

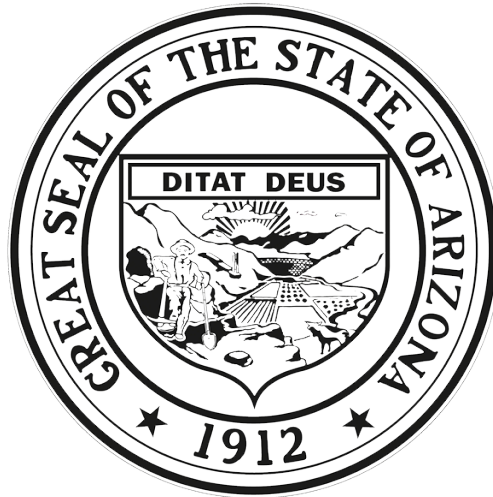
ARIZONA

2021

ANNUAL REPORT BLOOD LEAD SURVEILLANCE CHILDHOOD LEAD POISONING PREVENTION PROGRAM



ARIZONA DEPARTMENT
OF HEALTH SERVICES



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EXECUTIVE SUMMARY

Per Arizona Administrative Code R9-4-302, all blood lead results are reportable to the Arizona Department of Health Services (ADHS). The 2021 Blood Lead Surveillance Annual Report describes the activities of and the childhood blood lead data maintained and analyzed by the Childhood Lead Poisoning Prevention Program (CLPPP) for the 2021 calendar year.

The intent of this report is to provide information for stakeholders to identify areas across Arizona to target interventions. The report contains an analysis of statewide and county level data, a breakdown of blood lead levels above the Center for Disease Control and Prevention's (CDC) blood lead reference value (BLRV), and screening rates for statewide and high-risk zip codes and high-risk census tracts. The high-risk zip codes used for analyses in this report came from the 2018 Targeted Lead Screening Plan for the Prevention of Childhood Lead Poisoning.

Data displayed are for children less than 6 years of age at the time of first reported blood lead level at or above the BLRV or first reported test. The CDC updated the blood lead reference value from 5 $\mu\text{g}/\text{dL}$ to 3.5 $\mu\text{g}/\text{dL}$ in October, 2021. For the purposes of this report, a child was considered to have had a blood lead level at or above the BLRV when a venous test was reported greater than or equal to 5 $\mu\text{g}/\text{dL}$ in 2021. For 2022 data going forward, case counts will reflect the new BLRV.

Screening rates were calculated using venous and capillary blood lead test results reported to ADHS. These rates do not include verbal assessments or questionnaires administered by health care providers. Please note that there is a potential underestimation of counts and rates presented in this report due to ADHS' reliance on provider and laboratory reporting of blood lead test results.



EXECUTIVE SUMMARY (CONT.)

Screening rates in Arizona are lower than the national average. AZ CLPPP strongly recommends all children receive a blood lead test, rather than attempting to determine if children have any risk factors. However, at a minimum, providers are required to test all children on AHCCCS at 12 and 24 months of age, respectively or at least once before the child reaches 6 years of age if not previously tested. Providers should also screen refugee children ages 6 months to 16 years within 90 days of arrival. Follow-up lead screening should occur again after 3-6 months of placement in a permanent residence, regardless of the results of the initial lead test. A top priority for AZ CLPPP is to increase outreach and collaboration efforts with partners to improve screening rates among vulnerable populations. In addition to improving screening rates, the program aims to improve the identification of common lead sources throughout the state of Arizona.

Historically, AZ CLPPP had the ability to complete a limited number of environmental investigations. However, the program acquired an X-ray fluorescence (XRF) Analyzer in 2023 which allowed staff to efficiently identify sources of lead during environmental investigations. The program is continuously working to increase the number of environmental investigations completed each year.

In 2021, 45,311 Arizona children received either a venous or capillary blood lead test. Of these, 160 were found to have a venous blood lead level (BLL) at or above the BLRV. Childhood lead screening rates had increased from 2018 to 2019. However, there was a decrease in the screening rates in 2020 and again 2021, likely due to the COVID-19 pandemic and the LeadCare® test kit recall.



EXECUTIVE SUMMARY (CONT.)

Once a child is detected with a blood lead level at or above the BLRV through a screening test, a diagnostic follow-up test is recommended. ADHS provides case management services for all children with BLLs at or above the BLRV which includes educational mailings to families and faxing providers reminders to conduct follow-up testing. For the children that have a BLL greater than or equal to (\geq) 10 $\mu\text{g}/\text{dL}$, a questionnaire is completed over the phone with a parent or guardian to identify potential sources of lead. Investigation kits are offered to families depending on potential sources identified. Investigation kits include instructions on how to collect samples at their home and send them back to the Arizona State Public Health Laboratory (ASPHL) for analysis. For the children that have a BLL greater than or equal to (\geq) 20 $\mu\text{g}/\text{dL}$, an environmental investigations of the child's residence by CLPPP personnel is offered to the family.

In 2021, there were 33 children with confirmed blood lead levels greater than or equal to 10 $\mu\text{g}/\text{dL}$; 27 of these were newly identified. Parents that completed a verbal risk assessment most commonly reported living pre-1978 housing. They also reported that their children had a tendency to put soil or non-food items in their mouths.



GLOSSARY OF DEFINITIONS

Blood Lead Reference Value	Reference value based on the 97.5th percentile of blood lead values among U.S. children ages 1-5 years from the National Health and Nutrition Examination Survey
Capillary	Test where a blood sample is taken from the finger or heel of a child, used for screening purposes
Claritas[®] Data	Demographic data sets and population projections produced annually at the Block Group and Zip Code level by Claritas, LLC
Confirmed	One venous blood specimen with lead concentration, or two capillary blood specimens, drawn within 12 weeks of each other, both with lead concentration at or above the blood lead reference value
Incidence	Number of new cases during a specified time period
MEDSIS	The Medical Electronic Disease Surveillance Intelligence System (MEDSIS) is the secure, web-based surveillance system used to manage blood lead data
Prevalence	Number of current cases (new and preexisting) over a specified time period
STELLAR	The Systematic Tracking of Elevated Lead Levels and Remediation was a Centers for Disease Control and Prevention (CDC) database previously used to maintain blood lead data
Unique Child	An individual child who had at least one blood lead test result within the dataset within the calendar year
µg/dL	The amount of lead in micrograms per deciliter of blood
Venous	Test where a blood sample is taken from a vein; typically used for diagnostic purposes and to confirm an initial capillary test that meets or exceeds the blood lead reference values
Verbal Assessment	Screening questions asked by the health care provider to determine the risk level of a child for lead exposure



2021 ANNUAL SURVEILLANCE REPORT HIGHLIGHTS



160 total children had blood lead levels at or above the BLRV.



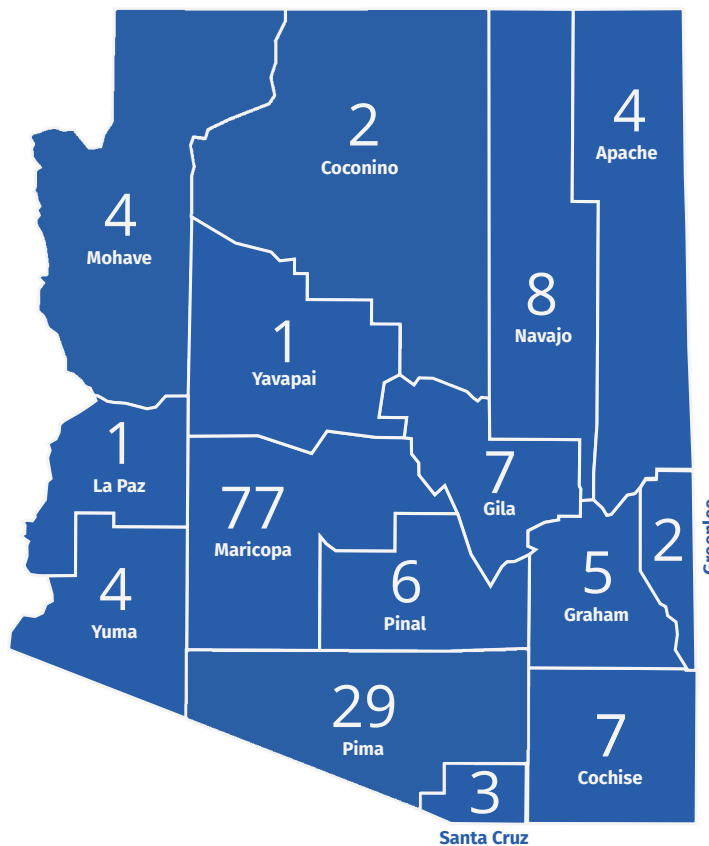
81% of cases lived in high-risk zip codes.



45,311 children under the age of 6 had a blood lead test.

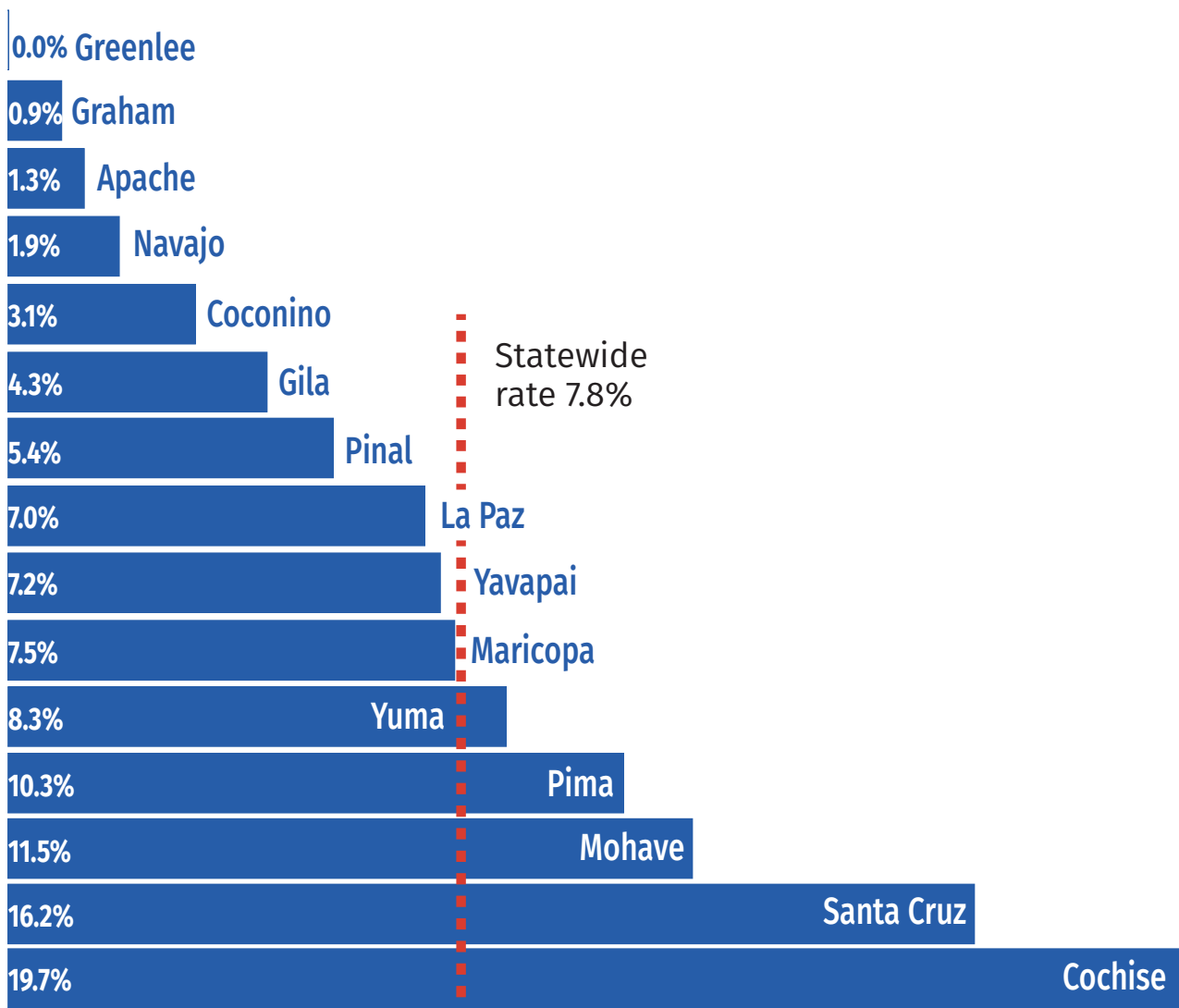
Case Distribution Across the State

This map shows the distribution of unique children under the age of 6 years reported with a venous blood lead level at or above the BLRV in 2021.



2021 ANNUAL SURVEILLANCE REPORT HIGHLIGHTS (CONT.)

12 & 24 Month Screening Rates in High-Risk Zip Codes*



*Children living in high-risk zip codes were recommended a blood lead test at both 12 and 24 months of age. For current high-risk areas, visit www.azhealth.gov/leadmap.



Statewide Data

45,311 unique children under the age of 6 had a venous or capillary blood lead test in 2021. 160 had a venous blood lead level greater than or equal to the blood lead reference value (BLRV). Of the 160 children, over 76% had their first reported blood lead level at or above the BLRV in 2021. 127 children had blood lead levels between 5 and 9.9 $\mu\text{g}/\text{dL}$, and 33 children had levels greater than or equal to 10 $\mu\text{g}/\text{dL}$. The highest venous blood lead level identified in a child was 35 $\mu\text{g}/\text{dL}$.

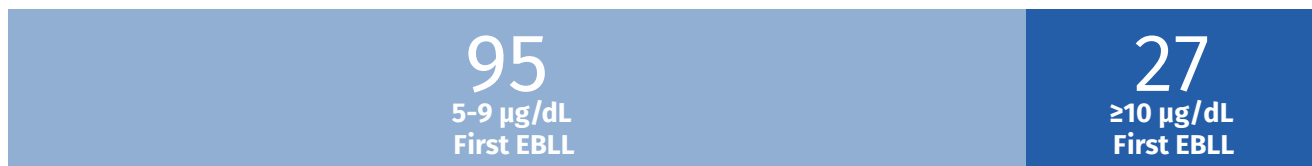
Prevalent Cases of Lead At or Above the BLRV

160 total children had a blood lead level at or above the BLRV.



Incident Cases Lead At or Above the BLRV

122 of the 160 children had their first reported blood lead level at or above the BLRV.



High-Risk Zip Code Screening Rates

Children living in high-risk zip codes* in Arizona should receive a blood lead test at 12 and 24 months of age through their health care provider. 19.2% of children living in a high-risk zip code had a blood lead test at 12 months of age. Even fewer, 12.6%, had a blood lead test at 24 months of age. Even fewer still, 7.8%, had received both recommended blood lead tests at 12 and 24 months of age.

Screening Age	High-Risk Zip Codes
12 & 24 months	7.8% [†]
12 months	19.2% [†]
24 months	12.6% [†]

*A list of high-risk zip codes by county can be found in Appendix F.

[†] Significantly different from 2020 rate ($p < 0.05$)



Statewide Overall Screening Rate

While Arizona's current screening guidelines recommend that children living in high-risk neighborhoods should receive a blood lead test at 12 and 24 months of age, this targeted approach may not detect children with lead levels higher than the CDC BLRV living in non-high-risk neighborhoods. Therefore, AZ CLPPP wants to emphasize that all children be screened for lead to help identify any children that may be at risk of lead exposure regardless of where they live.

In 2021, screening rates for children living in high-risk zip codes were higher than the screening rates for children in all zipcodes regardless of risk.

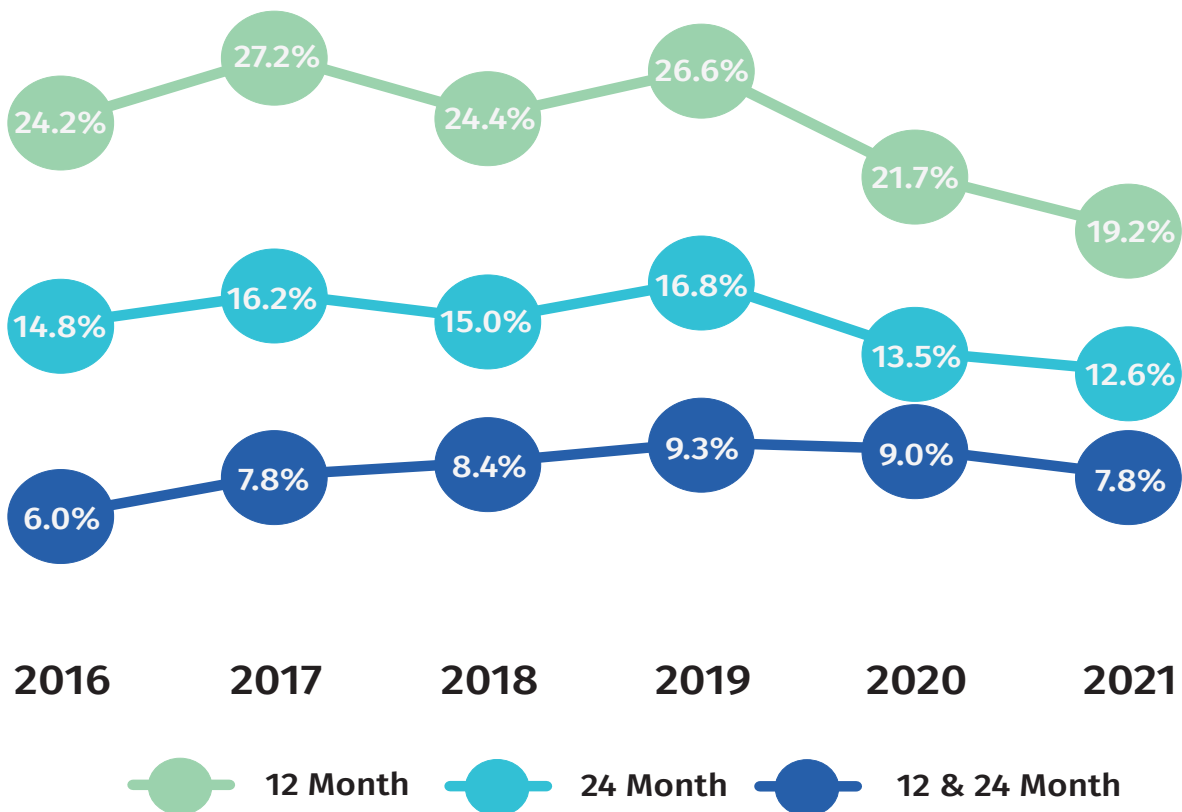
Screening Age	Zip Codes	
	High-Risk	All
12 & 24 months	7.8%	6.9%
12 months	19.2%	17.6%
24 months	12.6%	11.1%

See [appendix L](#) for a full list of screening rates for the state and counties.



Statewide High-Risk Screening Rate Trends

Overall, screening rates for children living in high-risk zip codes continued to decline from 2020 to 2021. The 12 month high-risk screening rate experienced the largest decrease, dropping 2.5% while the 24 month and 12 & 24 month high risk screening rates experienced a 1.1% and 1.2% decrease, respectively. This decline in lead testing can be attributed to a number of causes but most notably, the COVID-19 pandemic that began in 2020 and the LeadCare recall that lasted from June, 2021 to February, 2022.



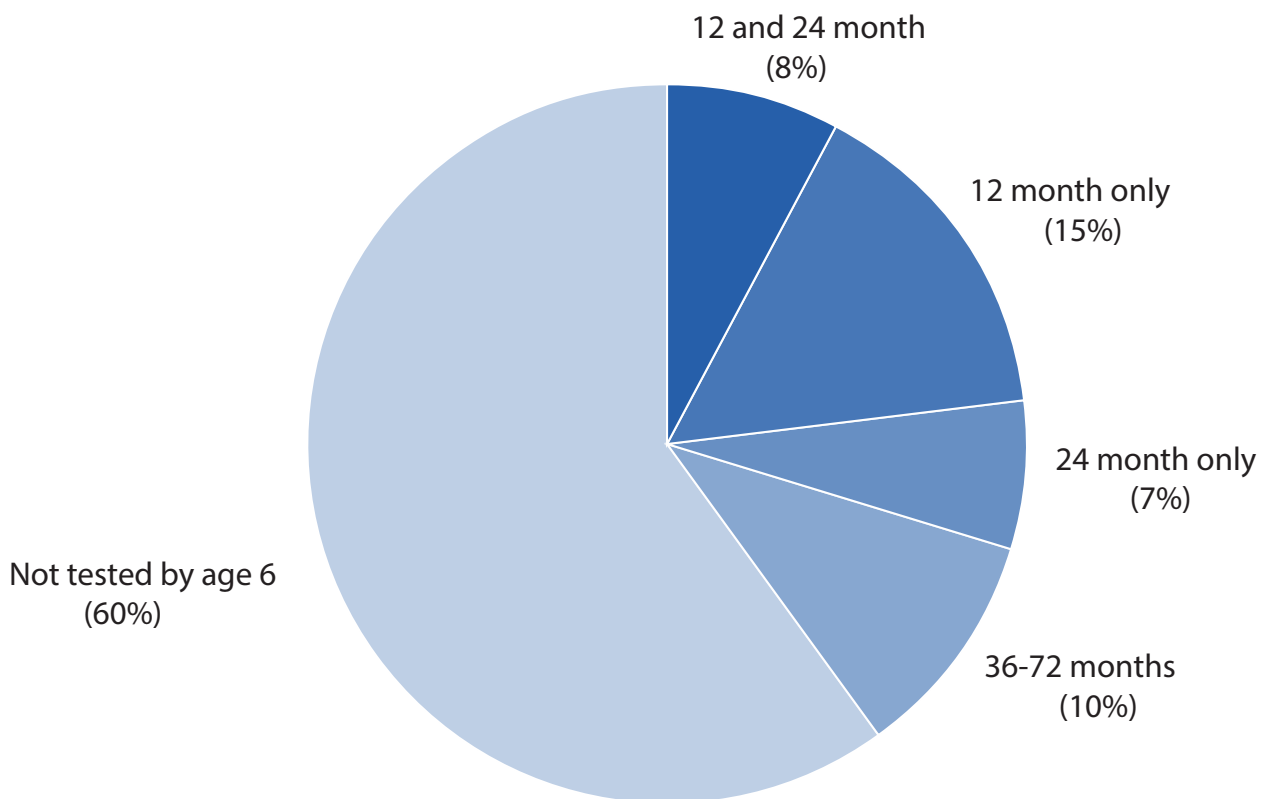
See [appendix K](#) for a full list of screening rates for the state and counties.



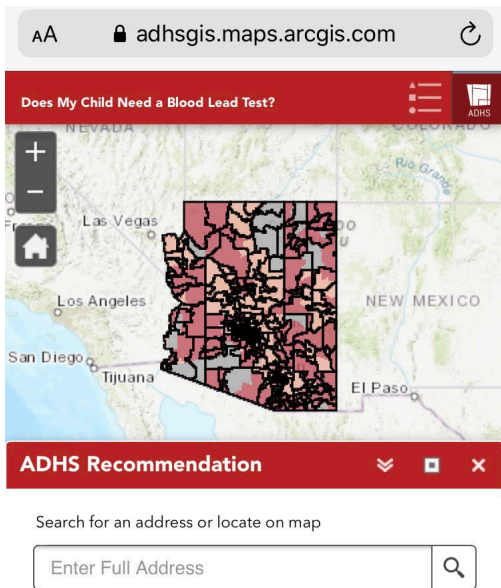
Statewide High-Risk Screening Compliance

According to current screening recommendations outlined in the 2018 Targeted Lead Screening Plan for the Prevention of Childhood Lead Poisoning, children living in high-risk zip codes should have a blood lead test at both 12 and 24 months of age. Children aged 36 to 72 months should be tested if they have not been previously tested. Blood lead testing children at a young age helps to identify children exposed to lead as early as possible. Once a lead-exposed child is identified, the appropriate education and resources can be provided to the family to reduce and prevent ongoing exposure.

Approximately 40% of children turning 6 years of age in 2021 that lived in high-risk zip codes had received at least one blood lead test. Only 8% were tested at 12 and 24 months as recommended by the Arizona Department of Health Services.



Screening in High-Risk Neighborhoods



In 2018, the Childhood Lead Poisoning Prevention Program created a new web-based interactive map (www.azhealth.gov/leadmap) for families and health care providers to easily identify children living in high-risk areas around the state who need blood lead testing. The goal of this map is to provide screening recommendations at a smaller geographical scale.

An analysis was performed for 2021 blood lead data, to identify the number of children living in high-risk neighborhoods who received a blood lead test at the recommended ages of 12 months and 24 months.

High-Risk Census Tracts Screening Rates

Screening rates are calculated at both the zip code and census tract levels. While individuals are able to identify the zip codes that they live in, census tracts are not as common knowledge. Having a zip code screening rate allows for easier reference to better known geographic areas. Zip codes are considered high-risk if there is at least one high-risk census tract within the zip code's boundaries. Alternatively, screening rates by census tracts allows for a more accurate representation of screening rates in a specific area.

Of the 45,311 children <6 years of age screened in 2021, 29,982 (66.2%) were children living in high-risk census tract areas. 17,468 of these children were either 12 or 24 months of age when they were screened, as recommended.

In 2021, there were 10,331 children 12 months of age and 7,137 children 24 months of age tested. The 12 months screening rate decreased from 23.7% in 2020 to 21.0% in 2021. A similar decrease was seen in the 24 months screening rate, which dropped from 15.0% in 2020 to 14.1% in 2021.

4,302 children received both recommended tests by the end of 2021. Only 8.5% of children living in high-risk areas received blood tests at the recommended ages of 12 and 24 months. The goal is to have all children living in high-risk areas to receive blood lead tests at these two ages.

Screening Age	High-Risk Census Tracts
12 & 24 months	8.5% [†]
12 months	21.0% [†]
24 months	14.1% [†]

[†] Significantly different from 2020 rate ($p < 0.05$)



LeadCare® Test Kit Recall

The LeadCare® testing platforms are used in physician's offices and laboratories to analyze blood lead. The LeadCare® II platform is currently the only CLIA-waived point-of-care blood lead test available and is used to test capillary blood specimens. Higher complexity methods are an alternative to point-of-care testing and are more sensitive and therefore able to detect lead at lower concentrations. Higher complexity tests are used to test both capillary and venous blood specimens.

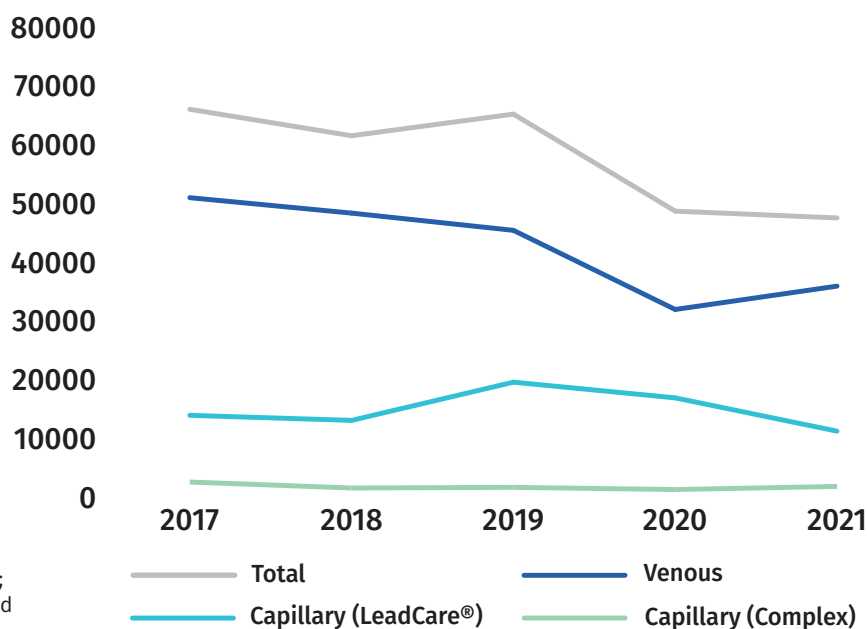
In June of 2021 the Magellan BioScience and the Food and Drug Administration issued a recall for LeadCare® Blood Lead Tests for the LeadCare II, LeadCare Plus, and LeadCare Ultra. These lots were distributed between October 27, 2020 and June 15, 2021.

ADHS CLPPP notified lead reporters throughout the state of the recall and provided periodic outreach to determine which facilities were impacted and to provide recommendations on retesting. Additional guidance was provided to physician's offices that experienced interruptions of point-of-care testing due to the recall to discuss options on how to continue to screen children for lead.

During the time this recall took place, the COVID-19 pandemic was still ongoing. It is difficult to determine the extent to which the pandemic and the recall each impacted lead screening, but both impacted lead screening rates in 2021. Many healthcare provider offices reported a decrease or complete halt in point-of-care testing due to the unavailability of test kits.

Blood Lead Tests by Specimen Type, 2017-2021*

There was a sharp decrease in capillary and venous testing done in 2020 due to the COVID-19 pandemic. A subsequent decrease in point-of-care capillary testing is seen in 2021 due to the recall in addition to the ongoing pandemic.



* Tests with missing specimen types were excluded; 160 for 2017, 125 for 2018, 98 for 2019, 42 for 2020, and 41 for 2021.

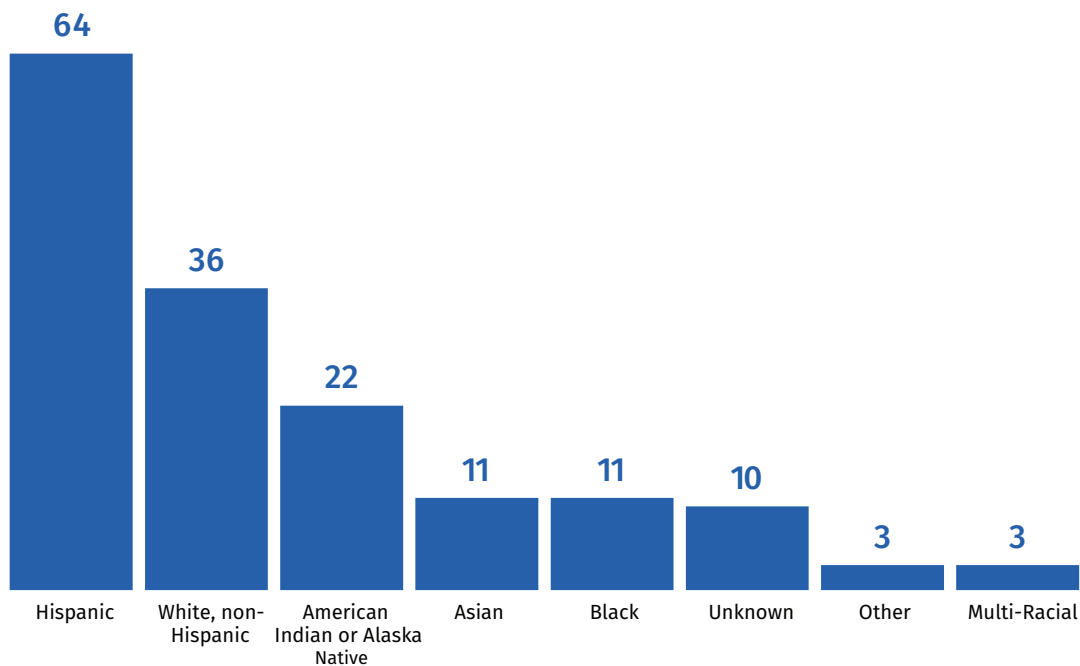


Statewide Case Demographics

Lead poisoning can disproportionately affect young children based on risk factors such as race or ethnicity, household income, immigrant or refugee status, and age of housing.

Race/Ethnicity

160 children in Arizona had blood lead levels at or above the BLRV, however, race and ethnicity information is not available for all children. Efforts to improve completeness for race and ethnicity data are underway. 64 (40.0%) of the children under the age of 6 with a confirmed blood lead level at or above the BLRV were Hispanic, followed by 36 (22.5%) white, non-Hispanic and 22 (13.8%) American Indian or Alaska Native. Children who identified as Asian, Black, Other, or Multi-Racial made up 17.5% of cases. Children who identified as a race other than those listed are included under Other. Of the children with a blood lead level at or above the BLRV, 10 (6.3%) had missing race or ethnicity data.



Statewide Sources

In order to gather more information about a child's environment and behavior, CLPPP makes efforts to complete a questionnaire regarding potential sources of lead exposure with the families. When a potential source is identified, CLPPP provides guidance to families on ways to reduce exposure. The information summarized below has been reported by parents and guardians for children identified with an BLL at or above the BLRV in 2021. Not all sources can be or have been confirmed as the source of lead exposure for each child, but this summary may give a better understanding of the possible sources of lead that impact Arizona children.

62 children had a history of **living in pre-1978 housing in Arizona**.

41 children were reported to have **mouthed or eaten soil and/or non-food items**.

29 children were reported to have **products from another country** in their home, such as candy, spices, or makeup.

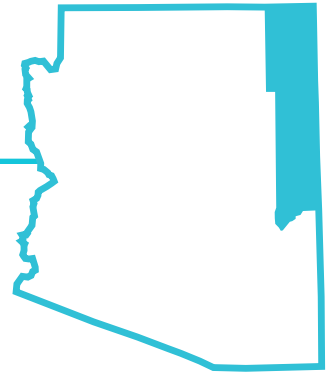
13 children were reported to have **imported or handmade glazed ceramics, pewter, crystal, or porcelain** in their home.

28 children were reported to **live with someone who has an occupation or hobby with a potential lead exposure**.

17 children were reported to have **lived or visited outside of the U.S.** in the past year.

Among the samples collected during environmental investigations in 2021 for children identified with a BLL at or above the BLRV in the same year, CLPPP identified the following confirmed lead sources: pre-1978 paint, soil, pottery, toys or jewelry, and makeup brought from another country.





Apache County

239 unique children under the age of 6 had a venous or capillary blood lead test in 2021. Of those children tested, there were 4 who had a venous blood lead level (BLL) greater than or equal to 5 µg/dL, compared to 1 child in 2020.

Unique children with BLL ≥ BLRV

4 children had a blood lead level exceeding the BLRV in 2021. All of these children had their first reported BLL exceeding the BLRV in 2021.

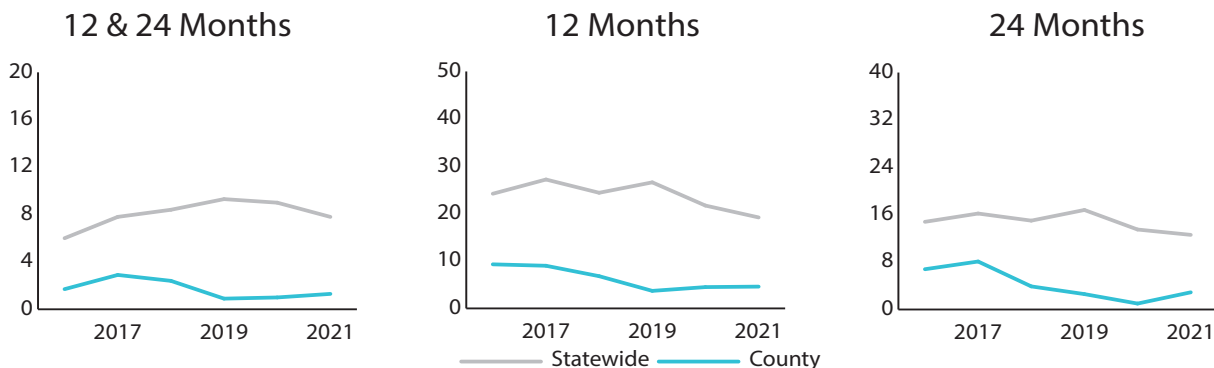


Screening Rates*

4.6% of children living in a high-risk zip code in Apache County had a blood lead test at 12 months of age. 2.9% of children had a blood lead test at 24 months of age and 1.3% of children had received both recommended blood lead tests at 12 and 24 months of age.

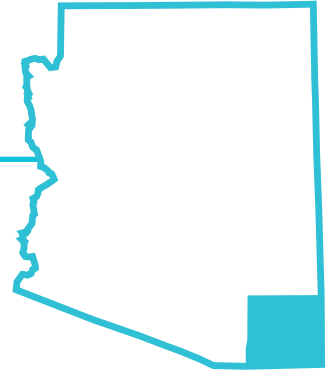
Screening Age	High-Risk Zip Codes	
	Apache	Statewide
12 & 24 months	1.3%	7.8% [†]
12 months	4.6%	19.2% [†]
24 months	2.9%	12.6% [†]

Screening Rate Trends, 2016-2021



* Children living in high-risk zip codes in Arizona should receive a blood lead test at 12 and 24 months of age through their health care provider. A list of high-risk zip codes by county can be found in Appendix F.
 † Significantly different from 2020 rate (p < 0.05)





Cochise County

1,245 unique children under the age of 6 had a venous or capillary blood lead test in 2021. Of those children tested, there were 7 who had a venous blood lead level (BLL) greater than or equal to 5 µg/dL, compared to 9 children in 2020.

Unique children with BLL ≥ BLRV

7 total children had a blood lead level exceeding the BLRV in 2021. 5 of these children had their first reported BLL exceeding the BLRV in 2021.

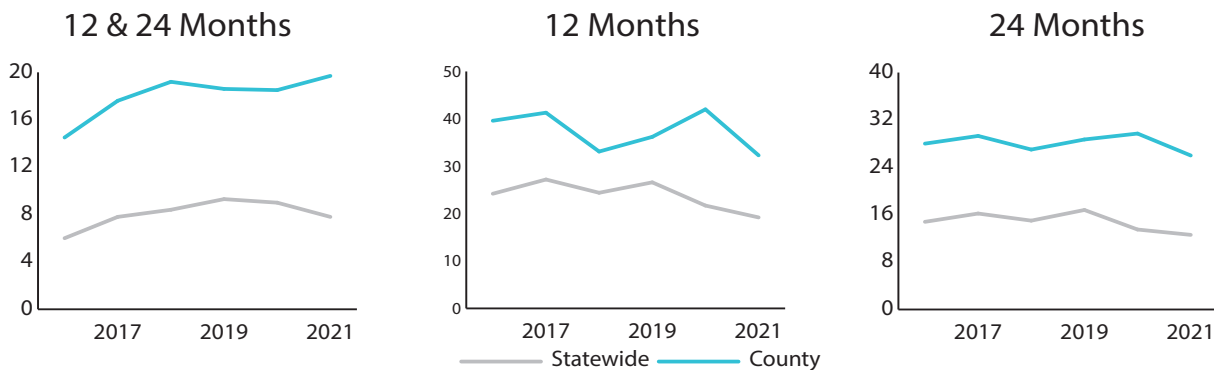


Screening Rates*

32.3% of children living in a high-risk zip code in Cochise County had a blood lead test at 12 months of age. 26.0% of children had a blood lead test at 24 months of age and 19.7% of children had received both recommended blood lead tests at 12 and 24 months of age.

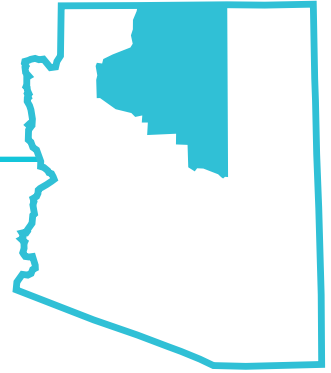
Screening Age	High-Risk Zip Codes	
	Cochise	Statewide
12 & 24 months	19.7%	7.8%†
12 months	32.3%†	19.2%†
24 months	26.0%	12.6%†

Screening Rate Trends, 2016-2021



* Children living in high-risk zip codes in Arizona should receive a blood lead test at 12 and 24 months of age through their health care provider. A list of high-risk zip codes by county can be found in Appendix F.
 † Significantly different from 2020 rate (p < 0.05)





Coconino County

791 unique children under the age of 6 had a venous or capillary blood lead test in 2021. Of those children tested, there were 2 who had a venous blood lead level (BLL) greater than or equal to 5 µg/dL, compared to 5 children in 2020.

Unique children with BLL ≥ BLRV

2 total children had a blood lead level exceeding the BLRV in 2021. Both of these children had their first reported BLL exceeding the BLRV in 2021.

2

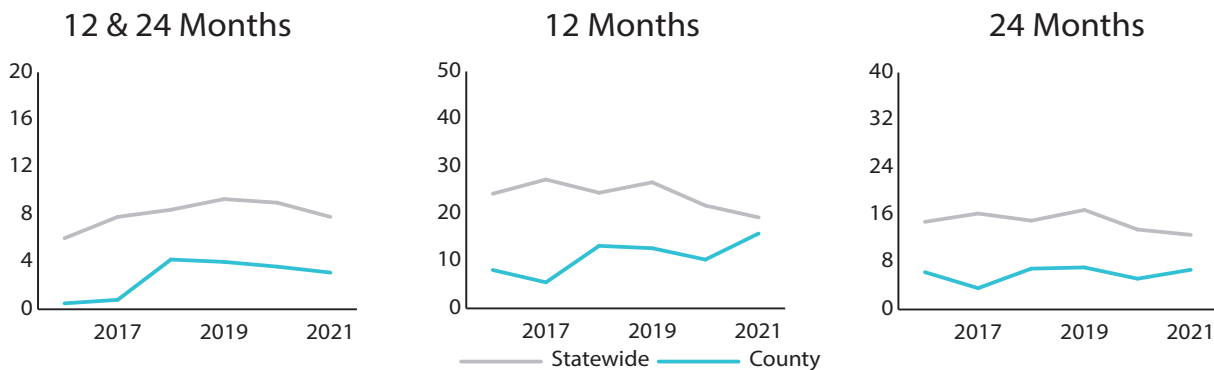
5-9 µg/dL
First EBLL

Screening Rates*

15.8% of children living in a high-risk zip code in Coconino County had a blood lead test at 12 months of age. 6.7% of children had a blood lead test at 24 months of age and 3.1% of children had received both recommended blood lead tests at 12 and 24 months of age.

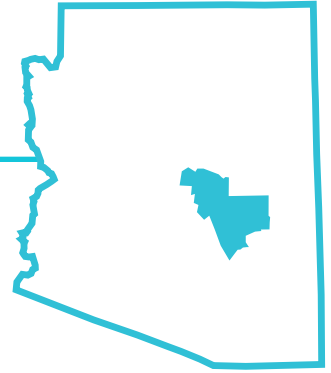
Screening Age	High-Risk Zip Codes	
	Coconino	Statewide
12 & 24 months	3.1%	7.8% [†]
12 months	15.8% [†]	19.2% [†]
24 months	6.7%	12.6% [†]

Screening Rate Trends, 2016-2021



* Children living in high-risk zip codes in Arizona should receive a blood lead test at 12 and 24 months of age through their health care provider. A list of high-risk zip codes by county can be found in Appendix F.
 † Significantly different from 2020 rate (p < 0.05)





Gila County

487 unique children under the age of 6 had a venous or capillary blood lead test in 2021. Of those children tested, there were 7 who had a venous blood lead level (BLL) greater than or equal to 5 µg/dL, compared to 6 children in 2020.

Unique children with BLL ≥ BLRV

7 total children had a blood lead level exceeding the BLRV in 2021. 4 of these children had their first reported BLL exceeding the BLRV in 2021.

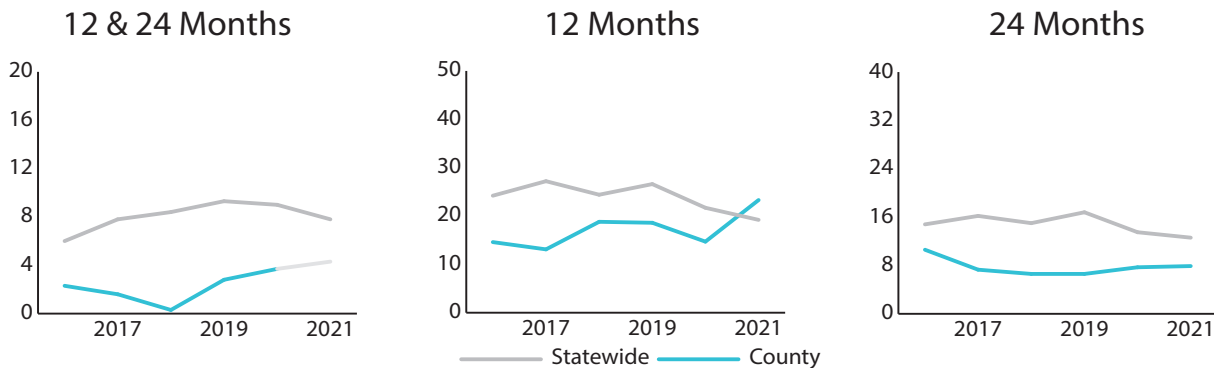


Screening Rates*

23.3% of children living in a high-risk zip code in Gila County had a blood lead test at 12 months of age. 7.9% of children had a blood lead test at 24 months of age and 4.3% of children had received both recommended blood lead tests at 12 and 24 months of age.

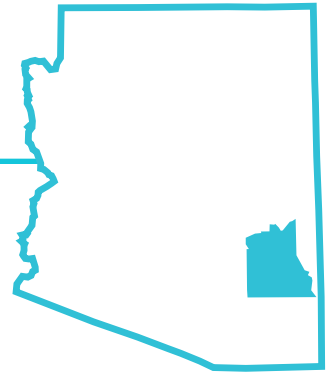
Screening Age	High-Risk Zip Codes	
	Gila	Statewide
12 & 24 months	4.3%	7.8% [†]
12 months	23.3%	19.2% [†]
24 months	7.9%	12.6% [†]

Screening Rate Trends, 2016-2021



* Children living in high-risk zip codes in Arizona should receive a blood lead test at 12 and 24 months of age through their health care provider. A list of high-risk zip codes by county can be found in Appendix F.
 † Significantly different from 2020 rate (p < 0.05)





Graham County

221 unique children under the age of 6 had a venous or capillary blood lead test in 2021. Of those children tested, there were 5 who had a venous blood lead level (BLL) greater than or equal to 5 µg/dL, compared to 6 children in 2020.

Unique children with BLL ≥ BLRV

5 total children had a blood lead level exceeding the BLRV in 2021. 2 of these children had their first reported BLL exceeding the BLRV in 2021.

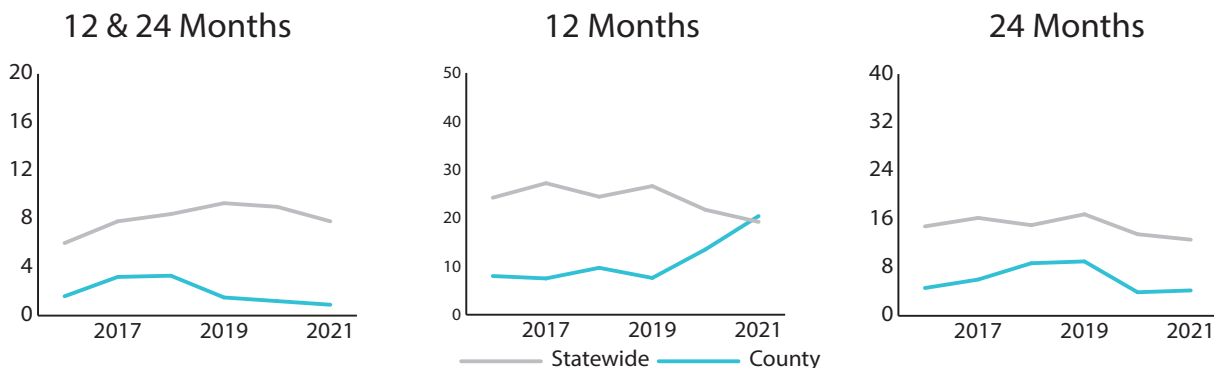


Screening Rates*

20.4% of children living in a high-risk zip code in Graham County had a blood lead test at 12 months of age. 4.2% of children had a blood lead test at 24 months of age and 0.9% of children had received both recommended blood lead tests at 12 and 24 months of age.

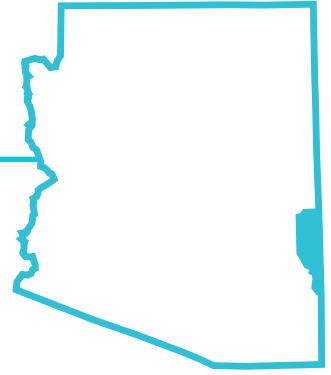
Screening Age	High-Risk Zip Codes	
	Graham	Statewide
12 & 24 months	0.9%	7.8%†
12 months	20.4%	19.2%†
24 months	4.2%	12.6%†

Screening Rate Trends, 2016-2021



* Children living in high-risk zip codes in Arizona should receive a blood lead test at 12 and 24 months of age through their health care provider. A list of high-risk zip codes by county can be found in Appendix F.
 † Significantly different from 2020 rate (p < 0.05)





Greenlee County

43 unique children under the age of 6 had a venous or capillary blood lead test in 2021. Of those children tested, there were 2 who had a venous blood lead level (BLL) greater than or equal to 5 µg/dL, compared to 3 children in 2020.

Unique children with BLL ≥ BLRV

2 children had a blood lead level exceeding the BLRV in 2021. Both of these children had their first reported BLL exceeding the BLRV in 2021.

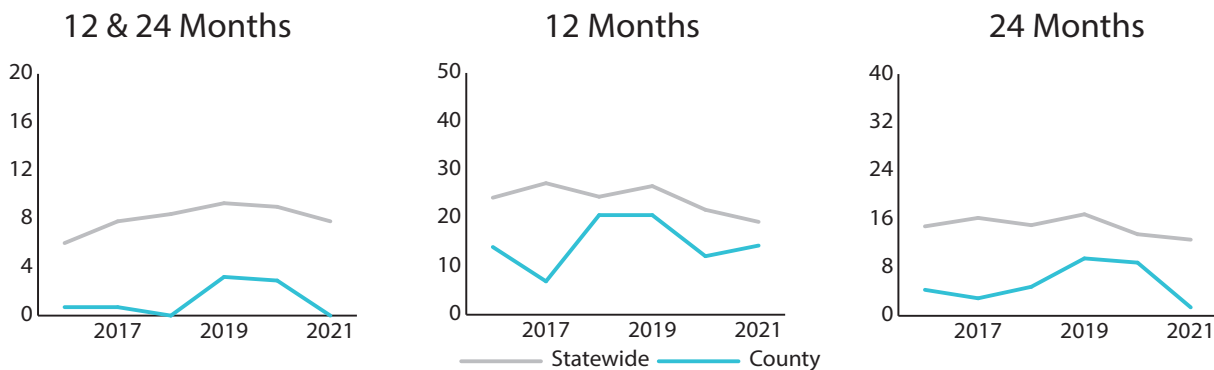


Screening Rates*

14.3% of children living in a high-risk zip code in Greenlee County had a blood lead test at 12 months of age. 1.4% of children had a blood lead test at 24 months of age and 0.0% of children had received both recommended blood lead tests at 12 and 24 months of age.

Screening Age	High-Risk Zip Codes	
	Greenlee	Statewide
12 & 24 months	0.0% [†]	7.8% [†]
12 months	14.3%	19.2% [†]
24 months	1.4%	12.6% [†]

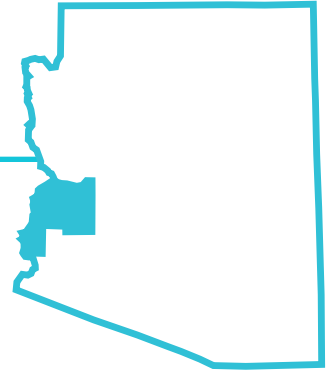
Screening Rate Trends, 2016-2021



* Children living in high-risk zip codes in Arizona should receive a blood lead test at 12 and 24 months of age through their health care provider. A list of high-risk zip codes by county can be found in Appendix F.

† Significantly different from 2020 rate (p < 0.05)





La Paz County

67 unique children under the age of 6 had a venous or capillary blood lead test in 2021. Of those children tested, one child had a venous blood lead level (BLL) greater than or equal to 5 µg/dL, compared to 0 children in 2020.

Unique children with BLL ≥ BLRV

1 children had a blood lead level exceeding the BLRV in 2021. This child had their first reported BLL exceeding the BLRV in 2021.

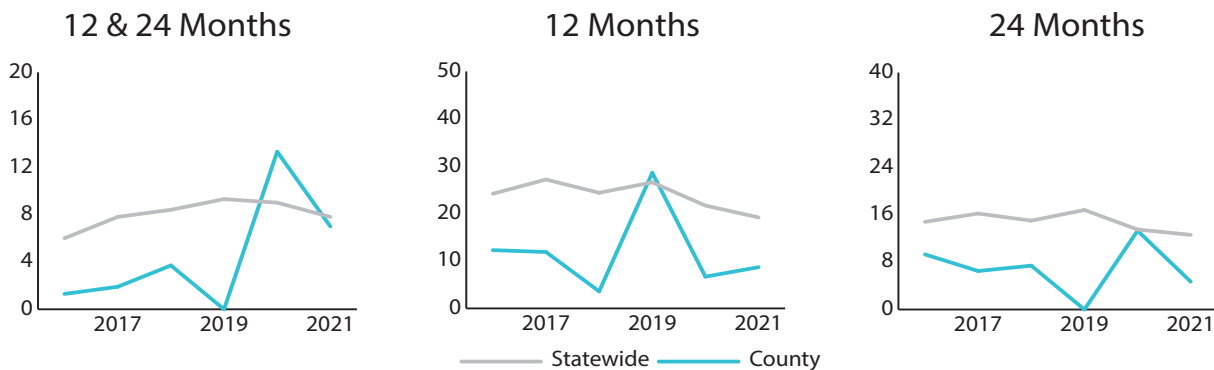


Screening Rates*

8.7% of children living in a high-risk zip code in La Paz County had a blood lead test at 12 months of age. 4.7% of children had a blood lead test at 24 months of age and 7.0% of children had received both recommended blood lead tests at 12 and 24 months of age.

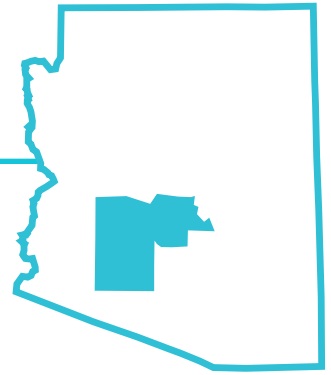
Screening Age	High-Risk Zip Codes	
	La Paz	Statewide
12 & 24 months	7.0%	7.8% [†]
12 months	8.7%	19.2% [†]
24 months	4.7%	12.6% [†]

Screening Rate Trends, 2016-2021



* Children living in high-risk zip codes in Arizona should receive a blood lead test at 12 and 24 months of age through their health care provider. A list of high-risk zip codes by county can be found in Appendix F.
 † Significantly different from 2020 rate (p < 0.05)



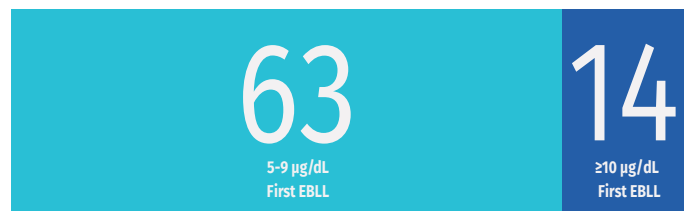


Maricopa County

26,404 unique children under the age of 6 had a venous or capillary blood lead test in 2021. Of those children tested, there were 77 who had a venous blood lead level (BLL) greater than or equal to 5 µg/dL, compared to 82 children in 2020.

Unique children with BLL ≥ BLRV

77 total children had a blood lead level exceeding the BLRV in 2021. 61 of these children had their first reported BLL exceeding the BLRV in 2021.

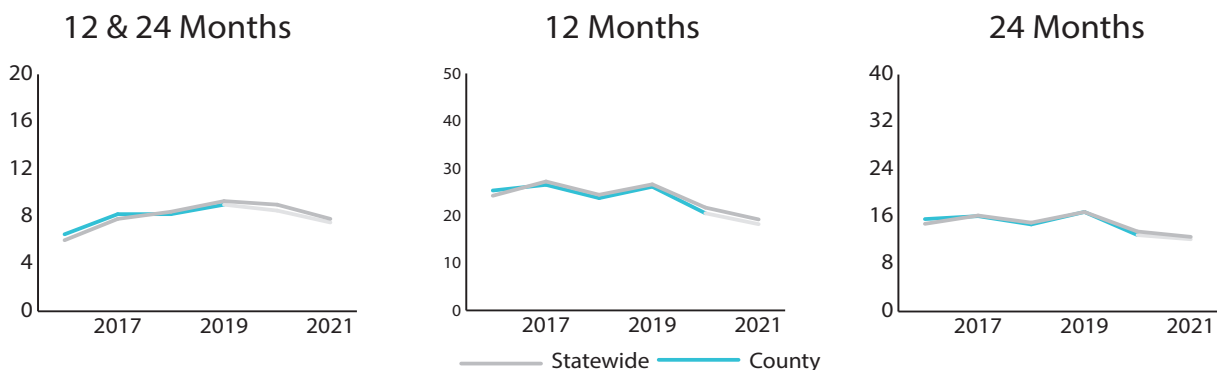


Screening Rates*

18.2% of children living in a high-risk zip code in Maricopa County had a blood lead test at 12 months of age. 12.2% of children had a blood lead test at 24 months of age and 7.5% of children had received both recommended blood lead tests at 12 and 24 months of age.

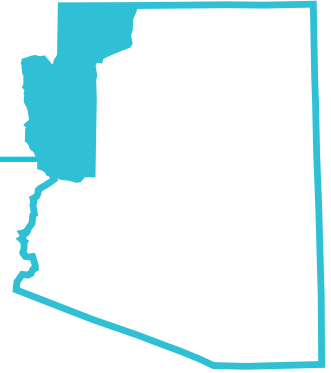
Screening Age	High-Risk Zip Codes	
	Maricopa	Statewide
12 & 24 months	7.5% [†]	7.8% [†]
12 months	18.2% [†]	19.2% [†]
24 months	12.2% [†]	12.6% [†]

Screening Rate Trends, 2016-2021



* Children living in high-risk zip codes in Arizona should receive a blood lead test at 12 and 24 months of age through their health care provider. A list of high-risk zip codes by county can be found in Appendix F.
 † Significantly different from 2020 rate (p < 0.05)





Mohave County

1,138 unique children under the age of 6 had a venous or capillary blood lead test in 2021. Of those children tested, there were 4 who had a venous blood lead level (BLL) greater than or equal to 5 µg/dL, compared to 8 children in 2020.

Unique children with BLL ≥ BLRV

4 total children had a blood lead level exceeding the BLRV in 2021. All of these children had their first reported BLL exceeding the BLRV in 2021.

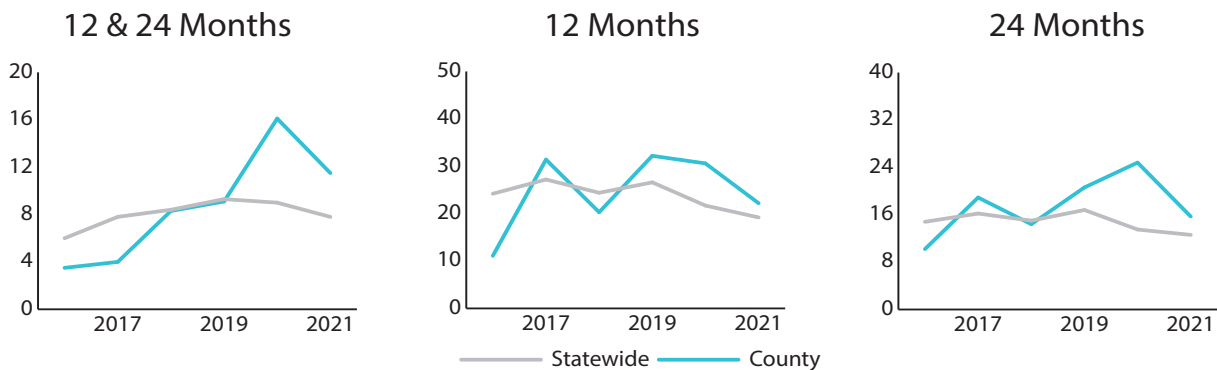


Screening Rates*

22.2% of children living in a high-risk zip code in Mohave County had a blood lead test at 12 months of age. 15.7% of children had a blood lead test at 24 months of age and 11.5% of children had received both recommended blood lead tests at 12 and 24 months of age.

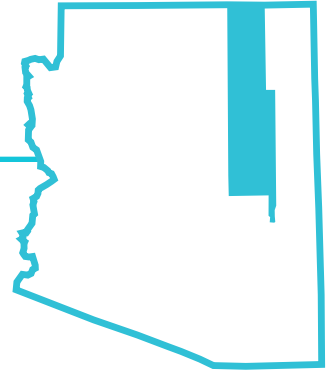
Screening Age	High-Risk Zip Codes	
	Mohave	Statewide
12 & 24 months	11.5% [†]	7.8% [†]
12 months	22.2% [†]	19.2% [†]
24 months	15.7% [†]	12.6% [†]

Screening Rate Trends, 2016-2021



* Children living in high-risk zip codes in Arizona should receive a blood lead test at 12 and 24 months of age through their health care provider. A list of high-risk zip codes by county can be found in Appendix F.
 † Significantly different from 2020 rate (p < 0.05)





Navajo County

730 unique children under the age of 6 had a venous or capillary blood lead test in 2021. Of those children tested, there were 8 who had a venous blood lead level (BLL) greater than or equal to 5 µg/dL, compared to 8 children in 2020.

Unique children with BLL ≥ BLRV

8 total children had a blood lead level exceeding the BLRV in 2021. 6 of these children had their first reported BLL exceeding the BLRV in 2021.

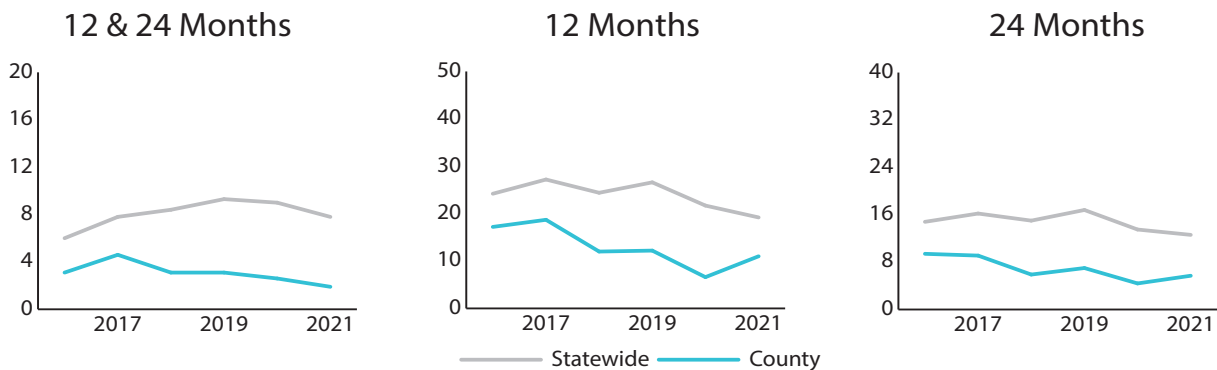


Screening Rates*

11.0% of children living in a high-risk zip code in Navajo County had a blood lead test at 12 months of age. 5.7% of children had a blood lead test at 24 months of age and 1.9% of children had received both recommended blood lead tests at 12 and 24 months of age.

Screening Age	High-Risk Zip Codes	
	Navajo	Statewide
12 & 24 months	1.9%	7.8% [†]
12 months	11.0% [†]	19.2% [†]
24 months	5.7%	12.6% [†]

Screening Rate Trends, 2016-2021



* Children living in high-risk zip codes in Arizona should receive a blood lead test at 12 and 24 months of age through their health care provider. A list of high-risk zip codes by county can be found in Appendix F.
 † Significantly different from 2020 rate (p < 0.05)





Pima County

6,554 unique children under the age of 6 had a venous or capillary blood lead test in 2021. Of those children tested, there were 29 who had a venous blood lead level (BLL) greater than or equal to 5 µg/dL, compared to 25 children in 2020.

Unique children with BLL ≥ BLRV

29 total children had a blood lead level exceeding the BLRV in 2021. 19 of these children had their first reported BLL exceeding the BLRV in 2021.

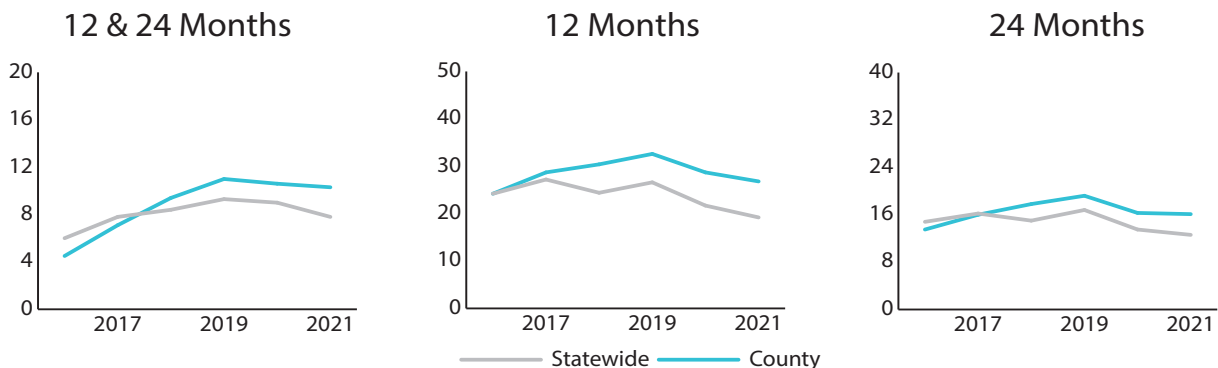


Screening Rates*

26.8% of children living in a high-risk zip code in Pima County had a blood lead test at 12 months of age. 16.1% of children had a blood lead test at 24 months of age and 10.3% of children had received both recommended blood lead tests at 12 and 24 months of age.

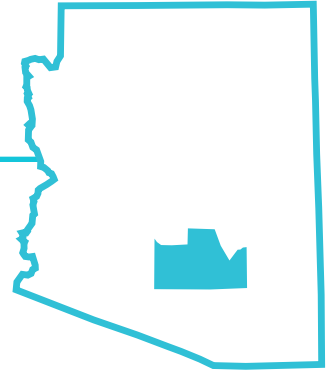
Screening Age	High-Risk Zip Codes	
	Pima	Statewide
12 & 24 months	10.3%	7.8% [†]
12 months	26.8%	19.2% [†]
24 months	16.1%	12.6% [†]

Screening Rate Trends, 2016-2021



* Children living in high-risk zip codes in Arizona should receive a blood lead test at 12 and 24 months of age through their health care provider. A list of high-risk zip codes by county can be found in Appendix F.
 † Significantly different from 2020 rate (p < 0.05)





Pinal County

2,617 unique children under the age of 6 had a venous or capillary blood lead test in 2021. Of those children tested, there were 6 who had a venous blood lead level (BLL) greater than or equal to 5 µg/dL, compared to 6 children in 2020.

Unique children with BLL ≥ BLRV

6 total children had a blood lead level exceeding the BLRV in 2021. 4 of these children had their first reported BLL exceeding the BLRV in 2021.

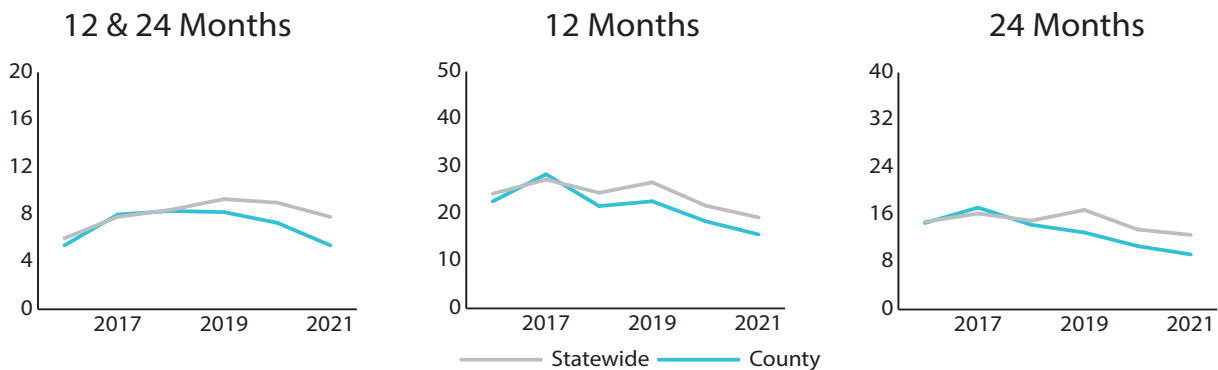


Screening Rates*

15.6% of children living in a high-risk zip code in Pinal County had a blood lead test at 12 months of age. 9.3% of children had a blood lead test at 24 months of age and 5.4% of children had received both recommended blood lead tests at 12 and 24 months of age.

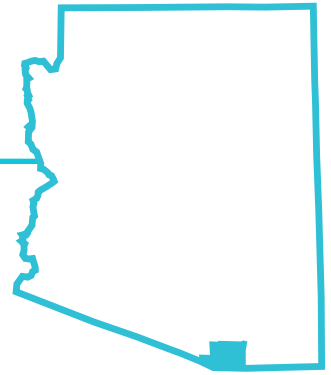
Screening Age	High-Risk Zip Codes	
	Pinal	Statewide
12 & 24 months	5.4% [†]	7.8% [†]
12 months	15.6% [†]	19.2% [†]
24 months	9.3%	12.6% [†]

Screening Rate Trends, 2016-2021



* Children living in high-risk zip codes in Arizona should receive a blood lead test at 12 and 24 months of age through their health care provider. A list of high-risk zip codes by county can be found in Appendix F.
 † Significantly different from 2020 rate (p < 0.05)





Santa Cruz County

884 unique children under the age of 6 had a venous or capillary blood lead test in 2021. Of those children tested, there were 3 who had a venous blood lead level (BLL) greater than or equal to 5 µg/dL, compared to 1 child in 2020.

Unique children with BLL ≥ BLRV

3 children had a blood lead level exceeding the BLRV in 2021. All of these children had their first reported BLL exceeding the BLRV in 2021.

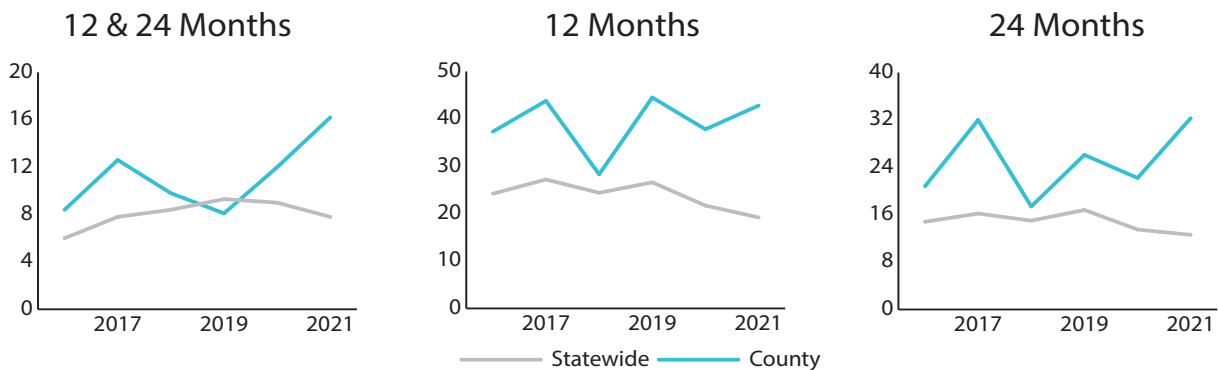


Screening Rates*

42.8% of children living in a high-risk zip code in Santa Cruz County had a blood lead test at 12 months of age. 32.3% of children had a blood lead test at 24 months of age and 16.2% of children had received both recommended blood lead tests at 12 and 24 months of age.

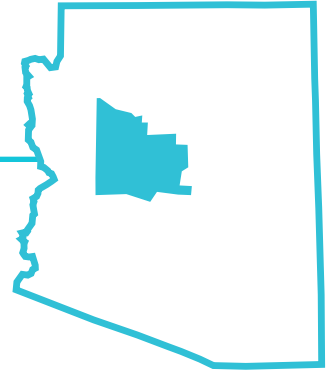
Screening Age	High-Risk Zip Codes	
	Santa Cruz	Statewide
12 & 24 months	16.2%	7.8% [†]
12 months	42.8%	19.2% [†]
24 months	32.3% [†]	12.6% [†]

Screening Rate Trends, 2016-2021



* Children living in high-risk zip codes in Arizona should receive a blood lead test at 12 and 24 months of age through their health care provider. A list of high-risk zip codes by county can be found in Appendix F.
 † Significantly different from 2020 rate (p < 0.05)





Yavapai County

571 unique children under the age of 6 had a venous or capillary blood lead test in 2021. Of those children tested, there was 1 who had a venous blood lead level (BLL) greater than or equal to 5 µg/dL, compared to 1 child in 2020.

Unique children with BLL ≥ BLRV

1 child had a blood lead level exceeding the BLRV in 2021. This child had their first reported BLL exceeding the BLRV in 2021.

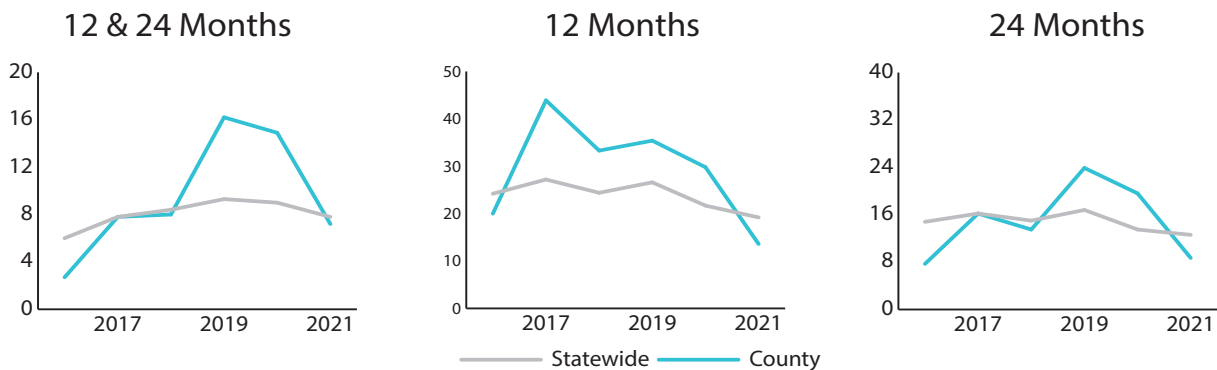


Screening Rates*

13.6% of children living in a high-risk zip code in Yavapai County had a blood lead test at 12 months of age. 8.7% of children had a blood lead test at 24 months of age and 17.2% of children had received both recommended blood lead tests at 12 and 24 months of age.

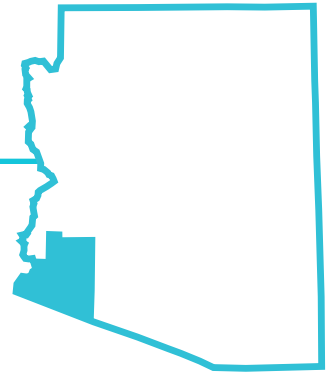
Screening Age	High-Risk Zip Codes	
	Yavapai	Statewide
12 & 24 months	7.2% [†]	7.8% [†]
12 months	13.6% [†]	19.2% [†]
24 months	8.7% [†]	12.6% [†]

Screening Rate Trends, 2016-2021



* Children living in high-risk zip codes in Arizona should receive a blood lead test at 12 and 24 months of age through their health care provider. A list of high-risk zip codes by county can be found in Appendix F.
 † Significantly different from 2020 rate (p < 0.05)





Yuma County

2,029 unique children under the age of 6 had a venous or capillary blood lead test in 2021. Of those children tested, there were 4 who had a venous blood lead level (BLL) greater than or equal to 5 µg/dL, compared to 2 children in 2020.

Unique children with BLL ≥ BLRV

4 total children had a blood lead level exceeding the BLRV in 2021. All of these children had their first reported BLL exceeding the BLRV in 2021.

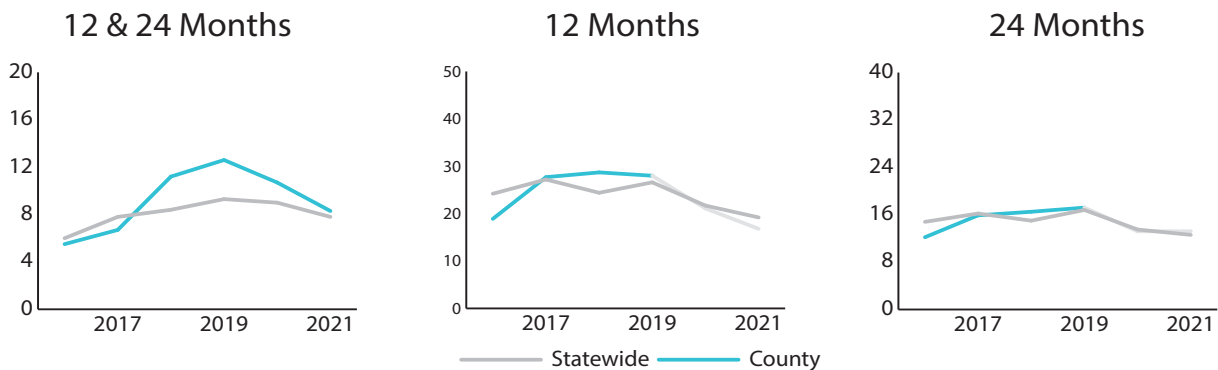


Screening Rates*

16.8% of children living in a high-risk zip code in Yuma County had a blood lead test at 12 months of age. 13.2% of children had a blood lead test at 24 months of age and 8.3% of children had received both recommended blood lead tests at 12 and 24 months of age.

Screening Age	High-Risk Zip Codes	
	Yuma	Statewide
12 & 24 months	8.3% [†]	7.8% [†]
12 months	16.8% [†]	19.2% [†]
24 months	13.2%	12.6% [†]

Screening Rate Trends, 2016-2021



* Children living in high-risk zip codes in Arizona should receive a blood lead test at 12 and 24 months of age through their health care provider. A list of high-risk zip codes by county can be found in Appendix F.
 † Significantly different from 2020 rate (p < 0.05)



APPENDIX A: DESCRIPTION OF DATA

Per Arizona Administrative Code R9-4-302, all blood lead results are reportable to the Arizona Department of Health Services (ADHS). 2011-2016 data were maintained in the Arizona lead registry database, Systematic Tracking of Elevated Lead Levels and Remediation (STELLAR), and 2017-2021 data were maintained in the Arizona Medical Electronic Disease Surveillance Intelligence System (MEDSIS). Data were combined and managed in SAS (statistical analysis system) version 9.4. Prior to analyses, efforts were taken to de-duplicate test results and children based on demographic and test result data. Analyses were performed on first reported blood lead result or blood lead result at or above the blood lead reference value (BLRV) per child in 2021 whose age was less than 72 months. Test results were excluded when the child's address was outside of Arizona. Children with a blank address were assumed to have resided in Arizona at the time of the test. Claritas 2021 population estimates were used to calculate screening rates. Results are not representative of all children living in Arizona because blood lead testing is not universal. Please note that there is a potential underestimation of counts and rates presented in this report due to ADHS' reliance on provider and laboratory reporting of blood lead test results. Rates based on counts less than 20 may be unstable and should be interpreted with caution. Children with missing address information were not included in screening rate calculations. Test results reported for PO Box zip codes were excluded from screening rate calculations due to lack of population estimate data for these zip codes with the exception of 86015, 86018, 85532, 85135, 85141, 85191, 85329, 85721, 85352, 85336, and 85334.



APPENDIX B: BACKGROUND

Lead is a naturally occurring heavy metal, but most high levels in the environment that people are exposed to come from human activities. Lead has properties that make it easy to work with and has been widely used in a variety of products and materials such as pipes, paints, ceramics, and gasoline. When ingested or inhaled, lead can have adverse effects on nearly all organ systems in the body. Children under the age of six years are especially at risk because they are still developing, have a tendency to put objects and their hands in their mouth, and absorb lead easily. Lead exposure often occurs with no obvious signs and symptoms. In children, lead poisoning can cause slowed development, reading and other learning problems, behavioral problems, as well as brain, liver, and kidney damage. Pregnant women can also pass lead to their unborn babies. For these reasons, major public health campaigns have focused on eliminating childhood lead poisoning.

Childhood lead poisoning is entirely preventable; however, it remains one of the most common environmental health dangers to children. In October, 2021 the Centers for Disease Control and Prevention (CDC) adopted the blood lead reference value of 3.5 µg/dL. This reference level was determined as the 97.5th percentile of the blood lead distribution in children one to five years of age from the National Health and Nutrition Examination Survey (NHANES). Children with blood lead levels at the reference level or higher are considered to have been exposed to more lead than most other children.



APPENDIX C: SUMMARY OF ADHS SCREENING RECOMMENDATIONS

The Arizona Department of Health Services developed and used the following recommendations in 2021 to identify children with blood lead levels at or above the BLRV in order to eliminate exposure and reduce the effects of lead on Arizona children.

A more in-depth discussion of our current screening recommendations can be found in Arizona's Targeted Lead Screening Plan for the Prevention of Childhood Lead Poisoning. For current high-risk areas, visit www.azhealth.gov/leadmap.

- 1. Children living in high-risk zip codes:** All children living in high-risk zip codes should have had a blood lead test at 12 and 24 months of age. Children aged 36 to 72 months should be tested if they have not been previously tested.
- 2. Children living outside of high-risk zip codes:** Children living in Arizona, but not in a high-risk zip code, should have received an individual risk assessment questionnaire at 12 and 24 months of age.



APPENDIX D: RESOURCES - EDUCATIONAL MATERIALS

Educational handouts are provided to the public and to health care professionals. Every family that has a child with a BLL at or above the BLRV will receive the primary educational handout (right) that details various sources of lead, cleaning techniques, and nutritional tips to increase awareness on preventative techniques for lead poisoning. Several of the educational handouts are available in both English and Spanish.

Each of these handouts and are available on the [AZDHS website](#).

Childhood Lead Poisoning

Even at low levels lead can cause irreversible damage to hearing, growth, and development.

Children can get lead poisoning by breathing in or swallowing dust that contains lead.

For more information contact our Childhood Lead Poisoning Prevention Program at 602-364-3118 azhealth.gov/lead

Sources of Lead Identify and remove sources of lead from your home.

- Home**
 - Lead can be in paint in old homes built before 1978.
 - Chipped paint
 - Dirt
 - Pewter
- Imported Goods**
 - Items brought back from other countries may contain lead.
 - Glazed pottery
 - Asian, Hispanic, Indian spices
 - Mexican candy (tamarindo and chili)
- Home Remedies**
 - Some home remedies may contain lead. These remedies are typically red or orange powders.
 - Traditional and folk remedies (Greta, Azarcón, Paylo-ah)
- Beauty Products**
 - Imported beauty products from Asia, India, and Africa may contain lead.
 - Sindoor, Kohl, Kajal, Surma
- Jobs**
 - Jobs such as car repair, mining, construction, and plumbing may increase your exposure to lead. Lead dust can be brought into the home on your skin, clothes, shoes, or other items you bring home from work.
 - Car batteries
 - Scrap metal/parts
 - Ammunition
- Hobbies**
 - Certain hobbies increase your risk of coming in contact with lead.
 - Hunting (lead bullets)
 - Fishing (lead sinkers)
 - Artist paints
 - Refinished furniture
- Travel**
 - Traveling outside the U.S. may increase your risk of coming in contact with lead-based items.
 - Souvenirs
 - Spices or food
 - Toys
 - Jewelry

Cleaning Keep lead dirt and dust out of your home with these helpful tips.

- Wash hands
- Keep shoes outside
- Mop & wet wipe
- Use a vacuum with a HEPA filter
- Wash toys

Avoid Sweeping Dry dusting Beating rugs

Nutrition These foods can help lower your child's lead level.

- Vitamin C: Tomatoes, Strawberries, Oranges, Potatoes
- Calcium: Milk, Cheese, Yogurt
- Iron: Chicken, Steak, Fish, Peas, Eggs

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Additional Educational Handouts

LEAD A SILENT POISON

HEALTH RISKS Even a small amount of lead can be harmful. Low levels of lead can cause problems with learning, memory, speech, and behavior. High levels of lead can cause serious brain damage, convulsions, coma, and even death.

Where To Find Lead Lead paint in older homes is the most common source of lead poisoning. Dust from peeling paint or remodeling can get on a child's hands, face, or clothing. Lead-based solder used in plumbing pipes and leaded glass can also be in soil. The home remediação industry has used and continues to use lead in common products in Arizona. Some imported jewelry, especially from China, may contain lead. Lead dust can be carried home from construction sites, lead-acid battery recycling, battery manufacturing or demolition sites, painting projects, battery recycling. Lead is used in home hobbies, such as creating stained glass, ceramics, and firing pottery, as well as melting and moulding bullets. Lead can get on clothing, water from pipes in older homes. However, this is not believed to occur.

What Can You Do? Ask your doctor about a blood lead test for your child. A blood lead test is the only way to find out if a child has lead poisoning. In the meantime, use steps to protect your child from lead.

Arizona Department of Health Services

Don't Take Lead Home from Your Job!

You can bring lead dust into your home and vehicle on your clothes, boots, skin, hair, and foods. Lead dust can get on furniture, floors, and carpets. Your child can get lead poisoning by swallowing this dust.

Lead poisoning can harm your child by causing:

- 1 Learning problems
- 2 Behavioral problems
- 3 Developmental problems

You may be exposed to lead on the job if you:

- Work at a shooting range
- Do construction or remodel houses and buildings
- Work at a mine/smelter
- Make/fix batteries or radiators
- Repair cars
- Solder/work with scrap metal
- Fish with lead sinkers
- Hunt or reload bullets
- Refinish old or antique furniture
- Make stained glass

To protect your family from lead from your hobby/job:

- 1 Wash your hands well with soap and water after working with lead and before eating.
- 2 Wear specific clothes for work or hobbies.
- 3 Wash work/hobby clothes separately from the rest of the family's clothes.
- 4 Shower and wash your hair at work if possible. (If no showers are available, wash face & hands and shower as soon as you get home.)
- 5 Never wear lead-contaminated work clothes in your home or in your vehicle.
- 6 Put on clean clothes & shoes before leaving work or as soon as you get home.
- 7 Keep work shoes outside in the garage.

There are many other jobs and hobbies that may have lead exposure. If you are unsure whether you work with lead, ask your employer.

Questions? Call (602) 364-3118 or visit www.azhealth.gov/lead

ARIZONA DEPARTMENT OF HEALTH SERVICES

Are you expecting a child or have a young toddler at home?

Is your home LEAD safe?

Lead can be harmful when it gets into the body, especially for young children and pregnant women.

Lead poisoning can cause permanent developmental, hearing, behavioral, and learning problems.

We can be exposed to lead through a wide range of sources.

Young children are most at risk because they are still developing, put everything in their mouths, and absorb lead easily.

Lead-based paint is peeling, flaking, or chipping because it flakes, or chips because fine dust that mixes with household dust.

Complete this checklist to find sources of lead in your home.

Was your home built before 1978? If yes, then it is likely to contain lead-based paint.

Complete these actions to prevent exposure to lead-based paint:

- Have an EPA-certified professional check home for lead.
- Repair peeling, chipping, or flaking lead-based paint.
- Hire an EPA-certified professional to perform necessary renovations on home.
- Cover bare lead-contaminated soil with vegetation or pavement.
- Establish a cleaning routine.

For more information visit our website at www.azhealth.gov/lead or call 602-364-3118.

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APPENDIX E: RESOURCES - CLPPP COALITION

In 2018, the Childhood Lead Poisoning Prevention Coalition was created with the purpose of establishing a network of partners to address lead poisoning prevention among various sectors and to provide a range of perspectives and expertise to address challenges encountered. The coalition aims to identify, prioritize, and address community and partner needs regarding lead poisoning prevention efforts and to achieve a widespread reach within our communities, connecting families to vital resources.

Current Priorities

- Increasing blood lead testing in high-risk areas
- Increasing education and awareness of lead poisoning in Arizona provided to health care providers and families
- Implementing new lead poisoning prevention activities

If you would like to participate in the CLPPP coalition, please send an email to HealthyHomes@azdhs.gov.



APPENDIX F: 2021 HIGH-RISK LEAD POISONING ZIP CODES

COUNTY	Zip Codes	COCONINO			
City	PO Box Zip	<i>Bellemont</i>	86015	<i>Chandler Heights</i>	85286
City		Flagstaff	86001		85127
			86002	El Mirage	85335
			86003	Fort McDowell	
APACHE			86004		85264
<i>Blue Gap, Low Mountain</i>			86005	Fountain Hills	85268
	86520	<i>Gray Mountain</i>	86016		85269
Chambers	86502	Page	86040	Gila Bend	85337
	86512	<i>Parks</i>	86018	Gilbert	85236
Chinle	86503	<i>Sedona</i>	86339		85296
Dennehotso	86535				85299
Eagar	85925	GILA		Glendale	85301
<i>Fort Defiance</i>	86504	<i>Claypool</i>	85532		85302
Ganado	86505	Globe	85501		85303
<i>Greer</i>	85927		85502		85304
<i>Hawley Lake</i>	85930	Miami	85539		85306
<i>Houck</i>	86506	Peridot	85542		85307
<i>Lupton</i>	86508	Winkelman	85192		85311
<i>Nazlini</i>	86540	Young	85554		85312
<i>Nutrioso</i>	85932				85318
<i>Red Rock</i>	86544	GRAHAM		Goodyear	85338
<i>Rock Point</i>	86545	Bylas	85530		85395
St. Johns	85936	Safford	85546	Laveen	85339
Teec Nos Pos	86514		85548	Litchfield Park	
Tsaile	86556	<i>Solomon</i>	85551		85340
<i>Window Rock</i>	86515			Mesa	85340
		GREENLEE			85201
COCHISE		Clifton	85533		85202
Benson	85602	Duncan	85534		85203
Bisbee	85603				85204
Douglas	85607	LA PAZ			85205
	85608	Parker	85334		85206
	85655	<i>Poston</i>	85371		85207
Hereford	85615	Salome	85348		85208
Huachuca City		<i>Wenden</i>	85357		85209
	85616				85210
Mc Neal	85617	MARICOPA			85211
<i>Naco</i>	85620	Aguila	85320		85212
<i>Pirtleville</i>	85626	Avondale	85323		85213
<i>Pomerene</i>	85627		85329		85214
San Simon	85632		85392		85216
Sierra Vista	85635	Buckeye	85326		85274
	85636		85396		85275
	85650	Chandler	85224	Peoria	85345
	85670		85225		85380
Tombstone	85638		85226	Phoenix	85003
Willcox	85643		85244		85005
	85644		85246		85006
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APPENDIX F: 2021 HIGH-RISK LEAD POISONING ZIP CODES

	85071		86405		85721		
	85072	Mohave Valley			85724	YAVAPAI	
	85074		86440		85725	Camp Verde	86322
	85075		86446		85726	Chino Valley	86323
	85078	<i>Yucca</i>	86438		85730	Cornville	86325
	85079				85731	Cottonwood	86326
	85080	NAVAJO			85732	<i>Lake Montezuma</i>	
	85082	<i>Cibecue</i>	85911		85733		86342
	85086	<i>Clay Springs</i>	85923		85734	Paulden	86334
Queen Creek	85142	<i>Fort Apache</i>	85926		85735	Prescott	86301
Scottsdale	85250	Holbrook	86025		85736		86302
	85251	Hotevilla	86030		85745		86303
	85252	<i>Indian Wells</i>	86031		85746		86304
	85256	<i>Pinedale</i>	85934		85754		86305
	85257	Pinon	86510		85756		86313
	85260	Polacca	86042		85757	Prescott Valley	
	85261	Shonto	86054				86312
	85267	Show Low	85901	PINAL			86314
	85271		85902	Apache Junction			86315
Sun City	85351	<i>Sun Valley</i>	86029		85117	Rimrock	86335
	85372	<i>White Mountain Lake</i>			85119	Sedona	86336
	85373		85912		85120		86340
Surprise	85378	Whiteriver	85941		85178	<i>Skull Valley</i>	86338
	85379	Winslow	86047	Arizona City	85123		
	85387	<i>Woodruff</i>	85942	Casa Grande	85122		
Tempe	85280				85130	YUMA	
	85281	PIMA			85194	<i>Colfred</i>	85352
	85282	Ajo	85321	Coolidge	85128	<i>Gadsden</i>	85336
	85283	<i>Catalina Foothills</i>		Eloy	85131	Roll	85347
	85285		85751	Florence	85132	San Luis	85349
Tolleson	85353	Marana	85658	Gold Canyon	85118	Somerton	85350
Tonopah	85354	Sahuarita	85629	<i>Hayden</i>	85135	Wellton	85356
<i>Tortilla Flat</i>	85190	<i>Sasabe</i>	85633	Maricopa	85138	Yuma	85364
Wickenburg	85358	Sells	85634		85139		85365
	85390	<i>Topawa</i>	85639	Oracle	85623		85366
Wittmann	85361	Tucson	85701	<i>Picacho</i>	85141		85367
Youngtown	85363		85702	San Manuel	85631		85369
			85703	San Tan Valley	85140		
MOHAVE			85705		85143		
Bullhead City	86442		85706	Superior	85173		
	86439		85710	<i>Valley Farms</i>	85191		
<i>Chloride</i>	86431		85711				
Colorado City	86021		85712	SANTA CRUZ			
Golden Valley	86413		85713	Nogales	85621		
Kingman	86401		85714	Patagonia	85624		
	86402		85715	Rio Rico	85628		
Lake Havasu City			85716		85648		
	86403		85717		85662		
	86404		85719	Tubac	85646		



APPENDIX G: NUMBER OF CHILDREN <6 YEARS WHO HAD A VENOUS OR CAPILLARY TEST, 2021

County	Total Children Screened
Arizona	45,311*
Apache	239
Cochise	1,245
Coconino	791
Gila	487
Graham	221
Greenlee	43
La Paz	67
Maricopa	26,404
Mohave	1,138
Navajo	730
Pima	6,554
Pinal	2,617
Santa Cruz	884
Yavapai	571
Yuma	2,029

*1,291 screened children from 2021 were missing address information and were not counted at the county level.



APPENDIX H: PREVALENT CASES OF CHILDREN <6 YEARS OLD IDENTIFIED WITH A BLL AT OR ABOVE THE BLRV, 2021

County	Total children	Children with 5-9 $\mu\text{g}/\text{dL}$	Children with $\geq 10 \mu\text{g}/\text{dL}$
Arizona	160	127	33
Apache	4	3	1
Cochise	7	5	2
Coconino	2	2	0
Gila	7	5	2
Graham	5	5	0
Greenlee	2	1	1
La Paz	1	0	1
Maricopa	77	63	14
Mohave	4	4	0
Navajo	8	6	2
Pima	29	23	6
Pinal	6	5	1
Santa Cruz	3	2	1
Yavapai	1	0	1
Yuma	4	3	1



APPENDIX I: PERCENT OF CHILDREN <6 YEARS SCREENED WHO HAD A BLL AT OR ABOVE THE BLRV, 2021

County	Percent Positivity
Arizona	0.4*
Apache	1.7
Cochise	0.6
Coconino	0.3
Gila	1.4
Graham	2.3
Greenlee	4.7
La Paz	1.5
Maricopa	0.3
Mohave	0.4
Navajo	1.1
Pima	0.4
Pinal	0.2
Santa Cruz	0.3
Yavapai	0.2
Yuma	0.2

*1,291 screened children from 2021 were missing address information and were not counted at the county level.



APPENDIX J: SCREENING RATES OF CHILDREN <6 YEARS OLD IN HIGH-RISK CENSUS TRACTS (%), 2021

County	At both 12 & 24 months*	At 12 months only*	At 24 months only*
Arizona	8.5[†]	21.0[†]	14.1[†]
Apache	2.1	8.0	4.9
Cochise	15.4	29.6 [†]	23.5
Coconino	1.4	15.0	5.6
Gila	6.6	37.2	13.5
Graham	0.4	18.9 [†]	3.9
Greenlee	0.0 [†]	10.5	1.0
La Paz	4.4	3.9	5.1
Maricopa	8.4 [†]	20.4 [†]	14.0 [†]
Mohave	10.9	21.5	15.5 [†]
Navajo	4.6	17.4	9.7
Pima	10.2	26.9 [†]	16.5
Pinal	6.5	17.4 [†]	10.7
Santa Cruz	15.9	43.2	32.5 [†]
Yavapai	6.6 [†]	11.6 [†]	8.6 [†]
Yuma	9.6	18.5 [†]	14.8

* Children living in a high-risk zip code were recommended a blood lead test at both 12 & 24 months of age. Screening rates for 12 & 24 month and 24 months only indicators were calculated for children who were 24 months old in 2021. Screening rates for the 12 months only indicator was calculated for children who were 12 months old in 2021.

† Significantly different from 2020 rate ($p < 0.05$)



APPENDIX K: SCREENING RATES OF CHILDREN <6 YEARS OLD IN HIGH-RISK ZIP CODES (%), 2021

County	At both 12 & 24 months*	At 12 months only*	At 24 months only*
Arizona	7.8[†]	19.2[†]	12.6[†]
Apache	1.3	4.6	2.9
Cochise	19.7	32.3 [†]	26.0
Coconino	3.1	15.8 [†]	6.7
Gila	4.3	23.3	7.9
Graham	0.9	20.4	4.2
Greenlee	0.0 [†]	14.3	1.4
La Paz	7.0	8.7	4.7
Maricopa	7.5 [†]	18.2 [†]	12.2 [†]
Mohave	11.5 [†]	22.2 [†]	15.7 [†]
Navajo	1.9	11.0 [†]	5.7
Pima	10.3	26.8	16.1
Pinal	5.4 [†]	15.6 [†]	9.3
Santa Cruz	16.2	42.8	32.3 [†]
Yavapai	7.2 [†]	13.6 [†]	8.7 [†]
Yuma	8.3 [†]	16.8 [†]	13.2

* Children living in a high-risk zip code were recommended a blood lead test at both 12 & 24 months of age. Screening rates for 12 & 24 month and 24 months only indicators were calculated for children who were 24 months old in 2021. Screening rates for the 12 months only indicator was calculated for children who were 12 months old in 2021.

† Significantly different from 2020 rate ($p < 0.05$)



APPENDIX L: SCREENING RATES OF CHILDREN <6 YEARS OLD IN ALL ZIP CODES (%), 2021

County	At both 12 & 24 months*	At 12 months only*	At 24 months only*
Arizona	6.9	17.6	11.1
Apache	1.2	4.4	2.8
Cochise	18.7	30.9	24.6
Coconino	7.4	21.1	10.9
Gila	4.5	23.5	9.8
Graham	0.8	14.5	3.3
Greenlee	0.0	13.1	1.3
La Paz	3.9	5.4	4.9
Maricopa	6.5	16.5	10.6
Mohave	12.2	23.3	15.2
Navajo	3.6	13.1	7.6
Pima	8.7	23.9	13.8
Pinal	5.7	15.5	9.3
Santa Cruz	15.9	42.1	32.0
Yavapai	7.3	13.4	9.0
Yuma	5.1	11.4	8.7

* Children living in a high-risk zip code were recommended a blood lead test at both 12 & 24 months of age. Screening rates for 12 & 24 month and 24 months only indicators were calculated for children who were 24 months old in 2021. Screening rates for the 12 months only indicator was calculated for children who were 12 months old in 2021.



APPENDIX M: INCIDENT CASES AND RATES OF CHILDREN <6 YEARS OLD IDENTIFIED WITH AN BLL ≥ 5 $\mu\text{g}/\text{dL}$, 2021

County	Newly identified cases	Case rates per 10,000
Arizona	122	2.3
Apache	4	6.9
Cochise	5	5.6
Coconino	2	2.2
Gila	4	11.3
Graham	2	5.6
Greenlee	2	22.0
La Paz	1	8.3 [†]
Maricopa	61	1.7
Mohave	4	3.5
Navajo	6	6.2
Pima	19	2.7
Pinal	4	1.3
Santa Cruz	3	7.7
Yavapai	1	0.8
Yuma	4	2.2

[†] Significantly different from 2020 rate ($p < 0.05$)



APPENDIX M: INCIDENT CASES AND RATES OF CHILDREN <6 YEARS OLD IDENTIFIED WITH AN BLL 5-9.9 µg/dL, 2021

County	Newly identified cases	Case rates per 10,000
Arizona	95	1.8
Apache	3	5.2
Cochise	3	3.3
Coconino	2	2.2
Gila	3	8.5
Graham	2	5.6
Greenlee	1	11.0
La Paz	0	0.0
Maricopa	48	1.4
Mohave	4	3.5
Navajo	5	5.2
Pima	16	2.3
Pinal	3	0.9
Santa Cruz	2	5.1
Yavapai	0	0.0 [†]
Yuma	3	1.6

[†] Significantly different from 2020 rate ($p < 0.05$)



APPENDIX M: INCIDENT CASES AND RATES OF CHILDREN <6 YEARS OLD IDENTIFIED WITH A BLL ≥ 10 $\mu\text{g}/\text{dL}$, 2021

County	Newly identified cases	Case rates per 10,000
Arizona	27	0.5
Apache	1	1.7 [†]
Cochise	2	2.2
Coconino	0	0.0
Gila	1	2.8 [†]
Graham	0	0.0
Greenlee	1	11.0
La Paz	1	8.3 [†]
Maricopa	13	0.4
Mohave	0	0.0
Navajo	1	1.0
Pima	3	0.4
Pinal	1	0.3
Santa Cruz	1	2.6 [†]
Yavapai	1	0.8 [†]
Yuma	1	0.5

[†] Significantly different from 2020 rate ($p < 0.05$)



APPENDIX N: DEMOGRAPHICS OF CASES, 2021

Race/Ethnicity	Count	Percent
American Indian or Alaska Native	22	13.8
Asian	11	6.9
Black	11	6.9
Hispanic	64	40.0
Multi-Racial	3	1.9
Native Hawaiian or Pacific Islander	0	0.0
Other	3	1.9
White, non-Hispanic	36	22.5
Unknown	10	6.3

Age (in Years)	Male		Female	
	Count	Percent	Count	Percent
0 - <1	2	1.3	3	1.9
1	25	15.6	22	13.8
2	24	15.0	28	17.5
3	9	5.6	19	11.9
4	10	6.3	12	7.5
5	2	1.3	4	2.5



APPENDIX O: NUMBER OF BLOOD LEAD TESTS FOR CHILDREN <6 YEARS OLD BY SPECIMEN TYPE, 2017-2021

	2017	2018	2019	2020	2021
Capillary (Complex)	1,847	832	941	566	1,101
Capillary (LeadCare®)	13,203	12,341	18,847	16,175	10,508
Venous	50,259	47,629	44,697	31,226	35,198
Unknown	160	125	98	42	41

