

# 2023 Maryland Lead Registry Annual Surveillance Report

# **Maryland Department of the Environment**







## MARYLAND CHILDHOOD LEAD REGISTRY ANNUAL SURVEILLANCE REPORT CALENDAR YEAR 2023

### **Executive Summary**

The Maryland Department of Environment (MDE) statewide Childhood Lead Registry (CLR) performs childhood blood lead surveillance for the state of Maryland. The CLR receives the reports of all blood lead tests done on Maryland children 0-18 years of age, and the CLR provides blood-lead results to the Maryland Department of Health (MDH), including Medicaid, Immunet, local health departments as needed for case management, and upon request to third parties for research and planning.

Since 1995, the CLR has released a comprehensive annual report on statewide childhood blood lead testing, including a detailed breakdown of blood lead data by age, jurisdiction, blood lead level, incident, and prevalent cases of blood lead level  $\geq 10$  micrograms per deciliter ( $\mu g/dL$ ), and blood lead level between 5-9  $\mu g/dL$ , and the trend of blood lead level over the years. This current report represents the blood lead test results for the calendar year (CY) 2023. All numbers are based on blood lead testing (venous or capillary) on children.

The CLR does not receive and does not process any reports on lead screening based on the lead risk assessment questionnaire. The CLR does not sample data. All data received from the twenty-four jurisdictions are analyzed and reported, populations are not based on zip codes or census tracts. Therefore, annual reporting represents all lead test results received for the calendar year being reported. With a few exceptions, all numbers referenced within this report pertain to children 0-72 months of age.

Environmental justice means equal protection from environmental and public health hazards for all people regardless of race, income, culture, and social status. Fair treatment means that no group of people, including a racial, ethnic, or socio-economic group, should bear a disproportionate share of the negative environmental consequences resulting from industrial, municipal, and commercial operations of the execution of federal, state, local, and tribal programs and policies (EPA, 2024).

In 2020, MDE created the first Environmental Justice (EJ) Internal Implementation Policy. This created the role of an EJ Officer to coordinate MDE EJ practices and serve as a liaison between communities and the Department to include enhanced inspections, compliance, enforcement and infrastructure investments in communities with EJ concerns. Through this work, MDE EJ Screening tool was developed, which incorporates demographic and socioeconomic data with MDE elements to allow for enhanced agency compliance, oversight, and monitoring. As well as enhanced communication and outreach in areas with permitting activities in overburdened or underserved communities.

https://mdewin64.mde.state.md.us/EJ/

### Calendar Year 2023 Surveillance Highlights

- ❖ A total of 130,305 blood lead tests from 117,600 children 0-17 years were received and processed by the CLR in CY 2023, of which 122,960 tests were from 110,568 children 0-72 months.
- ❖ There was a decrease in the number of children tested for lead in CY 2023 compared to CY 2022 (110,568 vs 113,666). The decrease may be reflected of repeated testing in children with elevated screenings during point of care and/or follow-up venous blood draw.
- Children one and two years had the highest blood lead testing in CY 2023 compared to all other age groups.
- The number of children 0-72 months identified with a blood lead level (BLL) ≥10 µg/dL increased from 256 in CY 2022 to 267 in CY 2023.
- \* The number of children 0-72 months identified with a BLL 5-9 μg/dL increased from 997 in
  - o CY 2022 to 1,051 in CY 2023.

### **Statistical Report**

In CY 2023, 110,568 children 0-72 months were tested for lead exposure statewide. Table One provides a summary of statewide statistics of blood lead testing in CY 2023. There is a decrease in the number of children tested for lead in CY 2023 compared to CY 2022 (110,568 vs 113,666).

Table One: CY 2023 Statistical Report

CALENDAR YEAR 2023 ST							
lte m	Number	Percent					
All Children (0-17 Y	'ears)						
Number of Tests	130,305						
Number of Children	117,600						
Children 0-72 Months							
Number of Tests	122,960						
Number of Children	110,568	100					
Age							
Under One	8,770	7.9					
One Year	39,814	36.0					
Two years	37,439	33.9					
Three Years	8,850	8.0					
Four Years	8,524	7.7					
Five Years	6,755	6.1					
Six Years	416	0.4					
Sex							
Female	53,949	48.8					
Male	56,500	51.1					
Undetermined	84	0.1					
Blood Lead Lev	rel (μg/dL)						
<3.4	107,301	97.0					
3.5-4.9	1,949	1.8					
5-9	1,051	1.0					
10-14	158	0.1					
15-19	60	0.1					
≥20	49	0.0					
Mean BLL (Geometric)	1.44						
Blood Spe	ime n						
Capillary	47,997	43.41					
Venous	61,697	55.8					
Undetermined	874	0.79					

<sup>1.</sup> Due to the rounding of percentages to the first decimal point in

this and other tables, the sum of breakdown percentages may not equal the total percentage.

Table Two: Number of Children Ages 0-72 Months at Risk by Jurisdiction

JURISDICTION	BLL ≥ <b>5 µg/dL</b>
ALLEGANY	47
ANNE ARUNDEL	72
BALTIMORE	186
BALTIMORE CITY	363
CALVERT	4
CAROLINE	7
CARROLL	51
CECIL	37
CHARLES	24
DORCHESTER	10
FREDERICK	37
GARRETT	2
HARFORD	27
HOWARD	36
KENT	5
MONTGOMERY	147
PRINCE GEORGE'S	134
QUEEN ANNE'S	5
SAINT MARY'S	11
SOMERSET	8
TALBOT	7
WASHINGTON	45
WICOMICO	44
WORCESTER	9
STATEWIDE	1318

Figure One shows the number of children tested from CY 2000 to CY 2023 slightly decreased between CY 2022 to CY 2023 as seen on the graph (113,666 vs 110,568). However, the number of children with reported blood lead level  $\geq$ 10  $\mu$ g/dL increased from CY 2022 compared to CY 2023 respectively (256 vs 267).

Figure One: Number of Children 0-72 Months Tested for Lead and Number Reported to Have a

Blood Lead Level ≥10 μg/dL: CY 2000- 2023

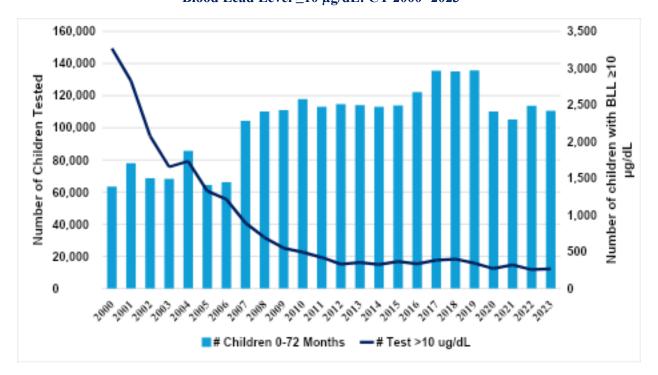


Figure Two shows the burden of lead exposure among children has continued to decline over the years.

Figure Two: Percent of Children 0-72 Months Tested for Lead and Identified with Blood Lead Level of 5-9 $\mu$ g/dL: CY 2000- 2023

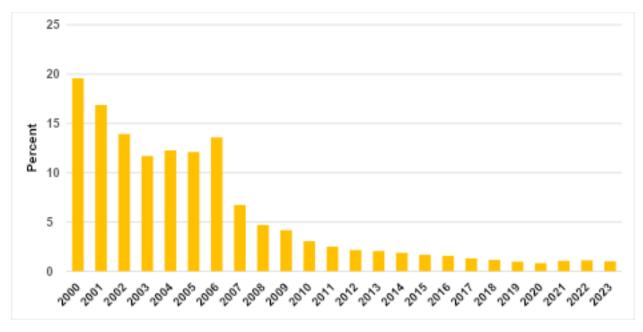


Figure Three shows the observed number of children tested from 2019 to 2023. The graph shows the variation in blood lead testing in children ages one to six years old throughout the years, with a slight decrease between 2022-2023.

Figure Three: Observed Number of Children Tested CY 1999- 2023

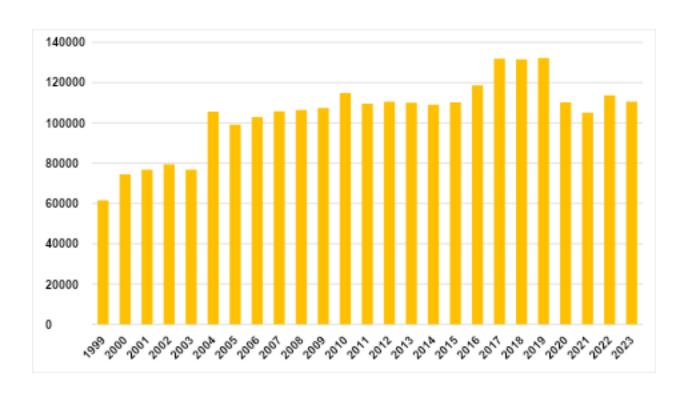


Figure Four shows the average number of blood lead tests per child from CY 2018- 2023. The graph shows a 0.07% increase in the number of tests from CY 2022 to CY 2023. Follow up testing is recommended after receipt of a screening with an elevated capillary result. A venous draw is recommended for confirmatory blood lead level screening.

Figure Four: Average Number of Blood Lead Tests per Child: CY 2018- 2023

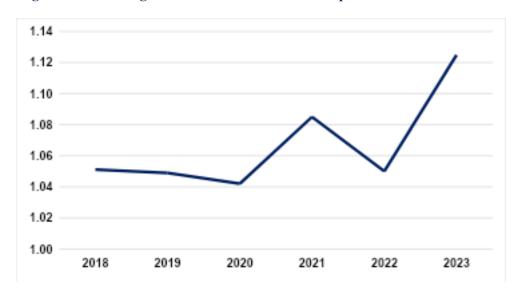


Table Three shows the reduction in blood lead testing CY 2022 vs CY 2023 by age group.

Table Three: Reduction in Blood Lead Testing CY 2023 vs CY 2022 by Age Group

	2022						
	Population	Children	Tested				
Age	of Children	Number	Percent				
<b>Under One</b>	68,782	8,821	12.8				
One Year	67,332	41,669	61.9				
Two Years	70,272	38,769	55.2				
Three Years	70,858	9,329	13.2				
Four Years	72,224	8,428	11.7				
Five Years	73,063	6,235	8.5				
Six Years	74,661	415	0.6				
Total	497,192	113,663	22.9				

	2023						
	Population   Children Tested						
Age	of Children	Number	Percent				
<b>Under One</b>	68,060	8,770	12.9				
One Year	69,378	39,814	57.4				
Two Years	67,804	37,439	55.2				
Three Years	71,747	8,850	12.3				
Four Years	72,724	8,524	11.7				
Five Years	74,179	6,755	9.1				
Six Years	74,790	416	0.6				
Total	498,682	110,568	22.2				

Changes	Changes in 2023						
Number	Percent						
51	0.6						
1,855	4.7						
1,330	3.6						
479	5.4						
96	1.1						
520	7.7						
1	0.2						
3095	2.8						

Table four shows the reduction in blood lead testing CY 2023 compared to CY 2022 by jurisdiction. The results show post COVID-19 testing, where most medical facilities have returned to normal business operations.

Table Four: Reduction in Blood Lead Testing CY 2023 vs CY 2022

	20	)22		202	Change in 2023			
County	Population of Child	Number	Percent	Population of Children	Number	Percent	Number	Percent
Allegany	3,343	1,029	30.8	3,280	980	29.9	49	5.0
Anne Arundel	37,112	11,455	30.9	37,364	9,976	26.7	1,479	14.8
Baltimore	50,421	15,844	31.4	50,559	15,617	30.9	227	1.5
Baltimore City	35,582	10,968	30.8	35,556	11,989	33.7	1,021	8.5
Calvert	5,270	1,206	22.9	5,429	1,219	22.5	13	1.1
Caroline	2,175	547	25.1	2,262	650	28.7	103	15.8
Carroll	9,964	2,933	29.4	10,318	2,858	27.7	75	2.6
Cecil	6,157	1,451	23.6	6,305	1,474	23.4	23	1.6
Charles	10,349	2,800	27.1	10,291	2,686	26.1	114	4.2
Dorchester	1,951	461	23.6	1,893	478	25.3	17	3.6
Frederick	17,631	5,112	29.0	18,486	5,288	28.6	176	3.3
Garrett	1,423	319	22.4	1,289	241	18.7	78	32.4
Harford	15,000	4,543	30.3	14,994	4,204	28.0	339	8.1
Howard	19,294	4,535	23.5	18,807	3,872	20.6	663	17.1
Kent	794	179	22.5	786	176	22.4	3	1.7
Montgomery	63,240	22,833	36.1	63,134	20,867	33.1	1,966	9.4
Prince George's	60,230	18,850	31.3	56,767	18,990	33.5	140	0.7
Queen Anne's	2,780	837	30.1	29,523	863	2.9	26	3.0
Saint Mary's	7,281	2,069	28.4	7,464	2,001	26.8	68	3.4
Somerset	1,137	386	33.9	1,148	387	33.7	1	0.3
Talbot	1,929	395	20.5	1,865	436	23.4	41	9.4
Washington	9,083	2,275	25.0	8,863	2,242	25.3	33	1.5
Wicomico	6,646	1,867	28.1	6,811	2,305	33.8	438	19.0
Worcester	2,222	772	34.7	2,357	769	32.6	3	0.4
Statewide	371,014	113,666	30.6	371,258	110,568	29.8	3,098	2.8

Figure Five shows the percentage of children tested for lead ages one and two years compared to ages six to eighteen years old. Figure Six shows the state of childhood lead poisoning.

Figure Five: Percent of Children Tested for Lead, Ages One- and Two-Years vs Between Child and Adult, Ages Six to Eighteen: CY 2019- 2023

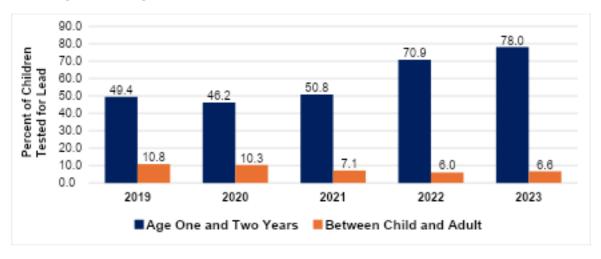
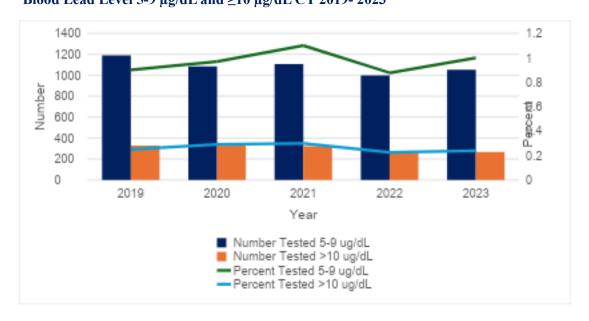


Figure Six: Number and Percent of Children 0-72 Months Tested for Lead with Blood Lead Level 5-9 μg/dL and ≥10 μg/dL CY 2019- 2023



### **Data Quality**

In CY 2023, CLR received blood lead test reports from 101 entities/clinics performing in-office screening (point of care). Four establishments send reports electronically with the remainder sending reports via fax or mail. The reduction in clinics providing point of care continued in CY 2023, where providers referred.

### Blood Lead Laboratory Reporting Requirement as of July 1, 2020

The amended law and regulations\* of 2020 require that the following information be included in the lab report:

1. Child information: Name (last name, first name, middle initial)

Date of birth

Gender

Race Ethnicity

Address: complete street address with apartment number (if

applicable), city/town, state, zip code, county

Country of birth

Pregnancy status at the time test (if applicable)

Parent/Guardian name (last name, first name)

Parent/Guardian Address (if different from the child address)

Telephone number

2: Test information
Date specimen was drawn

Type of specimen

Blood lead level (in microgram per deciliter "µg/dL" with up to

two decimal points) with the applicable comparator.

The date the test was done (analyzed)

Method of measurement

The method of measurement detection limit

The date the result was reported/sent to the state

### 3: Provider/Submitter information:

Name (last name, first name)

National provider identifier (NPI) (if applicable)

Office address

Office telephone number

Office fax number

Contact person (if applicable)

### 4: Laboratory information:

Name of the establishment

Clinical laboratory improvement amendment (CLIA) number

Address

Telephone number

Fax number

Contact person (name, telephone number
\*\*Any blood lead test with a blood lead level ≥3.5 µg/dL should be reported to the state within 24 hours after the test if finalized. All other results can be reported up to two (2) weeks after the test is finalized.

### Completeness of Data for CY 2023

Item	Percent Complete
Child's Name	100.0
Date of Birth	100.0
Sex/Gender	99.9
Race	47.4
Ethnicity	49.2
Guardian's Name	35.5
Sample Type	99.2
Test Date	100.0
Blood-Lead Level	100.0
Address (geocoded)	99.4
Telephone Number	78.9

Table Five shows blood lead testing of children 0-72 months by jurisdiction. The incidence (number of new lead poisoning cases divided by the total number of children statewide at risk of lead poisoning) and prevalence (total number of existing lead poisoning cases divided by the total number of children statewide at risk of lead poisoning) of lead cases in children 0-72 months by jurisdiction and blood lead level is shown.

Table Five: Blood Lead Testing of Children 0-72 Months by Jurisdiction

	Population			Blood Lead L		evel ≥5 µ	g/dL	Blood Lead Level 5-9 µg/dL			g/dL	Blood Lead Level ≥10 µg/dL			
	of			Incid	lence	Preva	lence	Incid	ence	Preva	lence	Incid	lence	Preva	lence
County	Children	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Allegany	3,280	1,227	37.4	47	1.4	31	0.9	36	1.1	23	0.7	11	0.3	8	0.2
Anne Arundel	37,364	10,673	28.6	72	0.2	27	0.1	68	0.2	24	0.1	4	0.0	3	0.0
Baltimore	50,559	17,535	34.7	186	0.4	82	0.2	143	0.3	56	0.1	43	0.1	26	0.1
Baltimore City	35,556	13,859	39.0	363	1.0	195	0.5	297	0.8	153	0.4	66	0.2	42	0.1
Calvert	5,429	1,327	24.4	4	0.1	3	0.1	3	0.1	2	0.0	1	0.0	1	0.0
Caroline	2,262	701	31.0	7	0.3	3	0.1	5	0.2	3	0.1	2	0.1	0	0.0
Carroll	10,318	3,113	30.2	51	0.5	23	0.2	41	0.4	13	0.1	10	0.1	10	0.1
Cecil	6,305	1,640	26.0	37	0.6	10	0.2	32	0.5	9	0.1	5	0.1	1	0.0
Charles	10,291	2,921	28.4	24	0.2	6	0.1	19	0.2	6	0.1	5	0.0	0	0.0
Dorchester	1,893	562	29.7	10	0.5	9	0.5	8	0.4	8	0.4	2	0.1	1	0.1
Frederick	18,486	5,685	30.8	37	0.2	20	0.1	26	0.1	16	0.1	11	0.1	4	0.0
Garrett	1,289	255	19.8	2	0.2	1	0.1	1	0.1	0	0.0	1	0.1	1	0.1
Harford	14,994	4,547	30.3	27	0.2	16	0.1	22	0.1	13	0.1	5	0.0	3	0.0
Howard	18,807	4,274	22.7	36	0.2	21	0.1	28	0.1	15	0.1	8	0.0	6	0.0
Kent	786	200	25.4	5	0.6	3	0.4	3	0.4	2	0.3	2	0.3	1	0.1
Montgomery	63,134	23,308	36.9	147	0.2	70	0.1	106	0.2	51	0.1	41	0.1	19	0.0
Prince George's	56,767	21,134	37.2	134	0.2	51	0.1	111	0.2	45	0.1	23	0.0	6	0.0
Queen Anne's	29,523	907	3.1	5	0.0	2	0.0	4	0.0	1	0.0	1	0.0	1	0.0
Saint Mary's	7,464	2,215	29.7	11	0.1	4	0.1	10	0.1	3	0.0	1	0.0	1	0.0
Somerset	1,148	440	38.3	8	0.7	7	0.6	5	0.4	4	0.3	3	0.3	3	0.3
Talbot	1,865	463	24.8	7	0.4	3	0.2	5	0.3	3	0.2	2	0.1	0	0.0
Washington	8,863	2,536	28.6	45	0.5	23	0.3	34	0.4	15	0.2	11	0.1	8	0.1
Wicomico	6,811	2,603	38.2	44	0.6	19	0.3	37	0.5	14	0.2	7	0.1	5	0.1
Worcester	2,357	831	35.3	9	0.4	2	0.1	8	0.3	2	0.1	1	0.0	0	0.0
Statewide	371,258	122,956	33.1	1,318	0.4	631	0.2	1,052	0.3	481	0.1	266	0.1	150	0.0

### Medical and Environmental Case Management in Maryland

In CY 2023 lead case management was initiated when a child aged 0-72 months is identified with a blood lead level of  $\geq 5 \mu g/dL$ . Lead case management consists of comprehensive medical and environmental interventions, coordinated between the health care provider, the local health department, and MDE. Services include outreach and education to the family of the identified child, a comprehensive environmental investigation to identify all potential sources of lead exposure, recommendations for lead hazard remediation, and compliance and enforcement as needed on pre-1978 residential rental units. Identifying all potential sources of lead in the child's environment and preventing further exposure are the most important factors in case management. All home visits are arranged with the family based on the availability of the parent or guardian and in accordance with recommendations identified in Maryland's Lead Case Management Guidelines (Guidelines). It is important to note that the Baltimore City Health Department (BCHD) provides these services to families in Baltimore City. The BCHD reports all case management outcomes to MDE.

During CY 2023, there were 313 total new cases of children with blood lead levels of  $\geq 5\mu g/dL$  in Maryland counties, excluding Baltimore City. This is a decrease of 81 new cases when compared to CY 2022 at 394. In CY 2023, medical case management was completed on 264 of the 313 new lead cases. This was an 84.3% completion rate. Table Six illustrates the medical case management outcomes for the 313 new cases of children identified with blood lead levels of  $\geq 5\mu g/dL$  in Maryland counties, excluding

Baltimore City. Medical case management guidelines in Maryland consider telephonic and in person home visits as acceptable forms of medical case management for lead exposures.

Table Six: Medical Case Management Outcomes ≥5μg/dL CY 2023 Maryland Counties (Excluding Baltimore City)

Total Referrals	Completed  Medical Outreach and Education (In-home or telephonic)	Unable to contact family/family moved	Refused
313	264	45	4

An Environmental Investigation (EI) is a comprehensive assessment that requires direct contact with families and their property Effective July 1, 2021, Code of Maryland Regulations- Environmental Investigations (COMAR 26.16.08) were enacted to achieve consistency during Environmental Investigations statewide. Further, MDE and BCHD staff continued to administer the environmental questionnaire to collect information on the possible home hazards within the home to discuss potential strategies to decrease exposure within the residence until an inspection occurred.

During CY 2023, there were a total of 343 cases referred for an Environmental Investigation in Maryland counties. This is a decrease of 64 cases when compared to CY 2022 at 407. Of the 343 referrals, there were a total of 204 (59.4%) Environmental Investigations completed, a significant increase when compared to 43.7% completed in CY 2022. There remains a significant no-entry rate for Environmental Investigations, when compared with years prior to the COVID-19 pandemic, however a 15.7% increase in completions for CY 2023 is significant.

Table Seven: Environmental Investigation Outcomes ≥5µg/dL CY 2023 Maryland Counties (Excluding Baltimore City)

Total Referrals	Completed	Unable to make contact	Refused	Moved
343	204	61	67	11

### **Medical and Environmental Case Management Baltimore City**

The Baltimore City Health Department performs all case management for children aged 0-72 months identified with blood lead levels of  $\geq 5\mu g/dL$  in Baltimore City. During CY 2023, there were 230 new cases of children aged 0-72 months identified with blood lead levels of  $\geq 5\mu g/dL$  in Baltimore City. This is a decrease of 3 new cases when compared to CY 2022 at 227. Table Eight illustrates the medical case management outcomes for new cases in Baltimore City for CY 2023 for blood lead levels  $\geq 5\mu g/dL$ . Medical case management was completed on 153 (66.5%) of the 230 new cases of children identified with a blood lead level of  $\geq 5\mu g/dL$ .

Table Eight: Medical Case Management Outcomes ≥5μg/dL CY2023 Baltimore City

Total Referrals	Completed  Medical Outreach and Education (In-home or telephonic)	Unable to make contact	Refused
230	153	64	13

During CY 2023, Environmental Investigations were completed on 82 (35.8%) of the 229 referrals. This was statistically consistent with the percentage of Environmental Investigations completed in CY 2022 at 33.2%. Table Nine illustrates the Environmental Investigation outcomes for Baltimore City in CY 2023.



Table Nine: Environmental Investigation Outcomes ≥5µg/dL CY 2023 Baltimore City

Total Referrals	Completed	Unable to make contact	Refused	Moved
229	82	67	63	17

It should be noted that the number of Environmental Investigations may be greater than the number of children identified as new cases, in part because Environmental Investigations may be performed at secondary addresses where the identified child may spend time. There also may be carryover from the prior year for which an Environmental Investigation was not completed. Conversely, there may be a decrease in the number of referrals for Environmental Investigations, as illustrated in the Baltimore City data for CY 2023 due to siblings being identified as new cases at the same address.

Table Ten lists the property type for each completed Environmental Investigation by jurisdiction. In CY 2023, 116 (57%) of the Environmental Investigations completed in Maryland counties, excluding Baltimore City, were identified as owner-occupied properties. In CY 2023, 88 (43%) of the Environmental Investigations completed in Maryland counties, excluding Baltimore City, were identified as rental properties. Of the 88 rental properties inspected. 64 (73%) were pre-1978 rental properties. The remaining 24 (27%) were post-1977 rental properties.

In CY 2023, 18 (22%) of the Environmental Investigations completed in Baltimore City, were identified as owner-occupied properties. In CY 2023, 64 (78%) of the Environmental Investigations completed in Baltimore City, were identified as rental properties. Of the 64 rental properties inspected. 62 (97%) were pre-1978 rental properties. The remaining 2 (3%) were post-1977 rental properties



### **Table Ten: Property Type: Environmental Investigations Statewide CY 2023**

	Total Environmental Investigations	Owner-Occupied						Rental Property					
County		Pre-1950		1950-1977		Post-1977		Pre-1950		1950-1977		Post-1977	
		Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Allegany	4	4	100%	-	-	-	-	-	-	-		-	-
Anne Arundel	11	2	18.2%	1	9.1%	5	45.4%	-	_	2	18.2%	1	9.1%
Baltimore	44	8	18.2%	6	13.6%	7	15.9%	2	4.5%	16	36.4%	5	11.4%
Calvert	4	1	25%	-	-	1	25%	-	-	1	25%	1	25%
Caroline	3	1	33.3%	-	-	-	-	1	33.3%	-	-	1	33.3%
Carroll	10	3	30%	4	40%	1	10%	1	10%	-	-	1	10%
Cecil	6	1	16.7%	2	33.3%	2	33.3%	1	16.7%	-	-	-	-
Dorchester	6	2	33.3%	1	16.7%	1	16.7%	2	33.3%	-	-	-	-
Frederick	14	-	-	-	-	11	78.6%	-	_	-	-	3	21.4%
Garrett	1	-	-	-	-	-	-	-	_	1	100%	-	-
Harford	6	1	16.7%	-	-	2	33.3%	1	16.7%	1	16.7%	1	16.7%
Howard	6	-	-	1	-	4	-	-	-	1	-	-	-
Kent	4	-	-	-	-	-	-	2	50%	1	25%	1	25%
Montgomery	31	3	9.7%	3	9.7%	7	22.6%	-	_	13	41.9%	5	16.1%
Prince George's	22	5	22.7%	1	4.6%	3	13.6%	-	-	12	54.5%	1	4.6%
Somerset	4	3	75%	1	25%	-	-	-	-	-	-	-	-
Talbot	2	-	-	-	-	2	100%	-	-	-	-	-	-
Washington	12	6	50%	-	-	1	8.3%	2	16.7%	-	-	3	25%
Wicomico	12	5	41.7%	1	8.3%	1	8.3%	4	33.3%	-	-	1	8.3%
Worcester	2	2	100%	-	-	-	-	-	-	-	-	-	-
<b>County Total</b>	204	47	23.0%	21	10.3%	48	23.5%	16	7.8%	48	23.5%	24	11.8%
<b>Baltimore City</b>	82	18	22%	-	-	-	-	59	72%	3	3.6%	2	2.4%

### **Sources of Lead**

An Environmental Investigation may identify multiple lead sources in a child's environment. There may also be instances when the accredited lead risk assessor is unable to determine a source of lead exposure. Figure Seven illustrates the distribution of lead hazards that were identified during Environmental Investigations, by county in CY 2023.

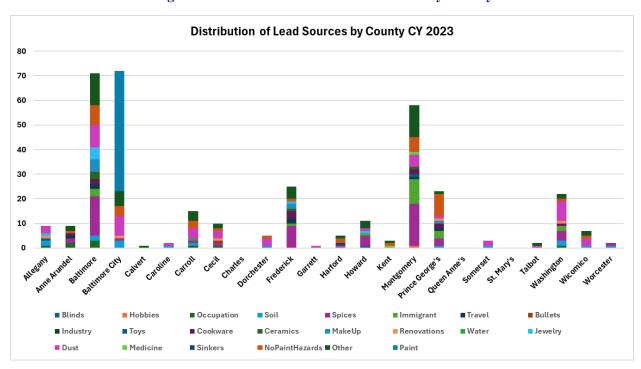


Figure Seven: Distribution of Lead Sources by County 2023

### Lead Hazards Identified by Housing Type

Figure Eight illustrates the total lead hazards, in owner occupied housing, by built date range, identified during Environmental Investigations in CY 2023 in Maryland Counties, including Baltimore City.

Figure Eight: Lead Hazards, Owner-Occupied Housing, CY 2023

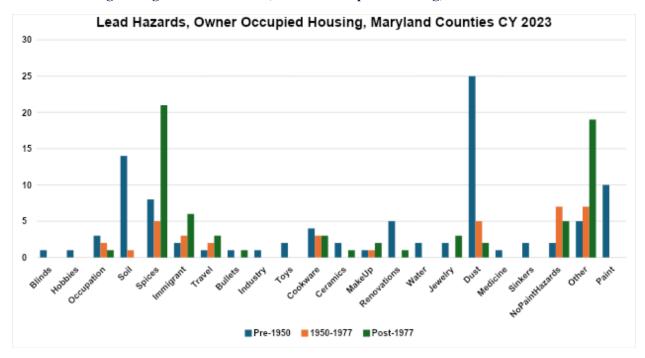


Figure Nine illustrates the total lead hazards, in rental occupied housing, by build date range, identified during Environmental Investigations in CY 2023 in Maryland Counties, including Baltimore City.

Figure Nine: Lead Hazards, Rental Occupied Housing, CY 2023

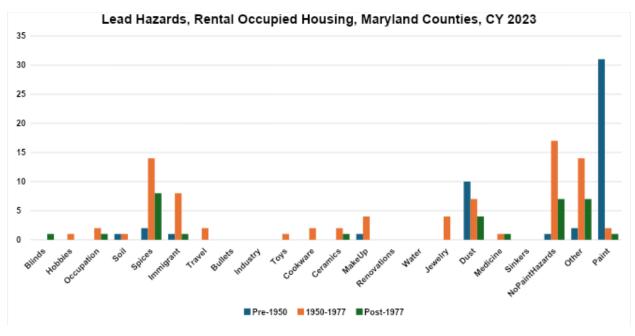


Figure Ten and Eleven illustrate the lead total hazards, in owner occupied and rental housing, by build date range identified during Environmental Investigations in CY 2023 in Baltimore City.

Figure Ten: Lead Hazards, Owner Occupied Housing Baltimore City, CY 2023

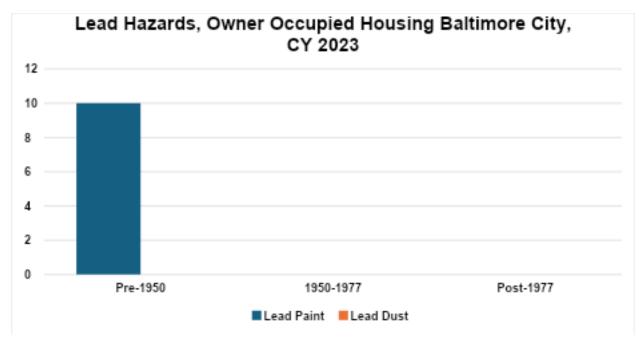


Figure Eleven: Lead Hazards, Rental Occupied Housing Baltimore City, CY 2023

