



**MARYLAND DEPARTMENT OF THE ENVIRONMENT**

**Lead Poisoning Prevention Program**

**Childhood Blood Lead Surveillance in Maryland**

**2005 Annual Report**

**July, 2006**



# MARYLAND CHILDHOOD LEAD REGISTRY

## 2005 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 provides blood lead test results to local health departments as needed for case management and planning.

Since 1995, the registry 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 2005 (CY 2005). All numbers are based on blood lead testing on children. The CLR does not receive any reports on lead screening based on the lead risk assessment questionnaire.

#### **CY 2005 Surveillance Highlights:**

- A total of 99,148 (21.8%) children 0-72 months were tested for lead exposure in 2005 statewide.
- The highest testing rates for children 0-72 months were found in Caroline county (35.1%); followed by Baltimore City (33.5%), Somerset county (31.8%), and Washington county (31.1%).
- The highest testing rates for children 0-35 months were found in Caroline county (54.8%), Somerset county (46.3%), Baltimore City (44.2%) and Wicomico county (41.7%).
- Accurate completion of address information further improved in 2005. More than 88% 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.
- Data management system improved. 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 (CDC) Lead Poisoning Prevention Program. More CLR staff work occurred this year on quality control and assurance activities to improve data quality and timeliness. In 2005, 91.8% 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 Registry database is approximately 7 days. The average time for elevated blood lead results ( $\geq 10$   $\mu\text{g}/\text{dL}$ ) is approximately 30 hours.
- Out of 99,148 children 0-72 months tested for lead statewide in 2005, 1,331 (1.3%) were found to have blood lead level  $\geq 10$   $\mu\text{g}/\text{dL}$  (prevalence case) of whom 916 had their very first EBL test (incidence case) in 2005. One hundred six (106) children had venous blood lead

level  $\geq 20$   $\mu\text{g}/\text{dL}$  (at level of qualified offer). Of these, 70 children were from Baltimore City.

- To better reflect the extent of the work, and to direct program activities to the “more at-risk” areas, revised and new terms were applied; “Prevalence case” (to replace number of children with EBL), “At Level of Qualified Offer” (to replace number of children with lead poisoning), and “Incidence case” (new term). Refer to text for further discussion on these terms.
- As part of the Governor’s legislative initiative in 2005, the blood lead level that triggers a qualified offer was lowered from  $20\mu\text{g}/\text{dL}$  to  $15\mu\text{g}/\text{dL}$ . This change became effective on February 24, 2006. The 2006 Annual report will reflect the change.

## OVERVIEW

### LEAD POISONING IN MARYLAND

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.

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.

#### Sources of Childhood Lead Exposure

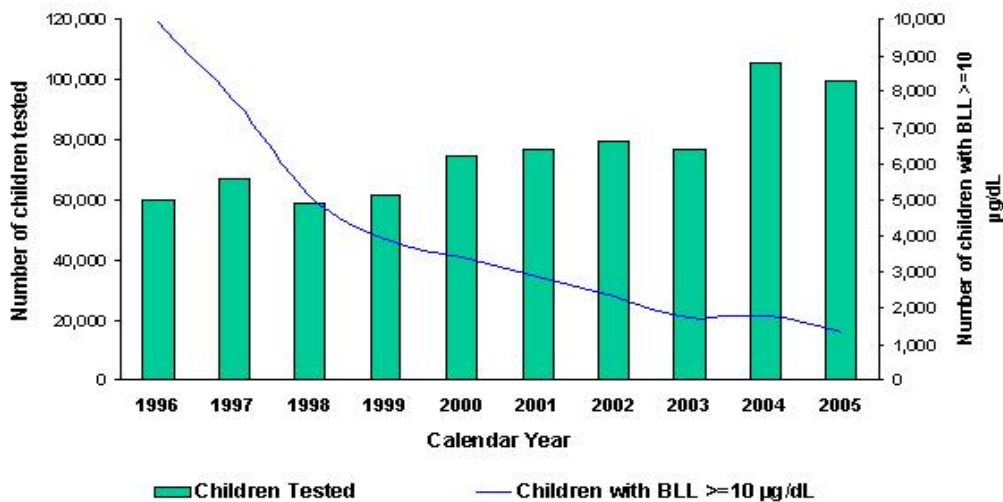
Lead paint dust from deteriorated lead paint or from renovation is the major source of exposure for children in Maryland. According to the US Census Bureau, 2004 American Community Survey there are more than 449,000 residential houses built before 1950 (95% likely to contain lead paint) and 972,000 houses 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.

Figure One

#### Number of Children 0-72 Months Tested for Lead and Number Reported to Have Blood Lead Level $\geq 10 \mu\text{g}/\text{dL}$ : 1996-2005



Much of the decline in blood lead levels is the result of lead poisoning prevention efforts. Increased enforcement of Maryland’s “Reduction of Lead Risk in Housing” law (Table One), increased awareness by parents and property owners of the hazards of lead exposure, and improved maintenance of rental housing.

**Table One**  
**Number of Certificates Issued for Pre-1950 Residential Rental Properties**

Calendar Year	Number of Certificates
1996	6,349
1997	14,045
1998	11,914
1999	11,320
2000	11,157
2001 <sup>1</sup>	19,349
2002	13,972
2003	12,517
2004 <sup>2</sup>	17,949
2005	29,891

Source: Maryland Department of the Environment, Lead Poisoning Prevention Program, Enforcement Division

1. The “Reduction of Lead Risk in Housing” 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 is required in 2006.
2. 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.

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 Two), and outreach and education to families and health care providers.

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

Occupancy and Year	1990 Housing <sup>1</sup>		2004 Housing <sup>2</sup>	
	Number	Percent	Number	Percent
Owner occupied	1,137,307	100.0	1,443,955	100.0
1980+	263,208	23.1	580,156	40.2
1950-1979	599,545	52.7	591,592	41.0
Pre- 1950	274,554	24.1	272,207	18.8
Renter Occupied	612,090	100.0	633,945	100.0
1980+	105,684	17.3	200,778	31.7
1950-1979	347,299	56.7	314,994	49.7
Pre- 1950	159,107	26.0	118,173	18.6

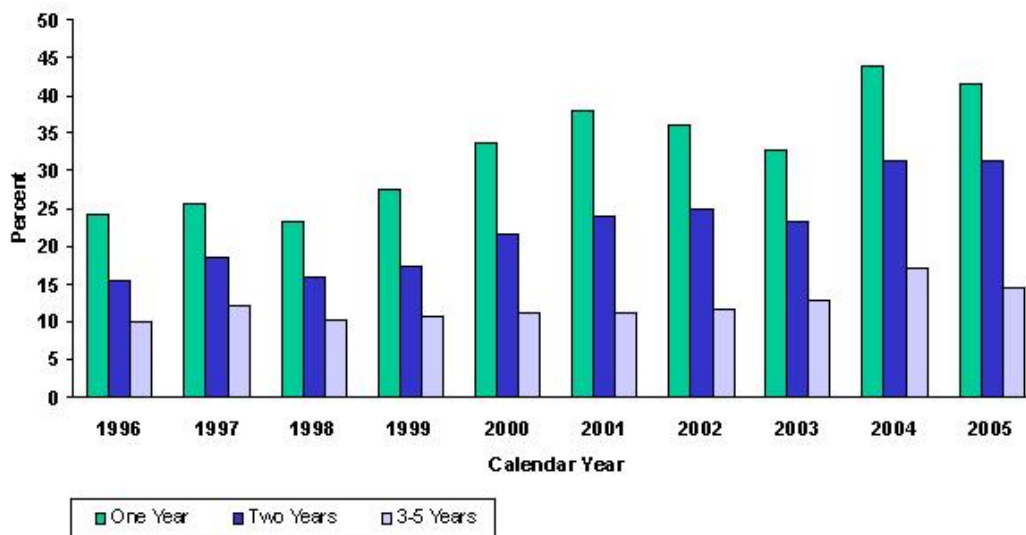
1. US Census Bureau, US census of population and housing of 1990.
2. US Census Bureau, 2004 American Community Survey.

**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]

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 increased (Figure 2). The increase in the testing of pre-school aged children can probably be attributed to parents and healthcare providers’ response to the school enrollment testing requirement in Health Article 18-106, which became effective for the school year starting September 2003.

**Figure 2**  
**Percent of Children One and Two Years Old Tested for Lead vs. Children of Other Ages\***



\* Children 0-72 months old with highest blood lead test for each year.  
 Source: Maryland Department of the Environment, Childhood lead Registry, Statewide data: 1996-2005.

**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.

Maryland’s Lead Poisoning Prevention Program has well-established case management and environmental investigation protocols for follow-up of children with elevated blood lead. A summary of Maryland’s case management guidelines is presented in Appendix A. The guidance was revised in February 2006 to reflect the new Notice of EBL portion of the Reduction of Lead Risk in Housing law, which dropped from a venous of 15 µg/dL to a venous of 10 µg/dL.

In calendar year 2005, a total of 99,148 children 0-72 months were tested for lead exposure statewide. Table Three provides a summary of statewide statistics of blood lead testing in 2005, and Table Four provides the breakdown of blood lead testing and the status of children with respect to lead exposure by jurisdiction in 2005. Table Four-A provides numbers of children by age groups of 0-35 months and 36-72 months. Table Five shows summary results for 9 years at the State, Baltimore City and Counties levels.

**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
  - Address
  - Test date
  - Sample type
  - Blood lead level
- 2-Blood lead results  $\geq 20$   $\mu\text{g/dL}$  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)

**Table Three**  
**Calendar Year (CY) 2005 Statistical Report<sup>1</sup>**

Item	Number	Percent (%)
Number of tests	118,524	
Number of children	99,148	100.0
<b>Age</b>		
Under One	11,112	10.4
One Year	31,782	31.3
Two Years	23,741	22.5
Three Years	11,678	12.7
Four Years	12,054	13.7
Five Years	8,781	9.4
<b>Sex</b>		
Female	47,655	48.1
Male	49,257	49.7
Undetermined	2,236	2.2
<b>Highest Blood Lead Level (<math>\mu\text{g/dL}</math>)</b>		
0-4	90,378	91.2
5-9	7,439	7.5
10-14	959	1.0
15-19	224	0.2
$\geq 20$	148	0.1

Mean BLL (Geometric mean)	2.37	
<b>Blood Specimen</b>		
Capillary	15,239	15.3
Venous	76,394	77.1
Undetermined <sup>3</sup>	7,515	7.6

1. For detailed analysis and breakdown of numbers refer to Supplementary Data Tables 1-5.
2. The 118,524 tests were from 113,362 children 0-18 years, of whom 99,148 were 0-72 months old. Data in this statistical table is based on children 0-72 months.
3. In supplemental data tables blood tests with sample type unknown were counted as capillary.

**Terms and definitions:**

To better reflect the extent of the work, and to direct program activities to the “more at-risk” areas, for the 2005 annual report (and forward), the following terms and definitions will be applied (the corresponding terms from previous reports are in parentheses).

EBL: A venous (or capillary in the absence of any venous) blood lead level  $\geq 10 \mu\text{g/dL}$ .

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

Incidence case: Any child with the very first EBL in 2005. The incidence case reflects the load of the children with EBL who have never had any EBLs in the past (not tested for lead, or their blood lead levels were below  $10 \mu\text{g/dL}$ .) Incidence is a better indicator for primary prevention than prevalence. It is expected that expansion of primary prevention activities result in less exposure and fewer new (incidence) cases. The old (prevalence) cases, because of the extent and severity of their past exposure may continue to have EBL for weeks, months, or even years.

To locate the new (incidence) cases for 2005, the list of children with EBL in 2005 was matched against the pool of children with EBL from 1995 forward. The matching criteria were the full (last, first) name and date of birth (mm/dd/yyyy). Any child who was not found in the match was assumed to be a new case.

At Level of Qualified Offer (children with lead poisoning): Any child with the venous blood lead level  $\geq 20 \mu\text{g/dL}$  in 2005. Qualified offer (QO) is the liability relief component of the Maryland Reduction of Lead Risk in Housing Act enacted in 1994 to address the problem of lead-based paint in pre-1950 rental units.

**Definition of Qualified Offer:** If a child under six, or a pregnant woman, has a blood lead level of 20 mcg/dL before February 24, 2006, or a blood lead level of 15 mcg/dL or more on or after February 24, 2006, the property owner may make a Qualified Offer. In order for the property owner to make a valid Qualified Offer, the property must be in full compliance with the law as found in Title 6, Subtitle 8 of Maryland’s Environment Article. Through a Qualified Offer, the law provides limited liability relief to property owners who meet minimum risk reduction standards. Compensation is capped at \$17,000: up to \$9,500 for relocation benefits and up to \$7,500 for uncovered, medically necessary expenses. By accepting a Qualified Offer, the Person at Risk (or parent or guardian) agrees not to sue their Landlord for possible damages caused by lead poisoning.



**Maryland Department of the Environment  
Lead Poisoning Prevention Program**

**Table Four**

**Blood Lead Testing of Children 0-72 Months by Jurisdiction in 2005**

County	Population of Children <sup>1</sup>	Children Tested		Prevalence Cases <sup>2</sup>		Incidence Cases <sup>2</sup>		At Level of Qualified Offer <sup>2</sup>	
		Number	Percent	Number	Percent	Number	Percent	Number	Percent
Allegany	4,821	1,037	21.5	32	3.1	25	2.4	1	0.1
Anne Arundel	42,575	6,631	15.6	20	0.3	18	0.3	2	0.0
Baltimore	58,150	14,505	24.9	110	0.8	84	0.6	5	0.0
Baltimore City	53,626	17,943	33.5	854	4.8	534	3.0	70	0.4
Calvert	6,623	753	11.4	7	0.9	6	0.8	1	0.1
Caroline	2,422	849	35.1	11	1.3	10	1.2	1	0.1
Carroll	13,173	1,460	11.1	5	0.3	3	0.2	1	0.1
Cecil	7,677	1,046	13.6	7	0.7	6	0.6	0	0.0
Charles	11,212	1,811	16.2	7	0.4	6	0.3	0	0.0
Dorchester	2,141	609	28.5	11	1.8	8	1.3	2	0.3
Frederick	18,172	3,019	16.6	14	0.5	11	0.4	1	0.0
Garrett	2,365	532	22.5	4	0.8	3	0.6	2	0.4
Harford	20,371	2,939	14.4	17	0.6	14	0.5	0	0.0
Howard	23,686	2,273	9.6	7	0.3	4	0.2	0	0.0
Kent	1,164	172	14.8	2	1.2	2	1.2	0	0.0
Montgomery	77,085	16,353	21.2	65	0.4	55	0.3	5	0.0
Prince George's	74,714	17,906	24.0	68	0.4	61	0.3	6	0.0
Queen Anne's	3,367	484	14.4	0	0.0	0	0.0	0	0.0
Saint Mary's	8,145	1,381	17.0	10	0.7	9	0.7	0	0.0
Somerset	1,534	488	31.8	8	1.6	3	0.6	3	0.6
Talbot	2,286	573	25.1	2	0.3	2	0.3	0	0.0
Washington	10,414	3,235	31.1	21	0.6	18	0.6	2	0.1
Wicomico	6,838	2,096	30.7	29	1.4	18	0.9	3	0.1
Worcester	2,952	696	23.6	6	0.9	3	0.4	1	0.1
County Unknown		357		14		13		0	
<b>Total</b>	<b>455,514</b>	<b>99,148</b>	<b>21.8</b>	<b>1,331</b>	<b>1.3</b>	<b>916</b>	<b>0.9</b>	<b>106</b>	<b>0.1</b>

Notes:

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. Refer to text for definitions.

**Table Four-A***Blood lead Testing of Children 0-72 Months by Major Age Group and Jurisdiction in 2005*

Age Group	Population of Children	Children Tested		Prevalence Cases		Incidence Cases		At Level of Qualified Offer	
		Number	Percent	Number	Percent	Number	Percent	Number	Percent
Allegany County									
0-35 Months	2,467	859	34.8	25	2.9	18	2.1	1	0.1
36-72 Months	2,354	178	7.6	7	3.9	7	3.9	0	0.0
Total	4,821	1,037	21.5	32	3.1	25	2.4	1	0.1
Anne Arundel County									
0-35 Months	21,632	4,916	22.7	14	0.3	14	0.3	0	0.0
36-72 Months	20,943	1,715	8.2	6	0.3	4	0.2	2	0.1
Total	42,575	6,631	15.6	20	0.3	18	0.3	2	0.0
Baltimore County									
0-35 Months	29,309	10,147	34.6	70	0.7	63	0.6	3	0.0
36-72 Months	28,841	4,358	15.1	40	0.9	21	0.5	2	0.0
Total	58,150	14,505	24.9	110	0.8	84	0.6	5	0.0
Baltimore City									
0-35 Months	27,622	12,208	44.2	533	4.4	410	3.4	44	0.4
36-72 Months	26,004	5,735	22.1	321	5.6	124	2.2	26	0.5
Total	53,626	17,943	33.5	854	4.8	534	3.0	70	0.4
Calvert County									
0-35 Months	3,220	599	18.6	7	1.2	6	1.0	1	0.2
36-72 Months	3,403	154	4.5	0	0.0	0	0.0	0	0.0
Total	6,623	753	11.4	7	0.9	6	0.8	1	0.1
Caroline County									
0-35 Months	1,131	619	54.7	8	1.3	8	1.3	1	0.2
36-72 Months	1,291	230	17.8	3	1.3	2	0.9	0	0.0
Total	2,422	849	35.1	11	1.3	10	1.2	1	0.1
Carroll County									
0-35 Months	6,390	1,002	15.7	5	0.5	3	0.3	1	0.1
36-72 Months	6,783	458	6.8	0	0.0	0	0.0	0	0.0
Total	13,173	1,460	11.1	5	0.3	3	0.2	1	0.1
Cecil County									
0-35 Months	3,828	644	16.8	3	0.5	3	0.5	0	0.0
36-72 Months	3,849	402	10.4	4	1.0	3	0.7	0	0.0
Total	7,677	1,046	13.6	7	0.7	6	0.6	0	0.0
Charles County									
0-35 Months	5,547	1,224	22.1	7	0.6	6	0.5	0	0.0
36-72 Months	5,665	587	10.4	0	0.0	0	0.0	0	0.0
Total	11,212	1,811	16.2	7	0.4	6	0.3	0	0.0

**Table Four-A (continued)***Blood lead Testing of Children 0-72 Months by Major Age Group and Jurisdiction in 2005*

Age Group	Population of Children	Children Tested		Prevalence Cases		Incidence Cases		At Level of Qualified Offer	
		Number	Percent	Number	Percent	Number	Percent	Number	Percent
Dorchester County									
0-35 Months	1,066	437	41.0	6	1.4	6	1.4	2	0.5
36-72 Months	1,075	172	16.0	5	2.9	2	1.2	0	0.0
Total	2,141	609	28.4	11	1.8	8	1.3	2	0.3
Frederick County									
0-35 Months	9,005	1,946	21.6	8	0.4	8	0.4	1	0.1
36-72 Months	9,167	1,073	11.7	6	0.6	3	0.3	0	0.0
Total	18,172	3,019	16.6	14	0.5	11	0.4	1	0.0
Garrett County									
0-35 Months	1,177	335	28.5	4	1.2	3	0.9	2	0.6
36-72 Months	1,188	197	16.6	0	0.0	0	0.0	0	0.0
Total	2,365	532	22.5	4	0.8	3	0.6	2	0.4
Harford County									
0-35 Months	10,077	1,941	19.3	14	0.7	11	0.6	0	0.0
36-72 Months	10,294	998	9.7	3	0.3	3	0.3	0	0.0
Total	20,371	2,939	14.4	17	0.6	14	0.5	0	0.0
Howard County									
0-35 Months	11,571	1,498	12.9	5	0.3	4	0.3	0	0.0
36-72 Months	12,115	775	6.4	2	0.3	0	0.0	0	0.0
Total	23,686	2,273	9.6	7	0.3	4	0.2	0	0.0
Kent County									
0-35 Months	603	129	21.4	1	0.8	1	0.8	0	0.0
36-72 Months	561	43	7.7	1	2.3	1	2.3	0	0.0
Total	1,164	172	14.8	2	1.2	2	1.2	0	0.0
Montgomery County									
0-35 Months	39,207	10,693	27.3	41	0.4	39	0.4	2	0.0
36-72 Months	37,878	5,660	14.9	24	0.4	16	0.3	3	0.1
Total	77,085	16,353	21.2	65	0.4	55	0.3	5	0.0
Prince George's County									
0-35 Months	37,527	11,015	29.4	48	0.4	43	0.4	5	0.0
36-72 Months	37,187	6,891	18.5	20	0.3	18	0.3	1	0.0
Total	74,714	17,906	24.0	68	0.4	61	0.3	6	0.0
Queen Anne's County									
0-35 Months	1,675	355	21.2	0	0.0	0	0.0	0	0.0
36-72 Months	1,692	129	7.6	0	0.0	0	0.0	0	0.0
Total	3,367	484	14.4	0	0.0	0	0.0	0	0.0

**Table Four-A (continued)***Blood lead Testing of Children 0-72 Months by Major Age Group and Jurisdiction in 2005*

Age Group	Population of Children	Children Tested		Prevalence Cases		Incidence Cases		At Level of Qualified Offer	
		Number	Percent	Number	Percent	Number	Percent	Number	Percent
Saint Mary's County									
0-35 Months	4,047	1,136	28.1	7	0.6	7	0.6	0	0.0
36-72 Months	4,098	245	6.0	3	1.2	2	0.8	0	0.0
Total	8,145	1,381	17.0	10	0.7	9	0.7	0	0.0
Somerset County									
0-35 Months	765	354	46.3	5	1.4	2	0.6	3	0.8
36-72 Months	769	134	17.4	3	2.2	1	0.7	0	0.0
Total	1,534	488	31.8	8	1.6	3	0.6	3	0.6
Talbot County									
0-35 Months	1,091	431	39.5	1	0.2	1	0.2	0	0.0
36-72 Months	1,195	142	11.9	1	0.7	1	0.7	0	0.0
Total	2,286	573	25.1	2	0.3	2	0.3	0	0.0
Washington County									
0-35 Months	5,289	1,970	37.2	15	0.8	13	0.7	2	0.1
36-72 Months	5,125	1,265	24.7	6	0.5	5	0.4	0	0.0
Total	10,414	3,235	31.1	21	0.6	18	0.6	2	0.1
Wicomico County									
0-35 Months	3,480	1,452	41.7	15	1.0	12	0.8	1	0.1
36-72 Months	3,358	644	19.2	14	2.2	6	0.9	2	0.3
Total	6,838	2,096	30.7	29	1.4	18	0.9	3	0.1
Worcester County									
0-35 Months	1,537	489	31.8	3	0.6	3	0.6	1	0.2
36-72 Months	1,415	207	14.6	3	1.4	0	0.0	0	0.0
Total	2,952	696	23.6	6	0.9	3	0.4	1	0.1
County Unknown									
0-35 Months		236		11		10		0	
36-72 Months		121		3		3		0	
Total		357		14		13		0	
Statewide									
0-35 Months	229,263	66,635	29.1	856	1.3	694	1.0	70	0.1
36-72 Months	226,251	32,513	14.4	475	1.5	222	0.7	36	0.1
Total	455,514	99,148	21.8	1331	1.3	916	0.9	106	0.1

**Table 5: Childhood Blood Lead Surveillance in Maryland: 1997-2005  
Children 0-72 Months Old**

Calendar Year	Population of Children	<u>Blood Lead Tests</u>		<u>Elevated Blood Lead</u>		<u>Lead Poisoning</u>		
		Number	Percent	Number	Percent	Number	Percent	
1997								
	City	58,262	21,423	36.8	5,983	27.9	1030	4.8
	Counties	362,935	44,546	12.3	1654	3.7	202	0.5
	Unknown		1,149		126		1	
	Total	421,197	67,118	15.9	7,763	11.6	1233	1.8
1998								
	City	56,759	17,753	31.3	3,949	22.2	669	3.8
	Counties	359,726	40,164	11.1	1,082	2.7	103	0.3
	Unknown		668		37		0	
	Total	416,485	58,585	14.1	5,068	8.7	772	1.3
1999								
	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		591		77		7	
	Total	418,912	61,529	14.7	3,904	6.4	555	0.9
2000								
	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		5,273		357		2	
	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		90		2		0	
	Total	436,817	79,507	18.2	2,297	2.9	260	0.3
2003								
	City	51,892	18,242	35.2	1,166	6.4	160	0.9
	Counties	386,076	58,470	15.1	552	0.9	77	0.1
	Unknown		9		1		0	
	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					<u>Prevalence cases</u>		<u>At Qualified Offer level</u>	
	City	53,626	17,943	33.5	854	4.8	70	0.4
	Counties	401,888	80,848	20.1	463	0.6	36	0.04
	Unknown		357		14		0	
	Total	455,514	99,148	21.8	1,331	1.3	106	0.1

**Appendix A**  
**Maryland Lead Poisoning Prevention Program**  
**Recommendations for Intervention and Case Management for Children with Lead Exposure (Rev. June 16, 2006)**

<b>Blood Lead Level</b>	<b>Local Health Department</b>	<b>Health Care Provider</b>	<b>Statewide Law Enforcement</b>
< 9 µg/dL	Anything above zero indicates some exposure or contact with lead. No Community Health Nurse case management services are indicated.	<ul style="list-style-type: none"> <li>• General education about lead and lead exposure.</li> <li>• Risk Assessment Questionnaire at all routine child health visits.</li> <li>• Repeat blood lead level according to CDC guidelines.</li> </ul>	As in footnote 2, plus: MDE enforcement of Lead Risk in Housing law's subsections on Notice of Elevated Blood Lead Level.
10 – 14 µg/dL	This is the CDC Level of Concern. Provide education to decrease exposure, including information about Special Loans Housing Program. For venous tests at this level and higher, send Official Notice of Elevated Blood Lead Level to Tenant and Rental Property Owner when child is under 6 years of age and residence is pre-1950 rental housing. (Under Environment Article § 6-8, Reduction of Lead Risk in Housing Law.)	As above plus: <ul style="list-style-type: none"> <li>• Educate to decrease exposure.</li> <li>• Repeat blood lead levels according to CDC guidelines.</li> </ul>	
15 – 19 µg/dL	If capillary test, coordinate with health care provider and guardian to validate with a venous blood lead test within 1 month. If venous test: <ul style="list-style-type: none"> <li>• Actions under EA § 6-8, Reduction of Lead Risk in Housing as above and Qualified Offer.</li> <li>• Contact and make a home visit in coordination with the Environmental Lead Sanitarian who will complete an environmental investigation within 15 days.</li> </ul> Coordinate with the health care provider and guardian for follow-up activities, such as housing and follow-up blood tests.	As above plus: <ul style="list-style-type: none"> <li>• Evaluate for iron deficiency.</li> <li>• Take environmental history.</li> </ul>	
20 – 44 µg/dL	If capillary test, coordinate validation of level with a venous blood lead test within 1 week. If venous test: <ul style="list-style-type: none"> <li>• Contact and make a home visit in coordination with the Environmental Lead Sanitarian who will complete an environmental investigation within 5 working days.</li> <li>• Discuss with the health care provider possible referral to tertiary care centers specializing in management of childhood lead poisoning.</li> <li>• Provide appropriate referrals to other agencies (Social Services, Housing, etc.)</li> </ul> Actions under EA § 6-8, Reduction of Lead Risk in Housing as above and Qualified Offer.	As above plus: <ul style="list-style-type: none"> <li>• Complete medical / nutritional history and physical examination.</li> <li>• Obtain developmental / psychological evaluation.</li> <li>• Consider chelation consultation.</li> </ul>	As above plus: MDE and local health department enforcement of Notice of Violations.
≥ 45 µg/dL	If capillary, contact provider within 2 working days. Inform provider to mark all specimens STAT (Highest Priority) and request immediate processing and report from laboratory. If venous, contact provider within 1 working day. Home visit within 2 working days. Actions under EA § 6-8, Reduction of Lead Risk in Housing as above and Qualified Offer.	As above plus: <ul style="list-style-type: none"> <li>• Consult with specialist in lead poisoning treatment.</li> <li>• Perform urgent chelation.</li> </ul>	
> 70 µg/dL	Contact the health care provider within 24 hours. If capillary, confirm the result immediately with a STAT venous test. If venous, verify hospitalization as a medical emergency. Same as above. Home visit within 1 working day. Actions under EA § 6-8, Reduction of Lead Risk in Housing as above and Qualified Offer.	<b>Hospitalize: Medical Emergency</b>	

- 1) Maryland Department of the Environment recommendations, based on Centers for Disease Control and Prevention guidance.
- 2) Environment Article §6-8, "Reduction of Lead Risk in Housing" subsections on Rental Property Registration, Risk Reduction Treatments at Turnover and Notice of Defect are ongoing primary prevention activities that trigger enforcement actions in all pre-1950 rental housing.