Focused Review: Lead Poisoning Prevention Program

Update Document from February 13, 2025 Presentation Meeting.

Contents:

JLOSC Staff Recommendation #1

After review of information collected on the 3 assigned objectives, staff recommend that JLOSC consider sponsoring a bill making technical corrections and clarifications to the Childhood Lead Poisoning Prevention Act, in Chapter 26 of Title 16.[1]

Using this staff report as a guide, the bill should revise the relevant provisions of the Delaware Code ("Code") covering topics such as:

- Clarifying the State Lead-Based Paint Program and Childhood Lead Poisoning Prevention Program.
    - Updating definitions.
    - Clarifying duties under each program.
    - Clarifying the "universal reporting system" used by the Division of Public Health to collect and maintain program data.
    - Clarifying public information.
- Updating, clarifying, and combining annual reporting requirements for the Division of Public Health and Childhood Lead Poisoning Prevention Advisory Committee.
- Clarifying and updating duties of the Childhood Lead Poisoning Prevention Advisory Committee.
    - Clarifying and updating staff and data support provided by the Division of Public Health.

[1] JLOSC and Delaware Department of Health and Social Services staff will work together to develop statutory revisions, and JLOSC staff will engage stakeholders as appropriate.

Review Highlights

Lead Poisoning Prevention Program
Focused Review, Released: February 2025

Joint Legislative Oversight & Sunset Committee

Key Findings

➔ Access to Screening at 12 and 24 months.

- The CDC established the Childhood Lead Poisoning Prevention Program to reduce lead exposure and provides program guidance and funding support to states.
- Delaware's Childhood Lead Poisoning Prevention Act guides all lead poisoning prevention programs.
  - The Act includes the Delaware State Lead-Based Paint Program and Childhood Lead Poisoning Advisory Committee ("advisory committee").
  - Items for clarification identified throughout the Act.
    - Applying technical corrections and clarifications provides clear guidance for the program.

➔ Water Testing Program in Delaware Schools.

- **October 2020:** Lead levels exceeded 7.5 parts per billion in 149 sites in 49 Delaware schools, all schools retested by 2023.
- **September 2023:** DOE announced "Filter First" approach which may require plumbing replacements or filter installations, other schools may require extensive and costly repairs.

➔ Analysis of Funds Available.

- **Delaware Fiscal Year 2024-2025:**
  - Residential Lead Remediation - $4.5M
  - Childhood Lead Poisoning Program - $1.9M
- **Federal Funds:**
  - US HUD - $1.5M (2024)
  - EPA - $28.99M (May 2024)
  - CDC - $540K (annual)

Staff Recommendation

➔ Technical corrections and clarifications to the Childhood Lead Poisoning Prevention Act (Chapter 26 of Title 16).

- Clarify the state 2 programs: State Lead-Based Paint Program and Childhood Lead Poisoning Prevention Program.
- Update and combine annual reporting requirements.
- Clarify and update duties of the advisory commission and DPH staff support.

WHY WE DID THIS REVIEW

The Joint Legislative Oversight and Sunset Committee ("JLOSC") voted on March 2, 2023, to have their staff perform a focused review on the Lead Poisoning Prevention Program.

OBJECTIVES

- ➔ Evaluate lead poisoning screening for 12 and 24-month-old children
- ➔ Assess the Water Testing Program in Delaware schools
- ➔ Analyze funds available

BACKGROUND

1994 - Childhood Lead Poisoning Prevention Act created.

- Mandated blood lead screening for all 12-month-old children in Delaware.
- Required all childcare facilities to collect verification of screening or a certificate stating religious beliefs.

2021 - Modified screening requirements.

- Aimed to simplify requirements and process for health care providers to eliminate confusion.
- Mandated lead poisoning screenings for children 12 and 24 months old.
- Created definitions such as:
  - "Screening" defined as a capillary (finger or heel prick) blood lead test.
  - "Testing" defined as a venous blood lead test.

2023 - Act modified created State Lead-Based Paint Program.

- Tasked to eliminate lead-based paint.
- Screen properties for lead-based paint where a child with high blood lead levels resides.

Delaware Childhood Lead Poisoning Prevention Program:

- Provides and promotes access to early lead poisoning screening.
- Childhood blood lead surveillance and reporting for the State of Delaware.
- Outreach and education.

Questions from JLOSC Members
Childhood Lead Poisoning Programs: Prevention and Paint Remediation

Please respond by Thursday, April 3, 2025.

JLOSC would like information for FY 2024 – February 28, 2025 for the following questions.

CLPPP = Childhood Lead Poisoning Prevention Program

DSLPP = Delaware State Lead-based Paint Program

1. Program Benchmarks & Progress

A. What are the key benchmarks for lead screening/testing (prevention) and paint remediation, and how is Delaware currently performing?

<u>CLPPP benchmarks</u>

1. Weekly EBLL reports of elevated blood lead level results are generated on Mondays from results received from physicians and laboratories
2. Weekly mailings of lead information and guidance sent to all families of identified children in the weekly EBLL reports
3. Weekly review of addresses in the weekly EBLL reports to determine the owner and build date of residences. Property information for all properties built before 1978 is submitted to the DSLPP weekly.
4. Monthly EBLL reports are generated the third week of each month and reconciled with the weekly reports to ensure no families and property referrals are missed.
5. Weekly reports of all test data received the previous week are provided to the WIC program, allowing nutritionists to review and provide lead information to WIC client families.
6. Monthly EBLL reports are sent to the DPH Birth to Three developmental assessment program.
7. Review and address all incomplete and possible erroneous submissions (Held Records) for each week by the end of the week.
8. Monthly review of EBLL cases among the case management team. Update and revise case approach and documentation as needed.
9. Monthly review of potential EBLL cases to determine if required confirmatory samples have been taken and results submitted.
10. Weekly track case referrals to DPH nutritionists, Birth to Three program, and Child Find intervention programs.

11. Monthly recordkeeping of case openings, success closeouts, and administrative closeouts.
12. Monthly review of CDC grant requirements to ensure successful grant management and delivery of deliverables.
13. Quarterly reports of testing data submitted to CDC.

DSLPP benchmarks

DSLPP investigations are initiated based on weekly reports from CLPPP. There are no specific quotas or targets for the number of cases to be worked each month. Instead, DSLPP addresses cases in a timely manner as they arise.

- Is DPH meeting those benchmarks or on track to meet them?

  CLPPP- Yes

  DSLPP- Yes

  LRA Requests: DSLPP typically sends Lead Risk Assessment (LRA) requests via email to environmental testing firms within one to two days of receiving case information.
  Weekly Calls: DSLPP holds regular weekly calls with certified contractors to monitor progress and assess whether target completion dates for projects will be met or if there will be delays.

  - If not, what is needed to meet the benchmarks?

B. Does DPH compare benchmark data from Delaware to benchmarks in other states?

CLPPP- No, DE CLPPP has state regulations and requirements that do not consistently compare with other state requirements. For example, DE requires all children to be tested for lead at ages 1 and 2 years old. Most states do not have similar "universal" testing requirements.

DSLPP- No, DSLPP does not make comparisons to other states. Unlike Delaware, most states don't have a centralized, statewide lead abatement program. Instead, lead abatement efforts are often handled at the local or county level.

- If so, what benchmarks are used and for which programs?

  - How does Delaware compare in lead prevention and abatement programs to other states?

    Delaware does not compare its lead programs to other states. Delaware's programs are more comprehensive than those in other states because they mandate universal screening and use data to pinpoint high-risk areas. However, Delaware falls behind in abatement

enforcement. Other states often manage remediation at the county level or local governments, which typically have more jurisdiction over housing, land use, and code enforcement. This makes them better positioned to manage these efforts, and as a result, consistent comparisons between states are difficult.

C. What areas in the state have been identified as high risk for lead exposure?

Major cities: Large metropolitan areas often have a high concentration of older buildings, many of which were built before 1978. In these urban areas, older neighborhoods often contain a significant portion of homes constructed prior to 1978.

- What methods or plans is DPH using in high-risk areas?
- CLPPP- The CLPPP is partnering with community non-profit organizations and contracted companies to increase knowledge and awareness in high-risk areas and sections of the population that may be underserved.

  DSLPP - DSLPP responds to EBLL cases (greater than 3.5 µg/dL) that occur in dwellings built prior to 1978.
- How is DPH monitoring these high-risk areas?

  CLPPP- The CLPPP produces an annual report that provides information on blood testing and changes over the previous 5 years.

  DSLPP - DSLPP records dwellings with identified lead hazards on our Excel Tracking Sheet. We are tracking remediation projects that are pending investigations, remediation projects that have started, and remediation projects that have been completed.

2. Contractor Availability / Workforce Development

A. How many contractors are available for lead remediation in Delaware, and are they in-state or out-of-state?

Delaware currently has roughly **80** Lead Based Paint Firms and **350** Renovation, Repair, and Painting Firms, totaling approximately **430 Certified Firms**, which consist of Delaware and out-of-state-based firms.

- Has DPH looked at the number of available contractors in surrounding states. If so, what are those numbers?

At this time, DPH does not know the number of available contractors in surrounding states. DPH and Delaware residents can only use Delaware Lead Certified Contractors.

- Has DPH explored using contractors certified in surrounding states or holding federal certification?

  No, DPH and Delaware residents can only use Delaware-lead certified contractors.

B. How many organizations has DPH contracted for remediation work, and are they based in Delaware?

A total of eleven (11) certified contractors applied for the RFP. Of those, only four (4) held both Lead Abatement and RRP certifications, while the remaining contractors were certified solely for RRP. Among the four fully certified contractors, three (3) were Delaware-based firms, and one (1) was based in Maryland.

C. What challenges is Delaware facing in attracting more contractors for lead removal?

1. **Time Commitment:**
   - **5 to 6 Days Off:** Taking time off from active work means losing income during the training period. Contractors typically depend on a consistent flow of work, so this can disrupt their revenue stream.
2. **Upfront Costs:**
   - **Training Registration and Fees:** Contractors will have to pay for the training itself, which can be expensive.
   - **Travel Costs:** Booking a hotel and paying for meals, gas, and tolls all add up quickly, especially if the training facility is far from their home. (NOTE: For Delaware-based contractors, the nearest Lead Abatement (LBP) training is in Hanover, Maryland. RRP training is up in New Castle County.)
3. **No Guarantee of Work:**
   - **Uncertain ROI:** Even after investing significant time and money, there's no certainty of immediate work in lead abatement. Contractors may not have enough demand for this specialized service to make the training worthwhile in the short term.

D. Do other states include specific provisions in their RFPs that make them more effective at hiring contractors?

DSLPP is not aware of other states' procurement and RFP processes.

E. For certification, Delaware is included with 14 other states and 1 tribe that are authorized by the EPA to operate their own Renovation, Repair, and Painting ("RRP") certification program instead of using the EPA's federal certification program?

Yes, Delaware is one of the states authorized by the **EPA** to operate its own **Renovation, Repair, and Painting (RRP)** certification program, instead of relying on the federal certification program. As of the most recent updates, Delaware is included among **14 other states and 1 tribe** that have received this authorization.

- Why did Delaware decide to operate its own RRP certification program?

  Delaware decided to operate its own **Renovation, Repair, and Painting (RRP)** certification program to address specific local needs and ensure the health and safety of its residents, particularly children, from lead-based hazards.

- Where is Delaware in the process of creating and operating its own RRP certification program?

  Delaware is currently **operating its own Renovation, Repair, and Painting (RRP) certification program**, as it has been authorized by the **EPA** to do so. As part of this process, Delaware assumed responsibility for managing the RRP certification, enforcement, and training processes within the state.

  - What resources and funding are needed?

    Continued funding of the DSLPP program will ensure program expansion.

- Could Delaware opt to discontinue its own RRP certification program and instead utilize the EPA's federal certification program?

  Yes, **Delaware** could opt to discontinue its own **Renovation, Repair, and Painting (RRP) certification program** and instead utilize the **EPA's federal certification program**, but there are several factors to consider before making such a decision.

  - What steps would be required?

    If Delaware chose to discontinue its own RRP certification program, the state would need to **notify the EPA** and follow the necessary procedures for transitioning to the federal program. The steps might include:

    1. **Formal notification** to the EPA that Delaware intends to cease administering its own program and will rely on the federal RRP program.

2. **Discontinuing state-level certification** and enforcement processes, including any state-specific training programs, inspection services, and penalties.
3. **Transfer of responsibilities**: Delaware would no longer handle the certification of contractors, enforcement of lead-safe work practices, or training, as those responsibilities would revert to the EPA.

- Has DPH compared Delaware's RRP certification program and requirements with those of the 14 other states and 1 tribe?

  No, not to the program's knowledge.

  - If so, how is Delaware different?
  - If not, are there plans to do this comparison?

    Not currently, as each state has different lead programs.

F. Would it be cost-effective for Delaware to fund in-state training for lead remediation?

   Delaware currently offers EHS Training, and Delaware Technical Community College (Del Tech) provides Renovation, Repair, and Painting (RRP) courses for contractors seeking certification to work in homes and buildings containing lead-based paint. These training programs are an essential part of the state's **RRP certification** process, which Delaware manages independently of the federal EPA program.

   - Have other training options been explored?

     Yes, possibly trade schools providing RRP courses.

G. How does DPH monitor contractor remediation work?

   The Department of Public Health (DPH) receives notifications for RRP and LBP activities at least **five business days** prior to the scheduled start date. Additionally, for projects under the Delaware Lead Poisoning Prevention Program (DSLPPP), we maintain continuous communication with contractors, ensuring that we are aware of the specific start and end dates for each project.

3. Funding & Spending

A. How much federal funding has DPH been awarded to date, including the $540K from the CDC and the $28.65 million from the EPA?

   The 28.65 million from the EPA is funds received from several programs.

In regards to the DSLPP, the EPA funding is $340,000 per year.

- Is there federal funding awarded but not yet received? If so, how much?

  Yes- HUD, Office of Lead Hazard Control and Healthy Homes

  $1,500,000.00

B. How is Delaware prioritizing the use of federal versus state funds?

   Delaware prioritizes federal funds before utilizing state funds.

C. What percentage of funding comes from federal grants versus the general fund?

   Approximately 43% of the annual funding is derived from two federal grants, and 57% is from state funds.

4. Data & Reporting

A. What data points will be provided in the DPH annual report from 2024 onwards? (Please provide a breakdown by prevention and paint remediation programs)

   CLPPP- Template:

Surveillance Report
Draft Template 2024_(

   DSLPP- The inception of the DSLPP began after July 1, 2024 when the Governor signed the bill (SB9). The DSLPP has been tracking cases per county & statewide, LRA requests per county & statewide, referrals to NCC No-Lead Program, lead abatements/remediations needed per county & statewide, and expenditures for abatement/remediations, including: lodging, meals, fuel, PODs, movers, per county & statewide.

B. Does the DPH use the Delaware Health Care Claims Database (HCCD), powered by the Delaware Health Information Network (DHIN), to collect data on lead screening and testing?

   NO

- If yes, what data is provided and how frequency?
- If yes, is DPH comparing data received from the HCCD and their own databased to determine missing data and identify providers and laboratories not complying with DPH reporting requirements?
- If not, why is the DPH not using the HCCD for this purpose? Has the DPH reached out to DHIN?

yes, DPH/HSP has been engaged in DHIN planning meetings.

C. How does DPH track and report efforts in both prevention and lead remediation programs?

CLPPP Daily receipts of lead testing results. DPH CLPPP receives over 20,000 results per year. The records are entered into the DPH lead surveillance system. Please refer to the response to question 1. Program Benchmarks & Progress A. for tracking methods.

DSLPP The DSLPP monitors remediation data on a daily basis using Excel spreadsheets. This data is then compiled and reported to the Advisory Committee on a quarterly basis through a Google Sheets Dashboard.

D. Has DPH considered methods to improve the organization and presentation of data presented in its annual report?

Yes

- Has DPH considered seeking feedback from stakeholders regarding its annual report?

  Yes. The Childhood Lead Poisoning Prevention Advisory Committee has provided a recommended report template. DPH will use the template to design future reports.

5. Lead Testing & Children

A. How many children have been screened or tested for lead?

In 2023, DPH received a total of 20,654 for age 0 – 18 years. Of that total,19,023 results were for children under 6 years old and 1,631 results for children ages 6 through 17 years. The test results were comprised of initial tests, second tests, and subsequent follow-up tests. Of these results, 13,600 blood lead results were the first (initial) tests for individual children ages 0 to 72 months and 1,171 results for children ages 6 through 17 years.

- How many results have been over 3.5 micrograms per deciliter?

  For first time test birth to 18 years, there were 842 results over 3.5 µg/dL. There were 774 children under the age of 6 years with reported results over 3.5 µg/dL.

- Does DPH track how many children receive confirmation testing after an initial result over 3.5 micrograms per deciliter?

  Yes

- How many are confirmed?

  In 2023, 268 confirmed EBLL cases were reported out of 774 tests conducted on children under 6 years old. In 2024, there were 372 confirmed EBLL out of 852 children. There were 410 and 413 elevated capillary tests that did not have a confirmatory venous test performed in 2023 and 2024, respectively.

- Are there any confirmation tests that do not confirm the initial screening result? If so, how many?

  Yes. In 2023 there were 96 confirmatory venous tests that were less than 3.5 µg/dL. In 2024, there were 67 that were not confirmed as elevated.

- What are the demographic breakdowns?

  In 2023, the reports that included race and ethnicity information showed that those who were identified as White made up the highest portion at 22%, followed by those identified as Black at 12%. Fifty-six percent (56%) reported the race as unknown. Over 30% of the reported ethnicity data were indicated as unknown. The non-Hispanic category made up approximately 50% and the Hispanic category was 17%.

  For reference, in 2023 Delaware's population breakdown was 59.3% White, 22.5% Black or African American, 11.1% Hispanic or Latino.

B. How does DPH screen children, especially those older than 24 months?

   Delaware law requires all tests for children up to the age of 18 years be report to DPH.

C. Does Delaware test all children for lead exposure or only those at risk?

   Delaware law requires all children be tested by venous or capillary methods at ages 12 and 24 months.

6. Lead in Water at Schools

A. Does DPH test and track lead levels in public school water systems?

   DPH provided support and assistance with DOE's testing and tracking efforts regarding premise plumbing. Additionally, lead in drinking water has a maximum contaminant level of 15 mcg/L of which the Office of Drinking Water enforces.

B. Are there any ongoing efforts to address lead in drinking water in Delaware schools?

The federal Lead and Copper Rule Improvements mandate the replacement of lead service lines by 2034. The Drinking Water State Revolving Fund offers 0% interest loans for all lead service line projects.

- Is DPH still collaborating with DOE?

  DPH/DOE are still collaborating with drinking water testing and requiring schools to do drinking water testing every three years, with the next round of sampling being required by June 2026 with an MCL of 5ppb, down from the previous 7.5ppb.
  DPH continues to provide lead testing kits to schools and provides support and assistance when requested.

7. Lead Abatement Process

A. How many residential spaces (homes, rental properties) have been investigated and tested for lead paint?

   Currently as of March 2025, 74 LRAs have been paid out and 17 clearance tests have been paid.

   - How many residences are currently being remediated?

     4 Currently scheduled on ongoing remediations
   - How many residences are on the remediation waitlist?

     7 Remediations currently in pipeline
   - How many residences have been completely remediated?

     10 Remediations currently completed

B. What is the process for lead abatement efforts, how are residences identified?

   The process for lead abatement, particularly in homes or dwellings built before **1978**, involves a crucial step: performing a **lead risk assessment**.
   Residence are identified when a **child has an Elevated Blood Lead Level (EBLL)** of **3.5 µg/dL or higher** and is living in a **home or dwelling built before 1978**.

C. What criteria is used for prioritizing residences on the remediation list?

   Remediation schedules are determined based on the order in which cases are received by DSLPP from CLPPP. Additionally, the availability of the contractor, property owner, and tenant are taken into consideration.

D. Are there specific areas or demographics disproportionately affected by lead exposure?

Mostly larger cities with older dwellings (i.e., Wilmington, Georgetown, Milford, Seaford, Laurel).

E. How much money has been spent on remediating homes since the program's launch? (Please provide a breakdown of expenditures by state and federal funds)

$1,716,433.23, which includes the $1 million to New Castle County.

F. Can DPH provide reports on whether remediation problems have been fixed and the status of the residents in those areas?

Yes- DSLPP has a dashboard that reports remediations and expenditures since the inception of Senate Bill 9 (SB 9) was signed by the governor.

8. Advisory Committee

A. Has DPH incorporated feedback from advisory committees into their lead programs? If so, what feedback has been incorporated?

Yes, The Advisory Committee assists with updating regulations that are incorporated into the program activities and responsibilities.

- What feedback would be helpful?

  The Advisory Committee can continue to advise and assist both Lead Programs with annual recommendations through their annual report.

9. New Castle County Programs

A. Does DPH refer cases to the New Castle County Lead program? If so, how many?

Yes. We referred 102 cases to the **NCC No-Lead Program** since the inception of **DSLPP**. However, some cases were referred from the **Childhood Lead Poisoning Prevention Program**.

B. Does DPH refer cases to the New Castle County Health Homes program? If so, how many?

No

C. Does DPH and New Castle County communicate and coordinate with screening and remediation efforts? Please describe this process.

DPH orders the LRAs. If the results show lead hazards identified, DPH refers the case to New Castle County with the LRA, per email. NCC reports the status of the remediation along with their expenditures on the Quarterly Reports Dashboard. If we run into a situation where we need status immediately, we email NCC and ask for status.

- If not, why not? Are efforts being made or explored to open communication and coordination?

D. Would DPH consider including data from coordination with New Castle County programs in its annual reporting to provide more accurate information regarding efforts in this area?

   Yes, NCC is providing data on the referred cases to the Quarterly Report, it will be included in the annual report.

   - Would DPH consider requesting annual data points from New Castle County programs for inclusion in the DPH annual report?

     NCC is providing data on the referred cases to the Quarterly Report, it should be included in an annual report.

DELAWARE HEALTH AND SOCIAL SERVICES
Division of Public Health
Office of Healthy Environments

Childhood Blood Lead Surveillance in Delaware

2024 Annual Report

March 2025

Prepared by:
Delaware Department of Health and Social Services
Division of Public Health
Health Systems Protection Section
Office of Healthy Environments
Lead Poisoning Prevention Program

Childhood Blood Lead Surveillance in Delaware

2024 Annual Report

March 2025

Delaware Department of Health and Social Services
Division of Public Health

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Table of Contents

Executive Summary

This is the fourth annual childhood blood lead surveillance annual report published by the Delaware Department of Health and Social Services, Division of Public Health (DPH). It was prepared to satisfy the regulatory condition set forth in Delaware House Bill 222. This report presents lead testing data for children up to the age of 18 years in Delaware who were tested and reported during Calendar Year (CY) 2023. The data were extracted from the Delaware Healthy Homes and Lead Poisoning Surveillance System (HHLPSS). The *Childhood Blood Lead Surveillance in Delaware 2024 Annual Report* is provided as a source of information for the public; federal, state, and local agencies; health care providers; and other organizations and individuals interested in lead poisoning prevention in Delaware.

Lead poisoning is a preventable occurrence but continues to be a significant environmental hazard for children in Delaware. Young children up to age 6, whose brains develop rapidly, are at greatest risk of harm from lead exposure. Childhood exposure to lead, through inhalation or ingestion, can cause long-term neurological damage and decreased intelligence that may be associated with learning and behavioral problems.

In CY2023, DPH received a total of 19,023 lead test results for children under 6 years old (0 – 72 months) and 1,631 results for children ages 6 - 17 years. The tests results were comprised of initial tests, second tests, and subsequent follow-up tests. Of these , 13,600 blood lead results were the first (initial) tests for individual children ages 0 - 72 months and 1,171 results for children ages 6 through 17 years. For the ages 0 - 72 months, this equates to a 63% testing rate based on current population estimates.. The testing rate for children required by Delaware law to be tested (ages 12 and 24 months with catch up provisions to- 72 months) was calculated to be 75%. Elevated blood lead level (EBLL), defined as a first (initial) test that was greater than or equal to 3.5 micrograms per deciliter (µg/dL), was found among 842 children 0-72 months of age.

Among the submissions that included race and ethnicity information, those who were identified as White made up the highest portion at 22%, followed by those identified as Black at 12%. Fifty-six percent reported the race as unknown. Over 30% of the reported ethnicity data were indicated as unknown, 50% reported as non-Hispanic and 17% reported Hispanic enthicity.

Testing rate calculations found that 59% of 1-year-old children (9 to 15 months old) received their initial blood test in calendar year 2023. Children receiving their second test at age 2 years (21 to 27 months) was 2,339, or 38% of the children that received an initial test at 1 year old. The number of children receiving their first test at 21 to 27 months was 2,374.

Introduction

This fourth annual report was prepared to satisfy the condition set forth in Delaware House Bill 222 related to Chapter 26, Title 16, §2606. Annual Report: "The Division of Public Health shall annually, on or before January 1, provide a report on elevated blood lead levels to the General Assembly…"

This report presents blood lead testing data for children up to the age of 18 years in Delaware who were tested and reported during Calendar Year (CY) 2023. The data was extracted from Healthy Homes Lead Poisoning Surveillance System (HHLPSS). This document is provided as a source of information for the public; federal, state, and local agencies; health care providers; and other organizations and individuals interested in childhood lead poisoning prevention in Delaware.

Lead poisoning is preventable but remains a significant environmental hazard for Delaware children. Young children up to age 6, whose brains develop rapidly, are at greatest risk of harm from lead exposure. Childhood exposure to lead, through inhalation or ingestion, can cause long-term neurological damage and decreased intelligence that may be associated with learning and behavioral problems,*Risk factors and children*. (n.d.). CDC Childhood Lead Poisoning Prevention. https://www.cdc.gov/lead-prevention/about/index.html.

Data Source

Since 1994, the State of Delaware has required by law that all children be tested for lead at 1 year and 2 years old if the child's environment indicates an increased risk for lead exposure. Being at increased risk for lead exposure is determined by the child's physician and based on a risk screening questionnaire. All lead testing results for children must be reported to the Delaware Department of Health and Social Services, DPH and presented to the schools at kindergarten enrollment. In 2021, this law was revised under House Bill 222. As it mandates universal testing at age 2, the risk screening questionnaire was no longer required. The revised law requires that all lead testing results must be reported to DPH, and that proof of a blood lead test be presented for enrollment into a licensed childcare facility and kindergarten.

DPH's Childhood Lead Poisoning Prevention Program (CLPPP) performs childhood blood lead surveillance for Delaware. All laboratories, health systems, and medical practices are required by law to transmit all child blood lead test results to the program. DPH's Healthy Homes and Lead Poisoning Surveillance System (HHLPSS) database receives and stores the reported test results. All data in this report are from children ages birth to 18 years.

Overview: The Impact of Childhood Lead Poisoning

Lead poisoning, the process of lead adsorption into the body, is a preventable occurrence but continues to be a significant environmental hazard for children in Delaware. Young children up to age 6, whose brains develop rapidly, are at greatest risk of harm from lead exposure. Childhood exposure to lead, through inhalation or ingestion, can cause long-term neurological damage and decreased intelligence that may be associated with learning and behavioral problems. Even low levels of lead in the body correlate to a lower IQ, reduced attentiveness, and impaired academic achievement. Children with even slightly elevated blood lead levels have a higher risk of developing attention-deficit/hyperactivity disorder. Childhood lead poisoning effects extends across the lifespan, impacting health, higher learning, and the ability to be hired and remain employed. (The Association between Lead and Attention-Deficit/Hyperactive Disorder: A Systematic Review, *Int. J. Environ. Res. Public Health* 2019, *16*(3), 382; https://doi.org/10.3390/ijerph16030382).

There is no safe level of lead in the body. Continuing research has led to a better understanding of poor health outcomes in children due to this environmental toxin at even lower levels than previously understood. Based on this research, on October 28, 2021, the U.S. Centers for Disease Control and Prevention (CDC) lowered its blood lead reference value (BLRV), used to identify children with blood lead levels statistically higher (97.5th percentile) than the majority of children, from 5.0 micrograms per deciliter (µg/dL)to 3.5 µg/dL. Delaware law, 16 Del. Admin. Code § 4459A-2.0 uses the CDC BLRV to identify children with elevated blood lead.

Reducing the risk of childhood lead poisoning is achieved by identifying and removing lead hazards from the environment before a child is exposed. Although children can be exposed to lead from many sources, lead-based paint, and the lead-containing dust it creates, is the most common source of lead exposure. As a result, the federal government banned the production and sale of lead-based paint for residential use in 1978. Many of these older homes still contain lead-based paint that deteriorate and create lead-containing dust as they age. Additional sources of lead exposure include drinking water from lead supply pipes and solder, lead-contaminated soil, toys, traditional health remedies, spices, and medicinal supplements.

In Delaware, the U.S. Census Bureau approximates 42% of dwellings were built before 1979 (American Community Survey 5-Year Data (2009-2023), 2024). As is the case nationally, lead poisoning is a more prevalent problem facing low-income families living in older unmaintained dwellings. Many of these dwellings are rental properties. Even though work in Delaware over the last 25 years has resulted in a significant drop in the number of children with elevated blood lead levels, inequities persist. According to the CDC, those disproportionately affected include children living below the federal poverty level, children living in older housing, non-Hispanic Blacks, Latinos, immigrants, and refugees (People at Increased Risk for Childhood Lead Poisoning, 2024).

Annually from 2016 to 2021, Delaware's Lead Poisoning Prevention Program identified communities with a higher risk of childhood lead poisoning to better target resources and to reduce health inequities associated with lead exposure in those communities. DPH determined risk by examining rates of elevated blood lead levels from first tests, the age of housing, and income levels for each of the state's cities and towns. The program compiled the reported data, which identified Delaware ZIP Codes with the highest numbers of children with elevated blood lead levels of 3.5 µg/dl or higher. The top 10 ZIP Codes with highest risk of childhood lead poisoning are in Wilmington (19805, 19802, 19801), Dover (19901, 19904), Newark (19702), New Castle (19720), Bear (19701), Seaford (19973), and Georgetown (19947). The Childhood Lead Poisoning Prevention Program is cooperating with other DPH programs to include lead testing data into census tract level reports. The project was not completed by the time of publication.

Case Management Plan

During 2023, the DPH CLPPP had a dedicated health coordinator, two case managers, and three investigators who conduct ongoing monitoring of case management activities. They are responsible for reviewing surveillance data, identifying children with high lead levels, and making appropriate referrals. DPH staff provide care coordination with primary care physicians for children with elevated blood lead levels using Case Management Standards, which follow CDC guidelines. Both the Program's Health Coordinator and Case Managers communicated with families and medical offices to assure that children at risk for lead poisoning are tested and that children who are identified with elevated results receive any eligible intervention services for which they may qualify.

The HHLPSS database enables the Data Management Analysts, Case Managers, and Investigators to frequently review childhood blood lead level results to ensure that children with elevated levels receive confirmatory testing, investigations, and follow-up care as necessary. The Data Management Analyst generates reports weekly to identify test submissions that are at or above the CDC BLRV. The Data Management Analyst and the Health Coordinator work with the Program's administrative staff to mail information to families who have children with reported blood lead levels of 3.5 µg/dL and above, and to identify children whose levels are confirmed to be elevated by venous testing. In 2023, the CLPPP mailed information to 783 families.

Blood lead levels are determined by two types of tests. A capillary screening test is usually the first step to determine if a child has an elevated blood lead level. Capillary testing is pricking a finger, heel, or another part of the body at the surface of the skin to produce drops of blood for testing. A venous blood draw takes blood from a child's vein using a needle. According to the CDC, venous samples are more reliable when analysis occurs at higher complexity methods, and that is why venous blood draws are used to confirm a child's lead level.

All families of children with a capillary (unconfirmed EBLL) or venous test (confirmed EBLL) are mailed information within one week of DPH receiving the results. The mailings included information regarding health concerns of lead exposure, possible sources of lead, how to clean and reduce lead hazards, and the possible eligibility for developmental intervention services offered by DPH through the Birth to Three program.

During 2023, whenever a child with an elevated blood lead level of 7.0 µg/dL or more was identified and confirmed by venous test, the health coordinator notified the child's primary care provider of DPH involvement and followed through with phone calls, emails, and direct mailings of educational materials to the family. A case was closed once two successive blood tests were below 7.0 µg/dL. The child's primary care provider continued monitoring levels until they were below the BLRV.

In 2023, there were 774 elevated results reported to DPH for children ages 0 - 72 months with an initial test at or above 3.5 µg/dL. Of these 774 results, 634 were capillary screenings and 140 were venous tests. No venous confirmations were performed on 410 children. This equates to 64.7% of children with an elevated capillary result not receiving venous confirmation. Venous confirmatory tests of 96 capillary results were found not to confirm an elevated status. Therefore, in 2023 a total of 268 confirmed EBLL children were identified based on the results reported to DPH. A total of 77 cases were closed in 2023 due to reduced blood lead values.

The children with blood level values equal to or greater than 5.0 µg/dL are eligible for developmental intervention services offered through DPH. The case managers make direct referrals to the Birth to Three program and the Data Analysts provide monthly lists to the program for all EBLL children.

Additionally, the case managers communicate with the CLPPP's Investigators, who coordinate investigations to identify the possible source(s) of the lead hazards. The investigator identifies the build date of the home. If the home was built before 1978, then it is considered to have the potential for lead-based paint hazards. The Investigator arranges a Lead Hazard Risk Assessment of the residence by an environmental testing firm. A Lead Hazard Risk Assessment is an on-site investigation to determine the existence, nature, severity, and location of lead-based paint hazards. Following the assessment, the Investigator contacts the property owner to review the findings and discuss options for what must be done to fix any lead-based paint hazards. The number of Lead Risk Assessments performed annually varies. For CY 2023, 29 Lead Hazard Risk Assessments were performed and paid for by DPH. Lead-based paint hazards were found at all 29 properties.

Elevated blood lead levels were found in children living in homes built after 1978. After case management interviews with the families, herb and spice samples were collected for analysis. In both cases, spices obtained outside the United States were found to contain lead were considered to be the source of exposure. The families were instructed to dispose of the items and purchase local spice replacements.

Blood Lead Testing Data Calendar Year 2023

In CY 2023, there was a total of 20,654 blood lead results reported to the CLPPP. For children from 0-72 months , the total was 19,023. The remaining 1,631 results received were for children ages 6-17 years. The total number of tests includes all initial tests and all follow-up tests by both capillary and venous methods. Of the total, 14,771 were for the initial tests, of which 13,600 were for children 0-72 months.

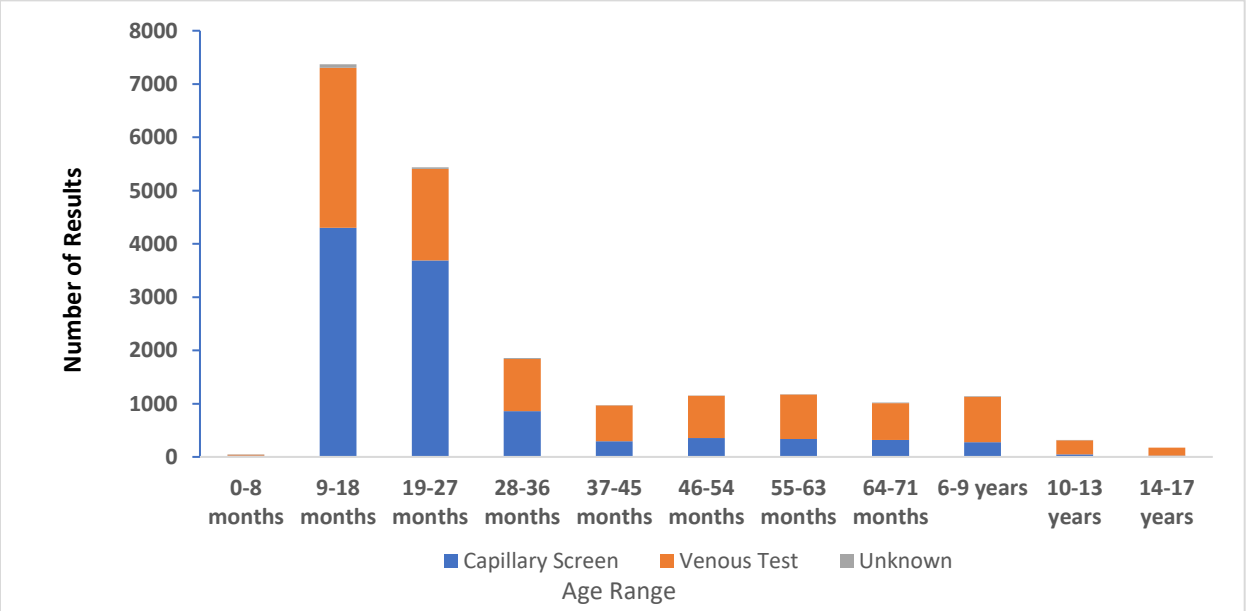
Table 1 summarizes the total results received by age distribution and the method of sampling. The data are shown graphically in Figure 1. It should be noted that136 capillary samples were collected on filter paper and sent to a laboratory for analysis instead of the analyses being performed at the physician's office using a point of care instrument.

Table 1. Number of Lead Test Results Received by Age and Sample Method, Delaware, Calendar Year 2023

Child Age Range	Capillary Screen	Venous Test	Unknown	Total Received
0-8 months	26	14	1	41
9-18 months	4,302	3,003	63	7,368
19-27 months	3,690	1,715	31	5,436
28-36 months	861	975	19	1,855
37-45 months	293	677	6	976
46-54 months	352	794	1	1,147
55-63 months	338	833	9	1,180
64-71 months	318	694	8	1,020
6-9 years	275	856	11	1,142
10-13 years	46	265	6	317
14-17 years	24	148	0	172
Total	**10,525**	**9,974**	**155**	**20,654**

Source: Delaware Department of Health and Social Services, Division of Public Health, Healthy Homes and Lead Poisoning Surveillance System (HHLPSS) Database, March 14, 2025

Figure 1. Number of Lead Results Received by Age and Sample Method, Delaware, Calendar Year 2023



Source: HHLPSS Surveillance Database, March 14, 2025

Delaware regulation 4459A requires testing at ages 1 and 2 years old. In Table 2, both initial and second lead tests are presented within the month ranges that represent 1-year-olds and 2-year-olds as defined in the regulation. Test totals include initial, second, and follow-up tests.

Table 2. Initial and Second Lead Screenings or Tests for children 9-15 months and 21-27 months, Delaware, Calendar Year 2023

Age	Total Screening or Tests	Initial Screenings or Tests	2nd Screenings or Tests
9-15 months	6,373	6,154	201
21-27 months	4,981	2,374	2,339

Source: Delaware Department of Health and Social Services, Division of Public Health, Lead Poisoning Prevention Program, March 2025

The age distribution of all tests – first screenings or tests, second screenings or tests, and number of results ≥3.5 µg/dL – are provided in Table 3. Figure 2 graphically depicts the age distribution of the results. Figure 3 graphically depicts the number of results ≥3.5 µg/dL by age distribution. There were 774 reported initial results equal to or greater than 3.5 µg/dL for children under 6 years of age (72 months).

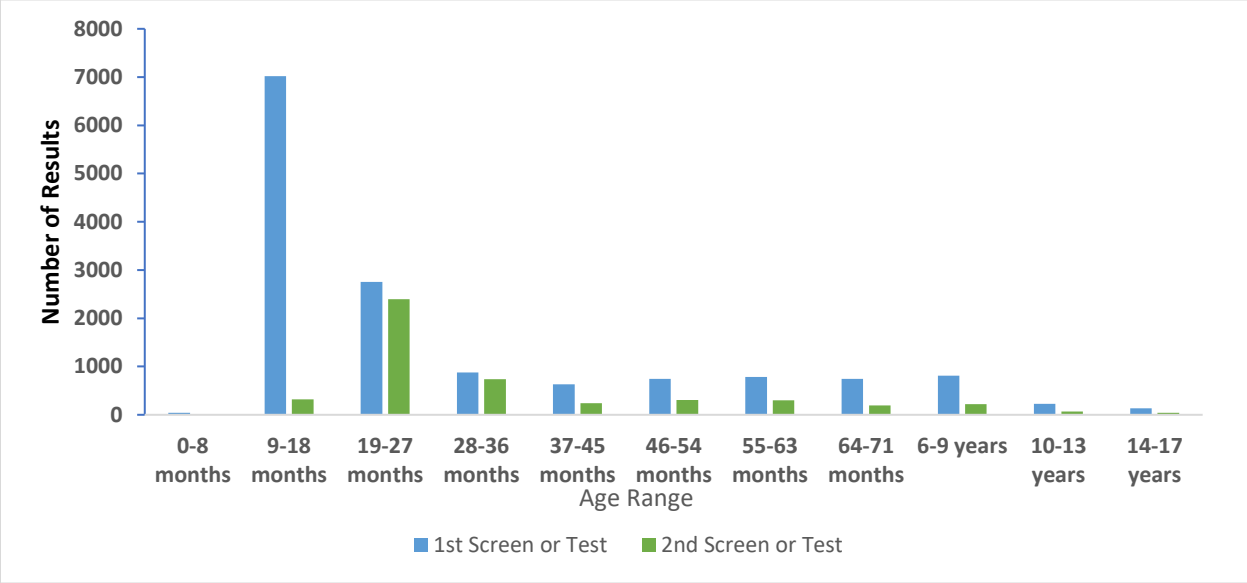
Table 3. Number of Total, First and Second Lead Tests and Numbers at or above 3.5 µg/dL, Delaware, Calendar Year 2023

Child Age Range	Total Received Screen or Test	1st Screen or Test	2nd Screen or Test	Screen or Test >= 3.5 ug/dL	1st Screen or Test >= 3.5 ug/dL
0-8 months	41	41	--	--	--
9-18 months	7,368	7,016	317	467	381
19-27 months	5,436	2,757	2,397	500	195
28-36 months	1,855	880	736	241	66
37-45 months	976	634	241	82	32
46-54 months	1,147	744	309	88	38
55-63 months	1,180	784	301	84	33
64-71 months	1,020	744	195	57	27
6-9 years	1,142	814	222	90	53
10-13 years	317	225	65	15	9
14-17 years	172	132	40	--	--
Total	**20,654**	**14,771**	**4,823**	**1,637**	**842**

"--" denotes the data was suppressed due to being less than 11 as per DPH privacy guidelines.

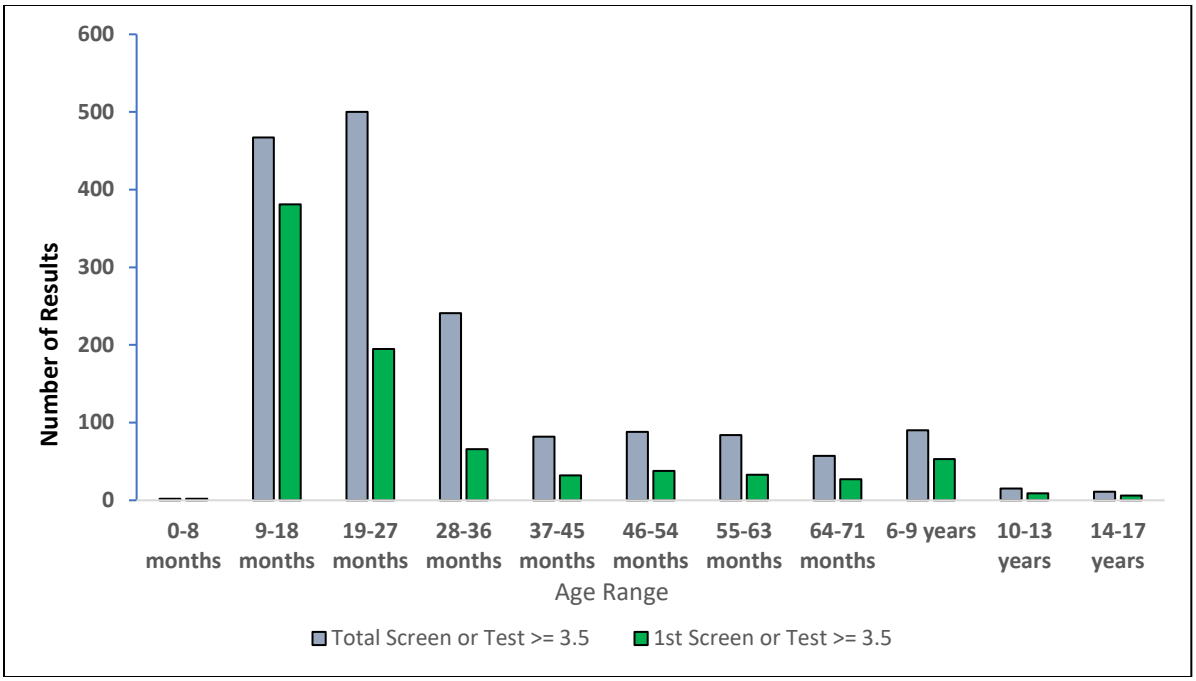
Source: Healthy Homes and Lead Poisoning Surveillance System Database, March 14, 2025

Figure 2. Age Distribution of Children Receiving Second Lead Test, Delaware, Calendar Year 2023



Source: Delaware Department of Health and Social Services, Division of Public Health, Lead Poisoning Prevention Program, March 2025

Figure 3. Age Distribution of Results ≥ 3.5 µg/dL for Total and First Lead Screen or Test, Delaware, Calendar Year 2023



Source: Delaware Department of Health and Social Services, Division of Public Health, Lead Poisoning Prevention Program, March 2025

The ranges of blood lead levels for the initial tests by age range are provided in Table 4. The maximum value for 2023 was 70 µg/dL for a child in the 19 to 27 months age range.

Table 4. Age Distribution of Lead Level Ranges for Results ≥ 3.5 µg/dL for the Initial Screen or Test Delaware, Calendar Year 2023

Child Age Range	≥ 3.5 µg/dL	3.5-4.9 µg/dL	5-9.9 µg/dL	10-14.9 µg/dL	15-19.9 µg/dL	20-29.9 µg/dL	30 µg/dL and above
0-8 months	2	2	0	0	0	0	0
9-18 months	381	266	95	11	6	3	0
19-27 months	195	119	57	10	6	2	2
28-36 months	66	37	20	3	0	6	0
37-45 months	32	17	14	0	0	0	1
46-54 months	38	25	13	0	0	0	0
55-63 months	33	19	10	2	1	1	0
64-71 months	27	17	3	6	0	0	1
6-9 years	53	33	16	2	2	0	0
10-13 years	9	4	2	1	1	0	0
14-17 years	6	4	2	0	0	0	0
Total	**842**	**543**	**232**	**35**	**16**	**12**	**4**

Source: Healthy Homes and Lead Poisoning Surveillance System Database, March 14, 2025

An evaluation was performed for the completeness of child information being submitted to DPH in the calendar year 2023. This evaluation will aid in determining what information is not

routinely provided but is needed to assist in case management and aid in determining any demographics that may be underserved. Table 5 summarizes the findings.

Table 5. Completeness of Child Information Submitted to Delaware Division of Public Health, Calendar Year 2023

Item	Percent Complete
Child's name	100
Date of Birth	100
Sex/Gender	94
Race	60
Ethnicity	69
Guardian's name	8
Sample type	100
Test date	100
Blood lead level	100
Address	99
Telephone number	53

Source: Healthy Homes and Lead Poisoning Surveillance System Database, March 14, 2025

Demographic data as reported to DPH is provided in Tables 6 and 7.

Table 6. Number of Initial Results by Ethnicity, Delaware, Calendar Year 2023

Ethnicity	Number Tested	Percent of Total
Hispanic	2,443	16.5%
Non-Hispanic	7,350	49.8%
Unknown	4,978	33.7%
Total	**14,771**	**100%**

Source: Delaware Department of Health and Social Services, Division of Public Health, Lead Poisoning Prevention Program, March 2025

Concluding Statements

The calendar year 2023 data has provided DPH with insight into several specific areas of the surveillance program.

Continued efforts, including educating healthcare providers of required testing and reporting, improving completeness of testing reports, and educating parents, can be expected to improve

blood lead testing and test reporting. If such efforts continue to be successful, the testing data will reflect continued increases in testing rates and completeness of information. Over the next several years upward trends are expected in the number of reported tests for the initial 1-year-old tests; and the 2-year-old second test.

Table 7. Number of Initial Results by Race, Delaware, Calendar Year 2023

Race	Number Tested	Percent of Total
American Indian	--	--
Asian/Pacific	332	2.2%
Black	1,820	12.3%
White	3,217	21.8%
Other	1,116	7.9%
Unknown	8,221	55.7%
Refused to Answer	--	--
Total	**14,771**	**100%**

"--" denotes the data was suppressed due to being less than 11 as per DPH privacy guidelines.

Source: Delaware Department of Health and Social Services, Division of Public Health, Lead Poisoning Prevention Program, March 2025

Testing Rate Calculations

The childhood lead testing rates were calculated both as a percentage of the population for ages 0-72 months and also for the population required to be tested by Delaware law, which does not occur until age 12 months. The number and percent of reported second tests were also calculated. The testing rates were calculated for the following.

Table 8 includes the information and calculation for testing rates 2023.

Table 8. Testing Rate for children receiving One and Two Lead Tests, Delaware, Calendar Year 2023

	Age 0-72 months	Age 12-72 months
Delaware population	63,206	52,799
Children who have received at least one blood lead screening or test on or before 12/31/2023	39,708	39,594

Children who have received at least two blood lead screenings or tests on or before 12/31/2023	9,158	9,155
Percent of children who have received at least one blood lead screening or test on or before 12/31/2023	63%	75%
Percent of children who have received at least two blood lead screenings or tests on or before 12/31/2023	14%	17%

Source: Delaware Department of Health and Social Services, Division of Public Health, March 2025

The CLPPP was provided testing information for children receiving Medicaid. For Calendar Year 2023, the number and testing percentages are provided in Table 9. The percentage is based on the number of children receiving at least one lead test or screening by the age of 2 years old.

Table 9. Testing Rate for children receiving Medicaid, Delaware, Calendar Year 2023

County	Number Tested	Percent Tested
New Castle	3,200	62.5%
Kent	1,098	60.3%
Sussex	1,350	71.7%

Source: Delaware Department of Health and Social Services, Division of Public Health, October 2024

Concluding Statements

The 2023 childhood blood lead data has provided DPH with measures and clarity on several areas of the surveillance program. These include:

- The total number of test/screening records (20,654) and initial tests (14,771) received were the highest DPH has received in a 12-month period.
- Sixty-three percent (63%) of children ages 0 – 72 months received at least one screening or test. For children between 12 – 72 months 75% received at least one test or screening.
- Fourteen percent (14%) of children ages 0 – 72 months received a second screening or test. For children between 12 – 72 months 17% received a second test or screening
- Capillary screening made up 51% of all records received.
- There were 643 initial capillary tests received indicating elevated blood lead levels that required confirmatory venous testing. Only 224 (35%) confirmation tests were received.

- Of the 224 venous confirmation samples received, 128 (57%) confirmed an elevated blood lead level and 96 (43%) were non-detected results and did not confirm an elevated blood lead level.

From the data DPH has determined that efforts by DPH and stakeholders has increased the number of child blood tests occurring. However, the percentage of unconfirmed elevated capillary results is high and that collaboration with healthcare providers and outreach to families is needed to increase confirmation testing. Changing the regulatory requirement of venous confirmation to allow capillary confirmation will also aid in increasing confirmatory follow-up.

The requirement for testing at 24 months of age was enacted in August 2021, with 2022 being the first full year of the requirement. Therefore, 2024 will be the first full calendar year when all children are required to have a 24 month test. The 2023 data can be used as a baseline for comparison of future 2 year old compliance. Outreach and collaborative efforts with healthcare providers and stakeholders are needed to ensure compliance with this testing requirement.