

OKLAHOMA CHILDHOOD LEAD POISONING PREVENTION SCREENING PLAN



Lead Poisoning Prevention



OKLAHOMA CHILDHOOD LEAD POISONING PREVENTION PROGRAM

SCREENING & SPECIAL SERVICES
OKLAHOMA STATE DEPARTMENT OF HEALTH
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http://oklahoma.gov/health/LeadPrevention.html



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INTRODUCTION

The Oklahoma Childhood Lead Poisoning Prevention Program was established by Oklahoma Legislature § 63-1-114.1 These statutes established the Comprehensive Childhood Lead Poisoning Prevention Program to be administered by the Oklahoma State Department of Health. The State Board of Health, giving consideration to the recommendations of the Infant and Children's Health Advisory Council, shall promulgate rules for:

Lead toxicity screening of children ages six (6) months to 72 months;

- 2. The performance of verbal risk assessments on children ages six (6) months to 72 months;
- 3. The performance of blood lead tests when screening eligible children for lead poisoning, provided that screening and testing for Medicaid-eligible children shall be conducted in accordance with existing federal law;
- 4. Setting standards for any developmental assessments for a child identified as being lead poisoned;
- 5. Identifying as statewide screening requirements the minimum laboratory tests or analysis for childhood lead poisoning to be performed by medical providers for particular age or population groups;
- 6. The determination of risk for each child tested;
- 7. Detailing the diagnosis, treatment and follow-up services needed pursuant to the provisions of this act;
- 8. Providing for health education and counseling related to childhood lead poisoning to parents and children; and
- 9. Assessments and lead hazard control as part of the treatment and follow-up for a child identified as being lead poisoned.

The Oklahoma Childhood Lead Poisoning Prevention Rules are found in Title 310, Chapter 512.

The Centers for Disease Control and Prevention (CDC) advise each state to develop a screening plan which is benefitting their state-specific needs and criteria. The program has considered clinical recommendations, historical screening and blood lead level data trends, and additional resources to make determinations and decisions on statewide screening.

UNIVERSAL SCREENING

Oklahoma is a universal screening state. This means that all children shall be screened for lead at 12 and 24 months of age, at 36-72 months of age without documentation of a previous blood lead test, for children less than six years of age whose risk status changes or indicates a need for testing, or when a parent requests testing. Providers should also consider testing children who are recent immigrants or may have recently traveled to a country where they may have brought home products that contain lead or been more likely to have been exposed to lead sources.

Per 310:512-1-2. Criteria: (c) After sufficient statewide data collection and documented incidence of low lead exposure, the Commissioner of Health may exempt a community or county from universal lead screening.

The Oklahoma Childhood Lead Poisoning Prevention Program periodically reviews all available data and incidence of lead exposure to determine if this criterion has been met.

This plan is supported by funding provided through the Centers for Disease Control and Prevention **NUE2EH001460**

WHO SHOULD BE SCREENED FOR LEAD?

- 1. Children at 12 months (10 months to 14 months or so) and again at 24 months (22 months to 26 months) of age².
- 2. Children 36-72 months of age without a recorded blood lead level.^{2*}
- 3. Children whose parents/guardians request a blood lead level.
- **4.** Children whose parents/guardians answer yes to any of the questions on the Lead Exposure Risk Assessment Questionnaire (LERAQ linked below) which may be used at well-child visits between six to 72 months of age (according to the Bright Futures Guidelines) or when a child's risk status changes.
- **5.** Recent immigrants, refugees, and international adoptees under 16 years of age within 90 days of their arrival into the United States. Repeat screening after three to six months following initial testing³.

THE LEAD EXPOSURE RISK ASSESSMENT QUESTIONNAIRE (LERAQ)

The Oklahoma Childhood Lead Poisoning Prevention Program has developed a Lead risk exposure questionnaire in accordance with Chapter 310:512-3-1. The LERAQ is the department's approved risk assessment questionnaire. This questionnaire was developed for use in assessing a child's individual risk for exposure to lead and serves only only as a screening tool. It cannot take the place of the required blood lead testing at 12 months of age and again at 24 months of age. Be aware that no questionnaire can capture all risks and lead exposure may come from a variety or combination of sources such as hobbies, occupations, products, etc.

Lead Exposure Risk Assessment Questionnaire LERAQ English Lead Exposure Risk Assessment Questionnaire LERAQ Spanish

*Previous blood lead results, if not available in the medical record, may be obtained by contacting the Oklahoma Childhood Lead Poisoning Prevention Program.

Phone: 405-426-8311FAX: 405-900-7551

Email: <u>OKLPPP@health.ok.gov</u>

¹Bright Futures: Guidelines for Health Supervision of Infants, Children, and Adolescent. https://downloads.aap.org/AAP/PDF/periodicity_schedule.pdf?_ ga=2.91740122.1112264329.1665091634-1999710129.1663593103

²Screening Components for EPSDT SoonerCare

65.4. Screening components (oklahoma.gov)

³CDC: Screening for Lead during the Domestic Medical Examination for Newly Arrived Refugees.

https://www.cdc.gov/immigrantrefugeehealth/guidelines/lead-guidelines.html



Oklahoma State Department of Health Guidelines for Management of Lead in Blood - Children - October 2023

- All capillary blood lead results ≥ 10 µg/dL must be confirmed with a venous specimen. *
- Primary management of lead poisoning relies on source identification and removal from exposure.
- Treatment decisions should be made in consultation with a physician knowledgeable about lead poisoning and medical management.
- For any child with a confirmed lead in blood level, follow-up according to retest schedule below until two consecutive blood lead tests are below 3.5 µg/dL.

CAPILLARY BLOOD LEAD LEVELS

Blood Lead (µg/dL)	Significance	Management	
< 3.5	No Action	Risk assessment (LERAQ) at well-child visit or clinic visit. No additional action is necessary unless an exposure risk change has occurred.	
≥ 3.5	Needs Confirmation	Confirm results with a venous specimen. A second capillary may be used if venous not available for results for 3.5 – 9.9 µg/dL only.	

CONFIRMATORY TESTING TIMELINE

If capillary (screening) blood lead level (µg/dL) is:	Perform venous (diagnostic) confirmatory blood test:
3.5 – 14	Within 3 months*
15 – 19	Within 1 month
≥ 20	Within 1 week

^{*}A second capillary test may be used to confirm an initial capillary result from 3.5 to 9.9 μ g/dL if it is collected within 12 weeks of the first capillary test. If confirmed as lead in blood, all subsequent follow-up testing MUST be through venous sampling.

VENOUS BLOOD LEAD LEVELS

Blood Lead (µg/dL)		
< 3.5	No Action	Risk assessment (LERAQ) at next well-child or clinic visit. No additional action is necessary unless an exposure risk change has occurred.
3.5 – 9.9	Lead in Blood	Retest with a venous test every 3 months until trend is downward or stable and then less often as trend indicates. Provide family with lead education including nutritional and environmental interventions.
10 – 19	Moderate Lead in Blood	Environmental Investigation should be initiated. Retest with a venous test every 1 – 3 months until trend is downward or stable and then less often as trend indicates. If blood lead level remains between 15 – 19 µg/dL after 2 venous tests at least 30 days apart, proceed according to actions for 20 – 44 µg/dL range. Contact OCLPPP to arrange an environmental investigation.
20 – 44	High Lead in Blood	Environmental Investigation should be initiated. Refer for medical management. Child needs a venous blood draw every 1 – 2 months until trend is downward or stable and then less often as trend indicates. Pharmacological treatment may be indicated. Contact OCLPPP to arrange an environmental investigation.
45 – 69	Severe Lead in Blood	Children in this range need both medical and environmental intervention. Refer for medical management. Child needs a venous blood draw every 2 weeks – 1 month (or more frequently if status requires) until trend is downward or stable and then less often as trend indicates. Pharmacological treatment may be indicated.
≥ 70	Emergency	Children in this range need immediate medical treatment and environmental intervention. Child needs a venous blood draw every 2 weeks – 1 month (or more frequently if status requires) until trend is downward or stable and then less often as trend indicates.

For more information or additional copies of this form contact Screening and Special Services and ask for information on Lead Poisoning at 405-426-8311 or toll free 1-800-766-2223 or email OKLPPP@health.ok.gov.

[^] If a retest time range is given, county health department nurses will retest based on the shorter retest time interval.



OKLAHOMA MANAGEMENT GUIDELINES ON CHILDHOOD LEAD POISONING FOR HEALTH CARE PROVIDERS

No level of lead in the body is known to be safe. Primary treatment for all lead in blood is prevention of lead exposure and the timely and effective reduction of any exposure that may have occurred. In addition to the long-known major sources of lead exposure (lead-contaminated paint, dust, and soil), other potential sources are being recognized. Ongoing coordination between the medical provider and the local public health team is essential for effective follow-up of lead exposed children.

BLL	Significance	Management
< 3.5 mcg/dL	• Standard history and physical examination and developmental assessment. • Evaluate nutrition and consider iron deficiency as in all children. • Evaluate lead exposure. Lead in Blood Results (may be capillary or venous)¹ • Retest as for routine screening, i.e., obtain additional lead in blood screen at ¹ and 2 years, test anytime up to 6 years (if not tested at ¹ and 2 years), or whenever indicated by changed circumstances or identification of new risks.	 Comply with Oklahoma regulations for Universal Screening which means a blood lead test for ALL children at ages 12 months and again at 24 months of age. Health care providers should give oral or written Anticipatory Guidance to a parent or guardian at each periodic health care visit for children from age 6 months to 72 months. Guidance should include at a minimum that children can be harmed by lead and are particularly at risk for lead poisoning from the time they crawl until 72 months and can be harmed by deteriorating or disturbed paint and lead-contaminated dust. Discuss hand to mouth activity, hand washing, and sources of lead exposure (e.g., lead-contaminated paint; dust and soil, particularly near streets and roadways; lead from a household member's job, ceramic ware, cultural remedies, imported food, costume jewelry, vinyl products, and lead in plumbing and water). Counsel on any risk factors identified. Discuss test results with family. Encourage good nutrition (iron, calcium, and vitamin C); consider referral to Supplemental Nutrition Program for Women, Infants, and Children (WIC). Encourage participation in early enrichment programs for children from families with low economic and social resources and for whom exposure to lead is likely. Chelation is not recommended in this lead in blood range.
3.5–14 mcg/dL	If Capillary Specimen – Confirm WITHIN 3 MONTHS WITH VENOUS ² General – Evaluate as above and • Consider more frequent or more extensive neurodevelopmental evaluations. Lead in Blood Results (all retests should be venous) • Retest IN 3 months. • If retest is in this range, monitor with lead in blood testing every 3 months until trend is downward or stable and then every 4 – 6 months as trend indicates. • If retest is in another range, follow-up as for that range.	 Manage as above and Evaluate risk to, and consider testing for, other children in the home. Evaluate risk to, and consider medical referral for, other household members (especially pregnant women). Add notation on lead in blood result to child's medical record for future neurodevelopmental monitoring. Advise activities such as those provided by early intervention/stimulation programs (e.g., Early Start and Head Start). Consider parent referral to the Oklahoma Childhood Lead Poisoning Prevention Program (OCLPPP) for additional education and guidance at (800) 766-2223. *Environmental Investigations can be obtained for confirmed (venous) levels of 10 mcg/DL or greater. Chelation is not recommended in this lead in blood range.

^{1.} Capillary specimens for lead are easily contaminated. Capillary specimens are acceptable for screening but all retests on BLLs ≥ 3.5 mcg/dL should be on venous blood. Use of a heelstick instead of a fingerstick to obtain a capillary specimen is recommended in children under one year of age.

^{2.} A second capillary test may only be used to confirm an initial capillary result between 3.5-9.9 µg/dL if it is collected within 12 weeks of the first capillary test. Once the result has been confirmed as lead in blood, all subsequent follow-up testing MUST be through venous sampling.

BLL	Significance	Management
15-19 mcg/dL	If Capillary Specimen – Confirm WITHIN 1 MONTH WITH VENOUS General – Evaluate as above and • Consider Hgb/Hct. Lead in Blood results (all retests should be venous) • Retest IN 1 – 3 months. • If retest is in this range, monitor with lead in blood testing every 1 – 3 months until trend is downward or stable and then less often as trend indicates. • If retest is in in another range, follow-up as for that range.	 Manage as above and If lead in blood results are persistent in this range (15 mcg/dL or greater on tests done at least 30 days apart) or if lead in blood results increase above this range, initiate referral to the OCLPPP for case management, environmental investigation, and recommendations for remediation of lead sources. Chelation is not recommended in this lead in blood range.
20-44 mcg/dL	If Capillary Specimen – Confirm WITHIN 1 WEEK WITH VENOUS General • History and physical examination with attention to neurodevelopment. • Evaluate lead exposure. • Evaluate iron deficiency: Hgb/Hct, ferritin, and Fe/TIBC • Consider abdominal x-ray if particulate lead ingestion is suspected. Lead in Blood Results – (all retests should be venous) • If retest is in this range, monitor with lead in blood testing every 4 weeks to 2 months until trend is downward or stable and then less often as trend indicates. • If retest is in another range, follow-up as for that range.	 Manage as above and Initiate referral to the OCLPPP for case management, environmental investigation, and recommendations for remediation of lead sources. Treat any iron deficiency. Order bowel decontamination if indicated. Chelation is not typically initiated in this BLL range. Continue on next page.

BLL	Significance	Management
45-69 mcg/dL	If Capillary Specimen – Confirm WITH VENOUS IMMEDIATELY General – Evaluate as above and • Very high lead in blood results have been associated with renal tubular dysfunction. If potentially nephrotoxic chelating agents are to be used in treatment, test renal function before and during treatment. Lead in Blood results (all retests should be venous) • If retest is in this range, monitor with serial lead in blood testing during any chelation. • Follow-up with lead in blood testing every 2 weeks to 1 month (or more frequently if status requires) until trend is downward or stable and then less often as trend indicates. • It may be appropriate to modify protocol if lead in blood results remain chronically elevated, e.g. from a retained bullet. • If retest is in another range, follow-up as for that range.	URGENT MEDICAL SITUATION Manage as above and • Consider chelation. • Evaluate whether hospitalization is needed to reduce lead exposure or to achieve compliance with treatment protocols. • Immediately notify the OCLPPP. Chelation Therapy • Consult with a provider experienced in managing chelation therapy. The Oklahoma Center for Poison and Drug Information is available for consultation at (800) 222-1222. • Repeat treatment cycles may be needed based on blood lead rebound.
≥ 70 mcg/dL	If Capillary Specimen – Confirm WITH VENOUS IMMEDIATELY General – Evaluate as above. Lead in Blood Results (all retests should be venous) If retest is in this range, monitor with serial Lead in Blood testing during chelation. Follow-up with Lead in blood tests every 2 weeks to 1 month (or more frequently if status requires) until trend is downward or stable and then less often as trend indicates. It may be appropriate to modify protocol if lead in blood results remain chronically elevated, e.g. from a retained bullet. If retest is in another range, follow-up as for that range.	MEDICAL EMERGENCY Manage as above and Immediately hospitalize to stabilize, reduce lead exposure, chelate, and monitor progress. Immediately notify the OCLPPP. Chelation Therapy Consult with a provider experienced in managing chelation therapy. Repeat treatment cycles may be needed based on blood lead rebound.

Note: Searching for gingival lead lines; testing of neurophysiologic function specifically for lead (postural sway, auditory evoked potentials, or nerve conduction); testing of hair, teeth, fingernails, or urine for lead; radiographic imaging of long bones; and X-ray fluorescence of long bones are not usually recommended.

CDC: Managing Elevated Blood Lead Levels Among Young Children: Recommendations from the Advisory Committee on Childhood Lead Poisoning Prevention.

NOTE: For results obtained with a point-of-care device (Lead Care II). Results listed as "high" indicate a greater than 65 result. Immediately clean the child's hands again and run a second test to confirm the initial result, if the second result is still showing as "high" immediately refer for venous confirmation.

Results that show "low" should be reported a < 3.3 (All results must be reported to the Oklahoma Childhood Lead Poisoning Prevention Program)

REPORTING RESULTS

- **ALL** blood lead results obtained on residents of Oklahoma are reportable to the Oklahoma State Department of Health's Oklahoma Childhood Lead Poisoning Prevention Program.
- Lead is a 'reportable' condition in the state of Oklahoma and **must** be reported, regardless of the blood lead level/result. See the **Reportable Conditions Rules** for further information.
- The Oklahoma Childhood Lead Poisoning Prevention Program (OCLPPP) maintains the blood lead surveillance databases for the state of Oklahoma. The OCLPPP receives blood lead results from reference labs such as DLO, LabCorp, ARUP, Regional Medical Laboratories, and others located throughout the United States for residents of Oklahoma.
- Providers, clinics, Head Starts, health departments, or other health service providers who utilize a point-of-care blood lead testing system, such as the Lead Care II® by Magellan, are required to report all such blood lead tests results to the OCLPPP. These results shall be reported electronically through a secure Partner Passageway. Some low-volume testing or out-of-state laboratories reporting for Oklahoma residents unable to report via regular electronic messaging may also utilize the partner passageway to report those results.

If you are a new Lead Care II user and have never reported to our website. Please call us at (405) 426-8311 or email our program with the subject "Access" at <a href="https://okcept.com/okcept/9/0kcept/9/0kcept.com/okcept/9/0kce

- Patient Name (First, Last) Middle initial or name if available.
- Address (at time of testing)
- DOB
- Sex/Gender
- Date Blood Sample was Obtained
- Date Blood Sample was Tested
- Sample Type (Capillary or Venous)-Note all testing on a Lead Care II® must be done using capillary (fingerstick) samples.
- Test Result. (On the Lead Care II® a result of "Low" should be reported as <3.3, a result of "High" indicates a result >65 and should be repeated immediately)
- Name and Address of Ordering Provider or Clinic

ADDITIONAL INFORMATION REQUESTED INCLUDES:

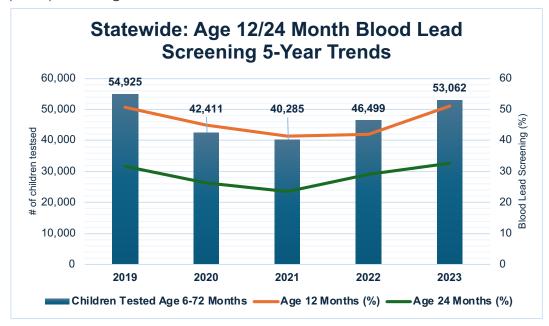
- Race
- Ethnicity
- Guardian Name and Phone number
- Medicaid Number (if applicable)
- Social Security Number



OKLAHOMA TESTING DATA

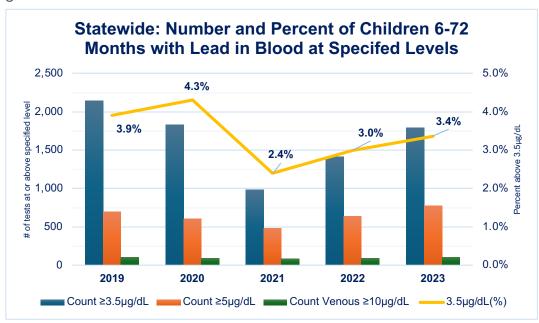
STATEWIDE: AGE 12/24 MONTH BLOOD LEAD SCREENING 5-YEAR TRENDS

Oklahoma's blood lead testing data for the past five years indicates a trend impacted by the COVID-19 pandemic, followed by a recovery in recent years. About **1 in 2** (51.1%) children received their required age 12-month blood lead tests in 2023, compared to about **1 in 3** (32.7%) for the age 24-month test.



STATEWIDE: NUMBER AND PERCENT OF CHILDREN TESTING AT 3.5 AND 5 $\mu g/DL$

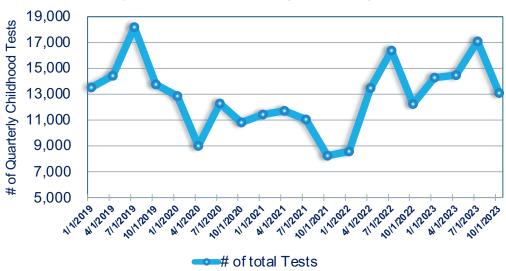
Blood lead test results reported at 3.5, 5 and 10 micrograms followed slight declines during 2020-2021, and returned to pre-pandemic trends in 2022 and 2023. On average during the five-year period, **102** children had confirmed reported blood lead levels at 10 micrograms or greater.



QUARTERLY BLOOD LEAD TESTING VOLUME (2019-2023)

Blood lead testing for children age 6-72 months was at its highest level in 2019 and decreased as precautions due to the pandemic in 2020 and 2021 impacted health facilities. After reaching the lowest point for testing in the fourth quarter of 2021, childhood blood lead tests began to increase to a level closer to the pre-pandemic trend. By the end of 2023, **87%** of the decline observed during pandemic had recovered.





PERCENTAGE OF BLOOD LEAD TESTS REPORTED ELECTRONICALLY

Progress in electronic lab reporting (ELR) of blood lead records has continued in the past five years. In the most recent year available (2023), approximately 99% of blood lead reports were received electronically, for processing in the system. Non-electronic records reported to the system have decreased significantly since 2019, from approximately 2,400 lab reports, to only 400 in 2023.

Percentage of Blood Lead Tests Reported Electronically

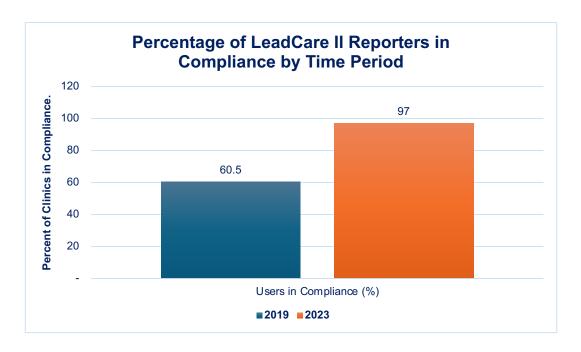


% of Electronic Lab Reports

INCREASE IN COMPLIANCE OF LEADCARE II REPORTERS

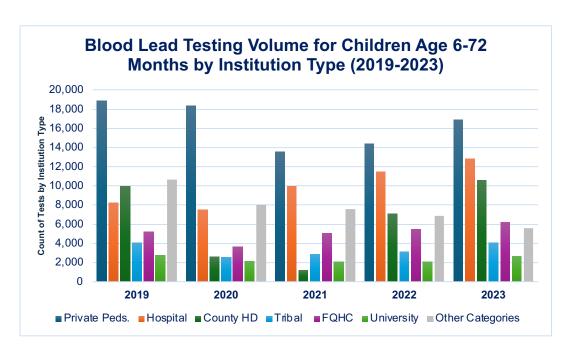
Oklahoma requires providers who use point-of-care devices, such as the LeadCare^{IITM} to report all blood lead results within 30 days. Beginning with a list of LeadCare^{IITM} users provided from the manufacturer, OCLPPP staff identified clinics who failed to report tests in a timely manner for additional communication and assistance.

In addition to e-mail and phone reminders, a dedicated OCLPPP team member is available to assist step-by-step on how to upload blood lead result reports through OCLPPP's online portal. By offering additional help and regular contact in the reporting process, the program has observed an increase in the percentage of clinics achieving compliance by providing complete results of tests on their LeadCare^{IITM} II devices. Since approximately **28%** of Oklahoma's total blood lead testing reports come from users of these devices, the improved compliance benefits the timeliness and accuracy of the state's data collection on childhood lead results.



COUNTY HEALTH DEPARTMENTS COMPARED TO OTHER INSTITUTION TYPES

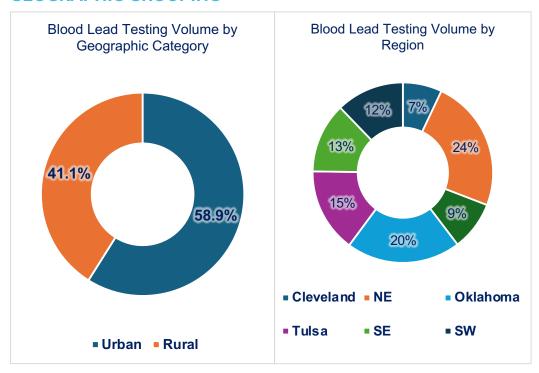
Overall, County Health Departments accounted for approximately 1 in 7 (14%) of the total blood lead tests for children age 6-72 months during the entire 2019-2023 period. Beginning in 2022, the number of tests rose rapidly as the impact of the pandemic receded. In 2023, County Health Department testing was 6% higher than the pre-pandemic level in 2019. By geographic classification, County Health Departments comprised about 1 in 3 (32%) of blood lead tests for children in rural areas.



GEOGRAPHIC DISTRIBUTION OF BLOOD LEAD TESTING

Geographically, the majority of blood lead testing occurred for children in urban areas with children in rural areas accounting for 4 in 10 tests (41%), on average from 2019-2023. About 3 in 10 tests occurred in the state's two largest counties, Tulsa and Oklahoma County. Screening trends for children dropped by the greatest percentage in Southwest (SW) and Northwest (NW) Oklahoma during the pandemic. However, both regions increased their screening rates to above pre-pandemic levels by 2023.

BLOOD LEAD TESTING FOR CHILDREN AGE 6-72 MONTHS BY GEOGRAPHIC GROUPING



Age 12/24 Month Screening Percentages, by State Region

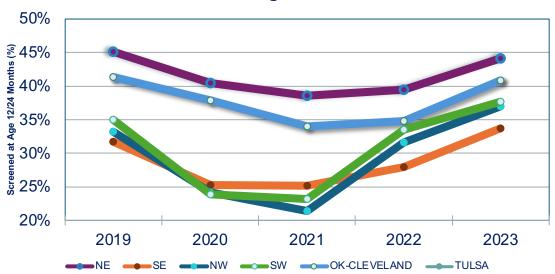
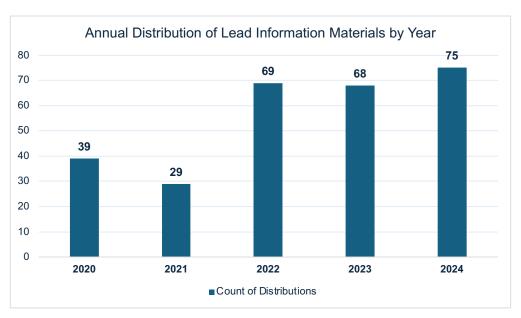


TABLE: SELECTED AND 5-YEAR AVERAGE BLOOD LEAD SCREENING PERCENTAGES BY REGION

Region	Children Tested Age 6-72 Mos.	Age 12- 24 Month Screening (2023) (%)	2019-2023 12/24 Month Avg	2019-2023 12 Month Avg %	2019-2023 24 Month Avg %
NW Quadrant	3,466	37%	29.4%	38.8%	24%
SW Quadrant	6,880	37.7%	30.7%	39.7%	25%
NE Quadrant	11,783	44.1%	41.5%	55.6%	33.8%
SE Quadrant	6,684	33.7%	28.8%	39%	21.3%
Oklahoma & Cleveland	10,647	37.8%	37.8%	40.5%	31.9%
Tulsa County	8,088	33.3%	43.9%	43.9%	27.2%

INCREASED DISTRIBUTION OF INFORMATIONAL MATERIALS 2020-2024

OCLPPP provided outreach to more provider offices and communities, by distributing brochures and items with lead prevention information. The team improved the online brochure request form, to ensure a wider variety of items can be ordered conveniently. Feedback from community partners reported OCLPPP's items have been useful at local health fairs, back-to-school events and for health education materials.



AREAS FOR OUTREACH ACTIVITIES AND BROCHURE DISTRIBUTIONS (MAP)

