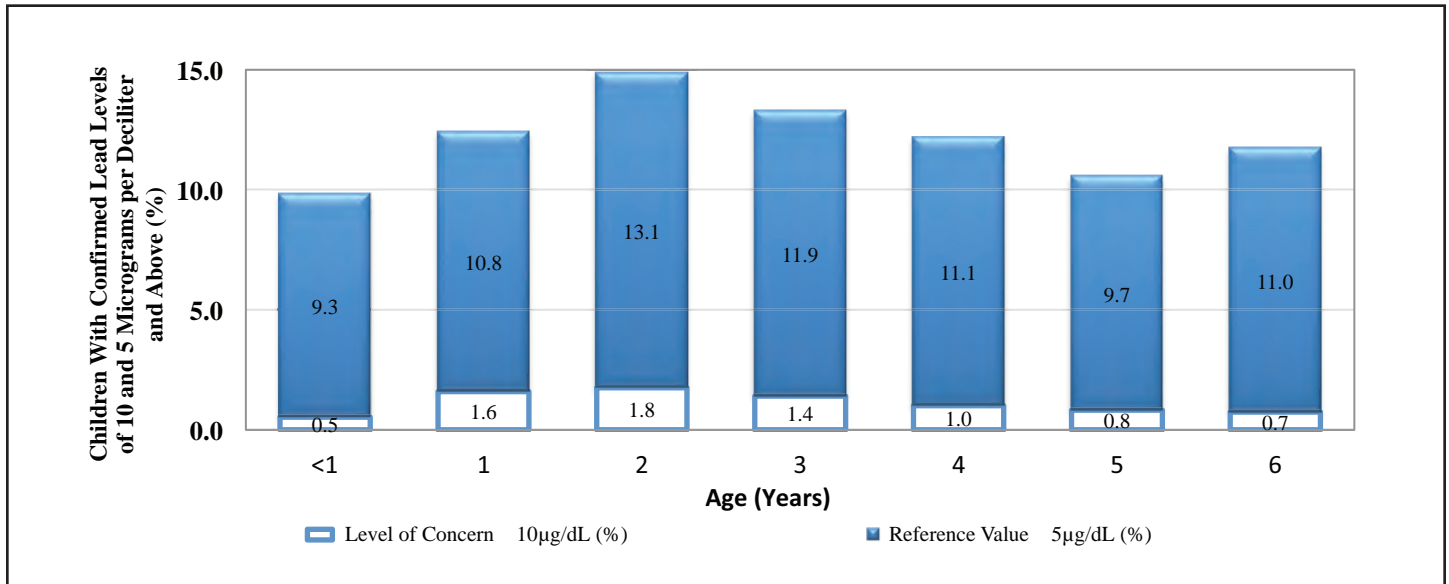
- **Young children and those with persistent oral behaviors:** Frequent hand-to-mouth exposures to surfaces with lead-containing dust (e.g., crawling on the floor, playing at a window) lead ingestion. Approximately 291,153 Illinois children tested in 2012, 29,100 (9 percent) had blood lead levels of 5µg/dL or greater.
- **Children in low income households:** Among Illinois children enrolled in Medicaid, WIC, Head Start, and All Kids in 2012, 10.8 percent had blood lead levels of 5µg/dL or greater.
- **African-American children:** In Illinois, African-American children are 1.4 times more likely to have more lead in their blood compared to white children.
- **Children residing in pre-1978 housing units:** A national survey estimated that in older homes where younger children reside, about 25 percent have lead-based paint hazards. For homes built before 1940, 94 percent are estimated to contain lead-based paint hazards; for homes built between 1940 through 1959, 87 percent have lead-based paint hazards. In Illinois, 23 percent of homes were built between 1940 and 1959; 25 percent of Illinois homes and 46 percent of Chicago homes were built in 1939 or earlier.
- **Children living in High-risk ZIP codes based on risk assessment:** Age of housing unit and poverty status were among the primary risk indicators for establishing high-risk ZIP codes.
- **Children exposed to oral imported products with uncontrolled amount of lead:** Such products include imported toys, cosmetics (surma, kohl), medicine (folk remedies), pottery, candies and spices.
- **Children with low iron:** Absorption of lead increases in the low-iron deficient individuals. Iron deficient children can absorb as much as 50 percent of the lead they ingest.

#### Sources:

- [http://www.idph.state.il.us/envhealth/Lead\\_PhysiciansGuide.pdf](http://www.idph.state.il.us/envhealth/Lead_PhysiciansGuide.pdf)
- American Healthy Homes Survey: Lead and Arsenic Findings. Office of Healthy Homes and Lead Hazard Control, U.S. Department of Housing and Urban Development.  
[http://portal.hud.gov/hudportal/documents/huddoc?id=AHHS\\_REPORT.pdf](http://portal.hud.gov/hudportal/documents/huddoc?id=AHHS_REPORT.pdf)

## Blood Lead Levels in Illinois Children by Age

Figure 7: Confirmed Lead Levels of Concern and Reference Values by Age in 2012



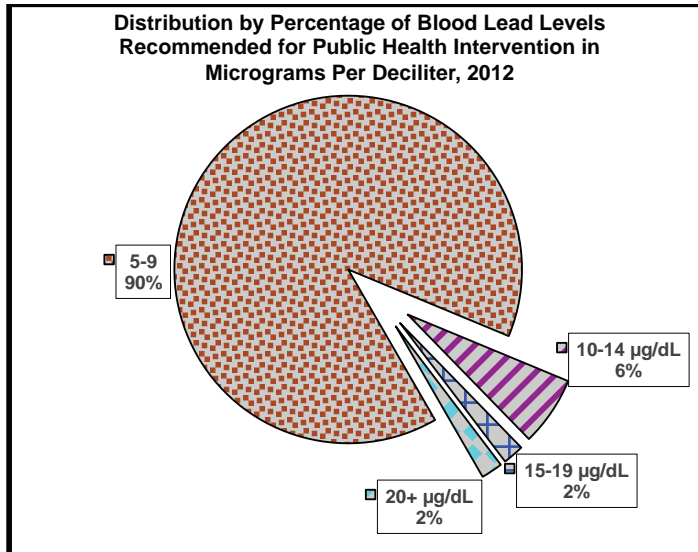
Source: Illinois Lead Program Surveillance Data, 2012

The percentage of Illinois children at confirmed (venous) blood lead levels of 10µg/dL or greater, or children with venous blood lead levels at the reference value of 5µg/dL or greater, all peaked at approximately 2 years of age (Figure 7). Illinois law requires physicians to screen children 6 months through 6 years of age who live in high risk areas for lead.

Before attending a licensed daycare, kindergarten or school, Illinois law also requires parents or legal guardians to provide a statement from a physician or health care provider that the child has been assessed for lead risk, if residing in a low risk area, or screened for pediatric blood lead poisoning, if living in a high risk area.

## Distribution of Blood Lead Levels and Adverse Effects

Figure 8: Distribution of Blood Lead Levels for Public Health Intervention in 2012



There is no safe level of lead in the body. As shown in Figure 8, about 90 percent of Illinois children have lead levels 5µg/dL to 10µg/dL and 6 percent have moderate levels of 10µg/dL to 14µg/dL.

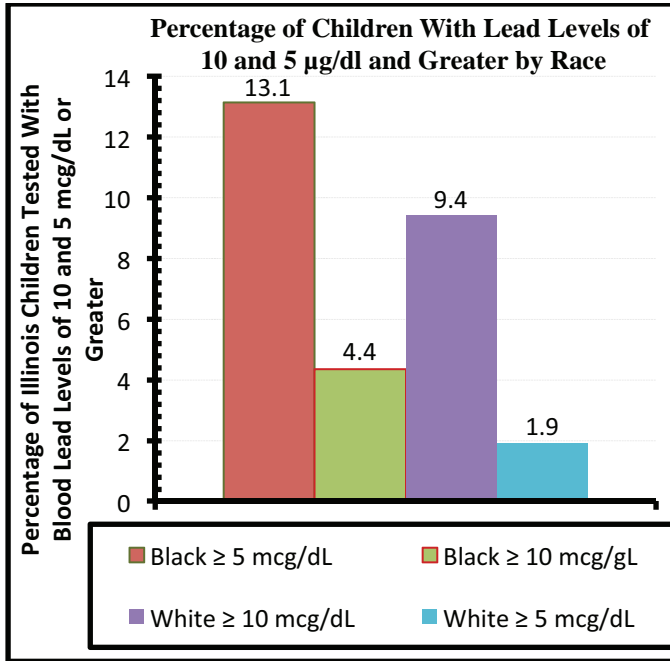
Source: Illinois Lead Program Surveillance Data, 2012





## Blood Lead Level and Race

**Figure 9: Illinois Childhood Blood Lead Levels by Black and White Race in 2012**



Race and ethnicity information is largely unknown. Among the 291,153 children tested in 2012, 83 percent reported no race information, and 84 percent had no ethnic information. Race and ethnic status were available for only 17 percent of them (9 percent whites, 4 percent blacks and 4 percent other races). Of the 11,820 black children tested, 4.4 percent had lead levels of 10µg/dL or greater and 13.1 percent had lead levels of 5µg/dL or greater. Of the 26,096 white children tested, approximately 1.9 percent had blood lead levels of 10µg/dL and 9.4 percent had blood lead levels of 5µg/dL or greater (Figure 9).

Source: Illinois Lead Program Surveillance Data, 2012

**Figure 10: Blood Lead Levels by Race from 1996 - 2012**

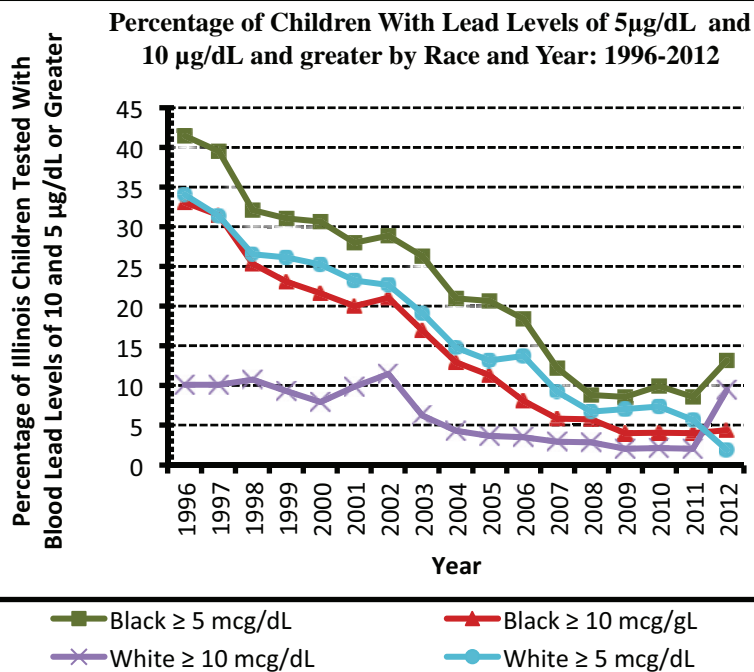


Figure 10 validates the significant differences in lead poisoning between black and white children through the years. Black children are disproportionately burdened by lead poisoning compared to their white counterparts.

## Lead Testing Activities in Illinois, Chicago and the United States: 2011-2012

**Table 4: Blood Lead Burden in Illinois, Chicago and United States: 2011 - 2012**

	2011		2012	
<b>Illinois<sup>1</sup></b>				
All Children Tested	290,862	%	291,153	%
≥ 10 µg/dL	3,164	1.1	3,035	1.0
Reference Value ≥5 µg/dL	44,667	15.4	29,160	<0.1
<b>Illinois without Chicago</b>				
≥ 10 µg/dL	2,054	0.7	1,915	0.7
Reference Value ≥5 µg/dL	35,221	12.1	21,687	7.4
<b>Chicago</b>				
≥ 10 µg/dL	1,110	1.0	1,120	1.0
Reference Value ≥5 µg/dL	9,446	8.9	7,473	7.3
<b>United States<sup>2</sup></b>				
Lead poisoning rate ≥ 10 µg/dL	20,740	0.6	15,685	0.6
Reference Value ≥5 µg/dL	214,275	5.8	137,031	5.4

**Source:** Illinois Lead Program Surveillance Data, 2011-2012; and U.S. Centers for Disease Control and Prevention (CDC) Blood Lead Surveillance Data, 2011-2012

<http://www.cdc.gov/nceh/lead/data/StateConfirmedByYear1997-2012.htm> downloaded February 11, 2014

<sup>1</sup>Of all children tested in 2012 in Illinois, 93 percent were younger than 6 years of age. <sup>2</sup>Children younger than 6 years of age only

Data in Table 4 includes capillary and venous tests for all children whose blood lead results were reported to the Department in the specified year. The data also includes tests results obtained with a portable desk top blood lead analyzer that operates within a +/- 3 µg/dL error range.

The new reference value includes blood lead data of 5µg/dL or greater. 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.

**Note:** All the children tested in 2012 were 15 years of age or younger with 97 percent being children 6 years of age and younger. These numbers included in Table 5 children tested for the first time, as well as those being retested for follow-up (lead prevalence).

# Illinois Lead Program Annual Surveillance Report: 2012

**Table 5: Total and Pre-1978 Occupied Housing Units**

Illinois/County/ City/ Delegate Agencies	Total Housing Units	Pre-1978 Housing Units Estimates	Total Occupied Housing Units (%)	Pre-1978 Occupied Housing Units <sup>a</sup>		
		(%) <sup>b</sup>		Owner Occupied (%)	Rental Occupied (%)	Total Estimates (%) <sup>b</sup>
US	130,038,080		87.8			
Illinois	5,267,614	70	90.6	44.5	22.3	66.8
Adams	29,887	76	90.8	54.2	19.3	73.5
Alexander	4,126	80	80.4	51.5	21.6	73.1
Bond	7,087	67	88.3	50.6	11.9	62.5
Boone	19,581	52	91.5	34.2	12.4	46.6
Brown	2,475	76	86.4	53.1	14.8	67.9
Bureau	15,686	82	92.9	60.9	19.4	80.3
Calhoun	2,824	65	72.4	48.8	13.4	62.1
Carroll	8,382	76	83.6	58.4	17.3	75.7
Cass	5,875	80	86.1	55.5	21.7	77.2
Champaign	85,888	59	90.6	32.0	24.7	56.7
Christian	15,532	76	91.0	56.7	17.5	74.2
Clark	7,804	73	86.5	55.7	16.4	72.1
Clay	6,437	69	87.2	52.3	14.2	66.5
Clinton	15,136	63	92.5	47.2	12.8	60.0
Coles	23,376	66	89.4	43.8	22.5	66.3
Cook w/o Chicago	975,692	74	92.6	46.3	31.8	78.1
Chicago	1,197,741	85	86.2	39.9	43.7	83.5
Crawford	8,733	73	89.5	56.0	16.0	71.9
Cumberland	4,918	64	84.8	46.3	15.3	61.6
DeKalb	40,297	57	93.9	33.6	20.8	54.4
DeWitt	7,506	77	90.7	58.6	17.3	75.9
Douglas	8,336	74	90.8	55.3	14.1	69.5
DuPage	355,804	57	94.3	41.4	12.3	53.7
Edgar	8,810	79	89.4	60.0	15.9	75.9
Edwards	3,214	76	86.7	53.9	20.3	74.2
Effingham	14,527	63	92.7	46.3	12.9	59.2
Fayette	9,314	74	87.8	56.0	16.6	72.7
Ford	6,271	86	89.9	63.9	18.4	82.3
Franklin	18,547	75	87.5	56.3	15.2	71.5
Fulton	16,250	83	90.3	64.5	17.2	81.7
Gallatin	2,818	74	84.4	54.1	14.4	68.6
Greene	6,429	78	90.0	62.4	15.7	78.1
Grundy	19,496	51	92.1	35.2	10.9	46.2
Hamilton	4,101	72	85.4	59.5	12.4	71.9
Hancock	9,286	79	86.3	61.1	15.8	76.9
Hardin	2,474	74	75.5	52.5	16.7	69.1
Henderson	3,900	76	83.2	57.0	16.5	73.5
Henry	22,083	80	92.5	60.2	18.0	78.2
Iroquois	13,459	79	87.9	59.4	16.3	75.7
Jackson	28,273	65	84.1	33.8	27.4	61.2
Jasper	4,369	70	91.6	53.9	11.0	64.9
Jefferson	17,110	63	89.8	42.8	16.7	59.5
Jersey	9,770	65	88.3	44.5	14.8	59.4

# Illinois Lead Program Annual Surveillance Report: 2012

Illinois/County/ City/ Delegate Agencies	Total Housing Units	Pre-1978 Housing Units Estimates	Total Occupied Housing Units (%)	Pre-1978 Occupied Housing Units <sup>a</sup>		
		(%) <sup>b</sup>		Owner Occupied (%)	Rental Occupied (%)	Total Estimates (%) <sup>b</sup>
Jo Daviess	13,421	64	74.5	51.0	16.8	67.8
Johnson	5,469	53	80.4	37.3	11.5	48.8
Kane	178,651	53	94.6	35.2	14.9	50.1
Kankakee	44,849	66	91.3	43.1	19.3	62.4
Kendall	37,822	32	94.4	22.9	6.9	29.8
Knox	24,084	84	90.8	58.4	24.1	82.5
Lake	257,971	51	92.7	36.0	11.7	47.8
LaSalle	49,766	74	91.1	54.6	17.5	72.2
Lawrence	6,988	78	90.2	53.8	20.7	74.5
Lee	14,971	79	91.7	57.1	19.4	76.5
Livingston	15,836	77	92.4	57.9	16.3	74.2
Logan	12,081	81	90.9	60.4	18.8	79.2
McDonough	14,341	75	90.1	49.1	24.4	73.4
McHenry	114,791	42	94.2	31.1	8.5	39.6
McLean	68,789	55	91.8	35.1	16.0	51.2
Macon	50,599	79	88.8	55.5	20.4	75.9
Macoupin	21,689	70	89.3	54.3	14.2	68.6
Madison	116,653	69	91.6	48.3	17.4	65.8
Marion	18,345	69	88.0	49.7	15.6	65.3
Marshall	5,946	81	86.8	65.1	12.9	78.0
Mason	7,094	80	91.3	63.3	15.0	78.3
Massac	7,119	66	88.4	46.7	14.9	61.6
Menard	5,644	66	89.6	49.5	12.3	61.8
Mercer	7,362	76	93.2	57.5	16.7	74.2
Monroe	13,136	44	94.3	32.9	9.2	42.2
Montgomery	13,017	75	89.9	56.9	16.4	73.3
Morgan	15,556	76	90.0	50.8	23.2	74.0
Moultrie	6,192	75	90.9	59.9	14.8	74.7
Ogle	22,386	68	92.3	47.9	18.5	66.5
Peoria	82,602	80	90.8	52.2	23.0	75.2
Perry	9,512	72	86.9	56.6	15.0	71.6
Piatt	7,262	72	90.3	56.5	12.1	68.6
Pike	8,017	80	82.9	61.9	17.2	79.0
Pope	2,507	60	73.7	41.8	14.4	56.2
Pulaski	3,211	71	78.8	50.3	17.2	67.6
Putnam	3,071	69	82.5	52.9	15.4	68.3
Randolph	13,686	69	87.7	54.4	13.7	68.1
Richland	7,568	71	88.2	55.0	15.8	70.8
Rock island	65,676	83	92.0	58.2	22.3	80.5
St. Clair w/o ESHD	101,632	58	90.5	40.3	19.7	59.9
ESHD <sup>1</sup>	13,431	85	82.4	45.5	39.1	84.6
Saline	11,910	71	88.9	47.4	18.7	66.0
Sangamon	89,624	63	91.5	41.4	17.5	59.0
Schuyler	3,465	74	86.8	58.2	16.2	74.3
Scott	2,477	71	86.4	53.1	19.7	72.8

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Illinois/County/ City/ Delegate Agencies	Total Housing Units	Pre-1978 Housing Units Estimates	Total Occupied Housing Units (%)	Pre-1978 Occupied Housing Units <sup>a</sup>		
		(%) <sup>b</sup>		Owner Occupied (%)	Rental Occupied (%)	Total Estimates (%) <sup>b</sup>
Shelby	10,305	77	87.7	58.1	16.8	74.9
Stark	2,707	87	89.1	71.1	17.1	88.3
Stephenson	22,111	76	88.8	53.6	21.6	75.2
Tazewell	57,010	75	94.2	56.6	15.9	72.5
Union	7,946	68	88.9	45.4	15.8	61.2
Vermilion	36,468	82	88.4	57.3	22.5	79.8
Wabash	5,654	73	86.7	56.8	13.8	70.6
Warren	7,731	85	89.0	59.6	21.9	81.5
Washington	6,544	72	92.6	55.9	13.6	69.5
Wayne	8,030	69	89.8	50.5	15.9	66.4
White	7,273	75	88.9	57.4	13.6	71.0
Whiteside	25,729	80	91.7	59.5	18.1	77.6
Will	233,921	43	94.1	28.4	9.3	37.6
Williamson	30,070	62	87.5	42.4	14.7	57.0
Winnebago	125,301	68	89.8	43.8	20.7	64.4
Woodford	14,971	68	94.8	53.0	12.2	65.3
Egyptian <sup>2</sup>	22,001	73	88.3	51.6	16.5	68.1
Evanston	32,856	87	88.6	51.6	35.0	86.6
Non DA <sup>3</sup>	496,622	133	92.8	44.1	13.5	57.6
Oak Park	24,153	92	90.8	59.3	32.2	91.5
Skokie	24,258	89	92.8	66.0	21.4	87.4
Southern Seven <sup>4</sup>	32,852	67	83.1	45.9	15.7	61.6
Stickney	2,720	81	87.2	67.3	10.8	78.1

**Source:** <sup>a</sup>Pre-1978 housing unit was estimated from U.S. Census Bureau, 2010 American Community Survey Five-Year Estimate, DP04; <sup>b</sup>Pre-1978 housing unit was estimated from U.S. Census Bureau, 2005-2009 American Community Survey Five-Year Estimate B25034.YEAR STRUCTURE BUILT - Universe: HOUSING UNITS;

<sup>1</sup>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.

<sup>2</sup>Egyptian counties include Saline, Galatine and White.

<sup>3</sup>Non-DA or Non-delegate agencies include the counties of Jo Daviess, Ogle, DuPage, Lee, Grundy, Brown, Hancock, Marshall, Putnam and LaSalle.

<sup>4</sup>Southern Seven counties include Alexander, Hardin, Johnson, Massac, Pope, Pulaski and Union.

Deteriorating lead-based paint remains the primary source of exposure to children. Approximately 54 percent of houses built prior to the residential lead paint ban of 1978 are estimated to have lead. Table 5 indicates that 67 percent of pre-1978 housing units in Illinois are occupied. Seventy-three percent of occupied pre-1978 housing units are located outside of the city of Chicago.

[http://scorecard.goodguide.com/env-releases/lead/rank-counties.tcl?how\\_many=50&drop\\_down\\_name=Number+of+housing+units+with+a+high+risk+of+lead+hazards&fips\\_state\\_code=17](http://scorecard.goodguide.com/env-releases/lead/rank-counties.tcl?how_many=50&drop_down_name=Number+of+housing+units+with+a+high+risk+of+lead+hazards&fips_state_code=17)

# Lead Levels of Children Who Benefited From Medical Assistance Programs

Medical assistance programs hereby refer to the authorized Social Security Acts of Title XIX (Medicaid) and the Children's Health Insurance Program (CHIP) that also covers All Kids Health Insurance Act as administered by the Illinois Department of Healthcare and Family Services (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. All children enrolled in the Illinois Department of Healthcare and Family Services (HFS) medical assistance programs are mandated to be universally screened between the ages of 12 months and 24 months of age. Children 36 months through 6 years of age, for whom no record of a previous screening exists, also should be screened for blood lead poisoning.

In 2012, HFS through their Illinois Health Connect (IHC) established a benchmark for primary care providers (PCP) in the IHC roster to qualify for a bonus payment for lead screening. Any PCP who screened 72.2 percent of their qualifying patients in 2012 on the IHC roster received a bonus payment. A **qualifying patient** was any child on the PCP's Illinois Health Connect panel roster on December 1, 2012, that turned 24 months in calendar year 2012.

The 2012 IHC bonus measure for lead screening has a benchmark of 72.2 percent of children who have had at least one lead screening prior to age 24 months.

For specific questions about IHC bonus measure, contact an IHC Quality Assurance Nurse or the IHC Provider Services Help Desk at 877-912-1999, extension 3.

For more information, go to:

<http://www.illinoishealthconnect.com/files/downloads/LeadScreening2012bonus.pdf>

or call Meridian Health Plan (MHP) Quality Management Department at 312-705-2900.

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Seventy-six percent of all children tested in 2012 were beneficiaries of the HFS Medical Assistance program compared to 24 percent who did not participate in the program. Of all the Medical Assistance Program recipient children tested, 1.4 percent had blood lead levels of 10µg/dL or greater compared to non-participants.

Seventy-five percent of all children tested in 2012 with lead levels at reference value of 5µg/dL or greater were Medical Assistance Program recipients compared to 25 percent non-participant children. Based on all the children in the Medical Assistance Program tested, 11.3 percent had lead levels at the reference value compared to 9.7 percent among non-participants.

In August of 2009, the CDC published a recommendation for blood lead screening of Medicaid eligible children aged 1 year to 5 years as follows:

1. *Decisions regarding the level of risk for elevated blood lead levels among Medicaid-eligible children should be made by state and local health departments;*
2. *Lead screening tests should be provided at WIC sites, and new blood lead testing technologies should be considered; and*
3. *Existing surveillance systems should be refined to include other measures of risk of exposure, including environmental measures, so that they are not solely dependent on blood lead level testing for identifying risk for lead poisoning.*

**<http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5809a1.htm>**

In March 2012, the Centers for Medicare and Medicaid Services (CMS) revised its screening policy for Medicaid eligible children to correspond with the recommendations of the CDC. The proposed plan encourages targeted screening in states that have sufficient data to demonstrate that universal screening is not the most effective method of identifying exposure to lead. The new policy also encourages partnerships between state Medicaid and public health or lead screening programs to collect and share data needed to support such a change and also to provide new screening guidelines to providers.

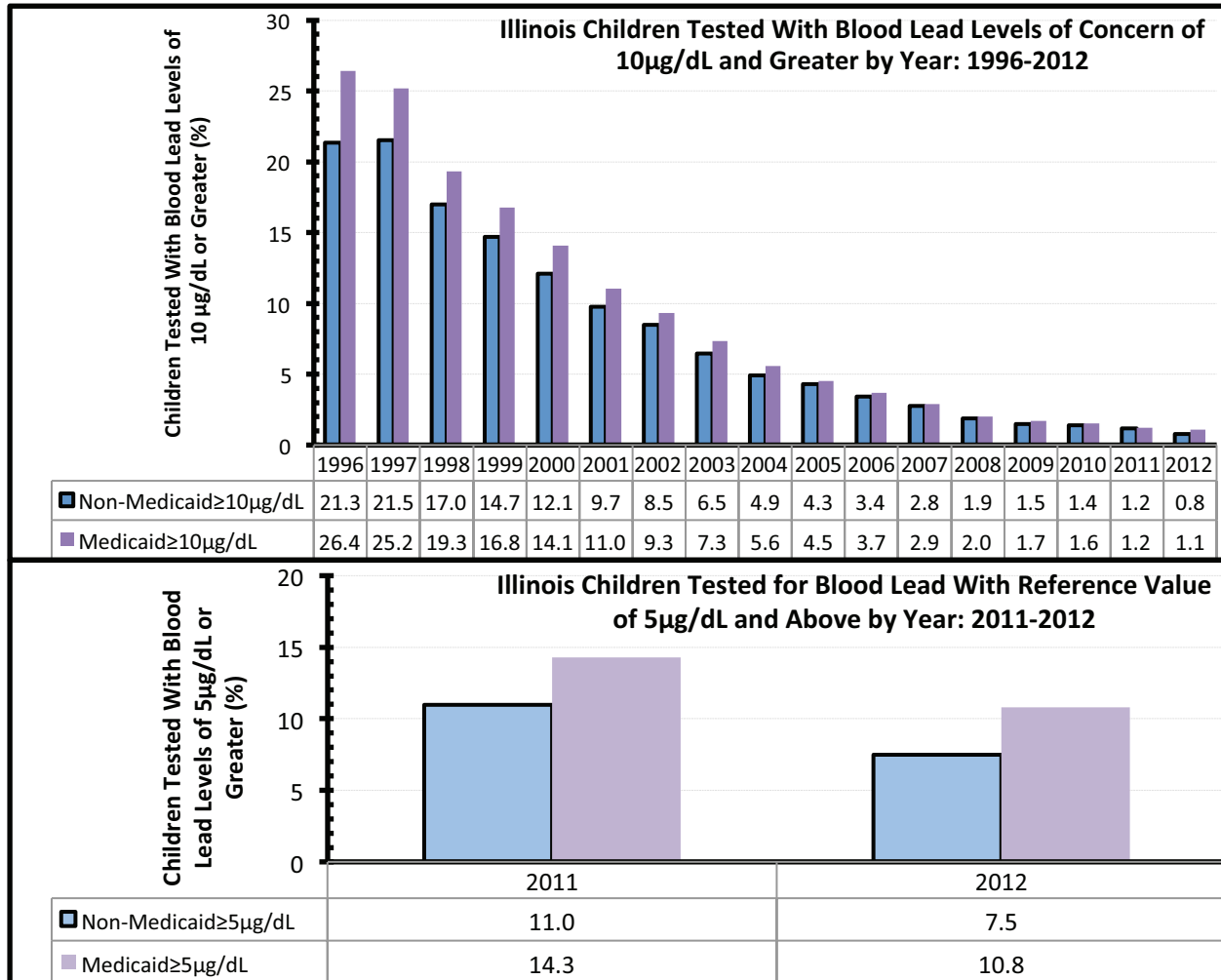
**<http://medicaid.gov/Federal-Policy-Guidance/Downloads/CIB-03-30-12.pdf>**

The Illinois Department of Public Health has data sharing agreements with Illinois Department of Healthcare and Family Services and the Department of Human Services.

Figure 11 shows that there has been a significant decrease in childhood lead poisoning in Illinois even among children eligible for Medicaid assistance programs.

# Illinois Lead Program Annual Surveillance Report: 2012

**Figure 11: Blood Lead Level of Concern and Reference Values of Medicaid and Non-Medicaid Eligible Children: 1996-2012**



**Data Source:** Illinois Department of Public Health-Illinois Lead Program Surveillance Database: 1996-2012 and the Illinois Department of Healthcare and Family Services Enterprise Data Warehouse



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**Table 6: The 2012 Blood Lead Test Results of Children Eligible for Medical Assistance Compared to Ineligible Children (Medicaid Versus Non-Medicaid Eligible Children)**

County	Total Number of Children Tested in 2012	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
<b>Illinois</b>	<b>291,153</b>	<b>76.2</b>	<b>1.1</b>	<b>10.8</b>	<b>23.8</b>	<b>0.8</b>	<b>7.5</b>
Adams	1,076	71.8	4.7	12.0	28.2	0.3	3.3
Alexander	195	82.6	2.5	17.4	17.4	5.9	11.8
Bond	288	83.7	0.4	9.5	16.3	0.0	6.4
Boone	1,159	85.4	0.5	13.4	14.6	0.6	15.4
Brown	72	50.0	2.8	22.2	50.0	0.0	5.6
Bureau	529	71.5	1.6	16.7	28.5	0.7	9.3
Calhoun	93	57.0	3.8	15.1	43.0	2.5	15.0
Carroll	272	73.9	2.5	10.9	26.1	1.4	4.2
Cass	454	81.7	3.8	16.7	18.3	1.2	8.4
Champaign	3,045	73.4	0.4	3.7	26.6	0.4	2.7
Christian	620	74.2	2.0	8.0	25.8	0.0	2.5
Clark	335	77.3	0.8	6.6	22.7	0.0	1.3
Clay	272	86.8	0.8	13.1	13.2	0.0	11.1
Clinton	364	77.2	1.1	2.5	22.8	0.0	2.4
Coles	864	72.5	1.6	8.1	27.5	0.8	3.4
Cook	161,081	78.5	1.0	12.6	21.5	0.7	8.0
Crawford	293	77.1	1.3	9.7	22.9	0.0	1.5
Cumberland	179	78.2	0.0	6.4	21.8	2.6	7.7
De Kalb	1,445	78.8	0.6	4.4	21.2	0.7	3.3
De Witt	184	70.1	2.3	20.2	29.9	0.0	3.6
Douglas	337	65.0	0.9	6.4	35.0	0.8	3.4
Du Page	9,670	66.3	0.4	2.5	33.7	0.3	1.9
Edgar	273	66.7	4.4	13.7	33.3	0.0	6.6
Edwards	119	75.6	1.1	4.4	24.4	0.0	3.4
Effingham	541	80.8	1.1	10.1	19.2	0.0	1.9
Fayette	429	85.5	2.2	7.4	14.5	0.0	4.8
Ford	136	69.9	3.2	12.6	30.1	0.0	7.3
Franklin	599	76.3	0.7	11.4	23.7	0.7	14.8
Fulton	422	76.1	3.1	15.0	23.9	1.0	10.9
Gallatin	144	66.7	0.0	7.3	33.3	0.0	2.1
Greene	336	83.3	1.8	10.7	16.7	0.0	8.9
Grundy	515	68.0	0.0	2.6	32.0	0.0	5.5
Hamilton	148	79.1	4.3	15.4	20.9	6.5	12.9
Hancock	366	69.4	2.8	14.6	30.6	2.7	5.4
Hardin	50	84.0	0.0	9.5	16.0	0.0	12.5
Henderson	94	67.0	4.8	14.3	33.0	0.0	6.5
Henry	889	64.8	2.4	16.1	35.2	1.3	8.9
Iroquois	423	70.4	2.3	8.4	29.6	0.0	12.0
Jackson	1,013	85.9	1.3	6.3	14.1	0.0	3.5
Jasper	125	77.6	1.0	7.2	22.4	0.0	3.6
Jefferson	485	78.8	2.1	9.2	21.2	1.0	9.7
Jersey	439	64.9	1.4	5.3	35.1	0.0	1.3

# Illinois Lead Program Annual Surveillance Report: 2012

County	Total Number of Children Tested in 2012	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
Jo Daviess	146	71.2	1.0	4.8	28.8	0.0	4.8
Johnson	125	78.4	3.1	26.5	21.6	0.0	14.8
Kane	14,554	84.0	1.1	6.6	16.0	1.1	5.3
Kankakee	2,551	76.7	1.3	7.2	23.3	0.7	6.2
Kendall	1,347	66.4	0.6	2.5	33.6	0.7	2.2
Knox	892	75.0	4.0	22.1	25.0	2.7	15.7
Lake	10,319	71.1	0.4	1.8	28.9	0.3	1.8
La Salle	1,664	67.7	1.6	18.2	32.3	0.6	15.8
Lawrence	312	81.7	1.2	7.8	18.3	3.5	3.5
Lee	205	67.3	3.6	11.6	32.7	1.5	4.5
Livingston	718	77.2	2.0	14.8	22.8	0.0	15.9
Logan	373	76.9	0.7	7.7	23.1	1.2	10.5
McDonough	435	74.7	0.9	8.6	25.3	0.9	3.6
McHenry	2,719	69.5	0.3	2.0	30.5	0.5	3.7
McLean	3,417	65.3	0.9	10.4	34.7	1.3	13.1
Macon	2,634	79.0	1.1	8.1	21.0	7.6	10.0
Macoupin	688	72.5	1.0	9.8	27.5	1.1	6.9
Madison	4,191	74.2	1.2	5.9	25.8	0.9	5.0
Marion	839	85.9	1.0	8.7	14.1	1.7	6.8
Marshall	132	77.3	2.9	22.5	22.7	0.0	10.0
Mason	229	86.5	3.0	13.6	13.5	3.2	12.9
Massac	222	84.7	1.1	14.4	15.3	0.0	5.9
Menard	137	71.5	0.0	7.1	28.5	0.0	2.6
Mercer	303	70.3	2.3	16.4	29.7	1.1	8.9
Monroe	372	47.0	0.6	6.3	53.0	0.5	3.0
Montgomery	505	78.0	2.3	9.6	22.0	3.6	7.2
Morgan	795	81.5	2.6	15.0	18.5	3.4	9.5
Moultrie	194	74.7	0.0	8.3	25.3	0.0	6.1
Ogle	430	66.0	1.1	10.9	34.0	0.7	7.5
Peoria	1,111	77.5	11.6	39.8	22.5	10.4	37.6
Perry	295	81.7	0.8	6.6	18.3	3.7	9.3
Piatt	162	61.7	3.0	8.0	38.3	1.6	4.8
Pike	302	76.8	1.7	12.1	23.2	1.4	2.9
Pope	30	70.0	0.0	9.5	30.0	0.0	11.1
Pulaski	102	79.4	7.4	16.0	20.6	0.0	0.0
Putnam	56	66.1	2.7	13.5	33.9	0.0	21.1
Randolph	451	78.0	1.7	11.4	22.0	2.0	8.1
Richland	205	87.8	1.7	18.3	12.2	0.0	12.0
Rock Island	4,498	77.9	2.1	14.1	22.1	1.4	17.0
St. Clair	6,849	83.1	1.4	8.2	16.9	1.6	5.9
Saline	694	79.8	1.3	9.9	20.2	0.0	5.0
Sangamon	3,364	76.7	1.6	9.2	23.3	2.4	5.7
Schuyler	135	70.4	5.3	14.7	29.6	0.0	10.0
Scott	95	72.6	1.4	8.7	27.4	0.0	7.7

## Illinois Lead Program Annual Surveillance Report: 2012

County	Total Number of Children Tested in 2012	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
Shelby	310	82.6	0.8	7.0	17.4	0.0	7.4
Stark	74	79.7	6.8	30.5	20.3	0.0	26.7
Stephenson	1,238	78.4	3.4	16.3	21.6	2.2	12.4
Tazewell	689	76.2	1.1	12.2	23.8	1.8	18.3
Union	320	79.1	1.2	9.5	20.9	0.0	6.0
Vermilion	1,677	84.5	1.4	5.8	15.5	0.0	1.2
Wabash	205	76.1	1.9	10.9	23.9	2.0	6.1
Warren	386	70.5	2.2	10.3	29.5	2.6	8.8
Washington	152	65.1	1.0	9.1	34.9	0.0	0.0
Wayne	273	75.1	2.0	12.7	24.9	2.9	16.2
White	336	75.0	0.8	11.5	25.0	1.2	3.6
Whiteside	1,234	76.7	1.8	9.3	23.3	0.7	4.9
Will	11,416	73.4	0.6	4.2	26.6	0.5	3.0
Williamson	872	77.4	0.9	22.1	22.6	1.0	26.9
Winnebago	6,749	82.9	1.4	16.5	17.1	2.0	14.2
Woodford	306	76.1	2.6	10.7	23.9	1.4	11.0

**Source:** Illinois Department of Public Health – Illinois Lead Program Surveillance Database and Illinois Department of Healthcare and Family Services Enterprise Data Warehouse, 2011. The SAS (statistical analysis software) and SQL (Structured Query Language) codes were used to query databases.

Table 6 shows that 76.2 percent of children tested for lead poisoning in 2012 were participating in medical assistance programs provided by the Illinois Department of Healthcare and Family Services or were enrolled in WIC (Women, Infant and Children) programs provided by the Illinois Department of Human Services.

The percentage of children with blood lead levels of 10µg/dL or greater was 1.1 percent for Medicaid and 0.8 percent for non-Medicaid eligible children in 2012. However, 10.8 percent of Medicaid eligible children tested exhibited lead levels at reference values of 5µg/dL or greater compared to only 7.5 percent among children who did not participate in medical assistance programs. Research indicates that substandard old housing units, nutrition poor in iron and calcium, and the inability to maintain chipping lead-based paint have been associated with lead poisoning.

# Illinois Childhood Blood 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.
- Ensure children eat a healthy diet that includes calcium and iron.

### A. Primary Prevention - 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 Illinois Lead Program regional nurses and the education coordinator conducted one-day lead poisoning prevention training sessions at each of the six regional offices of the Illinois Department of Public Health. A total of 63 health care professionals were trained on lead poisoning in 2012 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 Department's Division of Laboratories
- environmental case follow-up and compliance investigations for lead poisoned children
- Healthy Homes Initiative

Throughout the year, the Illinois Lead Program staff continued to conduct outreach and educational activities such as:

- speaking engagements for student nursing and medical residents programs
- attending stakeholder's organizational meetings
- hosting and participating in health fairs, conferences and campaigns offered to local health departments, health and environmental professionals, and community leaders to educate and distribute materials regarding the prevention and intervention of various home hazards

For more information on the one-day lead poisoning prevention training sessions, contact the Illinois Lead Program at 217-524-2081.

For more lead poisoning prevention tips, visit CDC at <http://www.cdc.gov/nceh/lead/tips.htm>.

# Illinois Lead Program Annual Surveillance Report: 2012

## B. Primary Prevention - CLEAR-WIN

The Comprehensive Lead Education, Reduction and Window Replacement Program is a prevention-focused pilot program aimed at replacing mostly original wood-sashed/painted windows in approximately 500 low-income, pre-1978 homes. The projects focus 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. Health benefits, hazards alleviation and home value after window improvement and energy savings will be evaluated.

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

## C. Primary Prevention - RRP Rule

The United States Environmental Protection Agency (U.S. EPA) Renovation, Repair and Paint Rule (RRP Rule) requires that anyone doing renovation, repair or painting of a pre-1978 home should abide by the **RRP Rule** currently enforced in Illinois by the U.S. EPA to contain the work area, minimize dust, and clean up thoroughly.

For more information on the RRP rule, visit [www.epa.gov/lead](http://www.epa.gov/lead) or phone 800-424-LEAD (5323).

## D. Licensed Lead Contractors in Illinois

The Department requires any person who wishes to conduct lead services in a regulated facility in Illinois to be appropriately licensed. These activities include lead inspections, lead risk assessments, lead hazard screens, lead mitigation and lead abatement work and supervision.

Lead Contractors in Illinois:	198
Other Lead Licenses	
Inspector:	103
Risk Assessor:	417
Supervisor:	609
Worker:	1,306

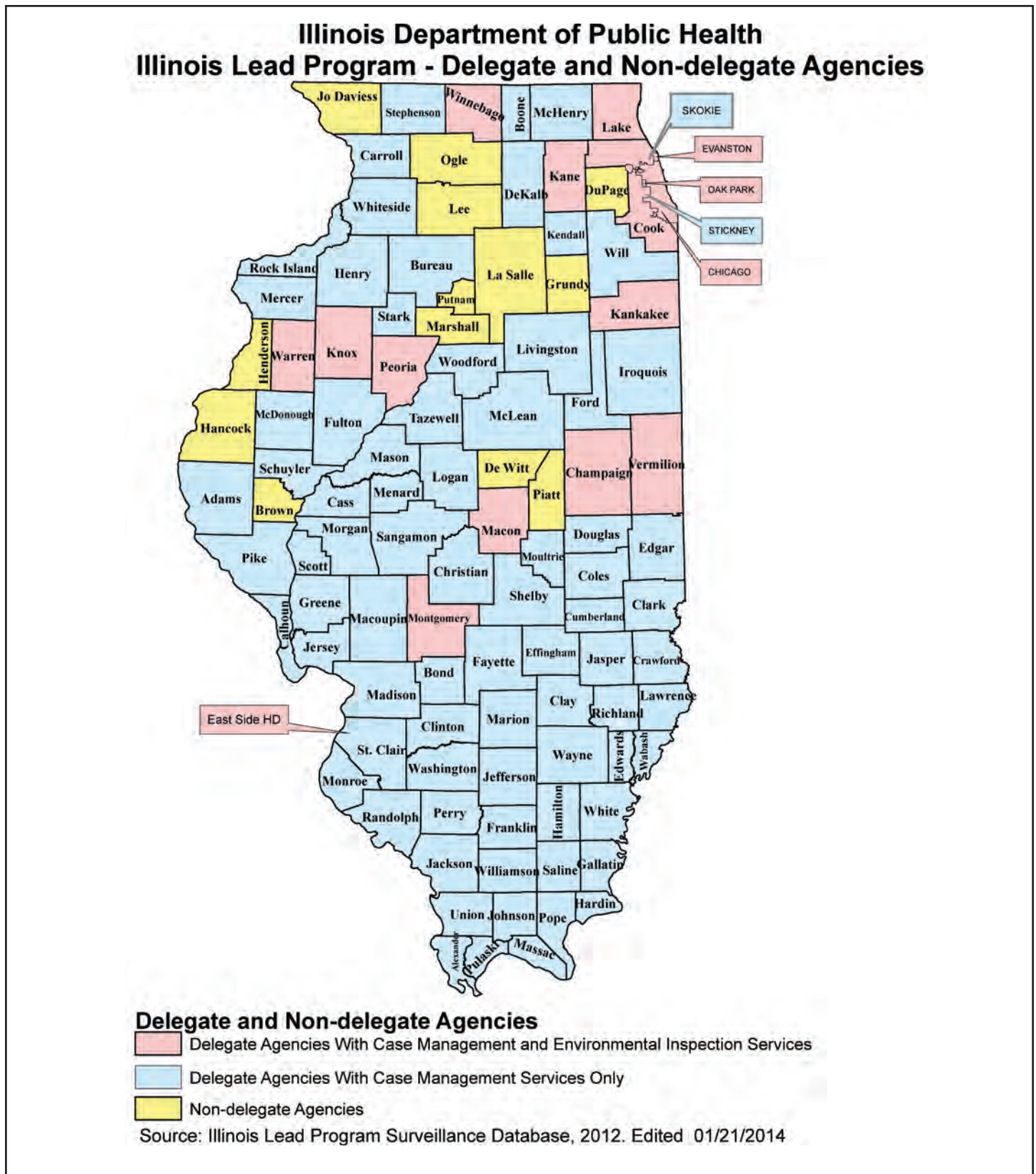
Approved Training Providers –see website

<http://app.idph.state.il.us/Envhealth/lead/LeadProfessionalListing.asp>

Figures from October 1 to December 31, 2012

# Illinois Lead Program Annual Surveillance Report: 2012

Figure 12: Illinois Lead Program Delegate and Non-delegate Agencies in 2012



## **E. Intervention - Case Management Follow-up of Children With Lead in Their Blood**

The Illinois Department of Public Health had grant agreements during 2012 with 86 delegate agencies to provide case management care for lead poisoned children in 89 of 102 counties. Medical case management activities include education, nurse home visits and referrals for related services such as medical, long-term nutritional supplementation and developmental testing. In collaboration with the Department, these delegate agencies provide community and technical education to health care providers, families of lead poisoned children and the general public. Each of the delegate agencies used the STELLAR (Systematic Tracking of Elevated Lead Levels and Remediation) data processing system to maintain records for case management of children in their jurisdiction (Figure 12).

Local health departments without a delegate agency agreement are designated as non-delegate agencies. There were 12 non-delegate agencies in 2012 where case management was provided by the Illinois Lead Program regional nurse consultants as shown in Table 7.

**Table 7: Counties With No Delegate Agencies Where Case Management Services Were Provided by the Illinois Department of Public Health’s Nurse Consultants in 2012**

Brown County Health Department	Grundy County Health Department	Jo Daviess County Health Department	Marshall County Health Department
Dewitt-Piatt County Health Department	Hancock County Health Department	La Salle County Health Department	Ogle County Health Department
DuPage County Health Department	Henderson County Health Department	Lee County Health Department	Putnam County Health Department

During the nursing case management visits, the families of the affected children were provided educational materials related to lead exposure and prevention. The families also were provided the smoking Quitline referral number (1-866-QUIT-YES) if other housing related concerns were identified.

# Illinois Lead Program Annual Surveillance Report: 2012

**Table 8: Environmental Assessment Activities for Lead Sources by Delegate Agencies and the Department's Division of Environmental Health Regions in 2012**

8a. Children Tested for Blood Lead for the <b>FIRST TIME</b> in 2012		Champaign Region	Edwardsville Region	Marion Region	Peoria Region	Rockford Region	West Chicago Region	TOTAL (N) <sup>3</sup>
Total Number of Children Tested for Blood Lead		10,249	12,112	7,225	10,354	7,811	83,992	<b>291,153</b>
Confirmed cases of blood lead identified for the first time in 2012 ( <b>Incidence</b> )	≥10 µg/dL	72	71	40	143	76	642	<b>1,045</b>
	≥5 µg/dL	169	193	94	358	221	6,998	<b>8,103</b>

8b. Environmental Investigations and Follow-up Conducted in 2012		Champaign Region	Edwardsville Region	Marion Region	Peoria Region	Rockford Region	West Chicago Region	TOTAL (N) <sup>3</sup>
Delegate Agencies <sup>1</sup>		27	16	0	40	44	799	<b>926</b>
Primary Dwelling		36	48	53	48	28	15	<b>228</b>
Secondary Dwelling		1	1	3	0	2	1	<b>8</b>
Follow-up Investigations		173	191	138	72	90	9 <sup>a</sup>	<b>673</b>
<b>Total</b>		<b>237</b>	<b>256</b>	<b>194</b>	<b>160</b>	<b>164</b>	<b>824</b>	<b>1,835</b>

8c. Mitigation, Abatement and Enforcement		Central Office	Champaign Region	Edwardsville Region	Marion Region	Peoria Region	Rockford Region	West Chicago Region	TOTAL (N)
Total Mitigation/Abatement Complete – Certificate of Compliance Issued		0	18	36	43	33	22	10	<b>162</b>
Total Cases Completed/Closed <sup>2</sup>		0	45	23	9	38	38	957	<b>1,110</b>
Total Cases for Enforcement		0	6	1	0	5	13	0	<b>25</b>
Complaints/On Site Contractor Investigations		24	0	0	12	0	9	0	<b>45</b>
Court/Stipulation Agreement Meetings		2	3	0	0	0	2	0	<b>7</b>
Public Presentations/Meetings		10	0	0	1	0	9	0	<b>20</b>
Local Health Department Program Review/Audit/Training		0	8	0	0	3	3	0	<b>14</b>

**Source:** Illinois Department of Public Health – Illinois Lead Program Surveillance Databases 2012. <sup>1</sup>Data from the delegate agencies with environmental inspection services; <sup>2</sup>Data includes closed cases by delegate agencies within the listed regions; <sup>3</sup>Totals may not add up exactly due to unidentifiable regional address; <sup>a</sup>incomplete data

Table 8a shows that 1,045 children were identified for the first time with confirmed venous lead levels of 10µg/dL or greater in 2012. A total of 1,679 environmental investigations and follow-up were conducted in 2012 (Table 8b). Reasons for case closures included: No lead hazard identified; venous blood-lead level was below 10 µg/dL; dwelling or occupant not located; dwelling demolished; or closure decision made by delegate agencies with environmental services (Table 8c).



# Illinois Lead Program Annual Surveillance Report: 2012

**Table 9: Environmental Assessment Activities for Lead Sources by Delegate Agencies in 2012**

	Investigation Counts	Environmental Closing Counts	Total Counts
<b>Champaign Region</b>			
Champaign County	0	0	0
Macon County	11	11	22
Vermilion County	16	13	29
Champaign Region Totals	27	24	51
<b>Edwardsville Region</b>			
East Side Health District	10	16	26
Montgomery	6	3	9
Edwardsville Region Totals	16	19	35
<b>Peoria Region</b>			
Knox County	13	6	19
Peoria County	19	29	48
Warren County	8	11	19
Peoria Region Totals	40	46	86
<b>Rockford Region</b>			
Winnebago County	44	29	73
Rockford Region Totals	44	29	73
<b>West Chicago Region</b>			
Chicago	648	742	1,390
Cook County HHS	80	110	190
Evanston	4	4	8
Kane County	51	47	98
Kankakee County	4	5	9
Lake County	12	17	29
Oak Park	0	1	1
West Chicago Region Totals	799	926	1,725
<b>Grand Total Amounts</b>	<b>926</b>	<b>1,044</b>	<b>1,970</b>

**Source:** Illinois Department of Public Health – Illinois Lead Program Surveillance Databases 2012

Table 9 shows the regional distribution of environmental investigations and case closures performed by delegate agencies in 2012. A total of 926 environmental investigations were performed in 2012 and 1,044 environmental assessment cases were closed in the same year.

# Illinois Lead Program Annual Surveillance Report: 2012

## F. Environmental Follow-up of Children With Lead in Their Blood

When a child has a confirmed blood lead level of 10µg/dL or greater, the local or regional health department is required by law to conduct a lead investigation to identify lead hazards. The health department risk assessor develops and provides a letter and report that identifies the tested surfaces, the surface test results, and whether or not the surfaces with results above the legal limit are lead hazards. Surfaces that contain lead are not always immediate lead hazards. The occupants and owners are provided information on lead-safe practices and the owner is required to submit a mitigation plan to the Department or local health department for review and approval.

In calendar year 2012, the Illinois Department of Public Health had grant agreements with 16 delegate agencies to provide environmental inspection services in addition to case management services (Table 10).

**Table 10: Delegate Agencies With Case Management and Environmental Investigation Services in 2012**

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	Macon County Health Department	Montgomery County Health Department	Oak Park Health Department
Peoria County Health Department	Vermilion County Health Department	Warren County Health Department	Winnebago County Health Department

Environmental services include home inspections and risk assessment. Other environmental services included follow-ups, complaints and on-site contractor investigation as shown in Figure 13. Remediation is required by law when a lead hazard has been identified in a home where a child with elevated blood lead level lives or regularly visits. Local health departments not covered by a delegate agency agreement are served by the Illinois Lead Program regional lead risk assessors housed in the regional offices of the Illinois Department of Public Health.

The six environmental regional offices of the Illinois Department of Public Health each have lead risk assessors who conduct home inspections for lead poisoned children with venous confirmatory lead levels of 10µg/dL or greater in accordance with the Illinois Lead Poisoning Prevention Act.

In 2012, a total of 1,835 initial lead and follow-up investigations were conducted on dwellings and common areas between dwellings where children with EBLLs  $\geq 10\mu\text{g/dL}$  reside or spend significant amounts of time. Forty-six percent of the initial and follow-up lead investigations were conducted by risk assessors from local

## Illinois Lead Program Annual Surveillance Report: 2012

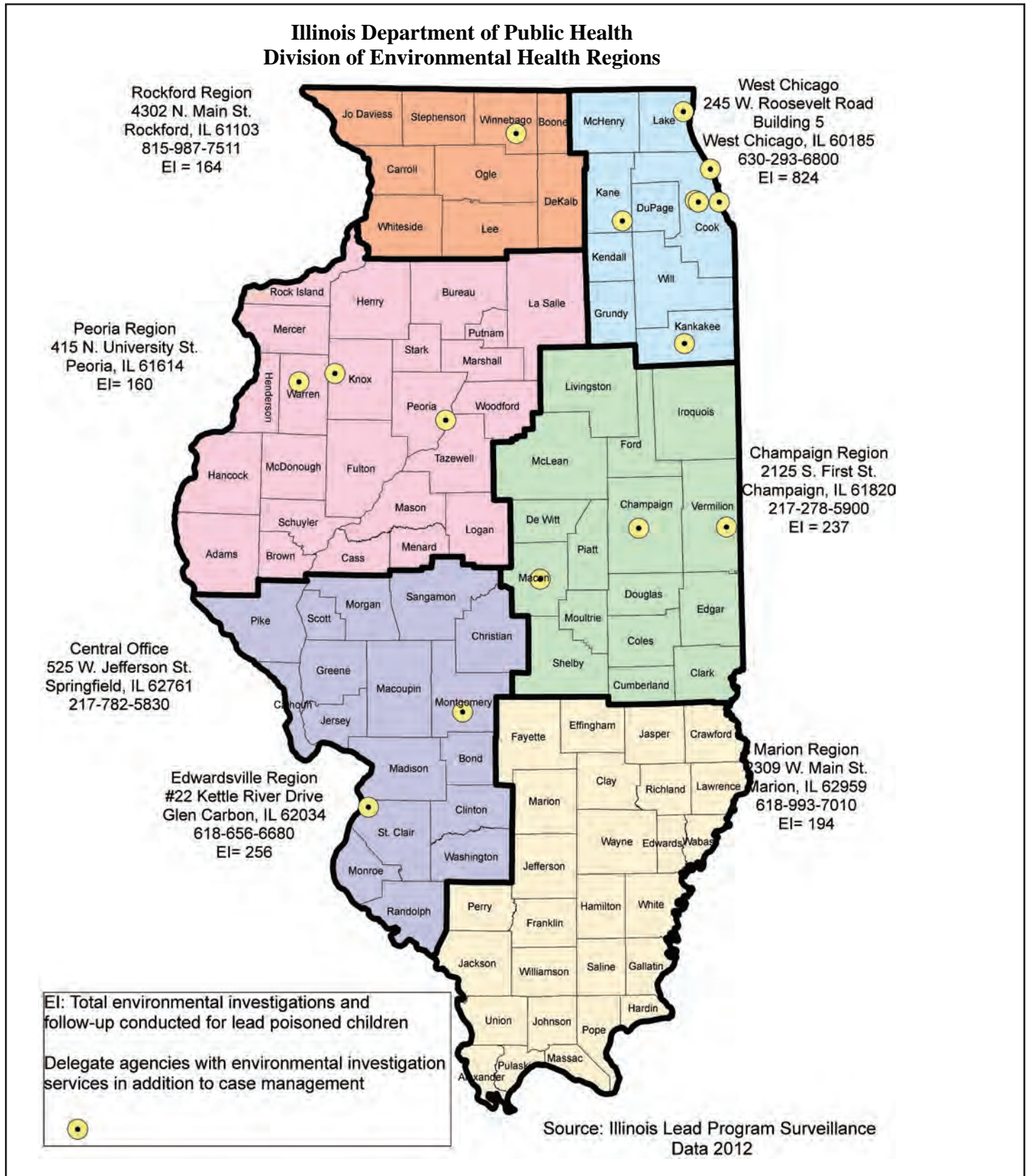
health departments that provide environmental services. The other 54 percent of the lead investigations were conducted by regional risk assessors from the Department.

Environmental remediation is necessary because the child can be re-exposed to the lead hazards 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 because the medication increases their body's ability to absorb lead from their environment. Figure 13 shows the number of environmental investigations for lead poisoning performed by the Department and its delegate agencies in 2012 grouped by region.



# Illinois Lead Program Annual Surveillance Report: 2012

**Figure 13: Number of Regional Environmental Investigations for Lead Poisoning Performed by Department and Delegate Agencies in 2012**



## Illinois Adult Blood Lead Registry

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 33 percent excretion by children<sup>3</sup>. Lead exposure in adults may lead to short-term or long-term cognitive dysfunction, adverse reproductive outcomes, cardiovascular or kidney damage. Adults can suffer from complications during pregnancy, high blood pressure or some nervous disorders.

The Illinois Adult Blood Lead Registry (ABLR) collects blood lead data for adults 16 years of age and older and notifies federal enforcement agencies to trigger inspections and/or interventions. The Division of Epidemiologic Studies maintains the ABLR.

According to the 2012 Illinois ABLR annual report:

- ABLR notified Occupational Safety and Health Administration (OSHA) of 18 companies that had 25 employees with lead levels  $\geq 40$   $\mu\text{g}/\text{dL}$  of their blood in calendar year 2011. These quarterly ABLR reports to OSHA led to one safety inspection but no citations were issued because the employer followed all safety rules.
- The ABLR notified OSHA within 24 hours of any case with an elevated blood lead level  $\geq 60$   $\mu\text{g}/\text{dL}$ .
- The ABLR data to the CDC's National Institute for Occupational Safety and Health (NIOSH) on a semi-annual basis in 2011.

For more information on the Illinois Adult Blood Lead Registry visit

[http://www.idph.state.il.us/about/epi/pdf/IHHSR\\_Annual\\_Report\\_12.pdf](http://www.idph.state.il.us/about/epi/pdf/IHHSR_Annual_Report_12.pdf), or phone 800-424-LEAD (5323).

<sup>3</sup>Rabinowitz, M.B., Wetherill, G.W. & Kopple, J.D. (1977) Magnitude of lead intake from respiration by normal man. J Lab Clin Med. 90, 238-48 <http://www.ncbi.nlm.nih.gov/pubmed/886210>

## Illinois Lead Program Advisory Council

The Illinois Lead Poisoning Elimination Advisory Council meets quarterly to discuss collaborative efforts in partnering with local agencies and organizations to reduce exposures to lead and other environmental health hazards at the local and statewide level. The council consists of several professionals from governmental agencies, local health departments, and community organizations whose mission is to carry out the goals and objectives set out in a statewide strategic plan to eliminate childhood lead poisoning in Illinois.

The mission of the advisory council is to develop and implement a comprehensive statewide strategic plan and foster creative partnerships and collaboration in the areas of:

- Primary Prevention – Education/Training
- Screening and Case Management
- Remediation
- Surveillance – Data Collection, Analyses, Dissemination/Evaluation
- Strategic Partnership
- Elimination Plan – Collaboration

The council is divided into committees who identify goals and objectives related to the elimination of childhood lead poisoning and healthy homes initiatives. The subcommittees are:

- Education and Outreach
- Policy and Regulations
- Data and Evaluation

The program continues to recruit and build capacity and competency among members of its advisory council.

The stakeholders include:

- Physicians and Nurses
- Health Educators
- Nutritionists
- Demographer
- Environmental Scientists
- Epidemiologists
- Other Allied Health Professionals
- University Professors

For more information on the advisory council, contact the Illinois Department of Public Health's Division of Environmental Health at 217-782-3517.

## 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://www.idph.state.il.us/illinoislead/index.htm>

### **U.S. Centers for Disease Control and Prevention (CDC)**

<http://www.cdc.gov/nceh/lead/>

Phone: 800-CDC-INFO (800-232-4636)

### **National Center for Healthy Housing (NCHH)**

<http://www.nchh.org>

Phone: 877-312-3046

### **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>

## Illinois Lead Program Staff

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