

MARYLAND DEPARTMENT OF THE ENVIRONMENT

Lead Poisoning Prevention Program

Childhood Blood Lead Surveillance in Maryland

2006 Annual Report

July, 2007



MARYLAND CHILDHOOD LEAD REGISTRY

2006 ANNUAL SURVEILLANCE REPORT

EXECUTIVE SUMMARY

The Maryland Department of the Environment's statewide Childhood Lead Registry (CLR) performs childhood blood lead surveillance for 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 test results to Medicaid and local health departments as needed for case management and planning.

Since 1995, the CLR has released a comprehensive annual report on statewide childhood blood lead testing. This current report presents the childhood blood lead test results for calendar year 2006 (CY 2006). All numbers are based on blood lead testing (venous or capillary) on children. The CLR does not receive any reports on lead screening based on the lead risk assessment questionnaire. With few exceptions all numbers referred to children 0-72 months.

CY 2006 Surveillance Highlights:

- A total of 121,968 blood lead tests from 115,969 children 0-18 years were received and processed by the CLR in 2006, of which 108,517 tests were from 102,974 children 0-72 months. The overall blood lead testing for children 0-72 months was 22.2% for 2006.
- The highest testing rates for children 0-72 months were found in Caroline county (36.3%); followed by Wicomico county (35.1%), Baltimore City (33.7%), and Somerset county (32.4%).
- The highest testing rates for children 0-35 months were found in Caroline county (59.7%), Somerset county (51.0%), Dorchester county (47.9%), and Wicomico county (47.2%).
- Accurate completion of address information further improved in 2006. More than 92.0% of blood lead tests were geocodable at the census tract level, which later was used for county assignment. Child's zip code address was the basis of county assignment for those records with an incomplete address.
- The Childhood Lead Registry is maintained in the "Systematic Tracking of Elevated Lead Levels and Remediation" (STELLAR) surveillance system, obtained from Centers for Disease Control and Prevention (CDC) Lead Poisoning Prevention Program. In 2006, 91.6% of blood lead tests were reported electronically. The average reporting time, from the time sample is drawn to time the result enters the CLR database is about 7 days. The average time for elevated blood lead results (≥10 µg/dL) is approximately 30 hours.

• Out of 102,974 children 0-72 months tested for lead statewide in 2006, 1,274 (1.2%) were found to have blood lead level \geq 10 µg/dL (prevalence) of whom 936 had their very first EBL test (incidence) in 2006.

Overview

Lead is one of the most significant and widespread environmental hazards for children in Maryland. Children are at the greatest risk from birth to age six while their neurological systems are being developed. Exposure to lead can cause long-term neurological damage that may be associated with learning and behavioral problems and with decreased intelligence.

Terms and Definitions

There is no evidence of a blood lead level below which there are no health effects. The Centers for Disease Control and Prevention (CDC) concurs that the evidence shows that there is no threshold level for blood lead that can be considered "safe". CDC's current blood lead level of concern of 10 $\mu g/dL$ is based on: 1) lack of successful clinical or public health interventions with BLLs below 10 $\mu g/dL$, 2) likelihood of misclassification errors due to uncertainty associated with laboratory testing at levels <10 $\mu g/dL$, and 3) the need to prioritize public health resources for children with

Sources of Childhood Lead Exposure

Lead paint dust from deteriorated lead paint or from renovation is the major source of exposure for children in Maryland. According to the US Census Bureau, 2005 American Community Survey there are more than 368,000 residential houses built before 1950 (95% likely to contain lead paint) and 897,000 houses built between 1950-1979 (75% likely to have lead paint.

Water, air, and soil, may provide low-level, "background" exposure, but rarely may cause childhood lead poisoning.

Imported products, parental occupations, hobbies, and imported traditional medicines occasionally may cause lead exposure among children.

There is some concern that in-utero exposure to lead may affect fetal development. This can be of more significance among certain subgroup populations who may be more at risk of environmental lead exposure.

BLL $\geq 10~\mu g/dL$. Based on these facts, the CLR dropped the term "Lead Poisoning" as was initially defined: "a venous blood lead level $\geq 25~\mu g/dL$ " and later dropped the level to $20~\mu g/dL$. Instead, to better reflect the extent of the work and to direct program activities to the "more atrisk" areas, from 2005 forward new terms 'incidence' and 'prevalence' with the following definitions were included in annual report.

EBL (Elevated Blood Lead level): A blood lead level $\geq 10 \,\mu\text{g/dL}$, currently defined by CDC as "Level of Concern". The highest venous, in the absence of venous test the highest capillary test was the bases of determination.

<u>Prevalence</u>: Any child with an EBL for the calendar year is the basis of this selection. Prevalence reflects the existing load of children with EBL who may be new to the program or may have been carried-over from previous years (continuously or after some remission.)

<u>Incidence</u>: Any child with the very first EBL is basis of this selection. The child may have not been tested for lead in the past or all his/her tests were below $10\,\mu\text{g/dL}$. Incidence reflects the load of the children with EBL who may have never been tested for lead before or the result of all their blood lead tests were all below $10\,\mu\text{g/dL}$. Incidence is a better indicator for primary prevention. It is expected that the expansion of primary prevention activities results in less exposure and fewer new cases. The old cases, because of the extent and severity of their past exposure may continue to have EBL for months or even years.

To locate the new cases, the list of children with an EBL in calendar year 1995 was set as a base and then list of children with EBL from 1996 was matched against it (using full last and first name, and date of birth as matching criteria). Children from 1996 who were not matched (not found in the list) were assumed to be new cases for CY1996, and were added to the list. Next the list of EBL children from 1997 was matched against the cumulative list of 1995 and 1996 to find new cases for CY1997 who were then added to the list. The process was repeated for each calendar year up to 2006.

Statistical Report

In calendar year 2006, a total of 102,974 children 0-72 months were tested for lead exposure statewide. Table One provides a summary of statewide statistics of blood lead testing in 2006.

Table One Calendar Year (CY) 2006 Statistical Report¹

Calcilual Teal (CT) 2000 k		
Item	Number	Percent (%)
Number of tests	123,013 ²	
Number of children	102,974	100.0
Age		
Under One	11,702	11.4
One Year	34,065	33.1
Two Years	25,186	24.5
Three Years	11,687	11.3
Four Years	11,893	11.5
Five Years	8,441	8.2
Sex		
Female	49,386	48.0
Male	51,123	49.6
Undetermined	2,465	2.4
Highest Blood Lead Level (µg/dL)		
0-4	93,058	90.4
5-9	8,642	8.4
10-14	890	0.9
15-19	230	0.2
≥20	154	0.1
Mean BLL (Geometric mean)	2.49	
Blood Specimen		
Capillary	16,422	15.9
Venous	78,258	76.0
Undetermined ³	8,294	8.1

^{1.} For detailed analysis and breakdown of numbers refer to Supplementary Data Tables 1-5.

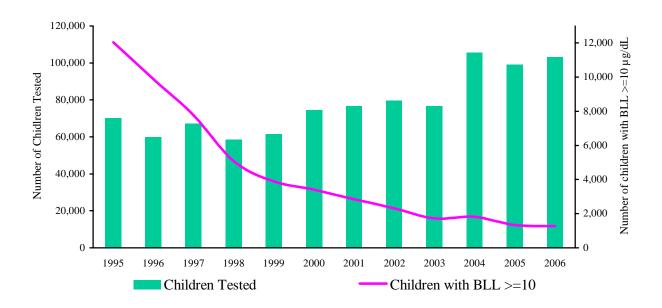
^{2.} The 123,013 tests were from 115,969 children 0-18 years, of whom 102,974 were 0-72 months old. Data in this statistical table are based on children 0-72 months.

^{3.} In supplemental data tables blood tests with sample type unknown were counted as capillary.

Findings

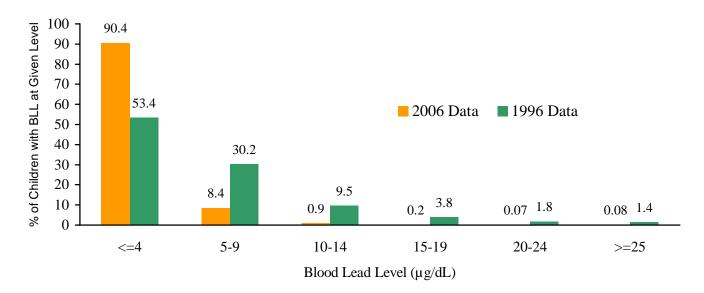
There has been a steady decline in childhood lead exposure in Maryland over the past decade at all levels of exposure. The reduction has occurred both statewide (Figure One) and in areas of highest risk such as Baltimore City.

Figure One Number of Children 0-72 Months Tested for Lead and Number Reported to Have Blood Lead Level ≥10 µg/dL: 1995-2006



The drop in the extent and severity of childhood lead poisoning are not only pronounced in the decrease in the number of children with blood lead level $\geq 10 \,\mu\text{g/dL}$, but also in further shift to the left of those children with blood lead level $< 10 \,\mu\text{g/dL}$ (Figure Two).

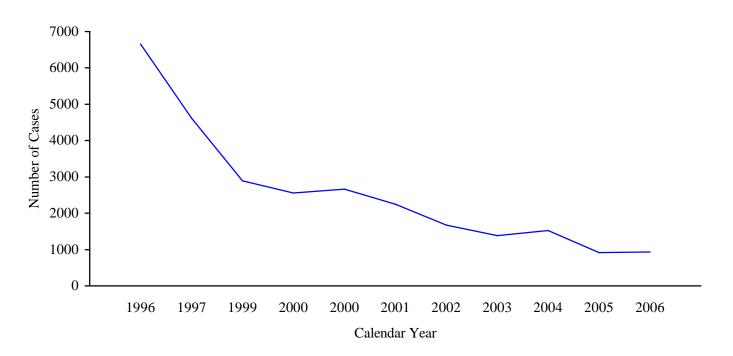
Figure Two Blood Lead Distribution of Children 0-72 Months Tested for Lead (1996 vs. 2006)



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There has been steady decline in both number and severity of new cases (incidence) of EBL (Figure Three, Map One, Maps Two a and b).

Figure Three Number of New Cases (Incidence) of EBL*: 1996:2006



Map One Distribution of New (Incidence) Cases of EBL by Blood Lead Level Children 0-72 Months, Baltimore City

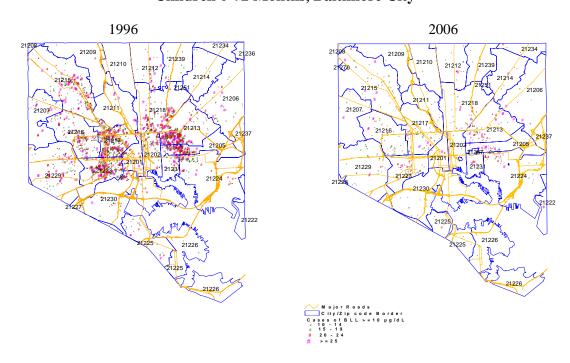


Table Two provides the breakdown of blood lead testing and the status of children with respect to lead exposure by jurisdiction in 2006.

Table Two
Blood Lead Testing of Children 0-72 Months by Jurisdiction in 2006

	Population	Children	Tested	Prevalent	t Cases ²	Incident Cases ³	
County	of Chidlren ¹	Number	Percent	Number	Percent	Number	Percent
Allegany	4,904	1,172	23.9	22	1.9	17	1.5
Anne Arundel	43,306	6,422	14.8	20	0.3	16	0.2
Baltimore	59,148	15,344	25.9	85	0.6	69	0.4
Baltimore City	54,547	18,363	33.7	843	4.6	573	3.1
Calvert	6,737	749	11.1	9	1.2	9	1.2
Caroline	2,463	893	36.3	7	0.8	3	0.3
Carroll	13,400	1,378	10.3	7	0.5	5	0.4
Cecil	7,808	1,058	13.5	6	0.6	6	0.6
Charles	11,404	1,919	16.8	1	0.1	1	0.1
Dorchester	2,177	684	31.4	11	1.6	8	1.2
Frederick	18,484	3,108	16.8	10	0.3	7	0.2
Garrett	2,406	495	20.6	5	1.0	3	0.6
Harford	20,721	3,041	14.7	15	0.5	14	0.5
Howard	24,092	2,188	9.1	8	0.4	6	0.3
Kent	1,184	257	21.7	4	1.6	4	1.6
Montgomery	78,408	17,411	22.2	53	0.3	48	0.3
Prince George's	75,996	18,561	24.4	71	0.4	66	0.4
Queen Anne's	3,425	659	19.2	4	0.6	4	0.6
Saint Mary's	8,285	1,517	18.3	11	0.7	11	0.7
Somerset	1,560	506	32.4	9	1.8	5	1.0
Talbot	2,326	636	27.3	5	0.8	5	0.8
Washington	10,593	3,012	28.4	18	0.6	15	0.5
Wicomico	6,955	2,440	35.1	22	0.9	16	0.7
Worcester	3,002	962	32.0	7	0.7	5	0.5
County Unknown		199		21		20	
Statewide	463,331	102,974	22.2	1,274	1.2	936	0.9

- 1. Adapted from the Census Bureau: "State Interim Population Projections by Age and Sex: 2000-2030" http://www.census.gov/population/www/projections/projectionsagesex.html.
- 2. All children with at least one blood lead test $\geq 10 \mu g/dL$ in 2006.
- 3. Children with the very first blood lead test $\geq 10 \,\mu\text{g/dL}$ in 2006. These children were either not tested in the past or their blood lead levels were below 10 $\mu\text{g/dL}$.

Appendix A provides numbers of children by age groups of 0-35 months and 36-72 months, and Appendix B provides summary results for the past eight (8) years at the State, Baltimore City and Counties levels. For detailed breakdown of blood lead data the reader is referred to supplementary data tables: Supplements 1-5.

Statewide activities to reduce (eliminate) childhood lead poisoning

State of Maryland has implemented laws and regulations, and has in place activities to reduce and eliminate childhood lead poisoning.

<u>Primary Prevention</u>: Much of the decline in blood lead levels is the result of implementation and enforcement of Maryland's "Reduction of Lead Risk in Housing" law. The law requires each pre-1950 rental dwelling to be issued a Full Risk Reduction certificate at turnover. In 2001, at least 50% of the owner's affected properties were required to be in compliance with the Full Risk Reduction Standard, 100% compliance was required in 2006. Effective October 1, 2004, the law requires rent court Judges and local housing registry officials to not accept cases and applications from pre-1950 rental property owners who can not present lead certificates that indicate that their rental properties are in compliance with the Reduction of Lead Risk in Housing law.

State laws and regulations with impact on childhood lead poisoning

- ✓ Requirements to perform lead hazard reduction at each turnover in rental housing built before 1950. [Environment Article (EA) §6-8]
- ✓ Outreach programs to parents, health care providers, and property owners, especially in at-risk areas. [EA§ 6-8, Health Article §18-106]

Other factors contributing to the decline of blood lead levels are the movement of families away from older housing into more recently built city or suburban housing (Table Three), and outreach and education to families and health care providers.

Table Three
Housing Units by Type of Occupancy and the Year Structure Built

Year	1990 Ho	ousing ¹	2000 Hou		2000 Housing ²			000 Housing ² 20		2005 He	2005 Housing ³	
Structure Built	Number	Percent		Number	Percent		Number	Percent				
Owner occupied	1,137,307	100.0		1,341,594	100.0		1,438,614	100.0				
1980+	263,208	23.1		507,485	37.8		613,226	42.7				
1950-1979	599,545	52.7		576,420	43.0		580,816	40.3				
Pre- 1950	274,554	24.1		257,689	19.2		244,572	17.0				
Renter Occupied	612,090	100.0		639,265	100.0		647,033	100.0				
1980+	105,684	17.3		171,397	26.8		206,488	31.9				
1950-1979	347,299	56.7		333,338	52.1		316,312	48.9				
Pre- 1950	159,107	26.0		134,530	21.0		124,233	19.2				

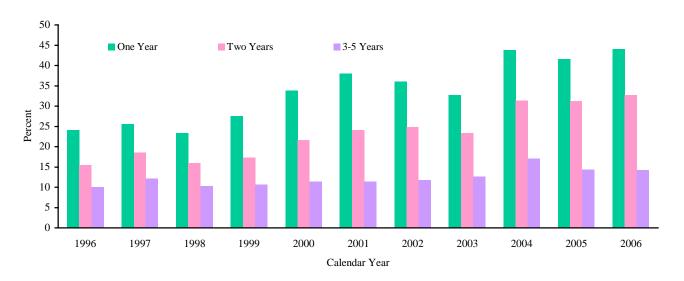
- 1. US Census Bureau, US census of population and housing of 1990.
- 2. US. Census Bureau, US census of population and housing of 2000.
- 3. US. Census Bureau, American Community Survey of 2005

<u>Secondary Prevention</u>: Maryland requires that children living in "at-risk" areas be tested at ages one and two years. The State has a targeted testing plan that identifies "at-risk areas." Universal blood lead testing applies to Baltimore City children (Ordinance 20 effective July 2000) and children on Medicaid (required by EPSDT). The percentage of one and two year old children tested for lead has increased substantially since 2004 (Figure Four).

Identifying Children with Lead Exposure

The critical issue in childhood lead poisoning is early detection. Because there are no specific clinical symptoms, a blood lead test is the most reliable technique to identify children with elevated blood lead levels. If there is any suspicion that a child is exposed to lead, a health care provider should do a blood lead test.

Figure Four
Percent of Children One and Two Years Old Tested for Lead vs. Children of Other



Tertiary Prevention: Maryland's Lead Poisoning Prevention Program has well-established case management guidance and environmental investigation protocols for follow-up of children with elevated blood lead level. As of February 24, 2006, one venous or two capillary blood lead tests $\geq 10~\mu g/dL$ trigger the Notice of EBL under the Reduction of Lead Risk in Housing Law. A venous blood lead test $\geq 10~\mu g/dL$ in Baltimore city or a venous blood lead test $\geq 15~\mu g/dL$ in Maryland counties initiates environmental investigation.

Data Quality

The CLR is maintained in the "Systematic Tracking of Elevated Lead Levels and Remediation" (STELLAR) surveillance system, obtained from CDC Lead Poisoning Prevention Program. CLR staff makes all efforts to further improve data quality with respect to completeness, timeliness, and accuracy. Staff keep track of laboratory reporting to make sure laboratories are reporting all blood lead tests no later than biweekly. The law requires blood lead results $\geq 20~\mu\text{g/dL}$ to be reported (fax) within 24 hours after result is known. However, upon CLR request, laboratories agreed to report (fax) the result of all blood lead test $\geq 10~\mu\text{g/dL}$ within 24 hours. For all blood lead tests $\geq 10~\mu\text{g/dL}$, staff check the completeness of data in particular with respect to child's and guardian's name, address, and telephone number.

In 2006, more than 91.6% of blood lead tests were reported to registry electronically. The average reporting time, from the time sample is drawn to time the result enters the CLR database

is approximately 7 days. The average time for elevated blood lead results ($\geq 10 \,\mu g/dL$) is approximately 30 hours. Table Four provides summary reports for completeness of data as required by law.

Table Four Completeness of Data for 2006

Item	% Complete
Child's name	100
Date of Birth	100
Sex/Gender	97.7
Race/Ethnicity	44.9
Guardian's name	38.5
Sample type	98.2
Blood lead level	100
Address (geocoded)	92.2

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 to be reported (fax) within 24 hours after result is known. All other results to be reported every two weeks.
- 3-Reporting format should comply with the format designed and provided by the Registry.
- 4-Data should be provided electronically.
- * EA 6-303, Blood lead test reporting (COMAR 26.02.01, Blood lead test reporting)

Appendix A Blood Lead Testing of Children 0-72 Months by Major Age Group and Jurisdiction in 2006

Age Group	Population of Children	Children Number	Tested Percent	Prevalent Number	Cases Percent	Incident Number	Cases Percent			
	Allegany County									
0-35 Months	2,503	970	38.8	16	1.6	14	1.4			
36-72 Months	2,401	202	8.4	6	3.0	3	1.5			
Total	4,904	1,172	23.9	22	1.9	17	1.5			
			Anne A	rundel Cour	ıty					
0-35 Months	21,947	4,799	21.9	14	0.3	12	0.3			
36-72 Months	21,359	1,623	7.6	6	0.4	4	0.2			
Total	43,306	6,422	14.8	20	0.3	16	0.2			
				nore County						
0-35 Months	29,735	11,126	37.4	64	0.6	58	0.5			
36-72 Months	29,413	4,218	14.3	21	0.5	11	0.3			
Total	59,148	15,344	25.9	85	0.6	69	0.4			
				imore City						
0-35 Months	28,024	12,690	45.3	537	4.2	438	3.5			
36-72 Months	26,523	5,673	21.4	306	5.4	135	2.4			
Total	54,547	18,363	33.7	843	4.6	573	3.1			
			Calv	ert County						
0-35 Months	3,266	582	17.8	9	1.5	9	1.5			
36-72 Months	3,470	167	4.8	0	0.0		0.0			
Total	6,737	749	11.1	9	1.2	9	1.2			
			Caro	line County						
0-35 Months	1,147	685	59.7	6	0.9	2	0.3			
36-72 Months	1,316	208	15.8	1	0.5	1	0.5			
Total	2,463	893	36.3	7	0.8	3	0.3			
			Carr	oll County						
0-35 Months	6,483	983	15.2	5	0.5	5	0.5			
36-72 Months	6,917	395	5.7	2	0.5		0.0			
Total	13,400	1,378	10.3	7	0.5	5	0.4			
			Ced	cil County						
0-35 Months	3,883	726	18.7	4	0.6	4	0.6			
36-72 Months	3,925	332	8.5	2	0.6	2	0.6			
Total	7,808	1,058	13.5	6	0.6	6	0.6			

Appendix A (continued)
Blood Lead Testing of Children 0-72 Months by Major Age Group and Jurisdiction in 2006

Age Group	Population of Children	Children Tested Number Percent		Prevalent Cases Number Percent		Incident Number	Cases Percent
			Char	les County			
0-35 Months	5,628	1,306	23.2	1	0.1	1	0.1
36-72 Months	5,776	613	10.6	0	0.0	-	0.0
Total	11,404	1,919	16.8	1	0.1	1	0.1
			Dorch	ester County	/		
0-35 Months	1,082	518	47.9	10	1.9	8	1.5
36-72 Months	1,096	166	15.2	1	0.6		0.0
Total	2,177	684	31.4	11	1.6	8	1.2
			Frede	rick County			
0-35 Months	9,136	2,062	22.6	8	0.4	7	0.3
36-72 Months	9,348	1,046	11.2	2	0.2		0.0
Total	18,484	3,108	16.8	10	0.3	7	0.2
			Garı	ett County			
0-35 Months	1,194	360	30.2	3	0.8	2	0.6
36-72 Months	1,212	135	11.1	2	1.5	1	0.7
Total	2,406	495	20.6	5	1.0	3	0.6
			Harf	ord County			
0-35 Months	10,224	2,109	20.6	12	0.6	12	0.6
36-72 Months	10,497	932	8.9	3	0.3	2	0.2
Total	20,721	3,041	14.7	15	0.5	14	0.5
				ard County			
0-35 Months	11,739	1,485	12.7	4	0.3	3	0.2
36-72 Months	12,353	703	5.7	4	0.6	3	0.4
Total	24,092	2,188	9.1	8	0.4	6	0.3
				nt County			
0-35 Months	611	214	35.0	3	1.4	3	1.4
36-72 Months	573	43	7.5	1	2.3	1	2.3
Total	1,184	257	21.7	4	1.6	4	1.6
			_	omery Coun	•		
0-35 Months	39,777	11,710	29.4	33	0.3	32	0.3
36-72 Months	38,631	5,701	14.8	20	0.4	16	0.3
Total	78,408	17,411	22.2	53	0.3	48	0.3

Appendix A (continued)
Blood Lead Testing of Children 0-72 Months by Major Age Group and Jurisdiction in 2006

Age Group	Population of Children	Children Tested Number Percent		Prevalent Cases Number Percent		Incident Number	Cases Percent			
	Prince George's County									
0-35 Months	38,073	11,715	30.8	46	0.4	42	0.4			
36-72 Months	37,923	6,846	18.1	25	0.4	24	0.4			
Total	75,996	18,561	24.4	71	0.4	66	0.4			
			Queen A	Anne's Cour	nty					
0-35 Months	1,700	485	28.5	3	0.6	3	0.6			
36-72 Months	1,725	174	10.1	1	0.6	1	0.6			
Total	3,425	659	19.2	4	0.6	4	0.6			
			Saint M	lary's Coun	ty					
0-35 Months	4,106	1,226	29.9	6	0.5	6	0.5			
36-72 Months	4,179	291	7.0	5	1.7	5	1.7			
Total	8,285	1,517	18.3	11	0.7	11	0.7			
				erset County						
0-35 Months	776	396	51.0	9	2.3	5	1.3			
36-72 Months	784	110	14.0	0	0.0		0.0			
Total	1,560	506	32.4	9	1.8	5	1.0			
			Tall	oot County						
0-35 Months	1,107	501	45.2	5	1.0	5	1.0			
36-72 Months	1,218	135	11.1	0	0.0		0.0			
Total	2,326	636	27.3	5	0.8	5	0.8			
			Washi	ngton Count	.y					
0-35 Months	5,366	1,870	34.8	13	0.7	11	0.6			
36-72 Months	5,227	1,142	21.8	5	0.4	4	0.4			
Total	10,593	3,012	28.4	18	0.6	15	0.5			
			Wicon	mico County	/					
0-35 Months	3,531	1,668	47.2	16	1.0	14	0.8			
36-72 Months	3,424	772	22.5	6	0.8	2	0.3			
Total	6,955	2,440	35.1	22	0.9	16	0.7			
			Worce	ester County	/					
0-35 Months	1,560	623	39.9	5	0.8	5	0.8			
36-72 Months	1,443	339	23.5	2	0.6		0.0			
Total	3,002	962	32.0	7	0.7	5	0.5			

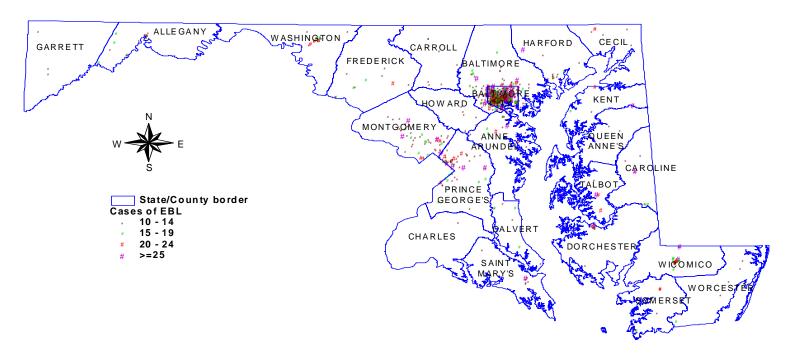
Appendix A (continued)
Blood Lead Testing of Children 0-72 Months by Major Age Group and Jurisdiction in 2006

	Population	Children	Tested	Prevalent Cases		Incident Cases	
Age Group	of Children	Number	Percent	Number	Percent	Number	Percent
			Coun	ty Unknown	l		
0-35 Months		144		17		17	
36-72 Months		55		4		3	
Total		199		21		20	
			S	tatewide			
0-35 Months	232,596	70,953	30.5	849	1.2	718	1.0
36-72 Months	230,735	32,021	13.9	425	1.3	218	0.7
Total	463,331	102,974	22.2	1,274	1.2	936	0.9

Appendix B Blood Lead Testing of Children 0-72 Months: 1999-2006

Calendar			Blood Le	ad Tests	BLL ≥1	0 μg/dL	Lead Poi	soning
Year		Population	Number	Percent	Number	Percent	Number	Percent
1999								
1,,,,	City	55,401	17,414	31.4	2,902	16.7	446	2.6
	Counties	363,511	43,524	12.0	925	2.1	102	0.2
	Unknown	303,311	591	12.0	77	2.1	7	0.2
	Total	418,912	61,529	14.7	3,904	6.4	555	0.9
2000	Total	110,712	01,527	11.7	3,701	0.1	333	0.7
2000	C '.	50.200	10.022	26.0	2 100	10.0	266	1.5
	City	50,380	18,033	36.8	2,198	12.2	266	1.5
	Counties	377,559	51,210	13.6	847	1.7	85	0.2
	Unknown	127.020	5,273	17.4	357	4.6	2	0.5
	Total	427,939	74,516	17.4	3,402	4.6	353	0.5
2001								
	City	53,149	21,231	40.0	2,027	9.5	230	1.1
	Counties	387,289	55,470	14.3	814	1.5	58	0.1
	Unknown		41		0		0	
	Total	431,438	76,742	17.8	2,841	3.7	288	0.4
2002								
	City	52,744	16,595	31.5	1,558	9.4	183	1.1
	Counties	384,073	62,822	16.4	737	1.2	77	0.1
	Unknown	501,075	90	10	2	1.2	0	0.1
	Total	436,817	79,507	18.2	2,297	2.9	260	0.3
2002	10001	,	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	10.2	_,_> .	,		0.0
2003	City	51 902	10 242	25.2	1 166	6.4	160	0.9
	City	51,892	18,242	35.2	1,166			
	Counties	386,076	58,470 9	15.1	552	0.9	77	0.1
	Unknown	127.069	-	175	1 710	2.2	0	0.2
	Total	437,968	76,721	17.5	1,719	2.2	237	0.3
2004								
	City	52,796	18,970	35.9	1183	6.2	147	0.8
	Counties	395,310	83,002	21.0	573	0.7	83	0.1
	Unknown		3,577		55			
	Total	448,106	105,549	23.6	1,811	1.7	230	0.2
2005					Prevaler	nt cases	Incident	cases
	City	53,626	17,943	33.5	854	4.8	534	3.0
	Counties	401,888	80,848	20.1	463	0.6	382	0.5
	Unknown		357		14		0	
	Total	455,514	99,148	21.8	1,331	1.3	916	0.9
2006								
	City	54,547	18,363	33.7	843	4.6	573	3.1
	Counties	408,784	84,611	20.7	431	0.5	363	0.4
	Unknown		199		21		20	
	Total	463,331	102,974	22.2	1,274	1.2	936	0.9

 $\label{eq:mapTwo-a} \mbox{Distribution of Children 0-72 Months Tested for Lead in 2006 with Blood Lead Level >=10 $\mu g/dL$}$



 $\label{eq:mapTwo-b} \mbox{Distribution of Children 0-72 Months Tested for Lead in 1996 with Blood Lead Level >=10 $\mu g/dL$}$

