State of Illinois
Illinois Department of Public Health

Illinois Lead Program 2021 Annual Surveillance Report

November 2022 Edition

IDPH
Illinois Department of Public Health

IDPH
ILLINOIS DEPARTMENT OF PUBLIC HEALTH

November 2022

Dear Colleagues,

The Illinois Department of Public Health (IDPH) is pleased to present the 2021 Annual Surveillance Report on childhood lead exposure and prevention activities within the state. The goals of the Illinois Lead Program are to:

- Enhance primary prevention and early detection through blood lead testing and surveillance.
- Provide ongoing case management and environmental services to children exposed to lead.
- Coordinate care and services with other agencies for children and families.

There is no safe level of lead in blood. Childhood lead exposure is known to contribute to learning disabilities, developmental delays, and behavioral problems. Illinois childhood lead exposure rates remain among the highest in the nation. In 2021, the Illinois childhood lead testing rate decreased 22% compared to 2019, the COVID-19 pre-pandemic year. IDPH is taking the necessary steps to ensure children not evaluated during the pandemic get the attention, referral, and care they need.

The Centers for Disease Control and Prevention (CDC) decreased its blood lead reference value (BLRV) for public health intervention from ≥5 µg/dL to ≥3.5 µg/dL in 2021. Consequently, IDPH is in the process of re-designating high-risk ZIP codes for lead exposure as a tool to increase testing of at-risk or vulnerable populations. Illinois is also evaluating its resources to adopt the new BLRV while still initiating case management and environmental investigation services at ≥5 µg/dL. Approximately 192,000 children were tested for lead exposure, of which 8,350 had blood lead levels ≥3.5 µg/dL and more than 4,750 were ≥5 µg/dL..

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, researchers, and all who seek information on Illinois lead poisoning prevention.

The program looks forward to a continued collaboration with local health departments and other federal, state, and local partners.

Very truly yours,

Sameer Vohra

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Director

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Thanks to the Illinois Lead Program Team (Aubrey Dove, Darla Hamende, Cari Rogers, Helen Wright, Jennifer Kennett, Sarah Hayes, and Sai Prahitha Arra) for review and general assistance. Medical assistance program data was obtained through an interagency data sharing agreement with the Illinois Department of Healthcare and Family Services (HFS).

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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 dph.illinois.gov/illinoislead
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*
- ✓ *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
BLRV	Blood Lead Reference Value
CDC	U.S. Centers for Disease Control and Prevention
CLIA	Clinical Laboratory Improvement Amendments
CLRQ	Childhood Lead Risk Questionnaire
CMS	Centers for Medicare & Medicaid Services
CPSC	Consumer Product Safety Commission
DCEO	Illinois Department of Commerce and Economic Opportunity
FDA	U.S. Food and Drug Administration
IDPH	Illinois Department of Public Health
IDHS	Illinois Department of Human Services
IEPA	Illinois Environmental Protection Agency
ESHD	East Side Health District
HHLPSS	Healthy Homes and Lead Poisoning Surveillance System
HHS	U.S. Department of Health and Human Services
HUD	U. S. Department of Housing and Urban Development
IDFPR	Illinois Department of Financial and Professional Regulation
IHDA	Illinois Housing and Development Authority
IHFS	Illinois Department of Healthcare and Family Services
ISBE	Illinois State Board of Education
IVRS	Illinois Vital Records System
IQ	Intelligence Quotient
OSHA	Occupational Safety and Health Administration
Ppb	Parts per billion
Program	Illinois Lead Program
USDA	U.S. Department of Agriculture
U.S. EPA	U. S. Environmental Protection Agency
µg/dL	Micrograms per deciliter
WIC	Special Supplemental Nutrition Program for Women, Infants, and Children
≥	Greater than or equal to

Definitions

Act: Illinois Lead Poisoning Prevention Act

Blood lead reference value: Lead in blood ≥3.5 µg/dL

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

Case management: Any activity that involves coordinating, providing, and overseeing the services required to reduce blood lead levels.

Child: A person under the age of 16. In this report emphasis is placed on children 6 years of age or younger at the time of testing except as otherwise stated.

Code: Illinois Lead Poisoning Prevention Code

Confirmed blood lead level: A blood lead level resulting from a single venous blood test. Elevated capillary blood test results shall be confirmed by a venous test.

Delegate agency: Unit of local government or health department approved by IDPH to carry out provisions of the Act and Code.

East Side Health District (ESHD) delegate agency includes the cities of Alorton, Brooklyn, Cahokia, Caseyville, Centreville, East St. Louis, Fairmont City, Lovejoy, National City, Sauget, and Washington Park, and Scott Air Force Base

Egyptian County delegate agency includes Gallatin, Saline, and White counties

Evaluation: Administration of Childhood Lead Risk Questionnaire (CLRQ) to parent by a health care provider.

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

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

Test: The quantifiable result of a blood lead drawn on a child.

Southern Seven delegate agency includes Alexander, Hardin, Johnson, Massac, Pope, Pulaski, and Union counties.

Executive Summary

This is the Illinois Lead Program's 28th annual surveillance report of childhood lead poisoning prevention activities and encompasses information for the period of January through December 2021. It is intended to serve as a standard reference for legislators; community-based organizations; city, state, federal agencies; and health care professionals and researchers who seek information on lead poisoning prevention in Illinois.

Act and Code: The Illinois Lead Poisoning Prevention Act [410 ILCS 45], authorizes IDPH's Office of Health Protection, Division of Environmental Health, Lead Program, to promulgate, administer, and enforce the Illinois Lead Poisoning Prevention Code (77 IL. Admin Code 845). Public Act 100-0723 of 2019, requires public health intervention at confirmed blood lead levels ≥5 µg/dL.

Delegate Agencies: In fiscal year 2021, IDPH had grant agreements with **101** local health departments or delegate agencies to provide case management care for lead-exposed children in **96** of **102** counties. Additionally, **28** of the delegate agencies covering **25** counties also had grant agreements to provide environmental investigation services. IDPH provided services to six counties with no delegate agency.

Problem: There is no safe level of lead in the body. Lead exposure is one of the most prevalent yet preventable environmental health hazards. Lead is a neurotoxin that can affect the brain and nervous system. Childhood lead exposure contributes to learning disabilities, developmental delays, behavioral problems, and other negative health effects.

Lead Burden: Childhood lead exposure in Illinois remains one of the highest in the nation. In 2021, more than **8,300** children tested had BLLs ≥3.5 µg/dL and more than **4,750** had BLLs ≥5 µg/dL.

Children at Highest Risk: Those with persistent hand-to-mouth behaviors, especially those 3 years of age and younger and who have access to lead-containing products, and those residing in or frequently visiting pre-1978 housing. Of the **53%** pre-1978 housing units with lead-based paint, **38%** have significant lead-based paint hazards. Approximately **63%** of the **5.3** million housing units in Illinois were built prior to the lead-paint ban of 1978.

Mission: The mission of the Program is to eliminate the incidence of childhood and prenatal lead exposure.

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

Goals:

- Prevent childhood and prenatal lead exposure through community and health care provider education and public awareness campaigns
- Identify children and pregnant women exposed to lead, provide prompt interventions to reduce lead exposures, and improve health and developmental outcomes

Funding: The program is currently supported by the Lead Poisoning Screening, Prevention, and Abatement Fund; Illinois General Revenue Funds; U.S. Centers for Disease Control and Prevention (CDC); U.S. Department of Health and Human Services (DHS); and Centers for Medicare and Medicaid Services (CMS).

Key Facts on Illinois Childhood Blood Lead Surveillance: According to the CDC Wonder national data system, there were an estimated 1 million children 6 years of age and younger in Illinois. Approximately **191,887 (18%)** were tested for blood lead in 2021. Amongst the children tested:

- Approximately **62%** had received a blood lead test at least once in their lifetime.
- About **61%** had at least one venous blood lead test.
- BLLs in children averaged **2.2** µg/dL.
- Of the **4,754 (2.5%)** children tested in 2021 with BLLs ≥5 µg/dL for public health intervention:
  - ➢ **68%** had a confirmatory venous test and **32%** were capillary tests.
  - ➢ **57%** were 2 years of age or younger.
  - ➢ **65%** benefited from programs administered by Medicaid.
  - ➢ **38%** White, **30%** Black or African American, **24%** Hispanics, **4%** Asians (confirmed case distribution).
- Of almost **212,421** total tests analyzed, **3.0%** had BLLs of ≥5 µg/dL (test positivity).

CDC is dedicated to eliminating childhood lead poisoning as a public health problem through strengthening blood lead testing, reporting, and surveillance, linking exposed children to recommended services and targeted population-based interventions.
https://www.cdc.gov/nceh/lead/default.htm

Key Facts About Illinois Children Tested for Lead in Blood in 2021

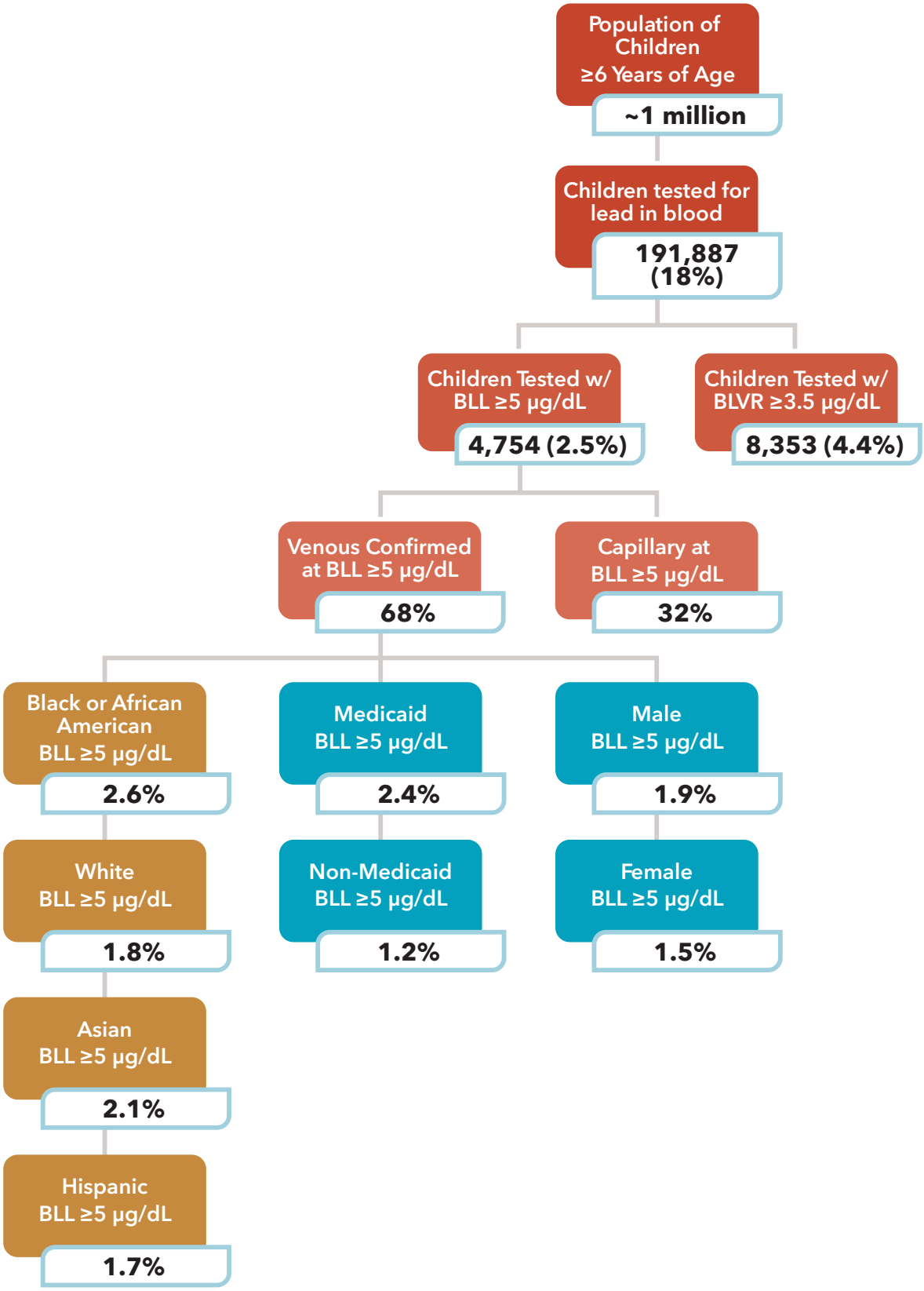
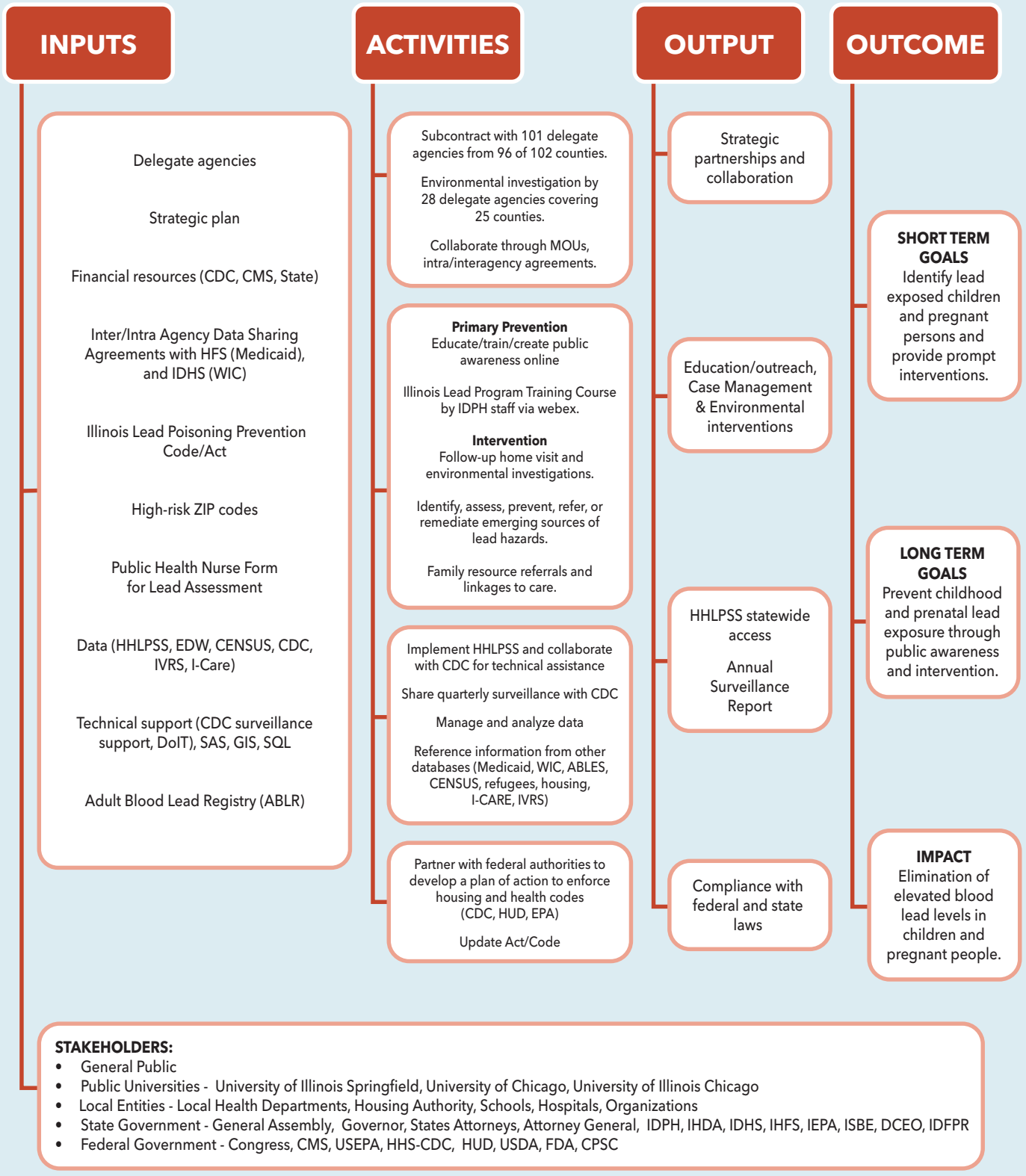


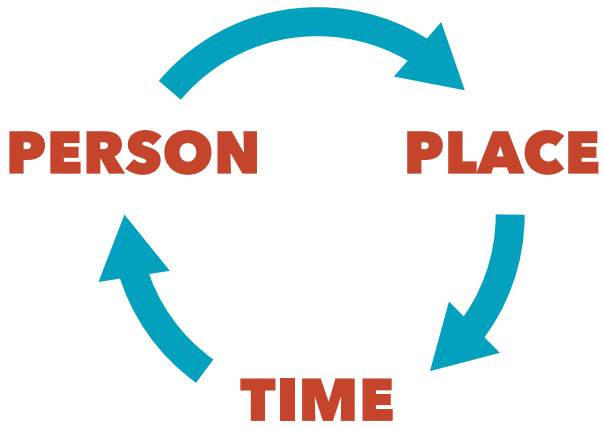
Figure 1: Illinois Lead Program Activities and Outcomes



Lead Exposure

Lead exposure can affect a child's ability to think, learn or behave

There is no safe level of lead in the body

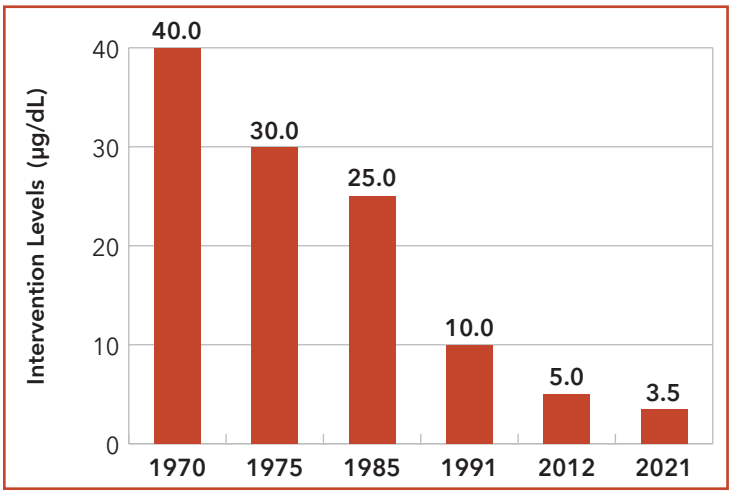


Childhood lead exposure in Illinois remains one of the highest in the nation

In Illinois, if all children were tested, it is estimated that approximately **26,000** *children are likely to have been exposed at blood lead reference value ≥5 µg/dL.*

Changes in Blood Lead Levels for Public Health Intervention

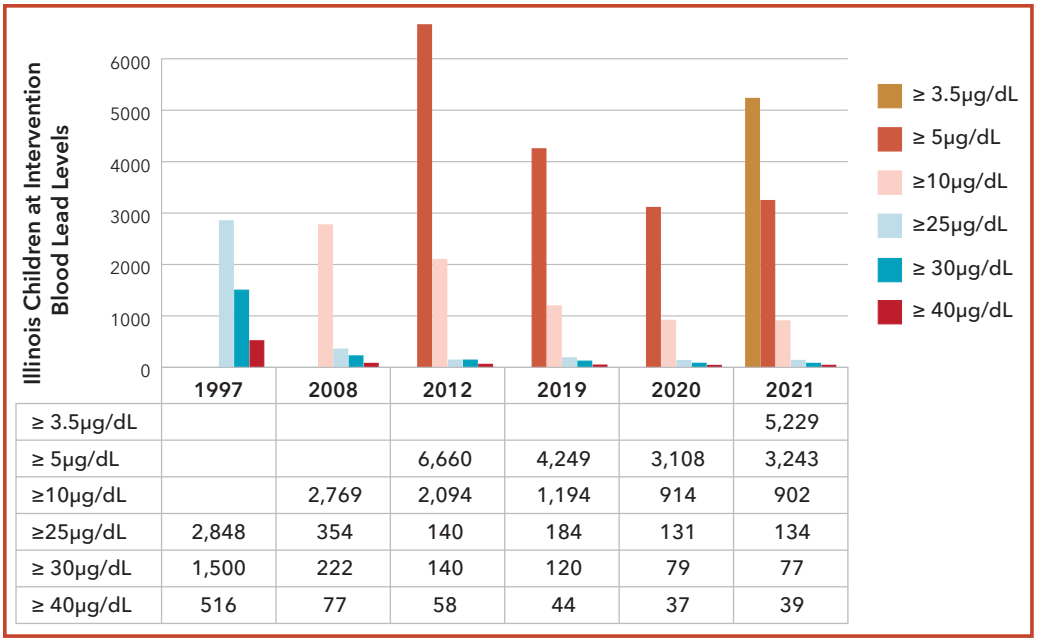
Figure 2: CDC Recommended Public Health Intervention Levels through the Years



In 2021, CDC lowered the blood lead reference value (BLRV) for public health intervention from ≥5 µg/dL to **BLRV ≥3.5 µg/dL**.

Figure 2 shows how the intervention level has evolved through the years. Pending adoption of the lowered BLRV, the **current Illinois public health intervention level is ≥5 µg/dL**.

Figure 3: Children Tested at Different Blood Lead Reference Values Across Time: 1997-2021



	1997	2008	2012	2019	2020	2021
≥ 3.5µg/dL						5,229
≥ 5µg/dL			6,660	4,249	3,108	3,243
≥10µg/dL		2,769	2,094	1,194	914	902
≥25µg/dL	2,848	354	140	184	131	134
≥ 30µg/dL	1,500	222	140	120	79	77
≥ 40µg/dL	516	77	58	44	37	39

Data Source: Illinois Department of Public Health – Healthy Homes and Lead Poisoning Surveillance (HHLPSS). 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. **Children with test results below a limit of detection were ascribed a value equal to the limit of detection.**

The number of Illinois children with lead in blood at confirmed (venous) intervention levels has decreased with time. In 2021, 39 children had lead levels ≥40 µg\dL compared to 516 children in 1997 (Figure 3).

Regulations that mandated removal of lead from food canning, gasoline, new residential paint, plumbing, and other sources significantly contributed to the decrease in childhood lead exposure.

Sources of Lead Exposure

Figure 4: Sources of Lead Exposure

*Consumer goods and products can be a source of lead exposure. Commonly imported items containing lead are ayurvedic medicine, folk medicines, cosmetics (such as Sindoor and Kumkum), toys, glazed pottery, spices (such as curry powder and turmeric), or other food items. Even consumer goods produced in the U.S. can be recalled due to lead content, such as the recall of Eames Desk Units and Eames Storage Units. In addition, just because a product states it was packaged in the U.S. does not mean it was manufactured here and could not possibly be a source of lead. To check product recalls visit:

Where is lead commonly found? - IDPH
LeadSourceGuide.pdf (illinois.gov)

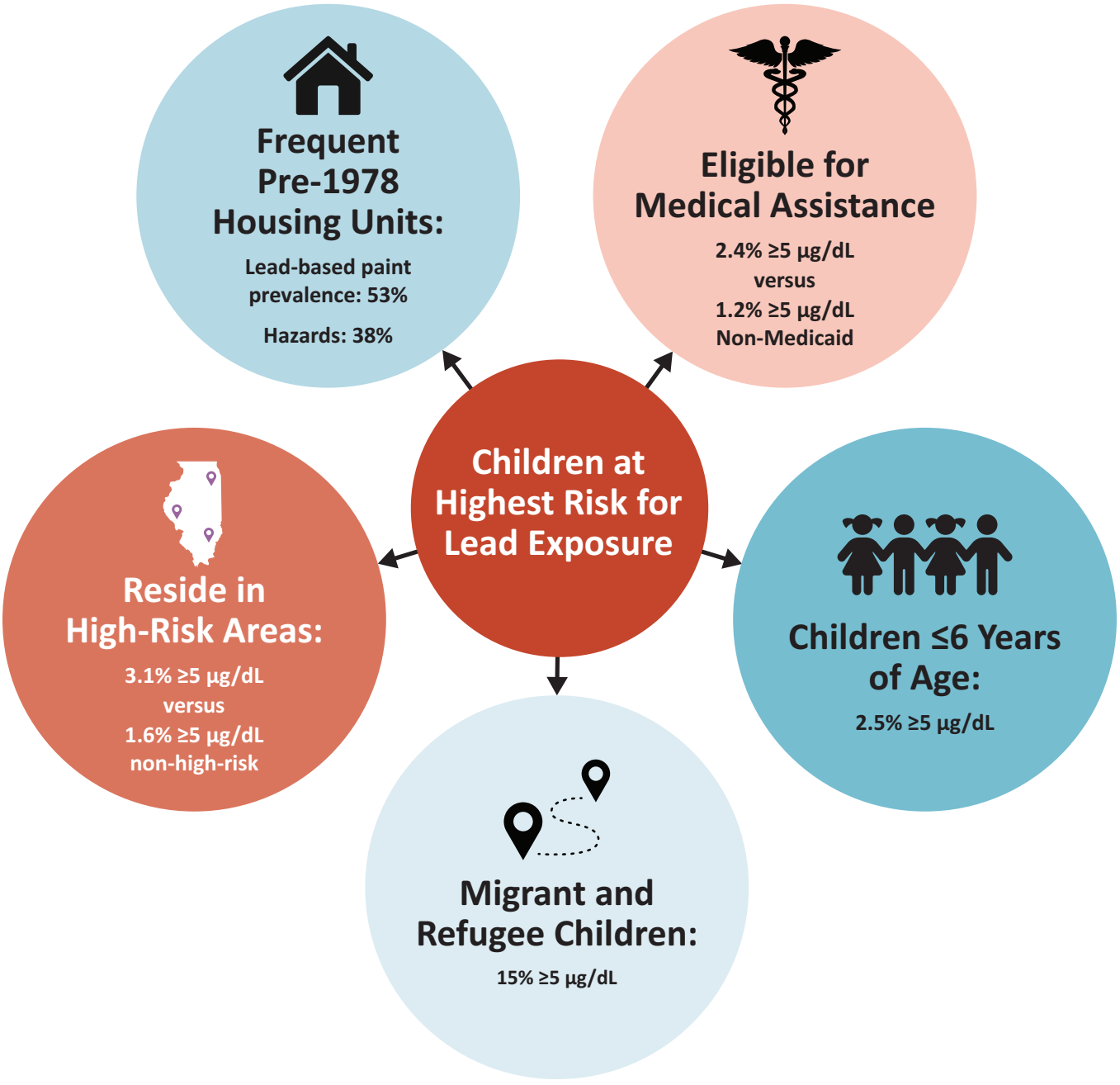
Consumer Product Safety Commission (CPSC) Recalls – for non-food consumer goods
https://www.cpsc.gov/Recalls/

U.S. Food and Drug Administration (FDA) Recalls – for food products
https://www.fda.gov/safety/recalls-market-withdrawals-safety-alerts

For more information about sources of lead exposure
https://www.cdc.gov/nceh/lead/prevention/sources.htm

Children at Highest Risk for Lead Exposure

Figure 5: Children at Highest Risk for Lead Exposure



Data Source: Illinois Department of Public Health – Illinois Lead Program 2021

Also visit https://nchh.org/resource-library/fact-sheet_state-healthy-housing_il.pdf

Link to Lead in Water

Go to: http://dph.illinois.gov/topics-services/environmental-health-protection/lead-in-water

Lead Prevalence and Pre-1978 Housing

Older homes with deteriorated lead paint continue to be the primary source of lead exposure in Illinois. Approximately **63%** of the 5.3 million Illinois housing units were built prior to the residential lead paint ban of 1978. Based on a national survey, **53%** of pre-1978 Illinois housing units have lead-based paint, and **38%** have significant lead-based paint hazards (Table 1).

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

Pre-1978 Housing Units with Lead			
Age of Housing Units (Year Built)	**Total Housing Units**	**Prevalence of Lead-Based Paint (LBP) in Midwest**	**Significant Deteriorating LBP Hazard**
Pre-1978	3,374,201	53%	38%

Source: 2021; U.S. Census Bureau 2016-2020 American Community Survey 5-Year Estimate, *American Healthy Homes Survey 11 Lead Findings Final Report 2021* Objectives of Lead Sampling in the American Healthy Homes Survey (AHHS) (PDF) (hud.gov)

Half of U.S. population exposed to adverse lead levels in early childhood:

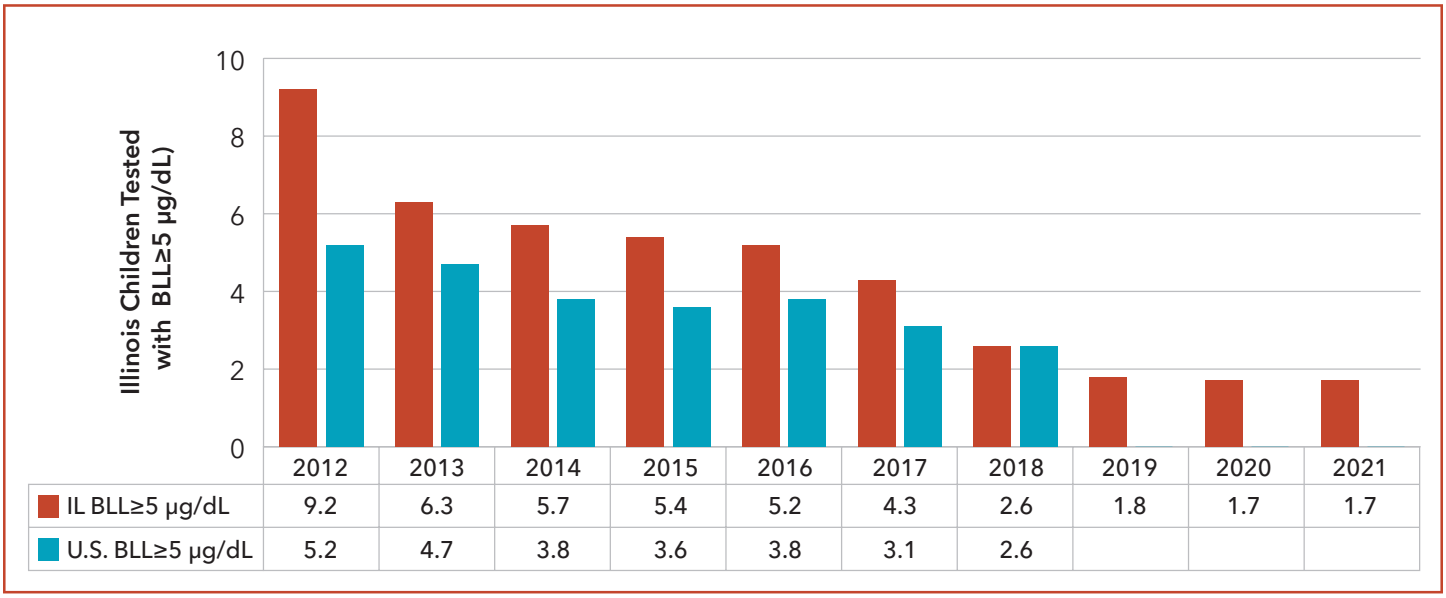
MacFarland et. al. estimated that over 170 million Americans alive today were exposed to high-lead levels in early childhood.

https://www.pnas.org/doi/epdf/10.1073/pnas.2118631119

Illinois and U.S. Childhood Blood Lead Prevalence: 2012 - 2021

Illinois and U.S. continue to make progress in reducing childhood blood lead exposure. Figure 6 represents children 5 years of age and younger at time of testing with confirmed BLL ≥5 µg/dL. Illinois BLLs ≥5 µg/dL have significantly decreased from 9.2% in 2012 to 1.7% in 2020. **Note:** In order to compare with national data compiled by CDC this figure only includes children 5 years of age and younger (< 72 months) as reported by CDC to date. Children with test results below a limit of detection were ascribed a value equal to the limit of detection.

Figure 6: Illinois and U.S. Children with Confirmed Lead in Blood ≥5 µg/dL: 2012 – 2021

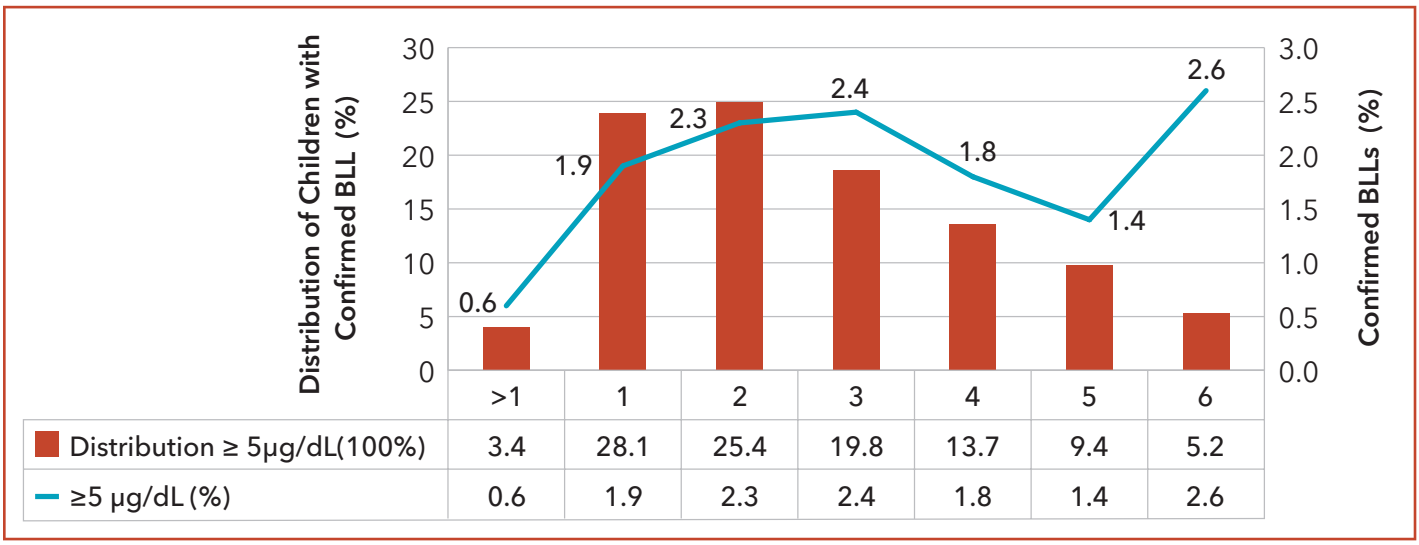


	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
IL BLL≥5 µg/dL	9.2	6.3	5.7	5.4	5.2	4.3	2.6	1.8	1.7	1.7
U.S. BLL≥5 µg/dL	5.2	4.7	3.8	3.6	3.8	3.1	2.6			

Data Source: Illinois Lead Program Surveillance Data, 2019-2021 only; Illinois and United States average 2012-2018 based on data reported by the CDC at http://www.cdc.gov/nceh/lead/data/national.htm.

Blood Lead Levels of Children by Age

Figure 7: Children with Confirmed Blood Lead Levels by Age



	>1	1	2	3	4	5	6
Distribution ≥ 5µg/dL(100%)	3.4	28.1	25.4	19.8	13.7	9.4	5.2
≥5 µg/dL (%)	0.6	1.9	2.3	2.4	1.8	1.4	2.6

Source: Illinois Department of Public Health – Healthy Homes and Lead Poisoning Surveillance (HHLPSS) Database, 2021. BLLs include number of children per age group with venous BLLs ≥5 µg/dL divided by children tested in age group multiplied by 100. Distribution of ≥5 µg/dL relates to number of children with BLLs ≥5 by age group divided by total BLLs.

For more details on blood lead levels by age see Appendix 2 on page 31.

A total of 6,916 children 7 to 15 years of age were also tested for blood lead in 2021. Of the 218 children in this age group with BLLs ≥5µg/dL, 195 were confirmed by a venous test.

For **newly confirmed cases** identified for the first time in 2021, see Appendix 1 on page 25.

Blood Lead Levels of Children by Race/Ethnicity

Black or African American children are disproportionately affected by lead exposure. Although they had a low testing rate **(20%)**, they still remained the only race with significantly high incident of BLL's greater than testing rate **(30%)**.

Comparatively, children in other race categories tested as follows:

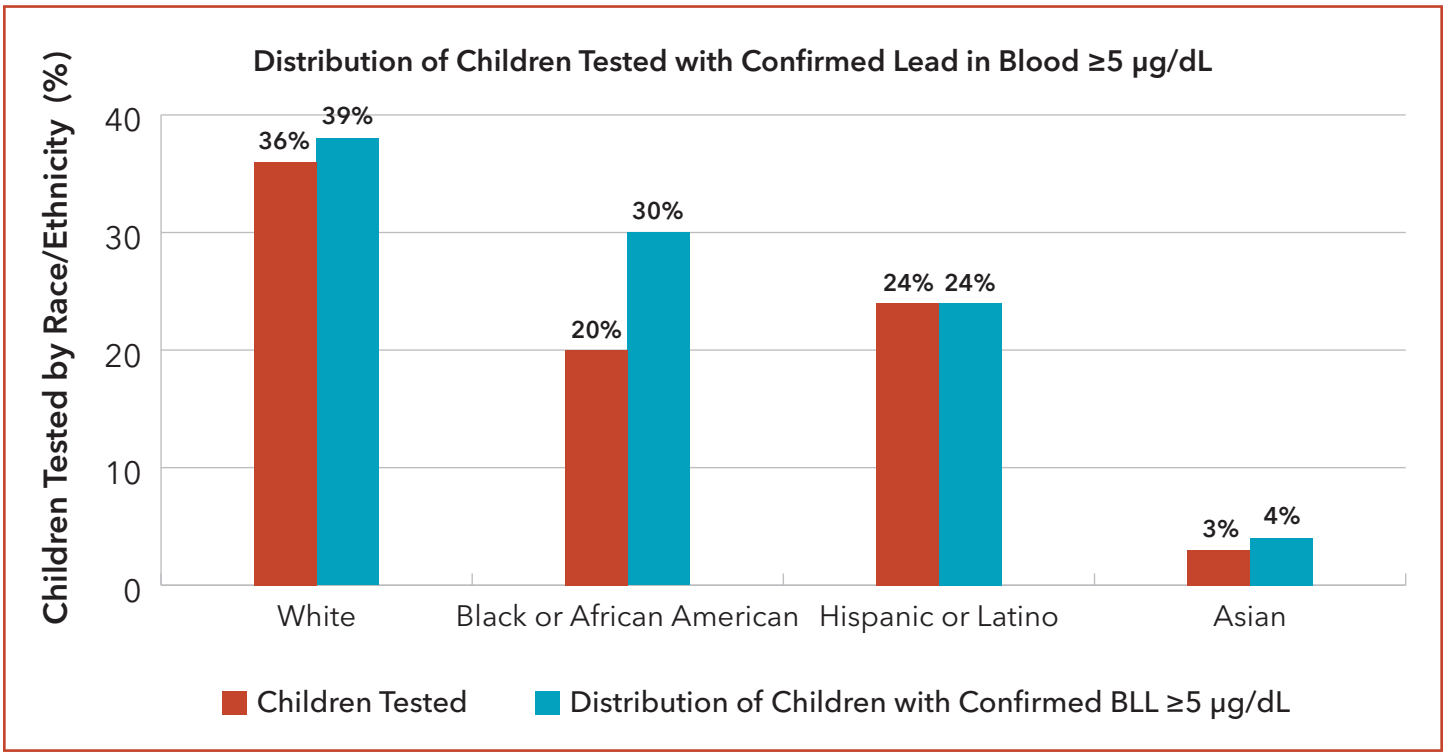
White: 36% of all children tested, **38%** of all children with a confirmed BLLs ≥5 µg/dL were White.

Hispanic: 24% of all children tested, **24%** of all children with a confirmed BLL ≥5 µg/dL were Hispanic.

Asian: 3% of all children tested, **4%** of all children with a confirmed BLL ≥5 µg/dL were Asian.

Additionally, looking at the percentage of children with confirmed BLL ≥5 µg/dL in each race category further shows the disproportionate effect of lead exposure to Black or African American children. Of the 37,520 Black or African American children tested, 3.5% had confirmed BLLs ≥5 µg/dL. Of the 69,506 White children, 3.0% had confirmed BLL ≥5 µg/dL. Of the 46,422 Hispanic children, 2.2% had confirmed BLLs ≥5 µg/dL.

Figure 8: Children with Confirmed BLLs ≥5 µg/dL Distributed by Race in 2021



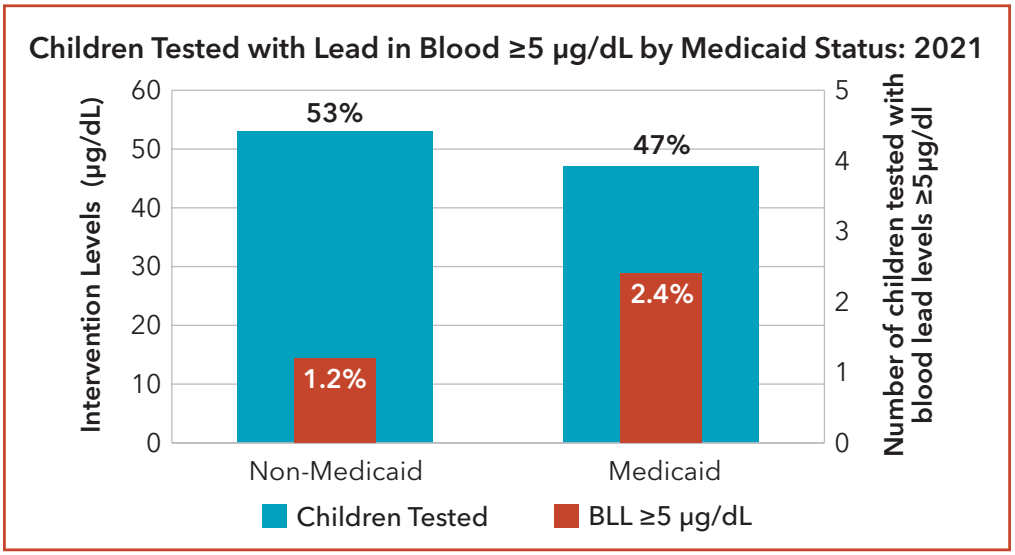
Data source: Illinois Department of Public Health - Healthy Homes and Lead Poisoning Surveillance System, 2021. Population estimates obtained from CDC WONDER Online Database. Accessed at http://wonder.cdc.gov/bridged-race-v2020.html on October20, 2022.

For more details on blood lead levels by race/ethnicity, see appendix 3 on page 31.

Blood Lead Levels of Children by Medicaid Status

State and federal mandates require all children enrolled in IHFS' medical programs to be considered at-risk for lead exposure and to receive a blood lead test prior to 12 and 24 months of age. If a child is 3-6 years of age and has not been tested, a blood lead test is required. All children enrolled in IHFS medical programs are expected to be tested regardless of where they live.

Figure 9: Medicaid and Non-Medicaid Children Tested for Lead in Blood in 2021



Data source: Illinois Department of Public Health - HHLPSS and the Illinois Department of Healthcare and Family Services Enterprise Data Warehouse.

Of all children reported in HHLPSS tested for blood lead, only **47%** were Medical Assistance Program recipients in 2021. Of the Medicaid recipients tested, **2.4%** had lead levels ≥5 µg/dL compared to **1.2%** for non-recipients. Of all children tested with confirmed BLLs ≥5 µg/dL, **65%** were Medicaid-enrolled and **35%** were non-Medicaid. Figure 9 highlights the difference between lead in blood based on Medicaid eligibility status.

For Medicaid and non-Medicaid enrolled children tested for blood lead by county, see appendix 1 on page 25.

For more information on providers who test for blood lead go to:
https://www.illinois.gov/hfs/MedicalProviders/NonInstitutional/Pages/ProviderBloodLead.aspx

For information on the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC), read:

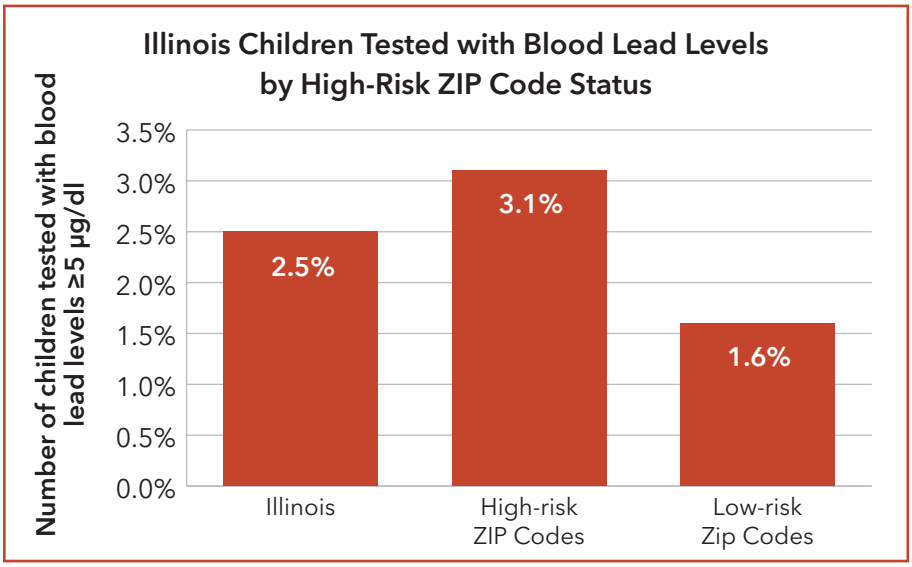
WIC Participation and Blood Lead Levels among Children 1–5 Years: 2007–2014
https://ehp.niehs.nih.gov/EHP2384/.

Lead Levels of Children by High-Risk ZIP Code Status

An amendment to the act required IDPH to designate areas of the state where children through 6 years of age are considered to be at high-risk for lead exposure and areas where children are considered to be at low risk for lead exposure. The high-risk ZIP codes were based on housing data and family economic status (200% poverty and below) obtained from the U.S. Census.

Illinois law requires physicians to perform a blood lead test on all children 6 years of age or younger who live in a high-risk area. Children are required to be evaluated for lead exposure if they reside in a low-risk area. More than **71%** of Illinois children with BLLs ≥5 µg/dL reside in high-risk areas.

Figure 10: Children residing in High-Risk and Low-Risk ZIP Codes Tested with Lead in Blood 2021

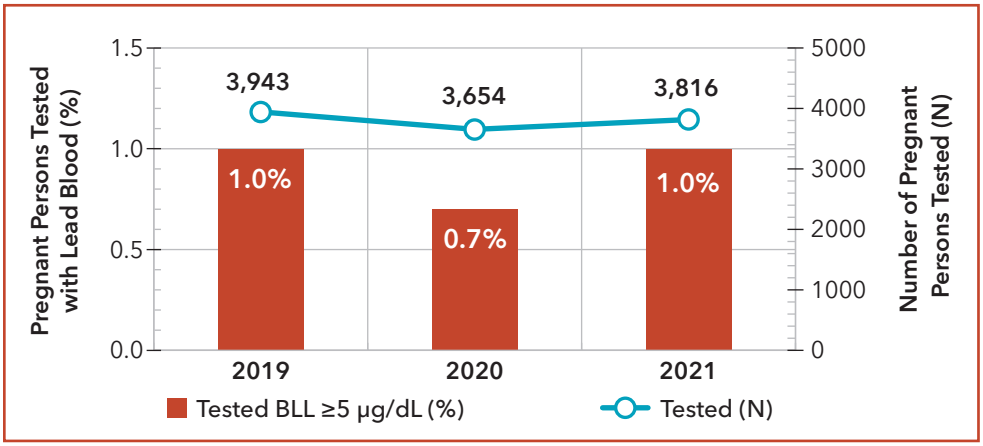


Data source: Illinois Department of Public Health – Healthy Homes and Lead Poisoning Surveillance (HHLPSS) Database, 2021.

Blood Lead Testing During Pregnancy

In October 2015, the program started collecting blood lead data for pregnant persons in accordance with Section 6.2 of the Act http://www.ilga.gov/legislation/ilcs/ilcs3.asp?ActID=1523&ChapterID=35. A total of 3,816 prenatal blood lead results were collected in 2021 and 38 were confirmed at BLLs ≥5 µg/dL (figure 11).

Figure 11: Pregnant Persons Tested and Reported to IDPH with Lead in Blood: 2019-2021



Data source: Illinois Department of Public Health - HHLPSS. *This is an ongoing study.

More information go to CDC Guidelines for the identification and management of lead exposure in pregnant and lactating women, which is available at http://www.cdc.gov/nceh/lead/publications/leadandpregnancy2010.pdf or visit IDPH's website at https://dph.illinois.gov/content/dam/soi/en/web/idph/files/publications/leadpregnancy.pdf.

For every 5 µg/dL increase in prenatal/childhood blood lead level, there is a higher risk of being arrested for a violent crime as a young adult by almost 50%. https://journals.plos.org/plosmedicine/article?id=10.1371/journal.pmed.0050101

Blood Lead Levels in Refugee Children

IDPH Minority Health's Refugee Health Assessment Program monitors the testing of refugee children for blood lead exposure following CDC guidelines as part of the initial domestic refugee health assessment.

Table 2: BLLs in Refugee Children ≤6 Years of Age in 2021

Number of Refugee Children	N	%
Total number of refugee children who completed the initial health assessment	115	
Children who completed the initial health assessment including a blood lead test	106	92
BLL ≥5 µg/dL	16	15

In 2021, there were 115 refugee children 6 years of age and younger at the time of testing who completed the initial health assessment in Illinois. Of those assessed, 106 children had blood lead results recorded in the IDPH Refugee Health Assessment Database, and 16 of these children had an EBLL (Table 2). Case management services and environmental assessments were conducted by delegated agency staff for children with confirmed EBLLs ≥5 µg/dL. In collaboration with IDPH, these delegate agencies provided outreach and education to health care providers and families of lead-exposed children.

Illinois RefugeeHealth Program
https://dph.illinois.gov/content/dam/soi/en/web/idph/files/publications/publicationscmh2015-refugee-program-ar.pdf
https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6959973/

Beware of lead in some cultural products, e.g., kajal, sauma, pay-loo-ah, daw tway gaw mo, greta, azarcon, litargirio, surma, tiro (tozali or kwalli), lozeena, tamarind, lead-glazed ceramics, make-up and beauty products, and dried plum candies by El Chavito, Inc.

Adult Blood Lead Registry

The Program and Adult Blood Lead Registry (ABLR) comprise the Illinois blood lead surveillance (Figure 12).

Figure 12: Illinois Blood Lead Surveillance Programs

ABLR, maintained by the IDPH Division of Epidemiologic Studies, collects blood lead data for people 16 years of age and older and notifies federal enforcement agencies to trigger inspections and/or interventions. In 2020, there were 2,076 cases of elevated lead in adults. In **2021**, there were **1,852** cases of adult blood leads. ABLR made nine referrals (employees) to OSHA for companies with employees who had blood lead levels greater than or equal to 40 µg/dL.

Illinois Health and Hazardous Substances Registry Annual Reports, Section 5.1:
https://dph.illinois.gov/content/dam/soi/en/web/idph/files/publications/2022-illinois-health-and-hazardous-substances-registry-annual-report.pdf

- Notify OSHA quarterly of any company that has employees with blood lead levels equal to or greater than 40 µg/dL.
- Notify OSHA within 24 hours of any case with blood lead level equal to or greater than 60 µg/dL.

Trends in Elevated Blood Lead Levels in Adults – Illinois, 2005-2014
https://dph.illinois.gov/content/dam/soi/en/web/idph/files/publications/publications-opps-trends-ineblls-adults-041516.pdf

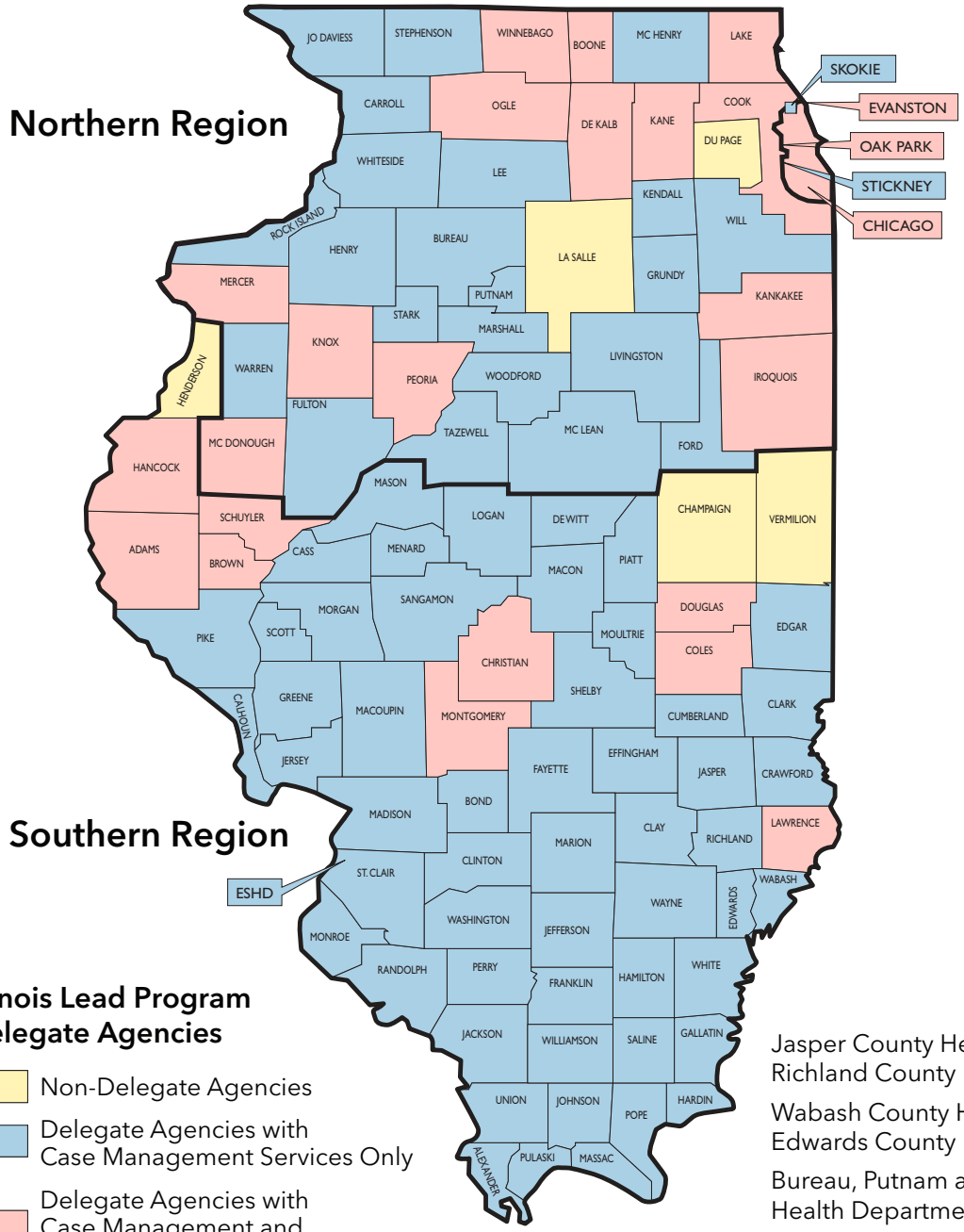
Illinois Morbidity and Mortality Bulletin
https://dph.illinois.gov/content/dam/soi/en/web/idph/files/publications/publicationsoppsimmb-vol-4-issue-1.pdf
https://www.cdc.gov/niosh/topics/ables/default.html

Data on 14,000 adults showed that an increase of 1 to 6.7 micrograms of lead per deciliter of blood (5 µg/dL) was significantly associated with an increase in mortality of 37% for all-causes, 70% for cardiovascular, and 108% for ischemic heart disease…Lanphear et al., 2018

Intervention - Case Management of Children with Lead in Blood

Delegate Agencies In 2021 IDPH had grant agreements with **101** delegate agencies to provide case management care for lead-exposed children in **96** of **102** counties. Additionally, **28** of the delegate agencies covering **25** counties also had grant agreements to provide environmental investigation services. IDPH provided services to the six counties without a delegate agency grant agreement.

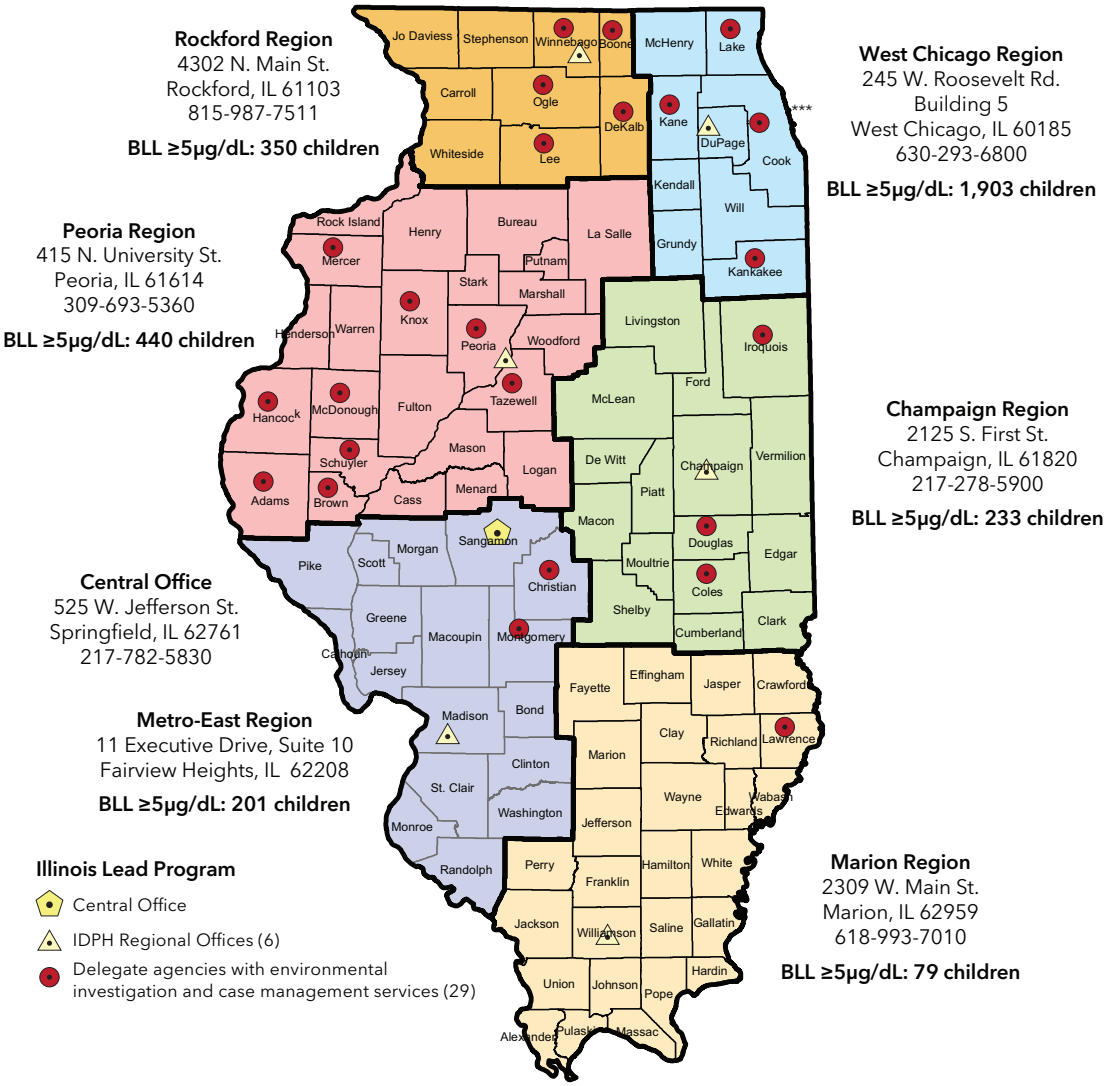
Figure 13: Illinois Lead Program Delegate and Non-delegate Agencies in Fiscal Year 2021



Intervention - Children Identified with Lead in Blood by Region

The six environmental regional offices of IDPH each house lead risk assessors who conducted home inspections for children with confirmed BLL ≥5 µg/dL in areas not covered by the **28** delegate agencies with environmental health services agreements. In 2021, a total of **2,106** children were identified for the first time with confirmed blood in lead ≥5 µg/dL (Figure 13).

Figure 14: Delegate Agencies with Environmental Investigations and Children with Confirmed Lead in Blood Identified for the First Time in 2021 by Environmental Health Regions



***Chicago, Evanston, and Oak Park also perform case management and environmental inspections.
*Brown is covered by Adams County Health Department.

Source: Illinois Department of Public Health, Updated 12/7/2022

Environmental remediation is required by law when a lead hazard has been identified in a home where a child with an BLL lives or frequents. Remediation is necessary to prevent on-going exposure to lead hazards. Children who return to an environment where lead hazards still exist remain at risk for further exposure.

Lead Licensees

The Act and Code requires any person who conducts lead services in a regulated facility in Illinois to be licensed by IDPH. Licenses expire annually and must be renewed (Table 3).

For a list of licensed lead abatement contractors visit https://data.illinois.gov/dataset/566lead_contractor_registration.

For a list of licensed risk assessors and inspectors visit https://data.illinois.gov/dataset/567lead_risk_assessor_and_inspector_licensees.

For approved training providers visit https://data.illinois.gov/dataset/569lead_training_course_provider_list.

Table 3: Lead Licenses Issued 2019-2021

Licenses Issued	2019	2020	2021
Lead abatement workers	859	718	735
Lead abatement supervisors	361	338	331
Lead inspectors	81	62	36
Lead risk assessors	575	327	243
Lead abatement contractors	143	132	125

Data source: Illinois Department of Public Health – Licensing Database

Compliance and Enforcement

The U.S. EPA authorizes the IDPH to carry out the compliance and enforcement aspects within the Act and Code in lieu of federal requirements.

- Conducted on-site investigations of lead mitigation/abatement projects statewide per notifications received by IDPH Central Office related to residential (630), school (190), and other (51) sites (Table 4).
    - Determined if individuals on-site were properly licensed.
    - Ensured lead mitigation/abatement activities were conducted in compliance with the Act and Code.
- Sought enforcement actions, fines, and penalties against persons found in violation of the Act and Code, including, but not limited to, persons performing lead services, such as lead inspection, risk assessment, mitigation, and abatement.
- Generated a summary compliance and enforcement action report for IDPH activities.

Table 4: Total Number of Abatement Projects

Compliance Type	2019	2020	2021
Abatement Projects	711	504	867

Source: Illinois Department of Public Health - Illinois Lead Program Database 2019-2021.

Interactive Map

Visit the Illinois Department of Public Health's website at http://dph.illinois.gov/topics-services/environmental-health-protection/lead-poisoning-prevention/childhood-surveillance

Societal Cost of Lead Poisoning

For just one cohort of children ages 1 to 2 years old who are estimated to have BLLs above the CDC reference value, the costs could be as high as $699,115,749.73

- $812,959.40 in costs associated with immediate medical intervention.
- $2,408,258.43 in costs associated with treatment of lead-related ADHD.
- $2,035,516.79 in parental work loss due to time taken off to care for child with an BLL 5 µg/dL and above.
- $2,758,371.30 in costs associated with additional special education services for children with lead poisoning.
- $691,100,643.81 in potential earnings over a lifetime.

A tool to calculate the cost of lead exposure and the economic benefits of key interventions to reduce lead exposure: http://valueofleadprevention.org/calculations.php?state=Illinois

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3. What information in this report is most valuable to you?
4. What additional information would you like to read about in future reports?
5. How can the content of this report be improved?

Provide feedback by email to dph.lead@illinois.gov, call 217-782-3517, or FAX to 217-557-1188

Appendix 1:

Pre-1978 Housing Units, and Children Tested for Lead in Blood by Delegate Agencies: 2020-2021

Illinois/ County/ Delegate Agency[1]	Estimated Population ≤6 Years of Age[5]	2020				2021									Pre-1978 Housing Units Estimates[13]
		Children ≤6 Years Tested[7]				Children ≤6 Years Tested[7]							Children ≤2 Years Tested[7]		
		Tested	BLL ≥5 µg/dL[8]	First Test[9]	New Confirmed Cases[10], BLL ≥5 µg/dL	Ever Tested ≤6 as of December 31, 2021[6]	Tested	BLL ≥5 µg/dL[8]	First Test[9]	New Confirmed Cases[10], BLL ≥5 µg/dL	Medicaid Enrolled[11] BLL ≥5 µg/dL[e]	Non-Medicaid[12] BLL ≥5 µg/dL[e]	Tested	BLL ≥5 µg/dL[e]	
	N	N	%	%	%	%	N	%	%	%	%	%	N	%	%
Illinois	**1,032,241**	**179,085**	**2.8**	**55.6**	**1.1**	**62**	**191,900**	**2.5**	**55.7**	**1.7**	**2.4**	**1.2**	**107,644**	**2.5**	**64**
Adams	5,170	732	7.2	81.6	4.5	82	752	6.3	83.5	5.6	9	3.1	587	5.3	69
Alexander	381	49	8.2	77.6	4.1	79	81	6.2	77.8	4.9	6.8	2.8	41	9.8	67
Bond	897	129	5.4	72.9	3.9	94	174	5.7	78.2	2.9	1.1	2.1	130	4.6	59
Boone	3,684	611	2.1	63.8	1	82	673	2.4	68.1	2.2	1.6	2.2	496	2	43
Brown	386	52	5.8	76.9	3.8	87	66	4.5	84.8	1.5	6.7	2	55	5.5	59
Bureau	2,092	293	9.2	73.7	2.7	86	433	7.4	79	4.8	8.9	3.9	282	8.2	75
Calhoun	276	47	0	83	0	54	41	0	80.5	0	0	0	27	0	61
Carroll	905	190	7.4	63.2	4.7	87	174	4.6	66.7	4	6	2.1	95	5.3	70
Cass	1,050	201	13.9	73.1	4.5	97	219	7.3	65.3	5	7.2	3.8	120	7.5	70
Champaign	14,099	1,510	1.2	84.9	0.5	56	1,340	1.2	87.4	1	0.8	1.1	1,060	1.2	49
Chicago	202,399	66,455	2.2	42.4	1.2	91	72,646	2.1	42	1.8	2.2	1.1	36,860	2.2	79
Christian	2,240	359	5.6	73	2.2	81	367	5.4	73	2.7	3.7	3.7	235	3.8	70
Clark	1,142	175	6.9	77.1	1.7	92	217	2.8	74.2	1.8	6.4	0.7	152	2	64
Clay	947	155	3.9	81.3	0.6	107	178	2.2	80.3	2.2	4.5	0	135	0.7	58
Clinton	2,683	381	1.8	76.4	0.5	63	284	1.8	75.7	1.1	0.9	1.4	208	2.4	51
Coles	2,959	686	3.9	65.7	1.2	106	778	4.5	65	1.7	4.3	1.6	621	4	63
Cook w/o Chicago	188,527	31,153	1.3	56.3	0.6	62	34,964	1.2	57.8	0.8	1	0.6	19,219	1.1	69
Crawford	1,236	95	3.2	58.9	1.1	80	261	2.3	77.4	0.4	1.7	0	137	1.5	68
Cumberland	858	117	3.4	68.4	0.9	66	121	5	67.8	1.7	4.3	2.7	87	5.7	60
DeKalb	7,349	1,066	3	67.6	1	60	737	3.7	69.6	2.6	1.8	1.9	386	3.9	51
DeWitt	1,129	182	9.3	68.7	1.6	75	132	10.6	70.5	4.5	10.9	0	85	10.6	72

Illinois/ County/ Delegate Agency[1]	Estimated Population ≤6 Years of Age[5]	2020				2021									Pre-1978 Housing Units Estimates[13]
		Children ≤6 Years Tested[7]				Children ≤6 Years Tested[7]							Children ≤2 Years Tested[7]		
		Tested	BLL ≥5 µg/dL[8]	First Test[9]	New Confirmed Cases[10], BLL ≥5 µg/dL	Ever Tested ≤6 as of December 31, 2021[6]	Tested	BLL ≥5 µg/dL[8]	First Test[9]	New Confirmed Cases[10], BLL ≥5 µg/dL	Medicaid Enrolled[11] BLL ≥5 µg/dL[e]	Non-Medicaid[12] BLL ≥5 µg/dL[e]	Tested	BLL ≥5 µg/dL[e]	
	N	N	%	%	%	%	N	%	%	%	%	%	N	%	%
Douglas	1,620	195	2.1	71.3	0	61	186	4.3	79	1.6	2.4	1	125	1.6	66
DuPage	69,052	6,461	1.2	70.5	0.4	40	6,183	1.1	70.1	0.6	0.7	0.6	3,615	1.4	51
Edgar	1,066	261	11.1	59.4	4.2	107	271	5.2	64.2	4.1	5.6	1.6	155	5.2	76
Edwards	479	78	1.3	71.8	0	90	111	1.8	76.6	0.9	0	0	63	1.6	67
Effingham	2,780	301	2.3	71.8	0.3	60	382	1.3	71.2	0.5	0.5	0.5	229	1.7	52
Fayette	1,478	175	2.9	75.4	1.1	81	271	3.3	74.5	0.4	4.7	3.1	200	3.5	66
Ford	961	155	8.4	76.1	3.2	76	153	12.4	80.4	7.8	10.6	4.6	106	9.4	78
Franklin	2,835	481	1.7	78.2	0.2	76	473	2.5	74.6	1.1	1.7	0.9	293	2.7	67
Fulton	2,083	298	7.7	79.5	3.4	73	324	4.3	85.5	3.7	4.1	3.2	161	5.6	75
Gallatin	316	62	1.6	61.3	1.6	89	35	2.9	68.6	2.9	4.5	0	13	0	62
Greene	891	157	8.9	68.2	3.8	94	218	6.9	70.6	6.4	13.2	1.5	133	7.5	75
Grundy	3,987	608	3.5	65.8	0.3	54	544	3.1	67.5	0.6	1.3	0.8	324	2.8	43
Hamilton	572	83	8.4	84.3	3.6	85	115	2.6	89.6	2.6	2.4	1.4	71	1.4	62
Hancock	1,177	152	7.2	78.3	3.3	83	218	6.9	80.3	4.1	8.7	6.1	148	6.1	73
Hardin	152	18	5.6	94.4	5.6	90	31	0	87.1	0	0	0	12	0	64
Henderson	395	40	17.5	77.5	7.5	65	58	5.2	72.4	1.7	6.1	0	35	0	66
Henry	3,404	576	9.9	70.8	1.7	89	721	9.7	74.5	2.9	10.3	2.9	443	6.5	77
Iroquois	1,861	235	7.2	66.4	0.9	61	223	3.6	73.5	2.2	2.8	2.4	115	2.6	73
Jackson	3,780	482	2.3	62.9	0.2	77	608	1.8	70.6	1	1.8	1.9	318	1.6	54
Jasper	734	71	1.4	63.4	0	52	100	6	72	3	4	4.4	48	6.3	61
Jefferson	2,967	293	2.4	81.2	1	62	340	1.5	85	0.3	0.6	0	199	2	56
Jersey	1,273	272	3.3	50.7	0.7	91	217	2.3	63.6	1.4	1.2	1.8	167	1.8	54
Jo Daviess	1,198	167	4.8	70.1	3.6	76	173	5.2	71.1	4.6	5.7	2.4	132	5.3	58
Johnson	740	54	1.9	90.7	0	55	69	0	82.6	0	0	0	40	0	46
Kane	42,488	7,083	2.9	53.1	1	65	7,597	3.3	50.8	1.9	2.6	1.6	3,656	3.1	47
Kankakee	8,083	1,455	2.2	44.9	0.9	66	1,044	2.8	52.2	1.5	1.9	1.1	519	3.1	63

Illinois/ County/ Delegate Agency[1]	Estimated Population ≤6 Years of Age[5]	2020				2021									Pre-1978 Housing Units Estimates[13]
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	N	N	%	%	%	%	N	%	%	%	%	%	N	%	%
Kendall	11,277	818	1.7	77.4	0.4	34	873	0.9	78	0.5	0.3	0.2	566	1.1	26
Knox	3,482	542	10.8	78.8	4.2	83	668	9	85	5.1	6.9	3.9	471	9.1	79
Lake	51,650	5,696	1.7	63.4	0.6	46	5,957	1	65.6	0.6	0.7	0.5	3,639	1.2	46
LaSalle	7,699	1,384	9.4	74	3	80	1,320	6.7	73	3.4	7.5	1.5	913	6.2	70
Lawrence	995	92	3.3	81.5	0	87	148	5.4	82.4	2.7	9.5	1.9	106	3.8	73
Lee	2,208	277	6.2	73.6	5.4	62	330	4.5	71.5	3.9	5	4	184	6.5	75
Livingston	2,439	424	9.2	73.6	0.9	92	511	6.1	76.5	1.8	5.5	2.2	384	5.2	75
Logan	1,921	211	8.1	67.8	0.9	61	227	6.6	70.5	3.1	6	4.1	127	5.5	77
Macon	8,004	2,034	9.7	45.1	2.5	80	2,193	7.5	48.7	3.7	6.9	3.4	1,057	7.3	75
Macoupin	2,981	442	6.1	70.1	1.4	84	592	6.1	73.6	2	4.1	1.1	327	4	67
Madison	19,129	3,043	2.7	62.8	0.9	69	2,992	3	63.3	2	2.9	0.9	1,987	2.9	62
Marion	3,001	469	8.1	70.4	1.7	83	487	3.5	71.9	1.6	2.6	1.9	310	2.9	60
Marshall	772	140	5	75	2.1	81	121	2.5	77.7	1.7	2.1	1.1	92	1.1	73
Mason	851	196	7.7	50.5	2	81	150	5.3	57.3	3.3	7.5	1.2	75	4	75
Massac	1,049	74	4.1	83.8	2.7	52	120	0.8	81.7	0.8	0	2.8	44	2.3	55
McDonough	1,692	157	6.4	78.3	3.2	75	226	9.7	80.1	8.4	8	7.3	180	11.1	68
McHenry	21,625	2,071	1.6	70	0.6	41	2,124	1.1	72.5	0.4	0.6	0.4	1,347	1	38
McLean	12,716	1,246	6.5	79.5	1.5	76	1,164	4.3	80	1.8	3.9	2.1	852	4.1	49
Menard	896	92	5.4	77.2	3.3	50	82	6.1	75.6	3.7	2.4	3.6	60	6.7	58
Mercer	1,039	146	6.2	76.7	4.1	81	197	2.5	71.1	2.5	5.7	0.7	136	2.9	76
Monroe	2,421	370	1.6	74.1	0	62	258	1.9	69	0.8	1.4	0.9	179	1.7	37
Montgomery	1,898	215	4.7	74	0.9	83	265	2.6	86.8	2.6	2.7	1.9	139	3.6	69
Morgan	2,248	474	8	66.2	2.1	101	471	2.8	75.4	1.7	1.9	0.9	268	1.9	70
Moultrie	1,193	134	6	78.4	3	57	172	8.7	72.7	4.1	6.8	0	121	9.1	66
Ogle	3,492	554	3.2	69.3	1.1	68	562	3.6	70.3	2.7	3.3	1.6	396	3.3	61
Peoria	15,614	2,746	6.9	71	2	82	3,069	6.9	74.4	2.5	6.7	2.1	2,248	6.2	71

Illinois/ County/ Delegate Agency[1]	Estimated Population ≤6 Years of Age[5]	2020				2021									Pre-1978 Housing Units Estimates[13]
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	N	N	%	%	%	%	N	%	%	%	%	%	N	%	%
Perry	1,327	196	4.6	66.3	3.1	80	235	3.4	72.8	2.1	4.8	0	119	1.7	61
Piatt	1,232	127	3.1	81.1	0.8	55	155	5.8	83.2	3.9	5.6	2.9	91	5.5	64
Pike	1,205	231	6.1	75.8	3.5	104	251	4.4	76.1	1.6	3.2	0.8	170	3.5	72
Pope	173	9	11.1	77.8	0	51	16	0	100	0	0	0	5	0	52
Pulaski	351	51	2	72.5	0	75	61	1.6	77	1.6	0	6.3	41	2.4	65
Putnam	369	39	0	84.6	0	72	46	2.2	95.7	0	0	0	33	0	59
Randolph	1,994	349	2.3	61.3	0.6	82	369	3	65.3	1.1	3	0.9	246	3.7	63
Richland	1,249	111	10	66.7	2.7	64	146	8.9	76	4.1	8.7	5.5	77	7.8	64
Rock Island	10,974	2,241	5.9	65.8	2.6	97	2,683	5.4	66.3	2.7	5.9	2.8	1,791	4.7	77
Saline	1,740	215	2.8	67.9	0.9	79	145	3.4	71	1.4	3.6	1	66	3	67
Sangamon	14,387	2,148	4.3	63.9	1.1	65	2,178	3.7	64.1	2.1	3.3	1.4	1,241	3.8	62
Schuyler	304	71	5.6	69	2.8	116	78	6.4	70.5	5.1	7.3	2.7	47	10.6	65
Scott	326	56	5.4	66.1	5.4	103	63	7.9	69.8	6.3	7.7	5.1	39	5.1	79
Shelby	1,519	243	5.4	65.8	0.8	74	237	4.6	70.9	1.3	2.7	0.8	170	6.5	67
St. Clair w/o ESHD	15,220	1,621	4.2	71.9	1	40	1,365	2.9	68.5	1.3	1.9	1	938	1.9	49
Stark	369	86	19.8	64	5.8	114	114	12.3	71.1	6.1	7.8	8.2	63	14.3	83
Stephenson	3,166	817	11.6	50.2	5	105	917	9.9	57.1	9.5	12.5	3.7	570	8.9	72
Tazewell	9,854	1,284	4	78.7	1.1	51	1,075	3	81.9	1.4	3.7	0.7	890	2.8	69
Union	1,139	157	3.2	81.5	1.3	64	194	6.2	79.9	4.6	5.6	2.8	108	10.2	60
Vermilion	6,102	1,028	3.2	66	2	84	1,329	2.8	69.5	2.8	2.7	1.6	698	3	78
Wabash	803	122	2.5	72.1	0.8	101	183	2.2	76	0.5	1.4	0	115	1.7	70
Warren	1,214	238	10.5	61.8	2.9	99	258	9.7	73.6	7.4	10.9	5.6	180	8.3	82
Washington	1,023	176	4.5	83	1.7	68	132	3.8	84.1	1.5	5.1	1.1	93	2.2	64
Wayne	1,265	165	6.1	71.5	1.8	81	215	4.7	80	2.8	5.3	3.3	134	5.2	60
White	961	142	2.1	74.6	0.7	72	115	0.9	76.5	0.9	2	0	59	1.7	72
Whiteside	3,820	472	4.4	64	3	80	610	3.3	72	2	2.6	1.7	291	3.4	74

Illinois/ County/ Delegate Agency[1]	Estimated Population ≤6 Years of Age[5]	2020				2021									Pre-1978 Housing Units Estimates[13]
		Children ≤6 Years Tested[7]				Children ≤6 Years Tested[7]							Children ≤2 Years Tested[7]		
		Tested	BLL ≥5 µg/dL[8]	First Test[9]	New Confirmed Cases[10], BLL ≥5 µg/dL	Ever Tested ≤6 as of December 31, 2021[6]	Tested	BLL ≥5 µg/dL[8]	First Test[9]	New Confirmed Cases[10], BLL ≥5 µg/dL	Medicaid Enrolled[11] BLL ≥5 µg/dL[e]	Non-Medicaid[12] BLL ≥5 µg/dL[e]	Tested	BLL ≥5 µg/dL[e]	
	N	N	%	%	%	%	N	%	%	%	%	%	N	%	%
Will	51,051	7,235	1.9	59.5	0.5	51	6,773	1.4	59	0.7	1.1	0.3	3,672	1.3	36
Williamson	4,901	449	3.6	80	0.4	59	498	2.6	82.5	0.6	2.5	0.3	318	1.9	49
Winnebago	22,240	4,201	3.7	65.1	2.5	86	5,245	3.4	62.5	3.3	3.4	2.4	3,265	3.4	62
Woodford	3,024	459	4.4	78.9	1.1	62	405	3.5	78.8	1.5	3.1	1.1	353	3.7	58
Egyptian2	3,017	419	2.4	69.2	0	78	295	2.4	72.9	1.4	3.2	0.5	138	2.2	68
ESHD3	5,355	2,156	1.8	51	0.5	191	2,028	2.1	51.9	0.6	1.4	1.3	1,099	1.9	73
Evanston	5,239	1,240	1.7	57.6	0.6	96	1,136	2.6	62.1	2.2	1.8	1.9	808	2.5	79
Oak Park	3,900	645	5.7	66	2.2	83	827	3.1	70.4	1.8	3.4	1.2	625	3.4	88
Skokie	5,422	1,243	1.5	58.5	0.6	77	1,173	2	59.5	1.9	1.7	1.3	763	1.3	85
Southern Seven4	3,984	412	3.9	82	0	62	572	3.3	80.9	2.6	3.2	2.3	291	5.8	57
Stickney	479	469	1.1	60.3	0.2	367	470	0.9	58.5	0.6	0.7	0.5	256	0.8	89

Data source: Illinois Department of Public Health – HHLPSS 2020-2021 Illinois Department of Healthcare and Family Services Enterprise Data Warehouse, 2020 through an interagency data agreement.

[1]Delegate Agency include unit of local government or local health department approved by IDPH to carry out provisions of the act and code. Local governments include city of Chicago, Egyptian, Evanston, East Side Heath District, Oak Park, Skokie, Southern Seven, and Stickney.

[2]Egyptian:Gallatin, Saline, and White counties.

[3]ESHD East Side Health District (ESHD) delegate agency includes the cities of Alorton, Brooklyn, Cahokia, Caseyville, Centreville, East St. Louis, Fairmont City, Lovejoy, National City, Sauget, and Washington Park, and Scott Air Force Base.

[4]Southern Seven: Alexander, Hardin, Johnson, Massac, Pope, Pulaski, and Union counties.

[5]**Estimated Population:** Illinois [a]Population data compiled from bridged-race Vintage 2020 (2010-2020) postcensal population estimates (released by NCHS on 9/22/2021). Available on CDC WONDER Online Database. Accessed at http://wonder.cdc.gov/bridged-race-v2020.html on April 5, 2022 1:02:27. City Source: U.S. Census Bureau, 2016-2020 American Community Survey 5-Year Estimates, Table S0101; [6]**Ever Tested:** Children≤6 years of age tested at least once in their lifetime as of December 31, 2021 divided by Estimated Population 6 Years of Age and Younger (denominator); [7] Age at time of testing; [8]**BLL ≥5 µg/dL:** Children tested with blood lead levels ≥ 5µg/dL (numerator) divided by all children tested (denominator); [9]**First Test:** Percentage of children tested for the first time based on all children tested in the year; [10]**New Confirmed Cases:** Children identified with confirmed venous blood ≥ 5µg/dL for the first time in that year (numerator) divided by all children tested (denominator); [11]**Medicaid Enrolled:** Medicaid enrolled children 6 years of age or younger tested with blood lead levels ≥ 5µg/dL (numerator) divided by all Medicaid enrolled children 6 years of age or younger tested

(denominator): [12]**Non-Medicaid** children 6 years of age or younger tested with blood lead levels ≥ 5µg/dL (numerator) divided by all non-Medicaid children 6 years of age or younger tested (denominator); [13]**Pre-1978 Housing Unit** was estimated from U.S. Census Bureau, 2016-2020 5-Years American Community Survey, Table B25034-Year Structure Built; dTotal number of children 2 years of age or younger at the time of blood lead testing in calendar year 2021 (test date – birthdate ≤2 years old).

The SAS (statistical analysis software) and SQL (Structured Query Language) codes were used to query databases. Due to rounding, decimals may not add up perfectly.

Note: As required by the **Act** (410 ILCS 45/7), health care providers shall report all blood lead test results to IDPH. If a child has multiple tests, the highest venous result was selected for this report. If there is no venous test on a child, the peak capillary blood lead result was selected. A child was counted only once for each year in which he or she was tested or had a follow-up test. A confirmed test in Illinois is a venous blood draw. Most laboratories that analyzed blood lead were able to quantify and accurately report levels of <5µg/dL compared to previous years. 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 ±3µg/dL error range.

Appendix 1 reflects the number of children tested in 2020 and 2021 as well as those retested for follow-up by county, lead level ≥ 5µg/dL, and Medicaid/non-Medicaid status. In 2021, BLLs in children ranged from 1.0 µg/dL to 364 µg/dL with a mean/median of 2 µg/dL. The most frequent reading was 1.0 µg/dL. In 2021, 56% of Illinois children tested were 2 years of age or younger and accounted for 57% of all children tested with BLLs of ≥5 µg/dL.

There were 4,754 children 6 years of age and younger identified with a BLL ≥5 µg/dL, and 3,243 (68%) of them were confirmed with a venous test. Of those confirmed, 2,051 were identified for the first time in 2021.

Approximately 62% of Illinois children have received at least one test in their lifetime (Children Ever Tested as of December 31, 2021).

Appendix 2 :

Children Tested for Blood Lead by Age from January 1 to December 31, 2021

Age (Years)	Estimated Population[a]	Total Tested	≥5 µg/dL		
			Children Tested, 2021		%
			Venous	Capillary	
<1	140,052	19,855	118	140	2.1
1	141,151	53,019	981	632	5.4
2	145,841	39,067	886	429	6.3
3	147,981	28,271	692	199	6.3
4	152,494	25,807	477	226	4.9
5	153,713	24,020	327	229	3.9
6	151,009	7,101	183	41	5.5
7-15		19,855	144	14	5.8
≤6 years	**1,032,241**	**191,887**	**3,243**	**1,835**	**2.8**

Data source: Illinois Department of Public Health – HHLPSS 2021. [a]Population data compiled from bridged-race Vintage 2019 (2011-2019) post-censal population estimates (released by NCHS on 6/25/2019). Available on CDC WONDER Online Database. Accessed at http://wonder.cdc.gov/bridged-race-v2018.html in February 2022.

Appendix 3:

Children Tested for Blood Lead by Race/Ethnicity January 1 to December 31, 2021

Racial Classification	Estimated Population[a]	Children Tested by Race in 2021			
		Total Tested	≥5 µg/dL		
		n	n		%
			Venous	Capillary	
Black or African American	192,043	37,520	983	346	3.5
White	762,179	69,506	1,247	809	3.0
Hispanic or Latino	242,171	46,422	776	244	2.2
Total Children Tested[b]	**1,032,241**	**191,887**	**3,243**	**1,511**	**2.4**

Data Source: Illinois Department of Public Health – HHLPSS 2021. [a]Population data compiled from bridged-race Vintage 2020 (2010-2020) post-censal population estimates (released by NCHS on 9/22/2021). Available on CDC WONDER Online Database. Accessed at http://wonder.cdc.gov/bridged-race-v2020.html on October20, 2022. [b]Children tested include unknown or other races not included on the table. Note: Race and Ethnicity are calculated differently.

Note: Race and Ethnicity are calculated differently.

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