Maryland
Department of the Environment

CHILDHOOD BLOOD LEAD SURVEILLANCE IN MARYLAND

ANNUAL REPORT

October 2019

Calendar Year 2018 Data

Prepared by:
Land and Materials Administration
Lead Poisoning Prevention Program

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Executive Summary

The Maryland Department of the Environment (MDE), Childhood Lead Registry (CLR) performs childhood blood lead surveillance for Maryland. The CLR receives the reports of all blood lead tests conducted on Maryland children 0-18 years of age and provides blood lead test results to the Maryland Department of Health (MDH) including Medicaid, Immunet, and 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 and blood lead levels. This current report presents the childhood blood lead test results for calendar year (CY) 2018. 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. With few exceptions all numbers refer to children 0-72 months of age.

CY 2018 Surveillance Highlights

- In CY 2018, the total number of children (0-18 years of age) who were blood lead tested was 142,127. The total number of blood lead test results of children (0-18 years) reported to the CLR was 149,179. A person may have multiple tests in the same year.

- In CY 2018, the total number of children (0-72 months of age) who were blood lead tested was 131,626. The total number of blood lead test results of children (0-72 months of age) reported to the CLR was 138,349. This number in CY 2018 (131,626) remained relatively the same compared to CY 2017 (131,832).

- The number of children (0-72 months of age) identified with a blood lead level of 5-9 µg/dL decreased from 1,661 in CY 2017 to 1,435 in CY 2018, a 13.6% decrease.

- The number of children (0-72 months of age) identified with a blood lead level of ≥10 µg/dL remained relatively stable from 388 in CY 2017 to 390 in CY 2018.

- The number of clinics and other establishments performing Point of Care testing (in-office testing) continues to increase in Maryland from 105 in CY 2017 to 119 in CY 2018.

- During the 2019 Maryland Legislative Session, Chapter 341 was enacted adopting a new Reference Level of ≥5 µg/dL for case management of children 0-72 months of age.

Overview

While the prevalence of blood lead levels ≥10 µg/dL in children in Maryland has declined dramatically over the years (18.0% in 1995, 1.3% in 2005, and 0.3% in 2018), there are still children with historically elevated blood lead levels and a number of children who are newly exposed to lead every year. Children are at the greatest risk from birth to age six while their neurological systems are developing. Exposure to lead can cause long-term neurological damage that may be associated with learning and behavioral problems and with decreased intelligence.

Sources of Childhood Lead Exposure

Lead-based paint hazards continue to be the major source of exposure for children in Maryland. Out of an estimated 2,427,014 residential houses in Maryland more than half (55.0%) were built in or before 1979 (Source: US Census Bureau, 2013-2017 American Community Survey, 5-Year Estimates). Properties built prior to 1978 may have lead-based paint. Although a significant number of residential rental units have been made lead free, there remain untreated units that may cause lead exposure in young residents.

Imported products, parental occupations and hobbies, and occasionally toys may also cause childhood lead poisoning. In-utero exposure to lead may affect fetal development.

The Centers for Disease Control and Prevention (CDC) has determined that there is no "safe" level of lead in a child's blood. As a result of the CDC adopting the lead "Reference Value" of 5µg/dL in 2012, Maryland has implemented guidance for caring for children with blood lead levels between 5-9 µg/dL. Furthermore, during the 2019 legislative session, Maryland adopted the CDC Reference Level for case management of children ages 0-72 months and pregnant women. Effective October 1, 2019, MDE shall notify the parent/guardian and the owner of the Affected Property where the child resides, the results of the test for blood lead levels greater than or equal to the new Reference Level.
In July 2020, all children identified with a blood lead level of ≥5 µg/dL will receive case management.

Statistical Report

In CY 2018, 131,626 children 0-72 months of age were tested for lead exposure statewide. Table One provides a summary of statewide statistics of blood lead testing in 2018.

The number of children tested in CY 2018 (131,626) (Table Two) is similar to the number tested in CY 2017 (131,832). There was a significant decrease in the number of cases with blood lead levels of 5-9 µg/dL (1,661 in CY 2017 vs. 1,435 in CY 2018). The number of cases with a blood lead level ≥10 µg/dL is relatively the same for both years (388 in CY 2017 vs. 390 in CY 2018).

Table One

CY 2018 Statistical Report

Item	Number	*Percent (%)
All Children		
Number of tests	149,179	
Number of children	142,127	
Children 0-72 Months		
Number of tests	138,349	
Number of children	131,626	100.0
Age		
Under One	11,177	8.5
One Year	46,618	35.4
Two Years	43,806	33.3
Three Years	11,030	8.4
Four Years	10,880	8.3
Five Years	8,115	6.2
Sex		
Female	63,834	48.5
Male	66,059	50.2
Undetermined	1,733	1.3
Highest Blood Lead Level (µg/dL)		
≤4	129,801	98.6
5-9	1,435	1.1
10-14	237	0.2
15-19	72	0.1
≥20	81	0.01
Mean BLL (Geometric mean)	1.67	
Blood Specimen		
Capillary	57,218	43.5
Venous	74,107	56.3
Undetermined	301	0.2

*Due to rounding percentage to the first decimal point in this and other tables, the sum of the breakdown percentages may not equal total percentage.

Table Two

Blood Lead Testing of Children 0-72 Months by Jurisdiction in CY 2018[1]

County	Population of Children[2]	Children Tested		Blood Lead Level 5-9 µg/dL						Blood Lead Level ≥10 µg/dL					
				Old Cases[3]		New Cases[4]		Total		Old Cases[5]		New Cases[6]		Total	
		Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Allegany	5,245	1,166	22.2	9	0.8	22	1.9	31	2.7	1	0.1	7	0.6	8	0.7
Anne Arundel	52,090	12,580	24.2	2	0.0	49	0.4	51	0.4	1	0.0	10	0.1	11	0.1
Baltimore	72,559	18,276	25.2	32	0.2	140	0.8	172	0.9	9	0.0	39	0.2	48	0.3
Baltimore City	61,150	15,900	26.0	171	1.1	383	2.4	554	3.5	49	0.3	109	0.7	158	1.0
Calvert	7,741	1,115	14.4	1	0.1	5	0.4	6	0.5	0	0.0	1	0.1	1	0.1
Caroline	3,498	772	22.1	2	0.3	7	0.9	9	1.2	1	0.1	1	0.1	2	0.3
Carroll	14,109	2,814	19.9	2	0.1	30	1.1	32	1.1	2	0.1	7	0.2	9	0.3
Cecil	9,774	1,757	18.0	5	0.3	23	1.3	28	1.6	0	0.0	1	0.1	1	0.1
Charles	14,316	2,934	20.5	0	0.0	22	0.7	22	0.7	1	0.0		0.0	1	0.0
Dorchester	3,023	625	20.7	5	0.8	7	1.1	12	1.9	2	0.3	1	0.2	3	0.5
Frederick	22,661	5,288	23.3	6	0.1	26	0.5	32	0.6	3	0.1	6	0.1	9	0.2
Garrett	2,412	367	15.2	1	0.3	4	1.1	5	1.4	0	0.0		0.0	0	0.0
Harford	22,791	4,993	21.9	2	0.0	32	0.6	34	0.7	2	0.0	5	0.1	7	0.1
Howard	26,693	5,920	22.2	11	0.2	30	0.5	41	0.7	4	0.1	13	0.2	17	0.3
Kent	1,523	210	13.8	2	1.0	2	1.0	4	1.9	0	0.0	1	0.5	1	0.5
Montgomery	96,294	25,808	26.8	20	0.1	112	0.4	132	0.5	3	0.0	32	0.1	35	0.1
Prince George's	87,692	21,843	24.9	37	0.2	147	0.7	184	0.8	13	0.1	38	0.2	51	0.2
Queen Anne's	4,183	809	19.3	0	0.0	7	0.9	7	0.9	0	0.0		0.0	0	0.0
Saint Mary's	11,468	1,688	14.7	1	0.1	11	0.7	12	0.7	0	0.0	1	0.1	1	0.1
Somerset	1,919	403	21.0	1	0.2	3	0.7	4	1.0	0	0.0		0.0	0	0.0
Talbot	2,865	652	22.8	1	0.2	7	1.1	8	1.2	0	0.0	4	0.6	4	0.6
Washington	13,707	2,767	20.2	5	0.2	25	0.9	30	1.1	0	0.0	11	0.4	11	0.4
Wicomico	9,267	2,132	23.0	3	0.1	15	0.7	18	0.8	4	0.2	6	0.3	10	0.5
Worcester	3,504	807	23.0	2	0.2	5	0.6	7	0.9	0	0.0	2	0.2	2	0.2
Total	**550,484**	**131,626**	**23.9**	**321**	**0.2**	**1,114**	**0.8**	**1,435**	**1.1**	**95**	**0.1**	**295**	**0.2**	**390**	**0.3**

1. Table is based on the selection of the highest blood lead test for each child in calendar year 2018 in the order of venous, unknown, or capillary.
2. Adapted from Maryland census population 2010 provided by the Maryland Data Center, Maryland Department of Planning, www.planning.maryland.gov/msdc
3. Children with the blood lead level of 5-9 µg/dL in 2018 and with a history of blood lead level ≥ 5 µg/dL in the past.
4. Children with the very first blood lead level of 5-9 µg/dL in 2018. These children were either not tested in the past or all their tests had blood lead level <5 µg/dL.
5. Children with the blood lead level of ≥10 µg/dL in 2018 and with a history of blood lead level ≥ 10 µg/dL in the past.
6. Children with the very first blood lead level ≥10 µg/dL in 2018. These children may have not been tested in the past or all their blood lead tests had blood lead level <10 µg/dL. This criterion may not necessarily match the criteria for the initiation of environmental case management.

Figure One illustrates the number of children 0-72 months of age tested for lead and those identified with a blood lead level of ≥10 µg/dL from CY 2010 - CY 2018.

Figure One

Number of Children 0-72 Months Tested for Lead and Number Reported to Have Blood Lead Level ≥10 µg/dL: CY 2000 - CY 2018

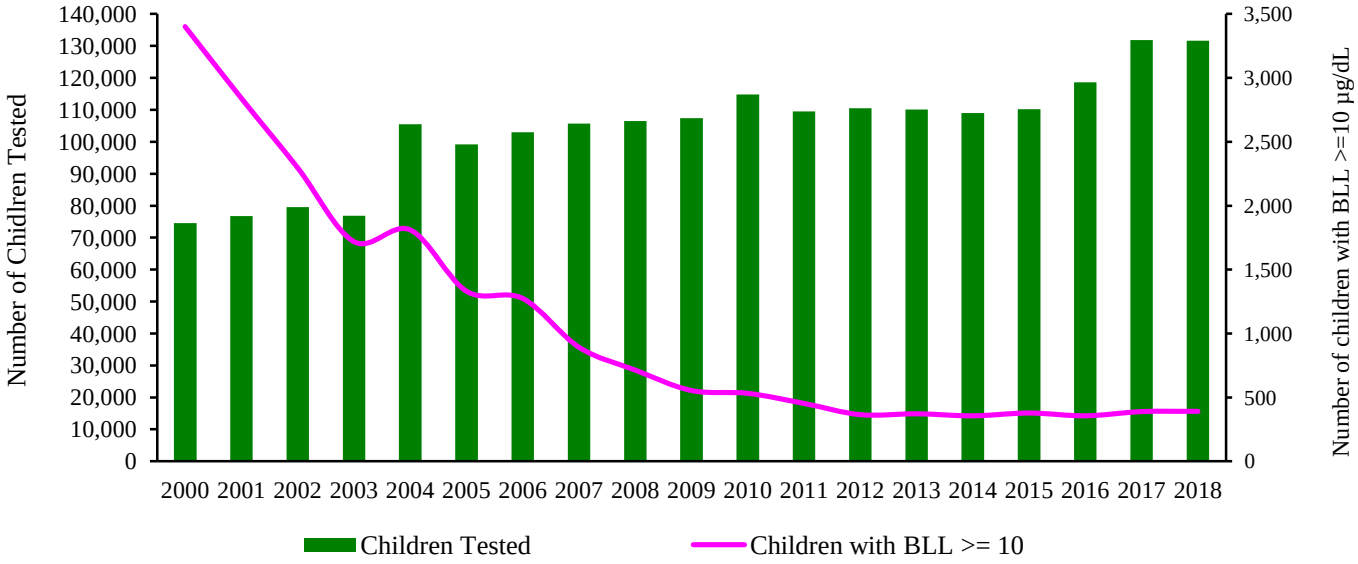
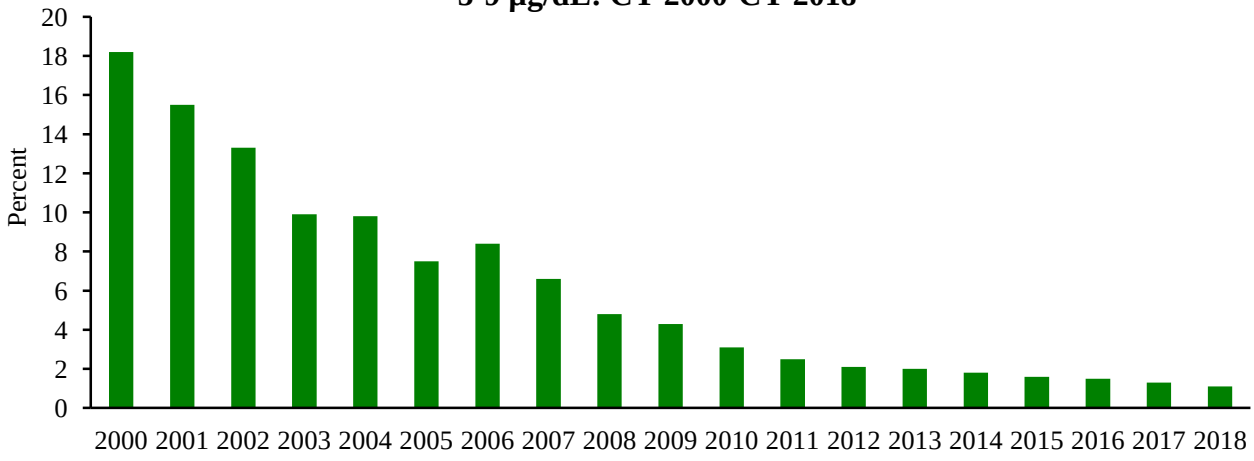


Figure Two illustrates the number of children 0-72 months of age tested for lead and those identified with the highest blood lead level of 5-9 µg/dL from CY 2010 - CY 2018.

Figure Two

Percent of Children 0-72 Months Tested for Lead with the Highest Blood Lead Level 5-9 µg/dL: CY 2000-CY 2018



Point of Care Testing and Universal Testing

The "Point of Care" (POC) testing initiative increased the number of clinics/institutions conducting in-office testing from 105 in CY 2017 to 119 in CY 2018. This in turn increased the percentage of lab reports received by MDE that were derived from POC testing from 35.8% in CY 2017 to 40.5% in CY 2018. All results for POC testing are reported to MDE in hard copy and must be processed manually by MDE.

The data indicates that Universal Testing, which requires all children age one and two years to be tested statewide, has increased lead testing for two year old children, while testing decreased for one year old children. In CY 2018, blood lead testing of children aged one year decreased in 18 counties, while testing of two year olds increased in 14 counties. Eight counties (Baltimore City, and Baltimore, Garrett, Prince George's, Somerset, Washington, Wicomico, and Worcester counties) had a decrease in blood lead testing for both ages. Five counties (Calvert, Caroline, Cecil, Charles, and Queen's Anne counties) had an increase in testing for both ages (Figure Three, Table Three). For a comprehensive overview of Universal Testing, see Appendix C.

Figure Three

Percent of Children One and Two Years Old Tested for Lead
2000-2018

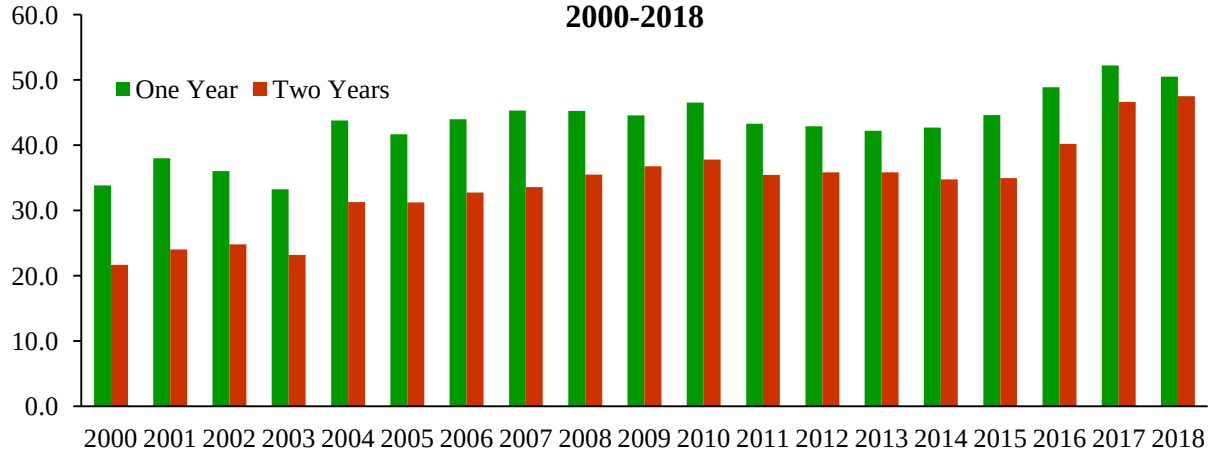


Table Three

Percent of Children Age One and Two Years Tested for Lead in 2017 and 2018

Jurisdiction	One Year Old		Two Years Old	
	CY2017	CY2018	CY2017	CY2018
Allegany	61.0	63.2	57.2	57.2
Anne Arundel	58.2	57.8	49.0	51.3
Baltimore	55.5	55.0	52.3	52.1
Baltimore City	53.9	50.3	52.3	50.0
Calvert	35.6	42.6	23.7	29.0
Caroline	55.2	58.5	51.2	52.2
Carroll	51.9	51.2	37.3	48.7
Cecil	41.4	42.5	25.6	27.3
Charles	43.6	52.9	37.5	40.3
Dorchester	54.8	47.7	45.2	48.4
Frederick	61.9	61.0	49.1	49.6
Garrett	45.8	42.3	38.7	35.6
Harford	47.7	45.1	42.0	48.2
Howard	55.5	53.7	42.5	46.0
Kent	36.0	32.8	28.9	29.2
Montgomery	51.4	47.7	49.9	52.4
Prince George's	47.6	44.7	43.6	42.0
Queen Anne's	47.2	54.7	43.5	46.3
Saint Mary's	42.6	41.6	24.3	25.1
Somerset	60.9	46.6	51.5	50.7
Talbot	56.7	61.3	52.4	48.8
Washington	46.1	44.9	40.8	39.5
Wicomico	59.3	55.6	55.3	52.3
Worcester	66.2	54.0	59.2	59.2
Statewide	52.2	50.5	46.6	47.5

Analysis of Adult ad Childhood Lead Exposure

MDE maintains the Adult Blood Lead Epidemiology and Surveillance (ABLES) database for all adults tested for lead statewide. A data extract was created on all adults with lead exposure in CY's 2017- 2018. The data was then compared with the addresses of children tested and identified with blood lead levels in CY 2018. Within the limitations of both databases (STELLAR and ABLES), the addresses of 58 adults were matched with the addresses of 87 children whose blood lead distribution is presented in Table Four. This data analysis may indicate that an occupational exposure may be a contributing factor to lead exposure.

Table Four

Blood Lead Level of Children 0-72 Months for CY 2018
And Match to Adult Blood Lead CY's 2017- 2018

Blood lead Level	Number of Children	Percent
≤4	77	88.5
5-9	5	5.7
10-14	4	4.6
20-24	1	1.2
Total	87	100.0

Data Quality

The CLR is maintained in the "Systematic Tracking of Elevated Lead Levels and Remediation" (STELLAR) surveillance system, obtained from the CDC, Childhood Lead Poisoning Prevention Program. MDE staff works to improve data quality with respect to completeness, timeliness, and accuracy. Staff keep daily track of reporting to make sure establishments are reporting all blood lead tests in a timely manner. The law requires blood lead results ≥20 μg/dL to be reported to MDE within 24 hours after the result is known. However, upon MDE's request, laboratories/clinics have agreed to report the results of all blood lead tests ≥10 μg/dL within 24 hours. With the CDC's blood lead "Reference Level" now at 5μg/dL, some laboratories report all blood lead tests ≥5 μg/dL within 24 hours.

In CY 2018, 59.5% of all blood lead tests were reported to the CLR through a computer generated electronic data file. This is a decrease of about 5 percentage points for this method of reporting compared to CY 2017 (64.2%) and a decrease of more than 17 percentage points compared to CY 2016 (76.7%). The decrease in electronic reporting is partially due to the increase in the number of establishments (clinics) that use POC instruments to conduct blood lead testing. Currently, the POC instruments only have the ability to produce hard copy reports.
The average time for a blood lead test report from the time the specimen is drawn to the time the report is processed into STELLAR is about 18.3 days. The average time for the report of the first blood lead level ≥10 μg/dL to be processed into the database is about 6 days (Table Five).

Table Five

Days to Process Lab Results into CLR
CY 2018

Days after draw date	Percentage of Blood Lead Reports Processes			
	Electronic Reports	Hard Copy Reports	First Report BLL ≥10	All Reports
≤4 days	16.7	0.3	54.6	10.0
5-9 days	49.5	0.2	36.2	29.5
10-14 days	21.5	0.5	3.8	13.0
15-19 days	5.0	3.0	1.0	4.1
20-24 days	3.0	10.4	0.7	6.0
25-29 days	1.0	20.1	1.3	8.7
≥30 days	3.4	65.6	2.4	28.6
Average/	13.4	38.5	5.9	18.3

MDE works to ensure that the blood lead test reports are complete and, to the extent that is possible, correct. Table Six displays a summary of the completeness of data in blood lead reports for CY 2018.

Table Six

Completeness of Data for CY 2018

Item	Percent Complete
Child's name	100.0
Date of Birth	100.0
Sex/Gender	98.8
Race	51.5
Ethnicity	48.3
Guardian's name	73.2
Sample type	99.7
Test date	100.0
Blood lead level	100.0
Address (geocoded)	87.7
Telephone number	96.9

Blood Lead Laboratory Reporting Requirement

The amended law and regulations* of 2001 and 2002 require that:

1-The following child's demographic data should be included in each blood lead test reported:
- Date of Birth
- Sex
- Race
- Address
- Test date
- Sample type
- Blood lead level

2-Blood lead results ≥20 µg/dL must be reported (via fax) within 24 hours after result is known. All other results must be reported within no later than two weeks.

3-Reporting format should comply with the format designed and provided by the Registry.

4-Data should be provided electronically.

* Environment Article, §6-303, Annotated Code of Maryland and COMAR 26.02.01.

Medical and Environmental Case Management

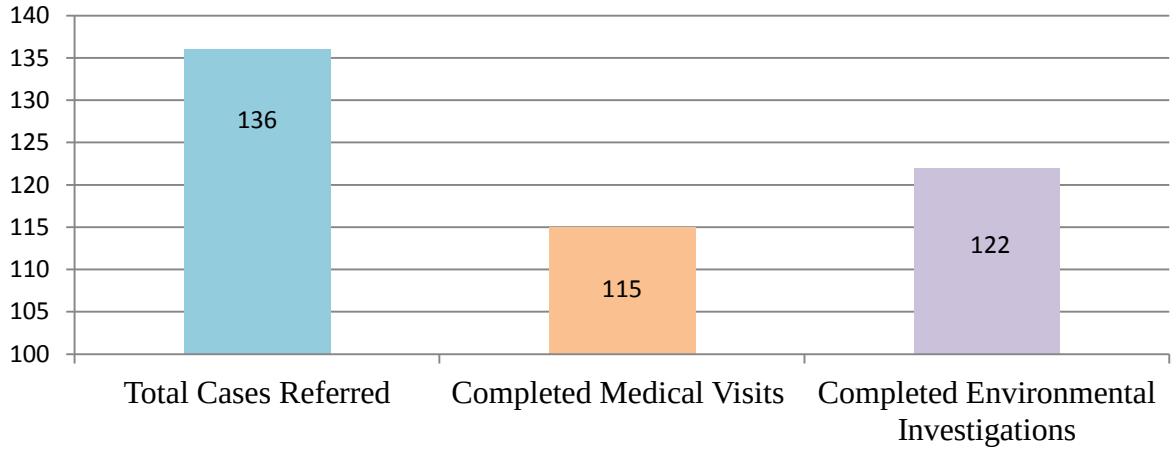
Maryland's Case Management Guidelines ("Guidelines") require medical case management when a child aged 0-72 months is identified with a first time venous or two capillary blood lead tests of ≥10 µg/dL within 12 weeks of each other ("Confirmed Case"). Case management consists of comprehensive medical and environmental case management, coordinated between the health care provider, 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 of a child. All home visits are arranged with the family based on the availability of the parent or guardian and in accordance with recommendations identified in the Case Management Guidelines.

When a child is diagnosed as a Confirmed Case and is identified to reside in or frequent a pre-1978 residential rental property, MDE or the local health department is required by law to send a Notice of Elevated Blood Lead Level (Notice of EBL) to the rental property owner. Under the law, an owner who receives a Notice of EBL must meet the modified risk reduction standard or provide for the temporary relocation of the tenants to a lead free or lead risk reduced unit within 30 days of receipt of the Notice of EBL.

During CY 2018, there were 235 Confirmed Cases that required medical and environmental case management in Maryland. This was a decrease of 25 Confirmed Cases when compared to CY 2017 (260). Of the total, there were 136 Confirmed Cases in Maryland counties (excluding Baltimore City). This was 43 fewer cases compared to the 179 Confirmed Cases in Maryland counties during CY 2017. See Figure Four for data on completed home visits for medical case management and environmental investigations for Maryland Counties.

Figure Four

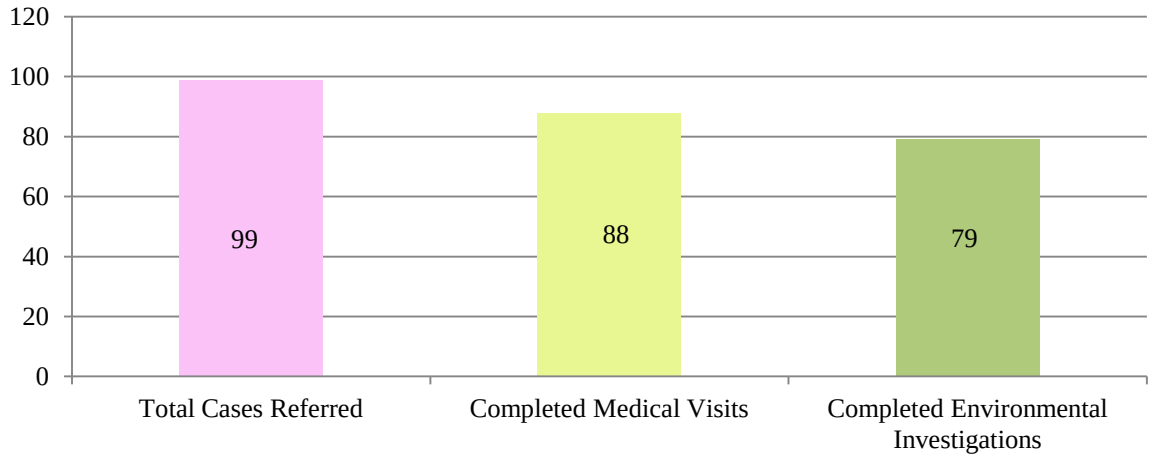
Medical and Environmental Case Outcomes
Statewide* CY 2018



*Excluding Baltimore City Cases

There were 99 Confirmed Cases during CY 2018 in Baltimore City. This was an increase of 18 cases compared to the 81 Confirmed **C**ases in CY 2017. Baltimore City performs all environmental investigations in response to Confirmed Cases. See Table Eight for medical and environmental case outcomes for Baltimore City.

Figure Five
CY 2018
Medical and Environmental Case Outcomes



During CY 2018, of the 136 Confirmed Cases statewide (excluding Baltimore City), 56.6% of the children were identified as residing in a rental property and 43.4% of the children were identified as residing in an owner occupied property. In CY 2018, in Baltimore City, 71.6% of the children were identified as residing in a rental property while 28.4% of the children were identified as residing in an owner occupied property. Table Seven provides a breakdown of Confirmed Cases and housing type identified by jurisdiction.

Sources of Lead Identified During Environmental Investigations

An environmental investigation performed in response to a Confirmed Case is designed to identify all potential lead sources in the child's environment. While exposure to lead paint hazards continues to affect children in all communities across Maryland, exposure from other sources has been observed. For instance, Prince George's County had 33 of the 136 Confirmed Cases in Maryland Counties (excluding Baltimore City). Of the 33 Confirmed Cases, 17 of the children had potentially been exposed to lead prior to their recent arrival to the U.S. There were also a significant number of cases statewide in which cosmetics, such as kohl, and spices purchased outside the U.S. were identified as potential lead hazards during environmental investigations. Figure Six shows the distribution of lead hazards identified by county for CY 2016- CY 2018. Table Eight contains the lead hazards identified for CY 2016- CY 2018 in each jurisdiction.

Table Seven

Property Status of New Cases (≥ 10 µg/dL)
Calendar Year 2018 by Jurisdiction

County	Number Cases	Owner-Occupied						Rental Property					
		Pre-50		1950-1977		Post-1977		Pre-1950		1950-1977		Post-1977	
		Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Allegany	6	4	66.6	0	0.0	0	0.0	1	16.7	0	0.0	1	16.7
Anne Arundel	7	0	0.0	0	0.0	2	28.6	3	42.8	0	0.0	2	28.6
Baltimore	30	8	26.7	3	10.0	3	10.0	0	0.0	11	36.7	5	16.4
Baltimore City	**99**	**28**	**28.3**	**1**	1.0	**0**	0.0	**60**	**60.6**	**8**	**8.1**	**2**	**2.0**
Calvert	1	1	100.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Caroline	1	1	100.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Carroll	3	1	33.3	0	0.0	0	0.0	2	66.7	0	0.0	0	0.0
Cecil	0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Charles	1	0	0.0	0	0.0	0	0.0	0	0.0	1	100.0	0	0.0
Dorchester	1	1	100.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Frederick	3	0	0.0	0	0.0	2	66.7	0	0.0	0	0.0	1	33.3
Garrett	0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0
Harford	2	1	50.0	0	0.0	0	0.0	0	0.0	0	0.0	1	50.0
Howard	9	0	0.0	0	0.0	4	44.4	0	0.0	3	33.3	2	22.2
Kent	1	0	0.0	1	100.0	0	0.0	0	0.0	0	0.0	0	0
Montgomery	18	2	11.1	2	11.1	3	16.7	2	11.1	6	33.3	3	16.7
Prince George's	33	2	6.1	5	15.1	3	9.1	0	0.0	21	63.6	2	6.1
Queen Anne's	0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0.0	0.0
Saint Mary's	1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	100.0
Somerset	0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Talbot	3	1	33.3	0	0.0	2	66.7	0	0.0	0	0.0	0	0.0
Washington	9	5	55.6	0	0.0	0	0.0	3	33.3	0	0.0	1	11.1
Wicomico	6	1	16.7	0	0.0	1	16.7	4	66.6	0	0.0	0	0.0
Worcester	1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	100.0
County Total*	**136**	**28**	**20.6**	**11**	**8.1**	**20**	**14.7**	**15**	**11.0**	**42**	**30.9**	**20**	**14.7**
Statewide	**235**	**56**	**23.8**	**12**	**5.1**	**20**	**8.5**	**75**	**31.9**	**50**	**21.3**	**22**	**9.4**

***** Excluding Baltimore City

Figure Six

Distribution of Lead Hazard Type
CY 2016- CY 2018 by Jurisdiction

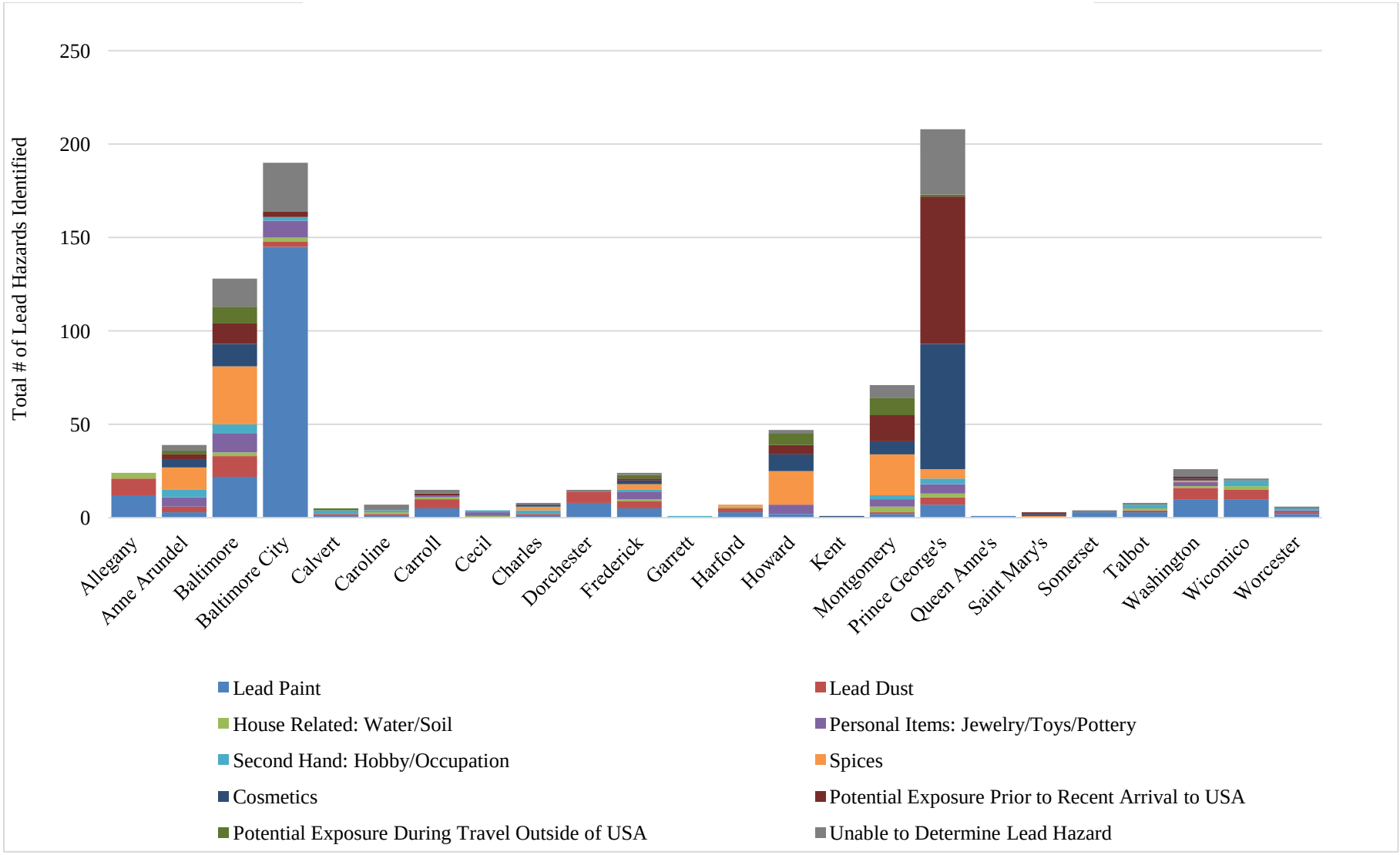


Table Eight

Lead Hazards Identified
Calendar Years 2016-2018 by Jurisdiction

County	Number of Cases	Total Hazards	Lead Paint	Lead Dust	House Related: Water/Soil	Personal Items: Jewelry /Toys/ Pottery	Second Hand: Hobby/ Occupation	Spices	Cosmetics	Potential Exposure Prior to Recent Arrival to USA	Potential Exposure During Travel Outside of USA	Unable to Determine Lead Hazard
Allegany	13	24	12	9	3	0	0	0	0	0	0	0
Anne Arundel	26	39	3	3	0	5	4	12	4	3	2	3
Baltimore	82	128	22	11	2	10	5	31	12	11	9	15
Baltimore City	***188**	**190**	**145**	**3**	**2**	**9**	2	**0**	0	**3**	**0**	**26**
Calvert	2	5	1	1	0	0	2	0	0	0	1	0
Caroline	7	7	1	1	1	0	1	0	0	0	0	3
Carroll	8	15	5	5	1	1	0	0	0	1	0	2
Cecil	4	4	0	0	1	2	1	0	0	0	0	0
Charles	4	8	1	1	0	0	2	2	1	0	0	1
Dorchester	9	15	8	6	0	0	0	0	0	0	0	1
Frederick	15	24	5	4	1	4	1	3	2	1	2	1
Garrett	1	1	0	0	0	0	1	0	0	0	0	0
Harford	6	7	3	2	1	0	0	1	0	0	0	0
Howard	26	47	2	0	0	5	0	18	9	5	6	2
Kent	1	1	0	0	0	0	0	0	1	0	0	0
Montgomery	57	71	2	1	3	4	2	22	7	14	9	7
Prince George's	133	208	7	4	2	5	3	5	67	79	1	35
Queen Anne's	1	1	1	0	0	0	0	0	0	0	0	0
Saint Mary's	1	3	0	0	0	0	0	1	1	1	0	0
Somerset	4	4	3	0	0	0	0	0	0	0	0	1
Talbot	6	8	3	1	1	0	2	0	0	0	0	1
Washington	21	26	10	6	1	2	0	1	1	1	0	4
Wicomico	15	21	10	5	2	0	3	0	0	0	0	1
Worcester	4	6	2	1	0	1	1	0	0	0	0	1
Counties' Total	***446***	***673***	***101***	***61***	***19***	***39***	***28***	***96***	***105***	***116***	***30***	***78***
Statewide	***634**	**863**	**246**	**64**	**21**	**48**	**30**	**96**	**105**	**119**	**30**	**104**

Figures Seven and Eight break down the percentage of each lead hazard found in Maryland counties. Separate pie charts are provided based on housing types and built dates. Figure Nine provide a similar breakdown for Baltimore City. Baltimore City housing mostly consists of pre-1950 housing. Consistent with prior years, lead-based paint hazards remain the most significant contributor of lead exposure in pre-1950 housing for both rental and owner occupied housing.

Figure Seven

Lead Sources Identified in Rental Housing
Maryland Counties CY18 (Excluding Baltimore City)

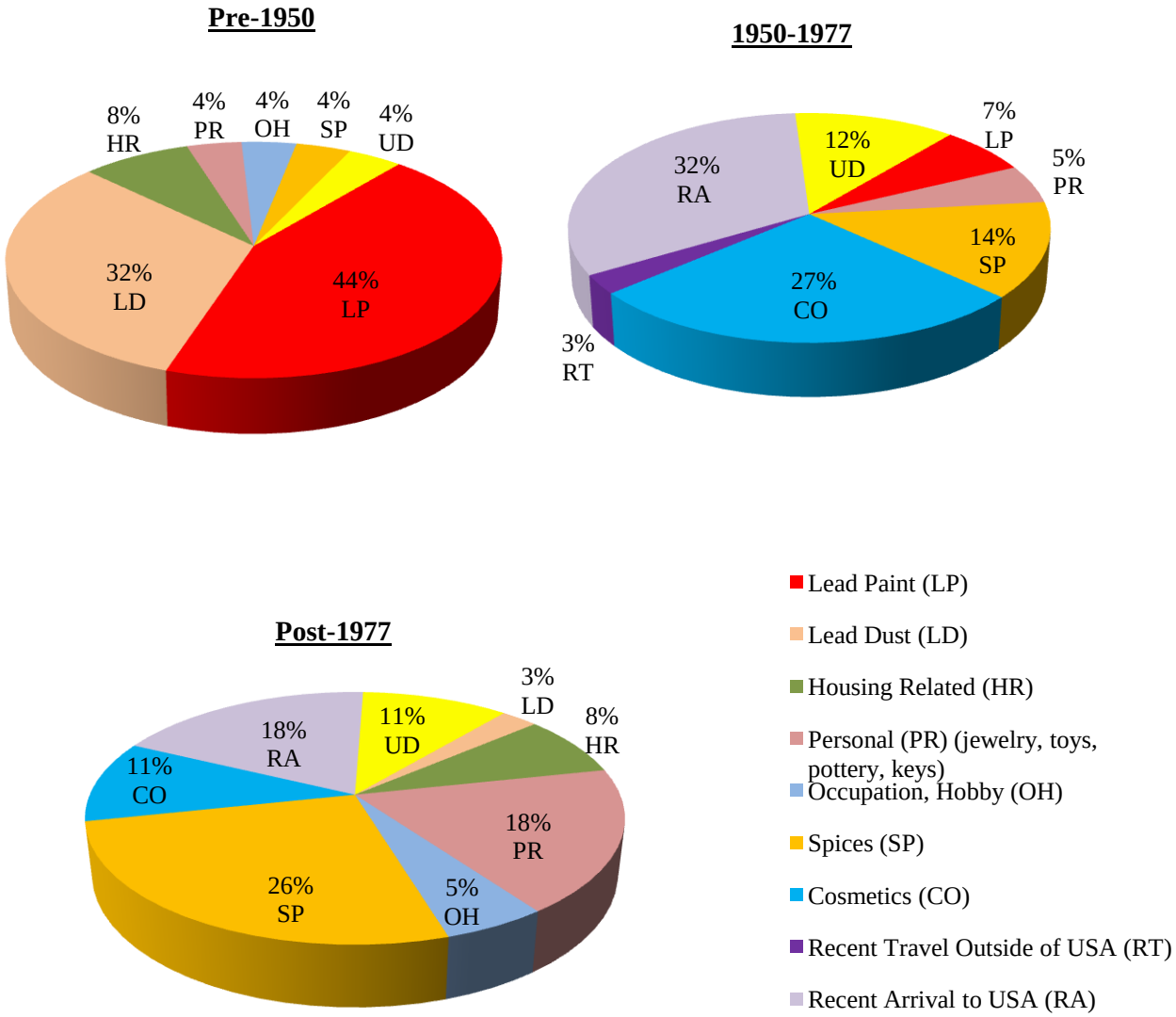


Figure Eight

Lead Sources Identified in Owner Occupied Housing
Maryland Counties CY 2018 (Excluding Baltimore City)

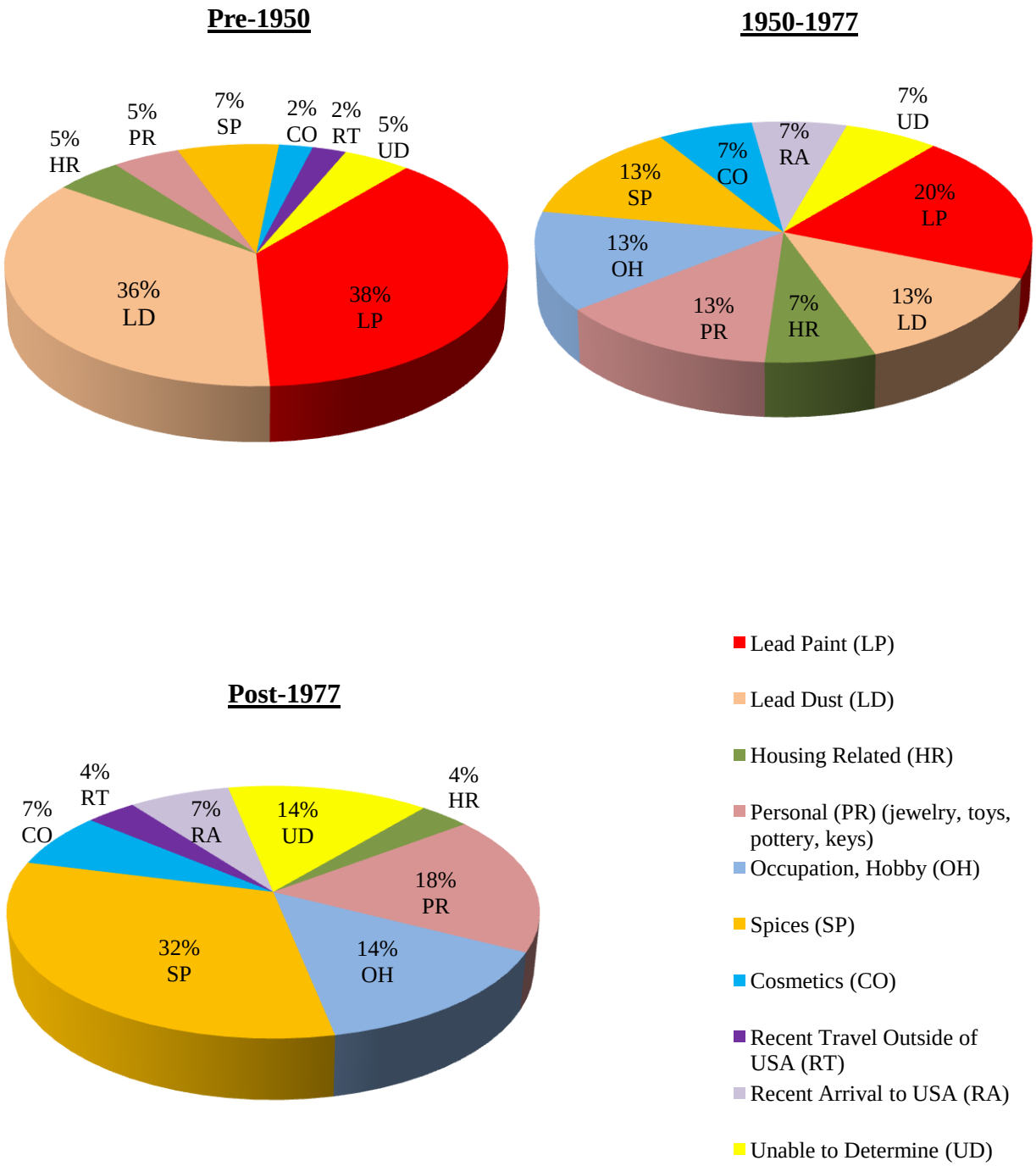
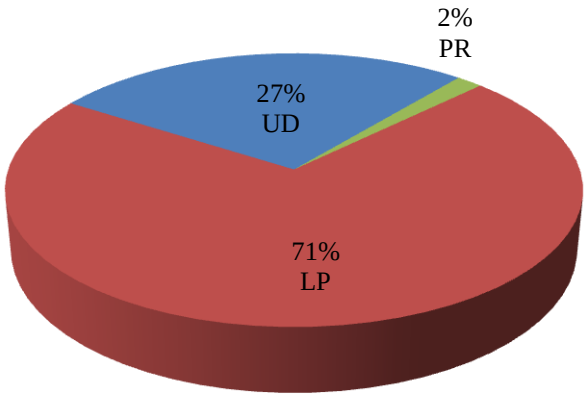
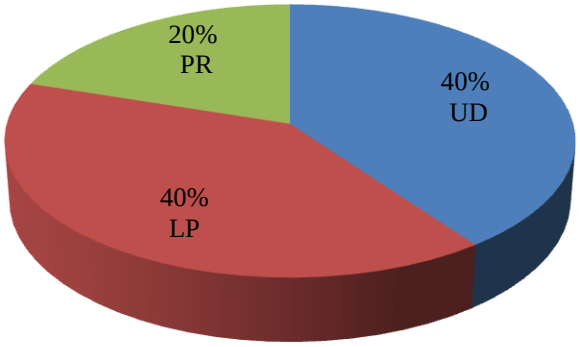


Figure Nine
Lead Sources Identified
Baltimore City CY 2018

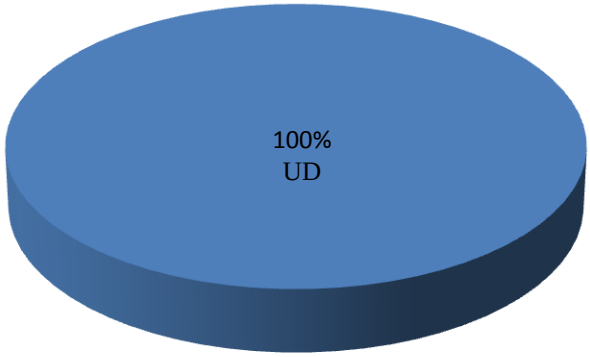
Pre-1950 Rental



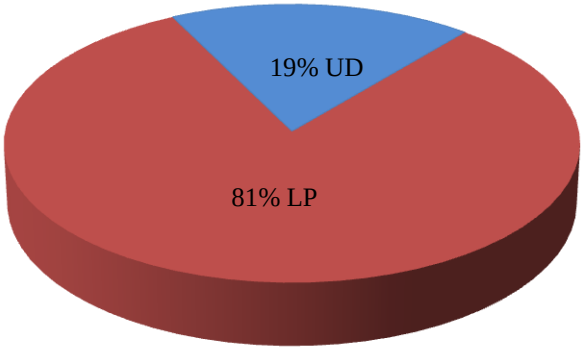
1950-1977 Rental



Post- 1977 Rental



Pre-1950 Owner Occupied*



*There were no Owner Occupied properties identified as being built after 1949

- Lead Paint
- Unable to Determine (UD)
- Personal (jewelry, toys, pottery, keys)

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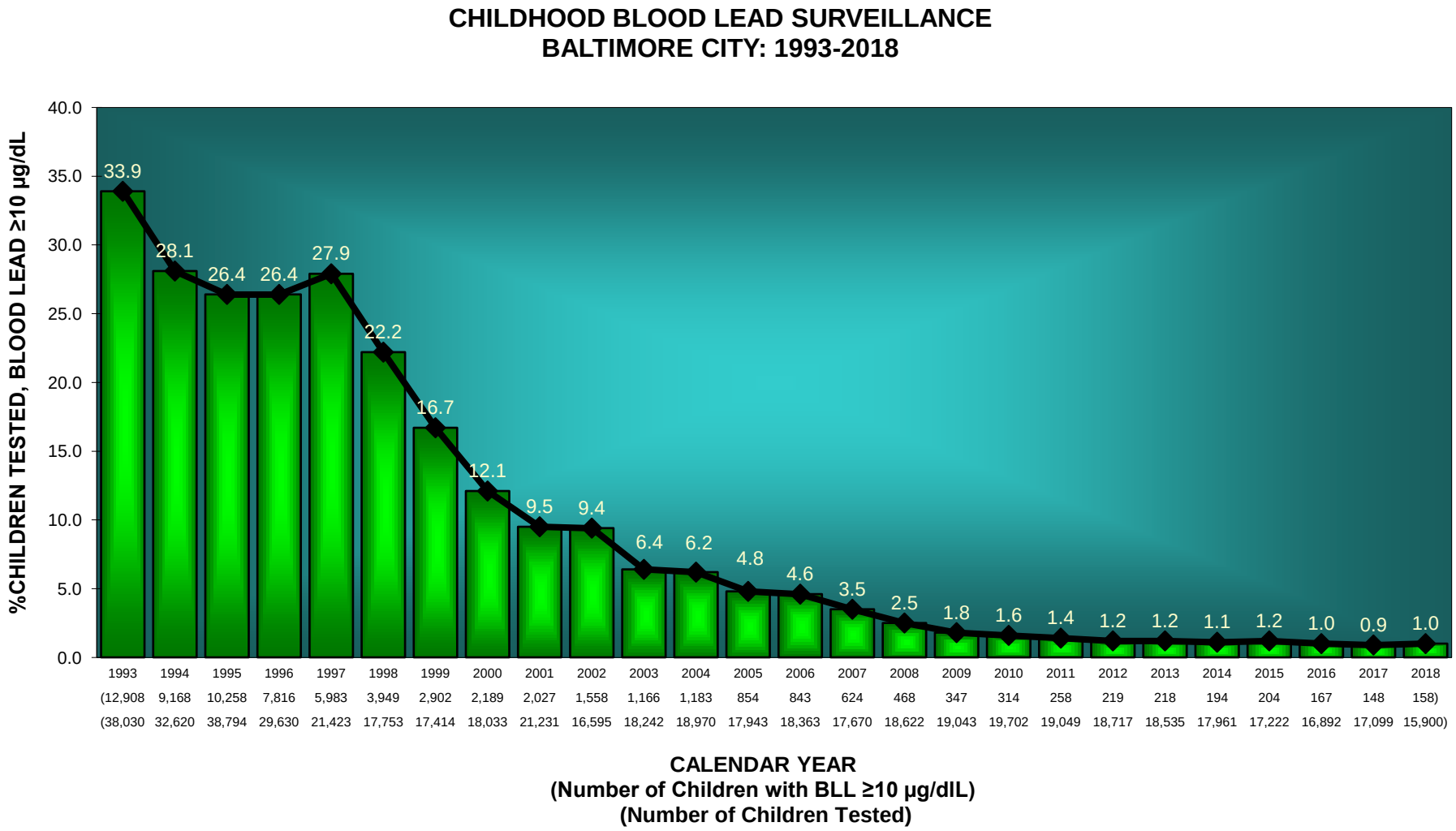
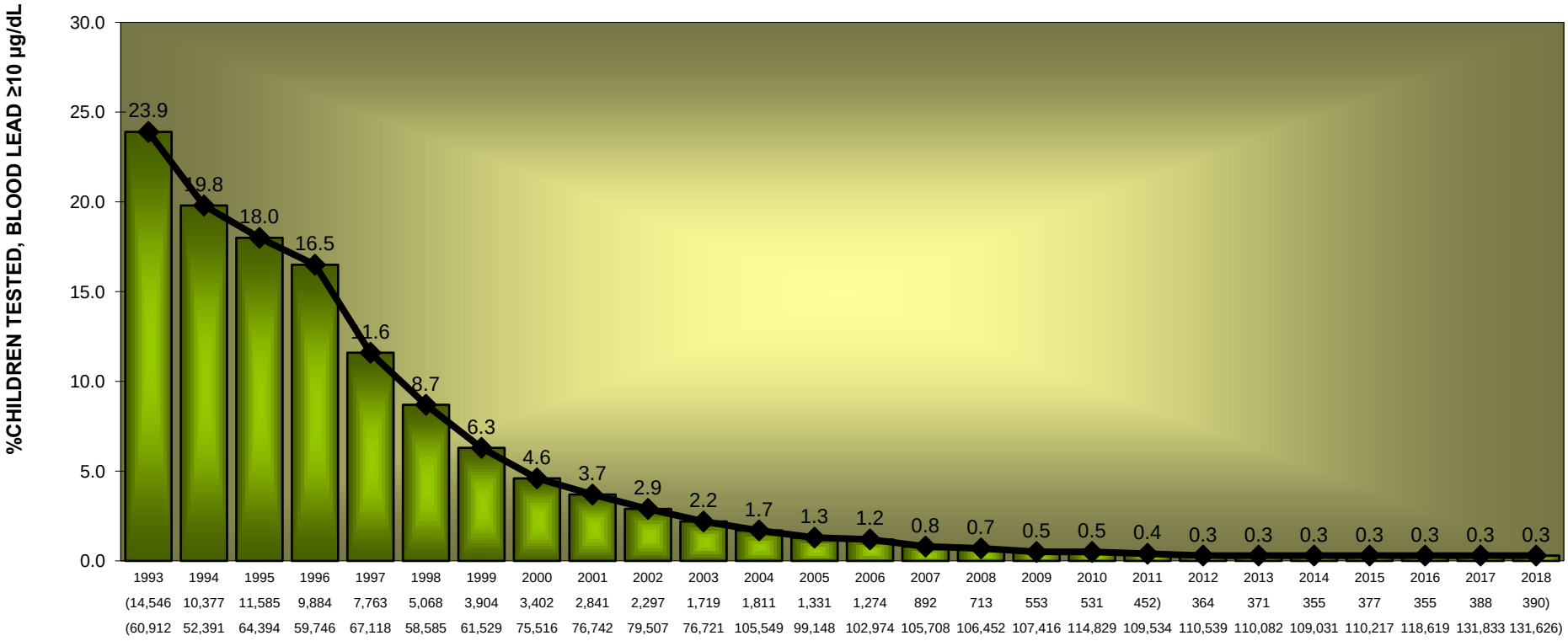
Appendix A


CHILDHOOD BLOOD LEAD SURVEILLANCE
BALTIMORE CITY: 1993-2018
%CHILDREN TESTED, BLOOD LEAD ≥10 µg/dL
40.0
35.0
30.0
25.0
20.0
15.0
10.0
5.0
0.0
33.9
28.1
26.4
26.4
27.9
22.2
16.7
12.1
9.5
9.4
6.4
6.2
4.8
4.6
3.5
2.5
1.8
1.6
1.4
1.2
1.2
1.1
1.2
1.0
0.9
1.0
1993 (12,908 (38,030
1994 9,168 32,620
1995 10,258 38,794
1996 7,816 29,630
1997 5,983 21,423
1998 3,949 17,753
1999 2,902 17,414
2000 2,189 18,033
2001 2,027 21,231
2002 1,558 16,595
2003 1,166 18,242
2004 1,183 18,970
2005 854 17,943
2006 843 18,363
2007 624 17,670
2008 468 18,622
2009 347 19,043
2010 314 19,702
2011 258 19,049
2012 219 18,717
2013 218 18,535
2014 194 17,961
2015 204 17,222
2016 167 16,892
2017 148 17,099
2018 158) 15,900)
CALENDAR YEAR
(Number of Children with BLL ≥10 µg/dlL)
(Number of Children Tested)

CHILDHOOD BLOOD LEAD SURVEILLANCE
STATEWIDE 1993-2018



CALENDAR YEAR
(Number of Children with BLL ≥10 µg/dL)
(Number of Children Tested)

Appendix B

Blood Lead Testing of Children One and Two Years old by Jurisdiction in CY 2018

	Population of Children	Children Tested		Blood Lead Level 5-9						Blood Lead Level >=10					
				Old Cases		New Cases		Total		Old Cases		New Cases		Total	
		Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Allegany															
One Year	842	532	63.2	0	0.0	10	1.9	10	1.9	0	0.0	4	0.8	4	0.8
Two Years	880	503	57.2	4	0.8	8	1.6	12	2.4	1	0.2	3	0.6	4	0.8
Total	1,722	1,035	60.1	4	0.4	18	1.7	22	2.1	1	0.1	7	0.7	8	0.8
Anne Arundel															
One Year	8,818	5,098	57.8	0	0.0	25	0.5	25	0.5	0	0.0	3	0.1	3	0.1
Two Years	8,728	4,475	51.3	0	0.0	16	0.4	16	0.4	0	0.0	4	0.1	4	0.1
Total	17,546	9,573	54.6	0	0.0	41	0.4	41	0.4	0	0.0	7	0.1	7	0.1
Baltimore															
One Year	12,372	6,806	55.0	6	0.1	56	0.8	62	0.9	2	0.0	17	0.3	19	0.3
Two Years	12,042	6,272	52.1	12	0.2	48	0.8	60	1.0	4	0.1	10	0.2	14	0.2
Total	24,414	13,078	53.6	18	0.1	104	0.8	122	0.9	6	0.0	27	0.2	33	0.3
Baltimore City															
One Year	10,850	5,457	50.3	20	0.4	161	3.0	181	3.3	3	0.1	44	0.8	47	0.9
Two Years	10,428	5,209	50.0	46	0.9	117	2.2	163	3.1	12	0.2	32	0.6	44	0.8
Total	21,278	10,666	50.1	66	0.6	278	2.6	344	3.2	15	0.1	76	0.7	91	0.9
Calvert															
One Year	1,212	516	42.6	0	0.0	3	0.6	3	0.6	0	0.0	0	0.0	0	0.0
Two Years	1,240	359	29.0	1	0.3	2	0.6	3	0.8	0	0.0	2	0.6	2	0.6
Total	2,452	875	35.7	1	0.1	5	0.6	6	0.7	0	0.0	2	0.2	2	0.2
Caroline															
One Year	571	334	58.5	0	0.0	3	0.9	3	0.9	0	0.0	0	0.0	0	0.0
Two Years	575	300	52.2	1	0.3	4	1.3	5	1.7	1	0.3	1	0.3	2	0.7
Total	1,146	634	55.3	1	0.2	7	1.1	8	1.3	1	0.2	1	0.2	2	0.3

Appendix B continued

Blood Lead Testing of Children One and Two Years old by Jurisdiction in CY 2018

	Population of Children	Children Tested		Blood Lead Level 5-9						Blood Lead Level >=10					
				Old Cases		New Cases		Total		Old Cases		New Cases		Total	
		Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Carroll															
One Year	2,188	1,121	51.2	0	0.0	11	1.0	11	1.0	0	0.0	2	0.2	2	0.2
Two Years	2,272	1,107	48.7	2	0.2	13	1.2	15	1.4	0	0.0	3	0.3	3	0.3
Total	4,460	2,228	50.0	2	0.1	24	1.1	26	1.2	0	0.0	5	0.2	5	0.2
Cecil															
One Year	1,668	709	42.5	1	0.1	9	1.3	10	1.4	0	0.0	0	0.0	0	0.0
Two Years	1,622	443	27.3	3	0.7	9	2.0	12	2.7	0	0.0	0	0.0	0	0.0
Total	3,290	1,152	35.0	4	0.3	18	1.6	22	1.9		0.0	0	0.0	0	0.0
Charles															
One Year	2,301	1,218	52.9	0	0.0	13	1.1	13	1.1	1	0.1	0	0.0	1	0.1
Two Years	2,488	1,003	40.3	0	0.0	6	0.6	6	0.6	0	0.0	0	0.0	0	0.0
Total	4,789	2,221	46.4	0	0.0	19	0.9	19	0.9	1	0.0	0	0.0	1	0.0
Dorchester															
One Year	512	244	47.7	2	0.8	4	1.6	6	2.5	0	0.0	0	0.0	0	0.0
Two Years	519	251	48.4	1	0.4	1	0.4	2	0.8	0	0.0	0	0.0	0	0.0
Total	1,031	495	48.0	3	0.6	5	1.0	8	1.6	0	0.0	0	0.0	0	0.0
Frederick															
One Year	3,592	2,210	61.5	1	0.0	13	0.6	14	0.6	0	0.0	4	0.2	4	0.2
Two Years	3,807	1,890	49.6	2	0.1	7	0.4	9	0.5	2	0.1	1	0.1	3	0.2
Total	7,399	4,100	55.4	3	0.1	20	0.5	23	0.6	2	0.0	5	0.1	7	0.2
Garrett															
One Year	359	152	42.3	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Two Years	405	144	35.6	1	0.7	4	2.8	5	3.5	0	0.0	0	0.0	0	0.0
Total	764	296	38.7	1	0.3	4	1.4	5	1.7	0	0.0	0	0.0	0	0.0

Appendix B continued

Blood Lead Testing of Children One and Two Years old by Jurisdiction in CY 2018

	Population of Children	Children Tested		Blood Lead Level 5-9						Blood Lead Level >=10					
				Old Cases		New Cases		Total		Old Cases		New Cases		Total	
		Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Harford															
One Year	3,730	1,681	45.1	1	0.1	7	0.4	8	0.5	1	0.1	1	0.1	2	0.1
Two Years	3,752	1,808	48.2	0	0.0	16	0.9	16	0.9	0	0.0	3	0.2	3	0.2
Total	7,482	3,489	46.6	1	0.0	23	0.7	24	0.7	1	0.0	4	0.1	5	0.1
Howard															
One Year	4,223	2,269	53.7	2	0.1	12	0.5	14	0.6	2	0.1	7	0.3	9	0.4
Two Years	4,468	2,055	46.0	5	0.2	7	0.3	12	0.6	1	0.0	3	0.1	4	0.2
Total	8,691	4,324	49.8	7	0.2	19	0.4	26	0.6	3	0.1	10	0.2	13	0.3
Kent															
One Year	258	85	32.9	0	0.0	1	1.2	1	1.2	0	0.0	0	0.0	0	0.0
Two Years	240	70	29.2	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Total	498	155	31.1	0	0.0	1	0.6	1	0.6	0	0.0	0	0.0	0	0.0
Montgomery															
One Year	16,116	7,684	47.7	4	0.1	39	0.5	43	0.6	0	0.0	9	0.1	9	0.1
Two Years	16,179	8,475	52.4	9	0.1	30	0.4	39	0.5	1	0.0	14	0.2	15	0.2
Total	32,295	16,159	50.0	13	0.1	69	0.4	82	0.5	1	0.0	23	0.2	24	0.2
Prince George's															
One Year	14,985	6,692	44.7	5	0.1	47	0.7	52	0.8	2	0.0	8	0.1	10	0.1
Two Years	14,700	6,170	42.0	13	0.2	28	0.5	41	0.7	5	0.1	18	0.3	23	0.4
Total	29,685	12,862	43.3	18	0.1	75	0.6	93	0.7	7	0.1	26	0.2	33	0.3
Queen Anne's															
One Year	665	364	54.7	0	0.0	3	0.8	3	0.8	0	0.0	0	0.0	0	0.0
Two Years	669	310	46.3	0	0.0	3	1.0	3	1.0	0	0.0	0	0.0	0	0.0
Total	1,334	674	50.5	0	0.0	6	0.9	6	0.9	0	0.0	0	0.0	0	0.0

Appendix B continued

Blood Lead Testing of Children One and Two Years old by Jurisdiction in CY 2018

	Population of Children	Children Tested		Blood Lead Level 5-9						Blood Lead Level >=10					
				Old Cases		New Cases		Total		Old Cases		New Cases		Total	
		Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Saint Mary's															
One Year	1,877	780	41.6	0	0.0	5	0.6	5	0.6	0	0.0	1	0.3	1	0.3
Two Years	1,876	470	25.1	1	0.2	3	0.6	4	0.9	0	0.0	0	0.0	0	0.0
Total	3,753	1,250	33.3	1	0.1	8	0.6	9	0.7	0	0.0	1	0.2	1	0.2
Somerset															
One Year	326	152	46.6	0	0.0	1	0.7	1	0.7	0	0.0	0	0.0	0	0.0
Two Years	345	175	50.7	0	0.0	1	0.6	1	0.6	0	0.0	0	0.0	0	0.0
Total	671	327	48.7	0	0.0	2	0.6	2	0.6	0	0.0	0	0.0	0	0.0
Talbot															
One Year	504	309	61.3	1	0.3	4	1.3	5	1.6	0	0.0	3	1.0	3	1.0
Two Years	502	245	48.8	0	0.0	1	0.4	1	0.4	0	0.0	0	0.0	0	0.0
Total	1,006	554	55.1	1	0.2	5	0.9	6	1.1	0	0.0	3	0.5	3	0.5
Washington															
One Year	2,220	996	44.9	2	0.2	9	0.9	11	1.1	0	0.0	5	0.5	5	0.5
Two Years	2,319	916	39.5	0	0.0	8	0.9	8	0.9	0	0.0	2	0.2	2	0.2
Total	4,539	1,912	42.1	2	0.1	17	0.9	19	1.0	0	0.0	7	0.4	7	0.4
Wicomico															
One Year	1,596	888	55.6	0	0.0	4	0.5	4	0.5	0	0.0	2	0.2	2	0.2
Two Years	1,548	810	52.3	1	0.1	6	0.7	7	0.9	3	0.4	1	0.1	4	0.5
Total	3,144	1,698	54.0	1	0.1	10	0.6	11	0.6	3	0.2	3	0.2	6	0.4
Worcester															
One Year	594	321	54.0	0	0.0	3	0.9	3	0.9	0	0.0	1	0.3	1	0.3
Two Years	584	346	59.2	2	0.6	2	0.6	4	1.2	0	0.0	1	0.3	1	0.3
Total	1,178	667	56.6	2	0.3	5	0.7	7	1.0	0	0.0	2	0.3	2	0.3

Appendix B continued

Blood Lead Testing of Children One and Two Years old by Jurisdiction in CY 2018

	Population of Children	Children Tested		Blood Lead Level 5-9						Blood Lead Level >=10					
				Old Cases		New Cases		Total		Old Cases		New Cases		Total	
		Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Statewide															
One Year	92,379	46,618	50.5	45	0.1	443	1.0	488	1.0	11	0.0	111	0.2	122	0.3
Two Years	92,188	43,806	47.5	104	0.2	340	0.8	444	1.0	30	0.1	96	0.2	126	0.3
Total	184,567	90,424	49.0	149	0.2	783	0.9	932	1.0	41	0.0	207	0.2	248	0.3

Appendix C

MARYLAND DEPARTMENT OF HEALTH
Maryland Blood Lead Testing Initiative: Interim Progress Report
Evaluation of March 28, 2016 Revision of COMAR 10.11.04

The State of Maryland has several initiatives to increase lead testing and ultimately reduce and eliminate childhood lead poisoning. These initiatives include:

- On April 13, 2015, the Department of Health adopted regulations allowing health care providers increased access to point-of-care testing to screen for elevated levels of lead in children. The amendment to COMAR 10.10.03.02B added whole blood lead testing to the list of tests that qualify for a Letter of Exception, so that providers would have an easier time setting up point of care (POC) testing.
- In October, 2015, the Department of Health released a new "Maryland Testing Targeting Strategy" that established all areas of the state as being "at risk" of lead poisoning. This revised the previous (2000 and 2004) targeting strategies.
- On March 28, 2016, the Department of Health issued final revised regulations (COMAR 10.11.04) requiring providers to test all children born on or after January 1, 2015 at ages 12 and 24 months for lead exposure. Children born before that date were still to be tested under the previous regulation, which requires testing of all children enrolled in Medicaid, all children living in areas identified in the 2004 Testing Targeting Strategy, and children suspected of lead exposure.

In addition to the revised regulations, the Department of Health and the Department of the Environment have conducted extensive outreach to providers and parents through mailings, online bulletins, and outreach through health care organizations. MDH also created a website and two videos, one for parents and one for providers, on the new testing requirements, and issued a set of clinical management guidelines to providers throughout the state.

Interim Results

The statewide average number of children aged 0-72 months tested for lead from CY 2010-2015 was 110,706. In CY 2016, blood lead testing of children 0-72 months was 17.8% higher than the 2010-2015 average, at 118,619 children tested. In CY 2017 testing again increased, and was 19.1% higher than the 2010-2015 average, at 131,832 children tested. In CY 2018 testing remained approximately unchanged from CY 2017 at 131,626 (18.9% higher than the 2010-2015 average).

The statewide number and percentage of children being tested at ages 12 and 24 months increased from an average of 68,892 (2010-2015) to a high of 90,813 in 2017. In 2018, testing at ages 12 and 24 months remained essentially unchanged from 2017 at 90,424 (an increase of 23.4% from the 2010-2015 average and a -0.08% change from 2017). Table C-1 provides a detailed breakdown of the annual change in testing, beginning in 2016.

Table C-1
Change in the Number and Percentage of Children Tested at Age 1 and 2 Years by Jurisdiction in CY 2018, Compared with Average Testing Rate Between 2010 – 2015 and CY 2017 (Source: Maryland Childhood Lead Registry)

County	Blood Lead Testing: Ages 12 and 24 Months									
	Average 2010-2015		2016		2017		2018		% Change 2018 from Baseline*	% Change 2018 from 2017**
	N	%	N	%	N	%	N	%		
Allegany	1,099	66.6	1,068	62.8	1,014	59.1	1,035	60.1	-9.8	1.7
Anne Arundel	5,960	36.2	7,824	45.2	9,371	53.6	9,573	54.6	50.8	1.9
Baltimore	11,302	49.6	12,528	52	13,114	53.9	13,078	53.6	8.1	-0.6
Baltimore City	11,969	59.8	11,172	53.2	11,264	53.1	10,666	50.1	-16.2	-5.6
Calvert	478	20.5	637	26.3	723	29.6	875	35.7	74.1	20.6
Caroline	591	56.1	583	51.6	607	53.2	634	55.3	-1.4	3.9
Carroll	882	20.3	1,424	32.3	1,974	44.4	2,228	50.0	146.3	12.6
Cecil	829	26.7	1,065	32.8	1,102	33.6	1,152	35.0	31.1	4.2
Charles	1,363	30.9	1,763	37.3	1,928	40.4	2,221	46.4	50.2	14.9
Dorchester	515	54.7	496	48.7	513	50	495	48.0	-12.2	-4.0
Frederick	2,048	29.6	3,504	48	4,077	55.3	4,100	55.4	87.2	0.2
Garrett	305	41.2	307	40.8	320	42	296	38.7	-6.1	-7.9
Harford	1,785	24.9	2,676	36.2	3,342	44.8	3,489	46.6	87.1	4.0
Howard	1,566	18.9	2,816	32.8	4,228	48.8	4,324	49.8	163.5	2.0
Kent	192	40.8	169	34.4	162	32.6	155	31.1	-23.8	-4.6
Montgomery	10,584	35	13,766	43.2	16,292	50.6	16,159	50.0	42.9	-1.2
Prince George's	11,086	39.6	12,540	42.8	13,503	45.7	12,862	43.3	9.3	-5.3
Queen Anne's	397	31.5	575	43.7	603	45.4	674	50.5	60.3	11.2
Saint Mary's	1,068	31	1,048	28.3	1,251	33.5	1,250	33.3	7.4	-0.6
Somerset	387	63.4	372	56.1	375	56.1	327	48.7	-23.2	-13.2
Talbot	530	56.5	551	55.5	547	54.5	554	55.1	-2.5	1.1
Washington	1,719	40.6	1,932	43.1	1,960	43.4	1,912	42.1	3.7	-3.0
Wicomico	1,574	54.3	1,625	52.4	1,795	57.3	1,698	54.0	-0.6	-5.8
Worcester	609	54.3	684	58.9	736	62.7	667	56.6	4.2	-9.7
Statewide	68,892	39.7	81,125	44.5	90,813	49.4	90,424	49.0	23.4	-0.8

*Change in the percentage of children tested by jurisdiction and statewide in 2018 compared with the average percentage tested by jurisdiction and statewide 2010 – 2015.

**Change in the percentage of children tested by jurisdiction and statewide in 2018 compared with the percentage tested by jurisdiction and statewide 2017.

This represents a jurisdiction-level increase in the percentage of children tested for lead in many jurisdictions, as shown in Figure C-1 and Table C-1. The largest increases observed were for Howard, Frederick, Harford and Carroll counties, all of which saw increases in their testing rates of more than 85% from 2010-2015 to 2018. Additionally, testing rates in Anne Arundel, Queen Anne's, Charles, and Calvert counties, increased by 50-75%. Cecil and Montgomery counties saw increases of 30-50%. Jurisdiction-level increases in the percentage of children tested for lead largely clustered in Central Maryland (Figure C-1). However, this may due in part to the relatively high 2010-2015 average testing rates in Western and Eastern Maryland (Figure C-2).

Figure C-1

Percentage Change in Children Tested at 12 and 24 months by County in Calendar Year 2018, compared with the Average Percentage of Children Tested between 2010 – 2015 (Source: Maryland Childhood Lead Registry)

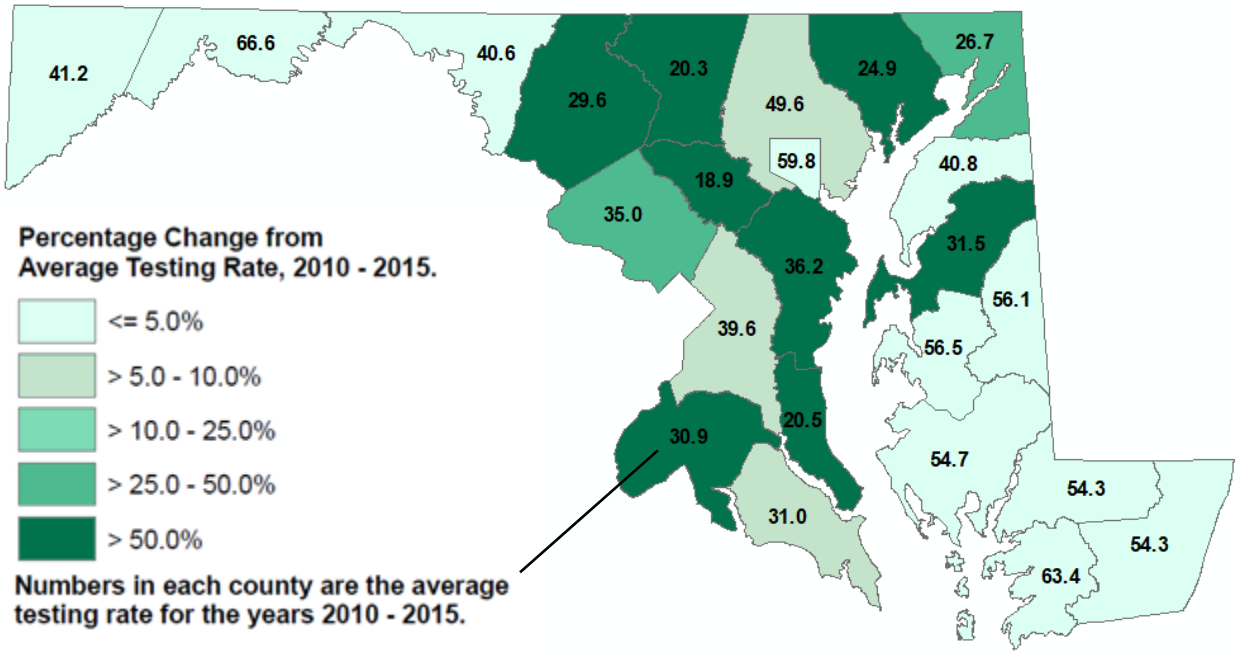
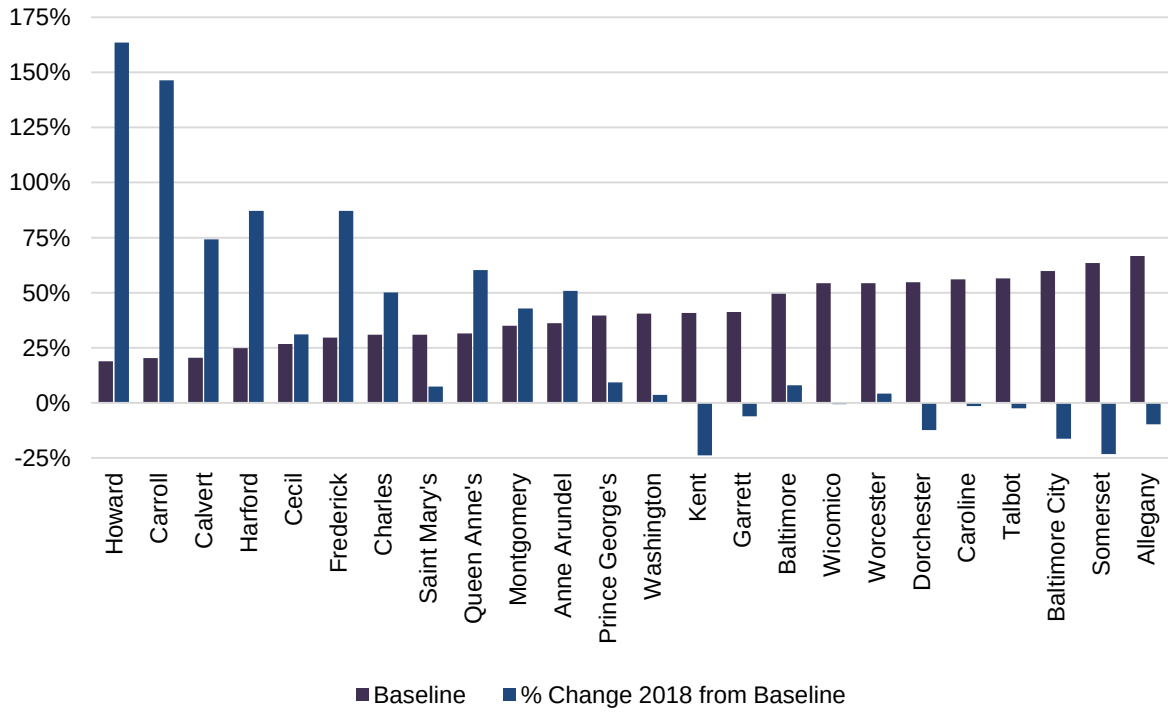


Figure C-2

Percentage Change in Children Tested at 12 and 24 months by County in Calendar Year 2018, compared with the Average Percentage of Children Tested between 2010 – 2015 (Baseline) (Source: Maryland Childhood Lead Registry)

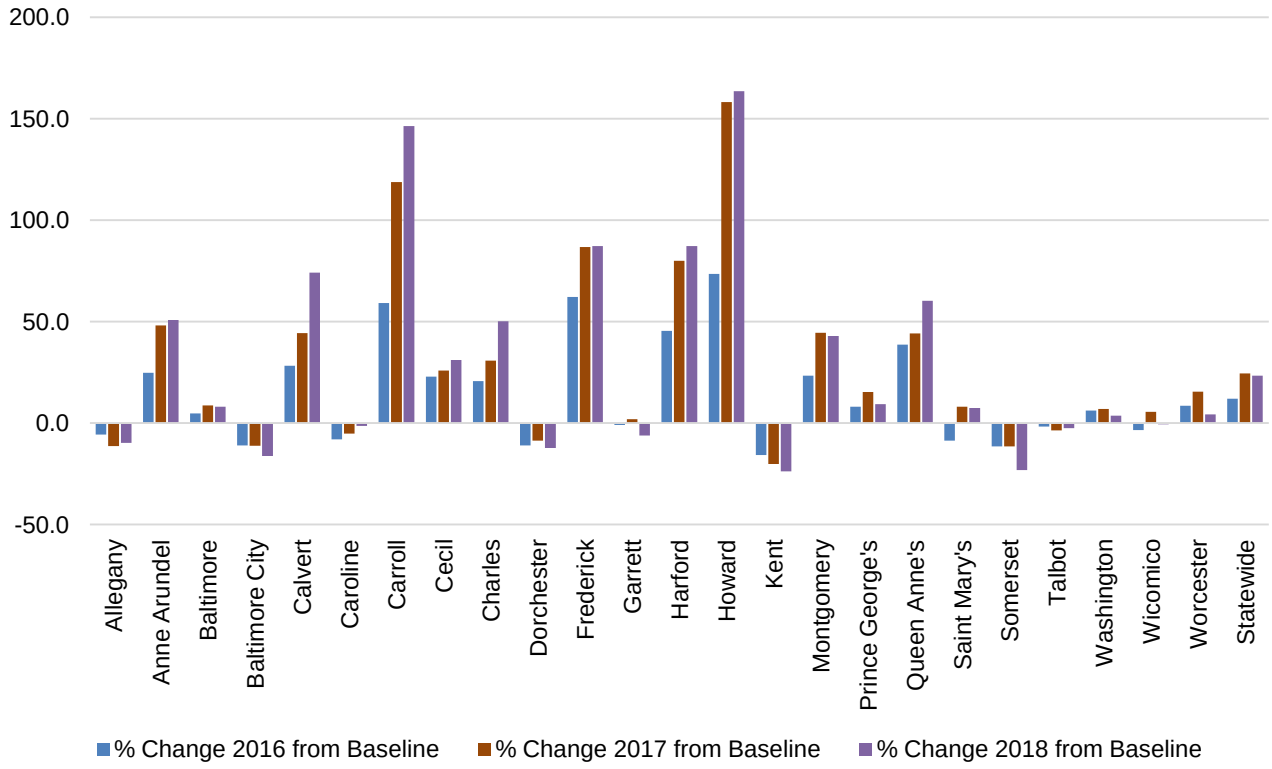


As Figures C-1 and C-2 show, the most significant increases in testing took place in areas with lower average rates during the period 2010 – 2015. While increases were seen in many jurisdictions, there were some areas that experienced small declines in testing rates (Table C-1 and Figure C-2). The reasons for these declines are unclear and could be related to normal fluctuations, or other factors. As will be discussed in the section on next steps, below, these jurisdictions represent opportunities for additional outreach to health care providers in conjunction with local health departments and non-governmental organizations.

Figure C-3 shows that lead testing rates increased statewide and in most jurisdictions year over year from 2010-2015 to 2016 and 2016 to 2017. Calvert and Carroll counties continued to see substantial increases in testing in 2018 compared to 2017. Anne Arundel, Cecil, Charles, Frederick, Harford, Howard, and Queen Anne's also made incremental gains in 2018. Jurisdictions where testing rates did not increase substantially between 2015 and 2017 did not see increases in 2018.

Figure C-3

Percentage Change in Children Tested at 12 and 24 months by County in Calendar Years 2016, 2017, and 2018 compared with the Average Percentage of Children Tested between 2010 – 2015 (Baseline) (Source: Maryland Childhood Lead Registry)



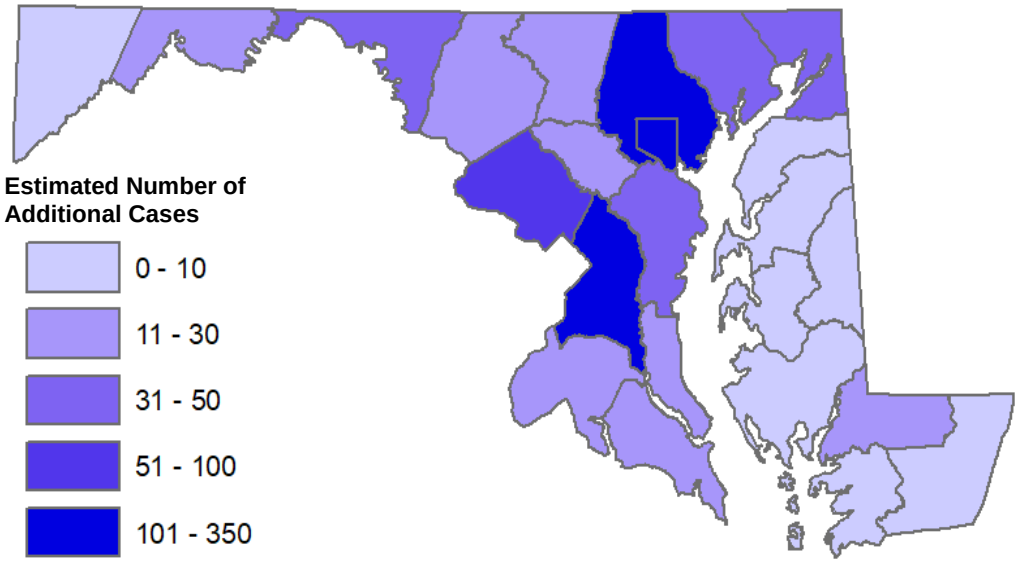
Next Steps

After two- and one-half years of universal testing, increases in blood lead testing at 12 and 24 months have slowed. Statewide, testing rates remained steady from 2017 to 2018 and most jurisdictions that saw an increase in testing between 2015 and 2017 saw smaller increases between 2017 and 2018 (Figure C-3). Perhaps more importantly, the jurisdictions where testing rates did not increase substantially between 2015 and 2017 also did not increase between 2017 and 2018.

Children with first time blood lead levels above 5µg/dL were identified in every jurisdiction in CY 2018. With testing rates below 100% it is likely that, in every jurisdiction, additional lead-exposed children were not identified. Assuming the distribution of lead exposure was the same among children who were and were not tested; we estimated the number of additional children with blood lead levels ≥5 µg/dL who would have been identified with testing rates of 100% (Figure C-4).

Figure C-4

Estimated Number of Additional Cases of Blood Lead Level ≥5 µg/dL Among Children 1 and 2 Years Old by Jurisdiction, Assuming 100% Testing Rates for All 1- and 2-Year-Olds in CY 2018[1]



1.Calculated by applying the jurisdiction rate of "New Cases" among 1- and 2-year-olds tested in CY 2018 to the number of children who were not tested in CY 2018.

Based on these results, the Department of Health and the Department of the Environment will be working with local jurisdictions to focus additional outreach efforts on jurisdictions where the need for outreach is greatest, based on criteria including: (1) jurisdictions where testing rates remain below 50% or actually have declined after three years of universal testing; (2) the total number of children not being tested is greatest; and (3) the likelihood of finding the maximum total number of lead-exposed children is greatest, based on estimates of missed "new cases" of blood lead level ≥5 µg/dL. The departments will continue conducting detailed analysis of blood lead testing data to identify local patterns in testing and to tailor outreach activities.

The Department of Health and the Department of the Environment understand that despite the requirement for testing at 12 and 24 months, parents and children still encounter barriers to blood lead testing. The departments are exploring opportunities to partner with payors, professional societies, local health departments and non-governmental organizations to develop and implement the planned enhanced outreach efforts.