# CHILDHOOD LEAD EXPOSURE IN NEW JERSEY

# ANNUAL REPORT

STATE FISCAL YEAR 2015 (July 1, 2014– June 30, 2015)

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### **GLOSSARY OF TERMS AND ACRONYMS**

**BLL:** Blood lead level.

**Children:** Refers to unduplicated individuals who are younger than 17 years of age, unless otherwise specified. In reference to data, each child is counted only once regardless of the number of tests that the child has had during the State Fiscal Year.

**Department:** Refers to the New Jersey Department of Health.

**EBLL:** Elevated blood lead level (10 μg/dL or greater).

Large Municipality(ies): Municipality(ies) with a population greater than 35,000 residents.

**Local Boards of Health:** The board of health of any municipality or the boards, bodies, or officers in such municipality lawfully exercising any of the powers of a local board of health under the laws governing such municipality.

**Population Data:** Census 2010 population data, unless otherwise specified.

**SFY:** State Fiscal Year 2015 includes the period of July 1, 2014 to June 30, 2015. Thus, for any State Fiscal Year identified, it begins July 1 of the preceding year and ends June 30 of the identified year.

**μg/dL:** Micrograms per deciliter of whole blood.

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### **EXECUTIVE SUMMARY**

N.J.A.C. §8:51A requires the protection of children younger than six (6) years of age from the toxic effects of lead exposure by requiring lead testing pursuant to N.J.S.A. §26:2-137.1 - 137.7. This Annual Report on Childhood Lead Exposure in New Jersey for State Fiscal Year (SFY) 2015 is submitted in compliance with N.J.S.A. §26:2-135, which requires the Commissioner of the Department of Health to issue an annual report to the Governor and the Legislature that includes a summary of blood lead testing and abatement program activities in the State during the preceding SFY.

The number of children tested for lead in SFY 2015 was 206,221, which represents an increase of 0.3% over the 205,607 children tested during SFY 2014. The SFY 2015 number of children tested also includes 93,128 children, or 42% of all children who are between 6 and 26 months of age, the ages at which all children must be tested under N.J.A.C. §8:51A.

While 205,232 (99.5%) children tested during SFY 2015 had blood lead levels (BLLs) below 10  $\mu$ g/dL, 989 (0.48%) children had a test result at or above this threshold (10  $\mu$ g/dL) and required public health action (case management and environmental investigation) by local boards of health.

There were 4,901 children reported with BLLs from 5  $\mu$ g/dL to 9  $\mu$ g/dL. Of those 4,901 children, 2,111 children were aged 6 to 26 months. The level 5  $\mu$ g/dL is a reference level used by the Centers for Disease Control and Prevention (CDC) that indicates a need for emphasis on primary prevention activities. Primary care providers should take appropriate action -- household education and retesting -- for children above the reference level.

The City of Newark continues to be a geographic focus in New Jersey's efforts to eliminate elevated blood levels. It exceeds every other large municipality in the number of children younger than 6 years of age with elevated blood lead levels (EBLLs). In SFY 2015, the City of Newark comprised 13% of the total number of children younger than 6 years of age with EBLLs in the State. Further, it had the highest number of new cases (incidence) of EBLLs in children reported during SFY 2015.

Throughout this report, population data obtained from the US Census 2010 is used as the denominator.

### CHAPTER ONE

## TESTING CHILDREN FOR ELEVATED BLOOD LEAD LEVELS

In New Jersey, per N.J.A.C. §8:51A, all children are required to be tested at both 12 and 24 months of age. Any child older than three (3) years of age must be tested at least once before their sixth birthday (if they had not been screened at age one (1) and two (2) years). Approximately 66% of children in New Jersey had at least one blood lead test by the age of 26 months and approximately 75% had at least one blood lead test prior to reaching three (3) years of age, along with 95% having at least one blood lead test prior to reaching six (6) years of age.

This chapter describes and depicts the testing statistics and trends based on the reports of blood lead tests received by the Department from clinical laboratories. Analyses to create the figures and tables are based on individual children, counting only one test per child.

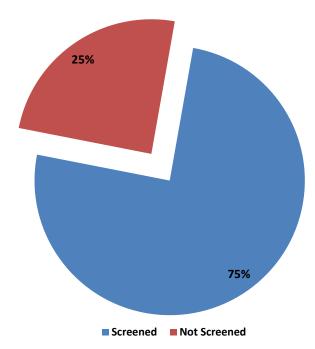
The figures and tables highlighting children between six (6) and 26 months of age closely represent the testing rates. However, the data displayed throughout these figures and tables also include children who were tested during SFY 2015 as their second test at two (2) years of age, while they may have been tested at one (1) year of age during SFY 2014.

The Department uses the range of six (6) to 26 months of age to also include data on tests that are performed earlier than 12 months of age or later than 24 months of age, as not all children are tested exactly at one (1) and two (2) years of age.

Figures 1a and 1b represent the percentages of children who had a lead test performed prior to turning three (3) and six (6) years of age, respectively, during SFY 2015.

Percentage of Children\* Who Turned Three (3) Years of Age During SFY 2015 and Had at Least One Blood Lead Test in their Lifetime

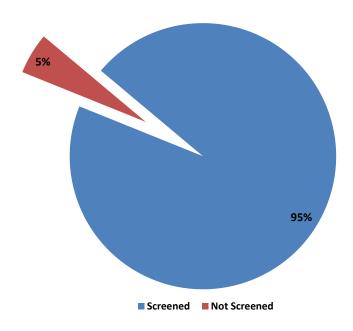
Figure 1a



<sup>\*</sup>Number of children born in New Jersey between July 1, 2011 and June 30, 2012 (103,497); Source: Birth Registry data

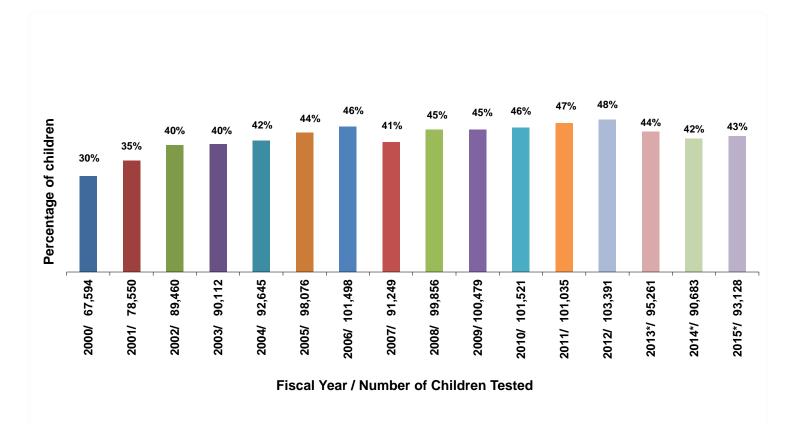
Figure 1b

Percentage of Children\* Who Turned Six (6) Years of Age During SFY 2015
and Had at Least One Blood Lead Test in their Lifetime



<sup>\*</sup>Number of children born in New Jersey between July 1, 2008 and June 30, 2009 (103,467); Source: Birth Registry data

Figure 2 Trend in Percentage of Children (six (6) to 26\*/29 months of age) Tested by SFY ( $n=222,837^1$  and  $n=214,727^2$ )



<sup>&</sup>lt;sup>1</sup> The denominator for SFY 2000 through SFY 2010 uses the number of children who were one (1) and two (2) years of age, based on US Census 2000 data.

<sup>&</sup>lt;sup>2</sup>The denominator for SFY 2011 to SFY 2015 uses the number of children who were one (1) and two (2) years of age, based on US Census 2010 data.

<sup>\*</sup>For FY 2013, 2014 and 2015 the data are for age group six (6) to 26 months, because the screening regulations (N.J.A.C. §8:51A) require that each child be screened for lead at the age of one (1) year and again at the age of two (2) years. The regulations specify the qualifying screening age ranges of six (6) to 17 months for the age of one (1) year and 18 to 26 months for the age of two (2) years.

#### **CHAPTER TWO**

# PROFILE OF BLOOD LEAD TESTS PERFORMED AND PREVALENCE OF ELEVATED BLOOD LEAD LEVELS IN CHILDREN

In this chapter, the figures and tables identify the statistics of testing performed for various ages and the prevalence of various blood lead levels EBLLs in children in SFY 2015.

Tables 1 and 2 show the testing statistics by county and municipality, respectively, of residence for children six (6) to 26 months of age. The % screened, Table 2, ranges from 3.1% (Evesham) to 75.2% (Plainfield), with a median screening rate of 37.7%. Figure 3 shows the prevalence of EBLLs among children six (6) to 26 months of age. The analyses behind the formulation of the tables are based on the number of children, reported during SFY 2015, which counts the highest BLL reported per child. The figures and tables in this chapter include children who were tested for a second time during SFY 2015 around two (2) years of age as required by law.

Tables 3 and 4 display the testing statistics and the prevalence of various blood lead levels in children who were tested at younger than six (6) years of age during SFY 2015.

The Department maintains a database containing all blood lead tests reported on children. In order to exhibit the distribution of lead tests and the prevalence of EBLLs in children, Figures 4a, 4b, 5 and Table 5 focus on the entire population of children who were tested and reported during SFY 2015.

Figures 6a and 6b depict the trend in the number of children reported with an EBLL by SFY.

The children in the age groups of younger than six (6) years of age and younger than 17 years of age may have had one or more blood lead tests performed during their lifetime, either as routine lead testing or as a follow-up to an elevated blood lead test. However, the analyses of data for the tables for these age groups were based on the number of individual children reported during SFY 2015, counting the highest BLL reported per child.

Table 1

SFY 2015: Number of Children (six (6) to 26 months of age) by BLL and County of Residence

County	Total Children*	%	BLL (μg/dL)									
County	Total Cindren	Screened	<5	5 - 9	10 - 14	15-19	20-44	≥ 45	Total			
ATLANTIC	6,521	40.7%	2,563	77	9	4	4		2,657			
BERGEN	19,955	37.6%	7,356	130	9	6	4		7,505			
BURLINGTON	10,166	24.0%	2,394	35	4	2	0		2,435			
CAMDEN	13,215	28.0%	3,615	70	8	4	0		3,697			
CAPE MAY	1,822	23.1%	411	6	1	2	0		420			
CUMBERLAND	4,368	38.3%	1,587	66	14		5		1,672			
ESSEX	21,569	49.4%	10,113	464	53	15	16	3	10,664			
GLOUCESTER	6,862	15.5%	1,034	20	4	1	3		1,062			
HUDSON	17,288	47.9%	8,039	183	35	13	8	1	8,279			
HUNTERDON	2,316	36.7%	835	11	1	2	0		849			
MERCER	8,591	41.1%	3,396	118	11	3	6	1	3,535			
MIDDLESEX	19,965	33.2%	6,449	120	32	12	7		6,620			
MONMOUTH	13,371	32.3%	4,225	80	8	3	1		4,317			
MORRIS	10,700	24.2%	2,545	38	6	2	2		2,593			
OCEAN	15,532	43.7%	6,730	46	6	3	3		6,788			
PASSAIC	13,727	50.4%	6,649	229	30	9	8		6,925			
SALEM	1,549	34.5%	490	38	3	3	1		535			
SOMERSET	7,581	26.8%	1,995	23	4	5	2		2,029			
SUSSEX	3,099	24.5%	746	9	2		1		758			
UNION	14,148	49.2%	6,762	159	25	11	8		6,965			
WARREN	2,382	33.2%	764	22	3	2	0		791			
Not Specified	N/A		11,862	167		3	0		12,032			
Total	214,727	43.4%	90,560	2,111	268	105	79	5	93,128			

<sup>\*</sup>US Census 2010 data

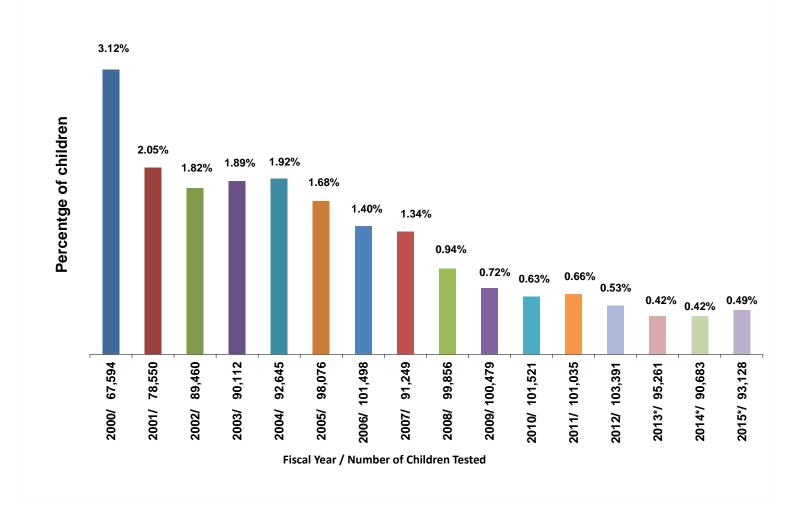
 $Table\ 2$  SFY 2015: Number of Children (six (6) to 26 months of age) by BLL and Municipality\* of Residence

	Total	%			BLL (µ	g/dL)			T
Municipality	Children**	Screened	<5	5 - 9	10 - 14	15-19	20-44	≥ 45	Total
ATLANTIC CITY	1,249	71.8%	833	54	3	3	4		897
BAYONNE	1,528	40.6%	608	9		1	2		620
BELLEVILLE	869	47.3%	403	7	1				411
BERKELEY	509	5.3%	26	1					27
BLOOMFIELD	1,224	40.1%	481	8	1	1			491
BRICK	1,531	25.4%	386	1	1		1		389
BRIDGEWATER	978	43.1%	419	1	1	1			422
CAMDEN	2,838	44.0%	1,194	52	2	2			1,250
CHERRY HILL	1,449	31.3%	451	2	1				454
CLIFTON	2,123	44.2%	925	10	2	1			938
EAST BRUNSWICK	860	31.5%	267	3	1				271
EAST ORANGE	1,916	39.2%	702	38	6	2	4		752
EDISON	2,560	40.1%	992	22	10	1	2		1,027
EGG HARBOR	1,038	37.5%	386	1	2				389
ELIZABETH	3,943	55.9%	2,111	78	9	4	2		2,204
EVESHAM	1,016	3.1%	31		1				32
EWING	600	33.8%	202	1					203
FORT LEE	725	30.9%	224						224
FRANKLIN	1,759	7.8%	133	3	1	1			138
FREEHOLD	652	58.9%	378	5	1				384
GALLOWAY	724	32.9%	232	3	3				238
GLOUCESTER	1,520	7.6%	113	1	1				115
HACKENSACK	1,118	51.6%	560	15	2				577
HAMILTON	1,814	23.4%	410	11	1		1	1	424
HILLSBOROUGH	866	44.2%	381	2					383
HOBOKEN	1,467	39.7%	579	3	1				583
HOWELL	1,125	20.0%	223	2					225
IRVINGTON	1,692	58.3%	911	61	8	1	5	1	987
JACKSON	1,100	26.0%	285	1					286
JERSEY CITY	7,192	53.6%	3,704	114	24	6	4	1	3,853
KEARNY	895	44.8%	391	7		2	1		401
LAKEWOOD	6,556	72.4%	4,712	30	2	2	1		4,747
LINDEN	911	41.5%	372	4	2				378
MANALAPAN	778	27.0%	210						210
MANCHESTER	448	12.7%	56	1					57

16	Total	%			BLL (µ	g/dL)			Total
Municipality	Children**	Screened	<5	5 - 9	10 - 14	15-19	20-44	≥ 45	Total
MARLBORO	767	12.9%	97	2					99
MIDDLETOWN	1,444	16.6%	239						239
MONROE (Gloucester County)	898	4.2%	35	1	1		1		38
MONROE (Middlesex County)	655	16.3%	106	1					107
MONTCLAIR	869	33.0%	278	8	1				287
MOUNT LAUREL	886	32.2%	282	2	1				285
NEW BRUNSWICK	1,573	59.8%	900	32	2	4	2		940
NEWARK	8,382	61.6%	4,847	273	26	10	5	2	5,163
NORTH BERGEN	1,498	43.1%	634	10	1				645
NORTH BRUNSWICK	1,220	33.6%	401	8	1				410
OLD BRIDGE	1,478	21.2%	311	1			1		313
PARSIPPANY- TROY HILLS	1,207	5.6%	64	2	1		1		68
PASSAIC	2,767	63.1%	1,665	65	9	3	5		1,747
PATERSON	4,632	59.7%	2,605	141	15	3	3		2,767
PENNSAUKEN	845	29.3%	248						248
PERTH AMBOY	1,584	50.9%	784	19	3	1			807
PISCATAWAY	1,361	38.9%	518	8	1	2			529
PLAINFIELD	1,628	75.2%	1,170	43	6	3	2		1,224
SAYREVILLE	1,137	20.4%	227	1	3		1		232
SOUTH BRUNSWICK	935	5.8%	49	1	3	1			54
TEANECK	1,075	27.3%	284	8	2				294
TOMS RIVER	1,816	37.7%	679	2	1	1	1		684
TRENTON	2,786	62.3%	1,622	98	9	3	4		1,736
UNION CITY	1,880	41.8%	763	20	1	1			785
UNION	1,250	43.8%	541	5		1	1		548
VINELAND	1,729	38.8%	661	8	1		1		671
WASHINGTON (Gloucester County)	900	3.7%	33						33
WAYNE	995	40.2%	398	2					400
WEST NEW YORK	1,523	43.3%	648	4	4	2	1		659
WEST ORANGE	1,263	32.7%	403	7	3				413
WINSLOW	1,122	3.8%	42		1				43
WOODBRIDGE	2,495	15.8%	386	5	1	2			394

<sup>\*</sup>Large Municipalities only \*\*US Census 2010 data

Figure 3 Trend in Percentage of Children (six (6) to 26\*/29 months of age\*) with BLL  $\geq 10~\mu g/dL$  by SFY



\*For FY 2013, 2014 and 2015 the data are for age group six (6) to 26 months, because the screening regulations (N.J.A.C. §8:51A) require that each child be screened for lead at the age of one (1) year and again at the age of two (2) years. The regulations specify the qualifying screening age ranges of six (6) to 17 months for the age of one (1) year and 18 to 26 months for the age of two (2) years.

Table 3

SFY 2015: Number of Children (<6 years of age) by BLL and County of Residence

Commen	Total	%			Blood L	ead Level (	μg/dL)		
County	Children*	Tested	<5	5-9	10-14	15-19	20-44	<u>≥</u> 45	Total
ATLANTIC	19,909	24.5%	4,662	194	18	6	5		4,885
BERGEN	61,192	20.4%	12,272	195	13	9	8		12,497
BURLINGTON	31,546	11.3%	3,506	60	6	2	0		3,574
CAMDEN	40,195	13.8%	5,413	112	19	6	4	2	5,556
CAPE MAY	5,423	12.8%	672	14	4	2	1		693
CUMBERLAND	12,963	23.6%	2,886	136	22	5	9		3,058
ESSEX	64,591	40.4%	24,746	1,137	134	34	37	7	26,095
GLOUCESTER	21,059	7.2%	1,480	29	7	1	4	1	1,522
HUDSON	49,759	37.4%	18,085	429	71	21	18	2	18,626
HUNTERDON	7,484	13.4%	982	15	1	2	0		1,000
MERCER	26,052	23.7%	5,919	207	23	6	10	2	6,167
MIDDLESEX	60,249	20.4%	11,978	236	52	16	11	2	12,295
MONMOUTH	42,404	17.4%	7,201	165	19	5	4		7,394
MORRIS	33,493	11.5%	3,765	60	9	5	3		3,842
OCEAN	46,657	23.9%	11,048	97	10	4	4		11,163
PASSAIC	41,179	35.9%	14,230	465	57	16	20		14,788
SALEM	4,625	17.4%	723	64	9	5	5		806
SOMERSET	23,622	12.4%	2,886	35	8	5	2		2,936
SUSSEX	9,701	10.8%	1,032	13	3		2		1,050
UNION	43,085	33.0%	13,779	348	50	18	21		14,216
WARREN	7,434	14.0%	1,000	35	4	3	0		1,042
Not Specified	N/A		19,306	344	1	3	0		19,654
Total	652,622	26.5%	167,571	4,390	540	174	168	16	172,859

<sup>\*</sup>US Census 2010 data

Table 4

SFY 2015: Number of Children (<6 years of age) by BLL and Municipality\* of Residence

Mioin aliter	Total	%			Blood Lea	d Level (μ	g/dL)		
Municipality	Children**	Tested	<5	5-9	10-14	15-19	20-44	<u>&gt;</u> 45	Total
ATLANTIC CITY	3,677	45.6%	1,526	133	9	3	5		1,676
BAYONNE	4,576	30.6%	1,364	25	3	1	5		1,398
BELLEVILLE	2,601	34.7%	887	15	1				903
BERKELEY	1,565	3.0%	46	1					47
BLOOMFIELD	3,575	28.9%	1,009	20	2	1			1,032
BRICK	4,558	15.6%	703	4	1		1		709
BRIDGEWATER	3,052	17.9%	539	4	1	1			545
CAMDEN	8,525	24.5%	1,994	79	8	3	2		2,086
CHERRY HILL	4,588	13.3%	606	2	1				609
CLIFTON	6,187	29.7%	1,809	22	3	1			1,835
EAST BRUNSWICK	2,725	17.1%	460	4	1				465
EAST ORANGE	5,534	36.7%	1,899	107	13	5	7		2,031
EDISON	7,774	23.0%	1,729	41	16	3	2		1,791
EGG HARBOR	3,341	18.9%	627	4	2				633
ELIZABETH	11,792	44.4%	5,032	167	24	7	3		5,233
EVESHAM	3,117	1.4%	43	1	1				45
EWING	1,797	17.4%	310	2					312
FORT LEE	2,171	19.8%	428	1					429
FRANKLIN	5,182	4.6%	229	7	3	1			240
FREEHOLD	2,156	31.4%	665	11	1				677
GALLOWAY	2,240	18.5%	403	8	3				414
GLOUCESTER	4,647	3.6%	161	3	2				166
HACKENSACK	3,223	35.2%	1,109	22	3	2			1,136
HAMILTON	5,480	14.4%	765	22	1		1	1	790
HILLSBOROUGH	2,736	18.1%	491	3	1				495
HOBOKEN	3,779	23.1%	867	4	1				872
HOWELL	3,591	9.7%	347	3					350
IRVINGTON	4,993	54.2%	2,478	181	28	4	12	1	2,704
JACKSON	3,649	14.0%	509	3					512
JERSEY CITY	20,393	43.2%	8,453	280	52	10	10	1	8,806
KEARNY	2,681	35.7%	936	16	1	2	1		956
LAKEWOOD	18,872	40.0%	7,481	65	5	3	2		7,556
LINDEN	2,726	31.0%	828	12	2	1	1		844
MANALAPAN	2,541	11.8%	300						300

N/1	Total	%	Blood Lead Level (μg/dL)								
Municipality	Children**	Tested	<5	5-9	10-14	15-19	20–44	<u>≥</u> 45	Total		
MANCHESTER	1,372	6.9%	92	2					94		
MARLBORO	2,606	6.3%	160	3					163		
MIDDLETOWN	4,615	7.4%	337	3					340		
MONROE (Gloucester County)	2,794	2.0%	52	2	1		1		56		
MONROE (Middlesex County)	2,082	6.8%	141	1					142		
MONTCLAIR	2,701	19.0%	499	13	1				513		
MOUNT LAUREL	2,705	12.2%	327	2	1				330		
NEW BRUNSWICK	4,753	37.6%	1,715	58	6	4	3	1	1,787		
NEWARK	24,831	57.4%	13,471	669	74	22	15	6	14,257		
NORTH BERGEN	4,473	31.3%	1,378	19	1				1,398		
NORTH BRUNSWICK	3,502	20.8%	710	16	1				727		
OLD BRIDGE	4,548	11.6%	525	2			1		528		
PARSIPPANY- TROY HILLS	3,671	2.8%	95	3	4		1		103		
PASSAIC	8,226	54.2%	4,295	131	18	4	9		4,457		
PATERSON	13,987	44.8%	5,938	284	31	8	11		6,272		
PENNSAUKEN	2,696	14.6%	386	4	2	1			393		
PERTH AMBOY	4,756	42.4%	1,963	41	7	2	2	1	2,016		
PISCATAWAY	3,903	23.6%	904	12	2	2			920		
PLAINFIELD	4,961	62.5%	2,966	108	13	5	9		3,101		
SAYREVILLE	3,338	13.6%	446	2	5		1		454		
SOUTH BRUNSWICK	3,130	3.4%	99	3	3	1			106		
TEANECK	3,142	14.8%	453	9	2				464		
TOMS RIVER	5,617	21.7%	1,211	5	1	1	1		1,219		
TRENTON	7,998	44.2%	3,331	171	19	6	8	1	3,536		
UNION CITY	5,742	34.3%	1,926	34	4	3		1	1,968		
UNION	3,701	26.4%	963	9	1	1	3		977		
VINELAND	5,058	22.7%	1,126	17	1	1	2		1,147		
WASHINGTON	2,968	1.5%	45						45		
WAYNE	3,105	18.6%	572	4		1			577		
WEST NEW YORK	4,258	39.0%	1,633	19	4	2	1		1,659		
WEST ORANGE	3,635	22.3%	794	15	3				812		
WINSLOW	3,336	2.1%	67		2				69		
WOODBRIDGE	7,326	10.1%	723	12	2	2	1		740		

<sup>\*</sup>Large Municipalities only \*\*US Census 2010 data

Figure 4a

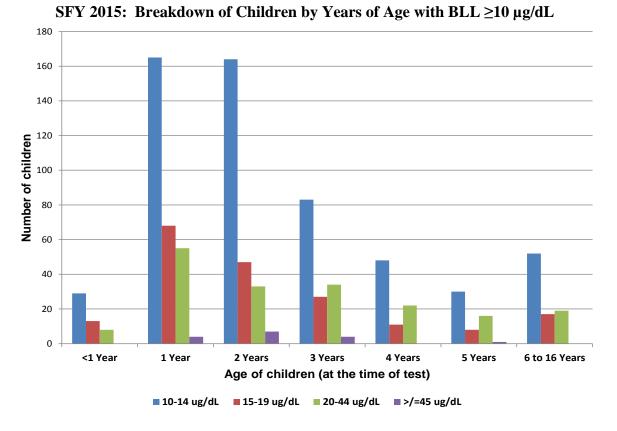


Figure 4b

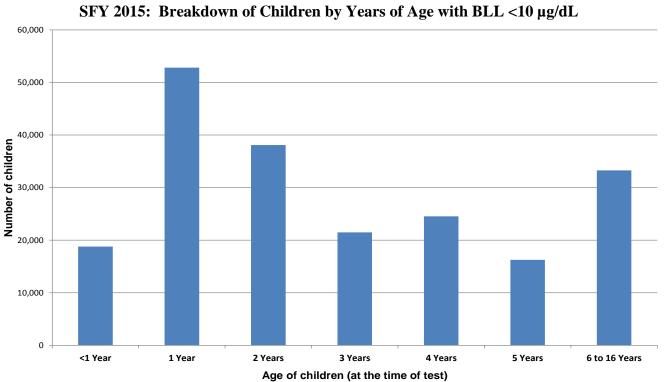
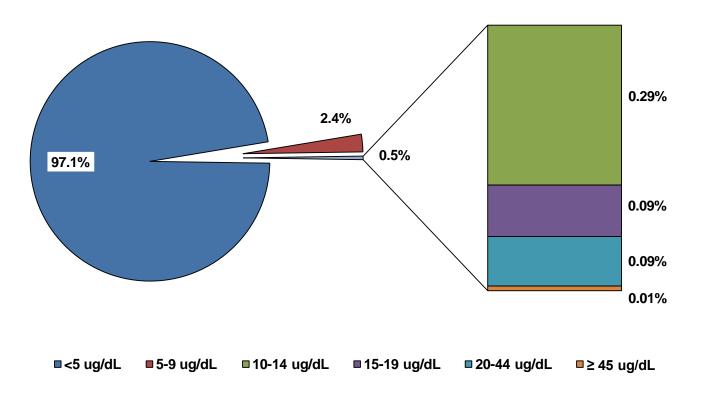


Figure 5
SFY 2015: Percentage of Children by BLL (n=206,221)



SFY 2015: Number of Children by BLL and County of Residence

Table 5

Comment	BLL (μg/dL)											
County	<5	5-9	10-14	15-19	20-44	≥45	Total					
ATLANTIC	5,162	206	19	7	6		5,400					
BERGEN	14,022	211	14	10	9		14,266					
BURLINGTON	3,797	63	6	2	1		3,869					
CAMDEN	5,994	121	22	6	5	2	6,150					
CAPE MAY	904	15	4	2	1		926					
CUMBERLAND	3,424	149	24	5	9		3,611					
ESSEX	30,722	1,299	147	38	42	7	32,255					
GLOUCESTER	1,587	29	7	1	4	1	1,629					
HUDSON	23,196	487	78	23	21	3	23,808					
HUNTERDON	1,021	17	1	2			1,041					
MERCER	7,166	220	25	8	14	2	7,435					
MIDDLESEX	15,141	259	58	17	11	2	15,488					
MONMOUTH	8,721	199	21	5	4		8,950					
MORRIS	4,193	62	10	5	3		4,273					
OCEAN	12,292	109	10	5	4		12,420					
PASSAIC	17,031	506	66	17	22		17,642					
SALEM	774	66	9	6	5		860					
SOMERSET	3,385	49	9	7	2		3,452					
SUSSEX	1,159	13	3		2		1,177					
UNION	17,028	395	56	19	22		17,520					
WARREN	1,091	39	4	3			1,137					
Not Specified*	22,521	387	1	3			22,912					
Total	200,331	4,901	594	191	187	17	206,221					

<sup>\*</sup>For the EBLLs reported with addresses that cannot be verified, the program staff and local boards of health staff make all attempts to follow up with the ordering providers and the reporting laboratories to obtain the correct addresses. However, the selection criteria logic used for the purpose of statistical information published here picks the highest confirmed test result (or the lowest unconfirmed test result when there is no confirmed test result) among all tests reported for each child, while other test results for the same child may have been reported with correct address(es).

Figure 6a  $\label{eq:Number of Children with BLL $\geq 10$ $\mu g/dL$ by SFY}$ 

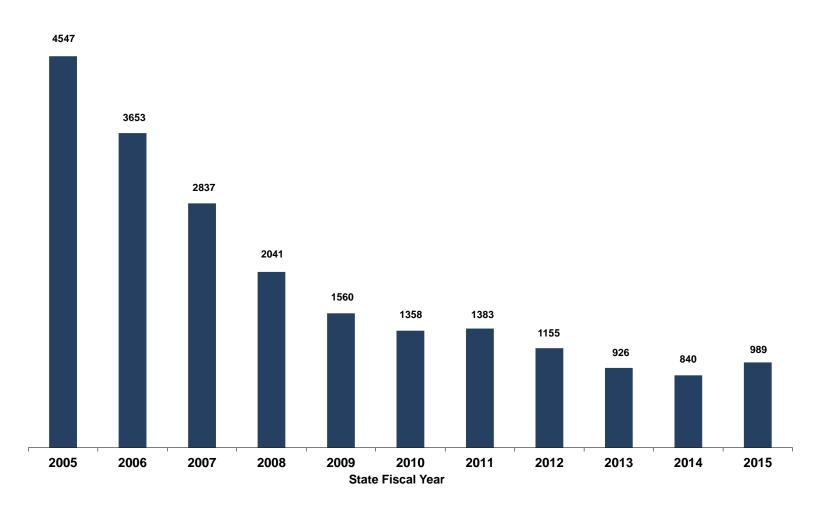
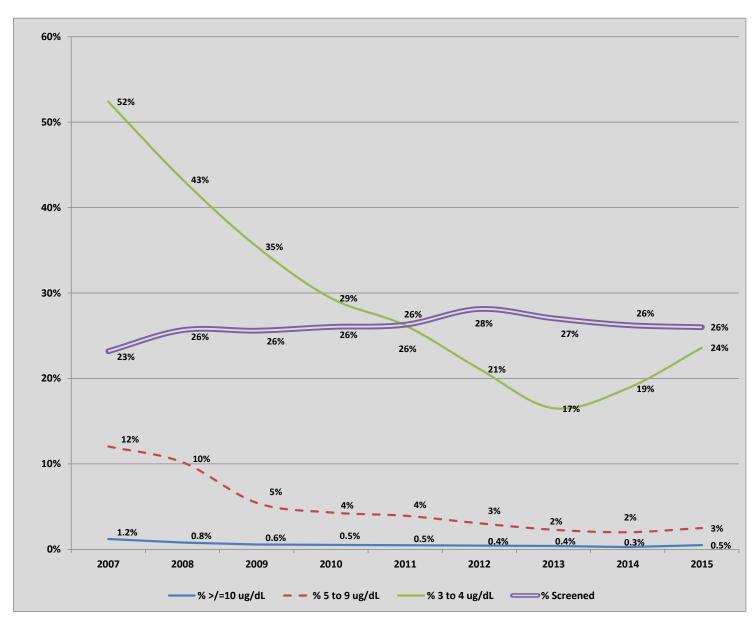


Figure 6b

Trends for Children <6 Years of Age:
Testing Rates and Percentages of Newly Reported BLL by SFY



While the testing rate is generally increasing, the percentage of EBLL is generally declining. The percentage of newly reported children with BLLs from 5 to 9  $\mu g/dL$  also remains under control.

Table 6

Children 5 Years of Age and their Blood Lead Levels, by Academic Year of Entering Kindergarten

			Blood Lead I	Level (µg/dL)			
Academic Year of Entering Kindergarten	of Entering		20 to 44	>/=45	Total # of Children with BLL >/= 10 ug/dL	% of Children with BLL >/= 10 ug/dL	Total # of Children Tested
2003-'04	1,454	423	415	40	2,332	2.40%	96,683
2004-'05	1,375	435	363	22	2,195	2.20%	101,091
2005-'06	1,301	468	357	34	2,160	2.00%	106,286
2006-'07	1,328	460	368	20	2,176	2.10%	105,294
2007-'08	1,209	417	308	27	1,961	1.80%	108,955
2008-'09	1,044	332	281	16	1,673	1.50%	109,913
2009-'10	824	266	254	15	1,359	1.20%	109,604
2010-'11	670	232	208	14	1,124	1.00%	110,420
2011-'12	541	187	167	24	919	0.80%	111,126
2012-'13	434	173	184	18	809	0.80%	107,183
2013-'14	419	139	170	15	743	0.70%	103,434

### CHAPTER THREE

### SPOTLIGHT ON THE CITY OF NEWARK

The City of Newark has the greatest number of children with EBLLs compared to any other municipality in the State. This large municipality comprised 13% of the State's children younger than six (6) years of age with an EBLL during SFY 2015, while only 3.8% of the entire State's population of children in that age group resides in Newark. Additionally, in SFY 2015 it comprised 18% of the total number of children younger than six (6) years of age with an EBLL in all large municipalities.

Of all children\* <6 years of age residing in Newark, 0.47% were reported with an EBLL during SFY 2015. By contrast, in two comparable large municipalities (by population\*) this percentage was 0.36% (Jersey City), and 0.36% (Paterson).

Newark addresses the issue of elevated blood lead levels in children through several means and has been allotted and continues to seek grants from governmental and non-governmental sources. In the past decade, Newark established and locally administers the State's only Lead-Safe Houses, which are municipally-owned properties. The Lead-Safe Houses are used to relocate residents who have a child with an EBLL and when the family has no other lead-safe housing alternatives. This is a great accomplishment that other municipalities have expressed an interest in also achieving. Further, Newark provides a primary prevention focused, community-based presence through the Newark Partnership for Lead-Safe Children. This partnership provides outreach, education and professional development opportunities to parents, property owners, child care providers and health, social services and housing professionals.

\*Source: US Census 2010 data

Figure 7

SFY 2015: Percentage of EBLL Cases in the City of Newark Compared to the Rest of New Jersey (*n*=898)

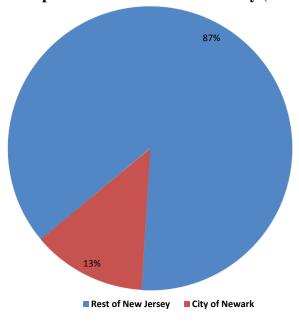
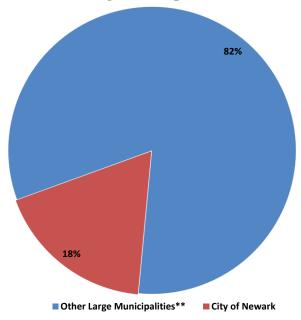


Figure 8

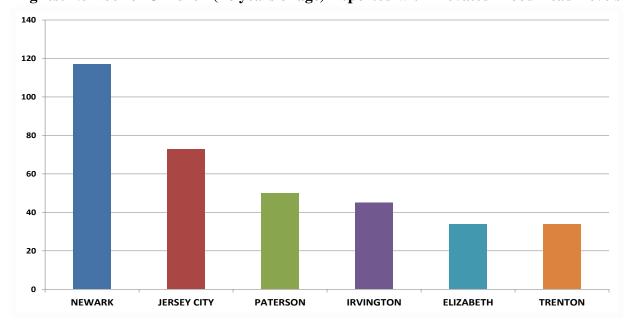
SFY 2015: Percentage of EBLL Cases in the City of Newark Compared to Other Large Municipalities in New Jersey (*n*=646)



The data are based on the total number of individual children younger than six (6) years of age who have a confirmed EBLL. Of the 117 children identified in the City of Newark during SFY 2015, only the highest blood lead test result per child is counted.

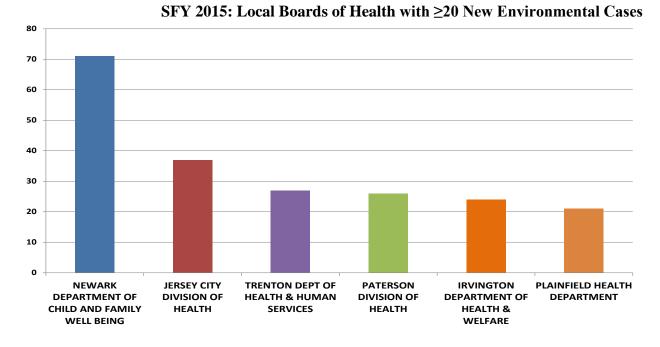
SFY 2015: Large Municipalities (population of >35,000) with Highest Number of Children (<6 years of age) Reported with Elevated Blood Lead Levels

Figure 9



The data are based on the total number of children who have a confirmed EBLL. Of the children reported with an EBLL during SFY 2015, only the highest blood lead test result per child is counted.

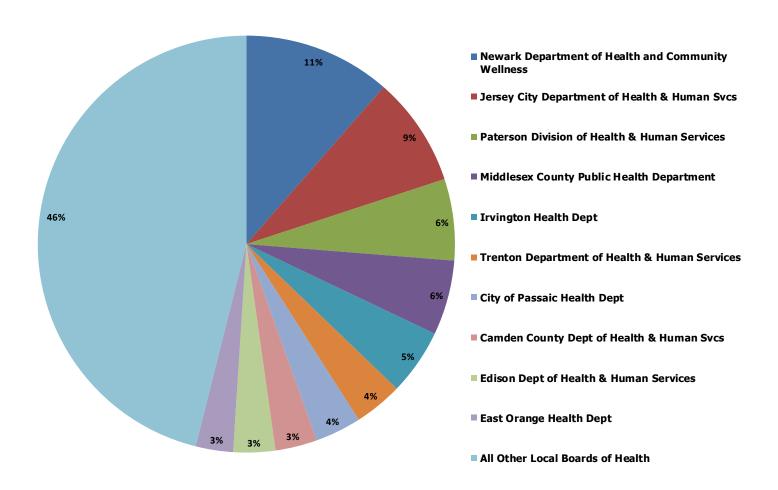
Figure 10



The data are based on the total number of new environmental cases opened during SFY 2015. A new environmental case is opened based on a child's EBLL. Once a case is opened, the local board of health is required to conduct an environmental investigation per N.J.A.C. §8:51-4.3.

SFY 2015: Top Ten Local Boards of Health Comprising the Highest Percentages\* of New EBLL Cases Compared to All Other Local Boards of Health

Figure 11



The data are based on the percentage of new cases of EBLLs reported during SFY 2015. This chart does not rank local boards of health by their burden of cases. The purpose of this chart is to highlight Newark for more new cases of elevated blood lead levels reported during the fiscal year as compared to other local boards of health.

<sup>\*</sup>Percent share of all new cases of elevated blood lead levels during SFY 2015 in the entire State.

#### CHAPTER FOUR

# ENVIRONMENTAL INVESTIGATIONS BY LOCAL BOARDS OF HEALTH

New Jersey law (N.J.S.A. § 24:14A-6) requires local boards of health to investigate all reported cases of EBLL (N.J.A.C. § 8:51) within their jurisdiction and to order the abatement of all lead hazards identified in the course of the investigation. The procedures for conducting environmental investigations in response to a child with EBLL are specified in N.J.A.C. § 8:51. The local board of health must conduct an inspection of the child's primary residence and any secondary addresses, such as a child care center, the home of a relative or other caregiver, or wherever the child spends at least 10 hours per week. If the child has recently moved, the property where the child resided when the blood lead test was performed must be inspected. The environmental inspection includes a determination of the presence of lead-based paint and leaded dust; the identification of locations where that paint is in a hazardous condition, such as peeling, chipping, or flaking; and, as appropriate, the presence of lead on the dwelling's exterior or soil. The inspector, with a public health nurse, speaks to the child's parent/guardian and completes a questionnaire to help determine any other potential sources of exposure to lead.

In addition, the local board of health arranges for a home visit by a public health nurse to educate the parent/guardian about how to reduce EBLLs and the steps that he or she can take to protect the child from further exposure. The public health nurse also provides ongoing case management services to assist the family, including but not limited to, receiving follow-up testing, medical treatment, and social services that may be necessary to address the effects of the child's exposure to lead.

The data listed in Tables 7, 8, and 9 in this chapter reflect the results of environmental investigations as reported to the Department by local boards of health. The data are accurate to the extent that the local boards of health make complete and timely reports to the Department through the electronic Childhood Lead Information Database (LeadTrax). It is possible that additional inspections and/or abatements may have been completed, but not reported by local boards of health.

Table 10 shows the environmental case activity within SFY 2015 by each local board of health.

Table 7
SFY 2015: Environmental Case Activity Status by County

County Name	Cases Referred	Investigation Required	Investigation Completed	% Investigation Completed	Abatement Required	Abatement Completed	% Abatement Completed
ATLANTIC	12	12	12	100%	9	5	56%
BERGEN	20	11	9	82%	7	3	43%
BURLINGTON	3	3	3	100%	1	1	100%
CAMDEN	18	12	12	100%	2	1	50%
CAPE MAY	1	1	1	100%	1	1	100%
CUMBERLAND	22	16	16	100%	12	6	50%
ESSEX	118	70	38	54%	26	15	58%
GLOUCESTER	4	4	4	100%	2	2	100%
HUDSON	60	48	50	104%	15	5	33%
HUNTERDON	2	1	1	100%	1	1	100%
MERCER	32	24	24	100%	19	13	68%
MIDDLESEX	36	12	9	75%	4	1	25%
MONMOUTH	13	6	6	100%	3	2	67%
MORRIS	12	2	1	50%	1	1	100%
OCEAN	12	6	5	83%	3	1	33%
PASSAIC	47	39	40	103%	33	23	70%
SALEM	6	3	3	100%	2	2	100%
SOMERSET	9	5	5	100%	3	2	67%
SUSSEX	3	2	2	100%	1	1	100%
UNION	49	22	20	91%	15	5	33%
WARREN	4	4	3	75%	2	0	0%
Total	483	303	264	87%	162	91	56%

Table 7 above displays the environmental case activity in SFY 2015 for each county, based on the number of EBLL reports (referrals) for new environmental cases sent to the appropriate local board of health.

A new environmental case is generated and referred to the appropriate local board of health when a child with an EBLL is reported who resides at an address that does not have an existing environmental case open.

Table 8

SFY 2015: Local Boards of Health with ≥20 New Environmental Cases

Local Board of Health	Cases Referred	Investigation Required	Investigation Completed	% Investigation Completed	Abatement Required	Abatement Completed	% Abatement Completed
Newark Department of Health and Community Wellness	71	38	7	18%	1	1	100%
Jersey City Department of Health & Human Services	37	29	29	100%	10	1	10%
Trenton Department of Health & Human Services	27	23	23	100%	18	12	67%
Paterson Division of Health & Human Services	26	22	22	100%	17	8	47%
Irvington Health Department	24	14	14	100%	12	3	25%
Plainfield Health Department	21	12	12	100%	11	1	9%

See Table 10 for complete data on the status of all EBLL cases referred to local boards of health during SFY 2015.

The data for this table is based on the environmental intervention activity information entered by the local boards of health as of July 15, 2015.

A new environmental case is generated and referred to the appropriate local board of health when a child with an EBLL is reported who resides at an address that does not have an existing environmental case open.

It can take several years to complete the abatement process for a property where lead hazards are identified. The length of time between the initial report of an EBLL and the completion of the abatement process can be affected by a number of factors. These factors include, but are not limited to:

- difficulty in identifying and communicating with absentee property owners;
- lengthy enforcement actions and court proceedings against recalcitrant property owners;
- delays in contracting with and scheduling work to be performed by State-certified lead abatement contractors; and,
- inability of property owners to obtain financial assistance to pay for the cost of the required abatement.

Table 9

Current Abatement Status of Cases by SFY: 1997-2015

SFY	Environmental Cases Opened	Investigation Required	Investigation Completed	% Investigation Completed	Investigation Pending	Abatements Completed	Abatements Pending	% Abatements Completed
1997	2168	1499	1468	98%	31	767	12	98%
1998	2014	1455	1405	97%	50	725	13	98%
1999	1517	1044	952	91%	92	558	29	95%
2000	1144	815	705	87%	110	484	29	94%
2001	932	648	562	87%	86	374	12	97%
2002	867	601	546	91%	55	363	7	98%
2003	796	527	495	94%	32	288	21	93%
2004	748	526	471	90%	55	289	20	94%
2005	718	542	481	89%	61	277	24	92%
2006	688	494	494	100%	0	229	40	85%
2007	1008	728	615	84%	113	354	20	95%
2008	750	581	487	84%	94	260	18	94%
2009	583	500	500	100%	0	336	36	90%
2010	450	411	411	100%	0	244	71	77%
2011	573	554	554	100%	0	269	99	73%
2012	874	435	403	93%	0	183	87	68%
2013	502	354	318	90%	36	171	61	74%
2014	424	381	348	91%	33	108	63	63%
2015**	483	303	264	87%**	162	91	85	58%

<sup>\*</sup>This table is based on information entered into the Childhood Lead Information Database as of July 15; as such, the 2015 rate does not reflect investigations completed after June 30, 2015.

<sup>\*\*</sup>For the cases opened during the end of SFY 2015, investigations would have been completed, followed by case status updates entered in the database, after when data was downloaded for creating this table, therefore this table does not capture completion status for those cases.

Table 10

SFY 2015: Environmental Case Activity by Local Board of Health\*

Local Board of Health	Cases Referred	Investigation Required	Investigation Completed	Abatement Required	Abatement Completed
ATLANTIC CITY HEALTH DEPT	7	7	7	4	4
ATLANTIC COUNTY HEALTH DEPT	5	5	5	4	2
BAYONNE DEPT OF HEALTH	7	6	6	1	1
BERGEN COUNTY DEPT OF HEALTH SERVICES	5	4	4	3	1
BERGENFIELD HEALTH DEPT	1	0	0	0	0
BLOOMFIELD DEPT OF HEALTH	1	0	0	0	0
BRIDGEWATER TOWNSHIP DEPT OF HEALTH	1	0	0	0	0
BURLINGTON COUNTY HEALTH DEPT	3	3	3	1	1
CAMDEN COUNTY DEPT OF HEALTH	19	14	14	2	1
CAPE MAY COUNTY HEALTH DEPT	1	1	1	1	1
CLIFTON HEALTH DEPT	2	1	1	0	0
CUMBERLAND COUNTY HEALTH DEPT	18	14	14	14	7
DOVER HEALTH DEPT	1	1	1	1	1
EAST ORANGE HEALTH DEPT	14	13	12	8	7
EDISON DEPT OF HEALTH & HUMAN RESOURCES	9	1	1	0	0
ELIZABETH DEPT OF HEALTH & HUMAN SERVICES	14	9	9	5	4
ELMWOOD PARK DEPT OF HEALTH	1	0	0	0	0
ENGLEWOOD HEALTH DEPT	1	0	0	0	0
FAIR LAWN HEALTH DEPT	3	2	1	1	2
FORT LEE DEPT OF HEALTH	1	0	0	0	0
FRANKLIN TOWNSHIP HEALTH DEPT	1	0	0	0	0
FREEHOLD AREA HEALTH DEPT	1	0	0	0	0
GLOUCESTER COUNTY DEPT OF HEALTH	4	4	4	2	2
HACKENSACK HEALTH DEPT	2	1	1	1	1
HAMILTON TOWNSHIP DIVISION OF HEALTH	5	1	1	1	1
HARRISON BOARD OF HEALTH	3	3	3	2	2
HILLSBOROUGH TOWNSHIP HEALTH DEPT	1	0	0	0	0
HOBOKEN HEALTH DEPT	2	2	2	0	0
HUNTERDON COUNTY DEPT OF HEALTH	2	1	1	1	1
IRVINGTON DEPT OF HEALTH & WELFARE	24	14	14	13	4
JERSEY CITY DEPT OF HEALTH AND HUMAN SERVICES	38	29	29	10	1

<sup>\*</sup>Local Boards of Health that had at least one environmental case opened during SFY 2015

Local Board of Health	Cases Referred	Investigation Required	Investigation Completed	Abatement Required	Abatement Completed
KEARNY DEPARTMENT OF HEALTH	2	2	2	1	0
LINDEN BOARD OF HEALTH	1	0	0	0	0
LONG BRANCH DEPARTMENT OF HEALTH	4	4	4	1	1
MAPLEWOOD HEALTH DEPARTMENT	2	1	1	1	1
MID-BERGEN REGIONAL HEALTH COMMISSION	5	4	4	4	1
MIDDLE-BROOK REGIONAL HEALTH COMMISSION	1	1	1	1	1
MIDDLESEX COUNTY PUBLIC HEALTH DEPARTMENT	19	11	9	4	3
MONMOUTH COUNTY HEALTH DEPARTMENT	5	3	3	3	2
MONMOUTH COUNTY REGIONAL HEALTH COMMISSION	3	0	0	0	0
MONTCLAIR HEALTH DEPARTMENT	2	2	2	2	2
MONTVILLE TOWNSHIP HEALTH DEPARTMENT	1	0	0	0	0
MORRISTOWN DIVISION OF HEALTH	3	1	0	0	0
NEWARK DEPARTMENT OF HEALTH AND COMMUNITY WELLNESS	72	41	26	26	1
NORTH BERGEN HEALTH DEPARTMENT	4	4	4	0	0
OCEAN COUNTY HEALTH DEPARTMENT	12	7	6	4	2
PALISADES PARK HEALTH DEPARTMENT	1	0	0	0	0
PARSIPPANY HEALTH DEPARTMENT	2	0	0	0	0
PASSAIC CITY HEALTH DEPARTMENT	17	15	15	15	14
PATERSON DIVISION OF HEALTH AND HUMAN SERVICES	26	22	22	17	9
PEQUANNOCK TOWNSHIP BOARD OF HEALTH	3	0	0	0	0
PISCATAWAY TOWNSHIP HEALTH DEPARTMENT	4	2	1	0	0
PLAINFIELD HEALTH DEPARTMENT	20	12	12	11	1
PRINCETON REGIONAL HEALTH COMMISSION	1	0	0	1	0
RAHWAY HEALTH DEPARTMENT	2	0	0	0	0
RANDOLPH TOWNSHIP BOARD OF HEALTH	2	0	0	0	0
ROSELLE HEALTH DEPARTMENT	3	0	0	0	0
ROXBURY TOWNSHIP BOARD OF HEALTH	2	1	1	1	1
SALEM COUNTY DEPARTMENT OF HEALTH	6	3	3	2	2
SOMERSET COUNTY HEALTH DEPARTMENT	2	1	1	1	1
SOMERVILLE HEALTH DEPARTMENT	3	3	3	1	0
SOUTH BRUNSWICK HEALTH DEPARTMENT	1	0	0	0	0
SUSSEX COUNTY DEPT HEALTH, PUB SAFE & SR SERVICES	3	2	2	1	1
TOWNSHIP OF UNION DEPARTMENT OF HEALTH	5	1	0	0	0
TRENTON DEPT OF HEALTH & HUMAN SERVICES	27	23	23	18	13

<sup>\*</sup>Local Boards of Health that had at least one environmental case opened during SFY 2015

Local Board of Health	Cases Referred	Investigation Required	Investigation Completed	Abatement Required	Abatement Completed
VINELAND DEPARTMENT OF HEALTH	4	3	3	2	1
WARREN COUNTY HEALTH DEPARTMENT	4	4	3	3	0
WEST NEW YORK HEALTH DEPARTMENT	6	3	4	1	1
WEST ORANGE HEALTH DEPARTMENT	5	3	3	3	2
WESTFIELD REGIONAL HEALTH DEPARTMENT	3	2	1	1	1
WOODBRIDGE TOWNSHIP DEPT OF HEALTH & HUMAN SERVICES	3	0	0	0	0

<sup>\*</sup>Local Boards of Health that had at least one environmental case opened during SFY 2015

### **CHAPTER FIVE**

### ADDRESSING ELEVATED BLOOD LEAD LEVELS IN NEW JERSEY'S CHILDREN

### **Healthy People 2020:**

In October 2011, the U.S. Department of Health and Human Services released *Healthy People* **2020** that established health objectives for the Nation for the next 10 years.

#### EH-8 Reduce blood lead levels in children

**Objective EH-8.1** Reduce blood lead levels in children aged 1–5 years (Revised)

Baseline: 5.8 μg/dL: Concentration level of lead in blood samples at which 97.5 percent of the

population aged 1-5 years is below the measured level in 2005–08

Target: 5.2 µg/dL of lead

Target-Setting Method: 10 percent improvement

Data Sources: National Health and Nutrition Examination Survey (NHANES), CDC/NCHS

Revision History: At launch, this objective was informational only. In 2014, the measure was changed from "elevated blood lead levels ( $\geq$ 10 micrograms/dl) in children aged 1 to 5 years" to the "concentration of blood lead among children aged 1 to 5 years in the 97.5 percentile". As a result, the original baseline was revised from 0.9 percent to 5.8 µg/dl. The target-setting method was changed from "not applicable" to "10 percent improvement" and a target of 5.2 µg/dl was established.

### **Objective EH-8.2:** Reduce the mean BLLs in children (Revised)

Baseline: 1.8 µg/dL was the average blood lead level in children aged 1 to 5 years in 2003–04

Target: 1.6 µg/dL average blood lead level in children aged 1 to 5 years

Target-Setting Method: 10 percent improvement

Data Sources: National Health and Nutrition Examination Survey (NHANES), CDC/NCHS

Revision History: In 2014, the original baseline was revised from 1.5 (2005-2008) to 1.8 (2003-2004) to align with other NHANES biomonitoring objectives. The target was adjusted from 1.4 to 1.6 to reflect the revised baseline using the original target-setting method. Periodicity was revised to biennial.

### **Healthy New Jersey 2020**:

**Objective**: Concentration level of lead in blood samples at which 97.5 percent of the population aged 1-5 years is below the measured level in 2005–08

Baseline: 8.0 µg/dL (2005-2008)

Target: 7.2 µg/dL of lead

Target-Setting Method: 10 percent improvement

Data Source: New Jersey Childhood Lead Information Database (LeadTrax) New Jersey Baseline to

parallel the Healthy People 2020 Objective EH-8.1 (Revised): 8.0 µg/dL (2005-2008)

Concentration level of lead in blood samples at which 97.5 percent of the population aged 1-5 years is below the measured level SFY 2015:  $5.0 \mu g/dL$ 

**Objective:** Reduce mean blood lead levels in children aged one (1) to five (5) years to an average blood lead level of  $< 2.9 \,\mu\text{g/dL}$ .

Baseline: 3.8 μg/dL in 2003-2004

SFY 2015: 1.7 µg/dL (Data Source: New Jersey Childhood Lead Information Database (LeadTrax))

### **SFY 2015 Accomplishments**

### A. Surveillance

The Department witnessed an increase of traditional laboratories and point-of-care test users who electronically reported blood lead test results. Currently, 99.6% of BLL results are reported electronically while the remainder are reported via facsimile or regular mail. This is an increase from 99.5%, the electronical laboratory reporting rate in SFY 2014.

The Master Client Index (MCI), an interdepartmental data exchange project whose purposes are to offer real-time updates of blood lead levels of Medicaid-enrolled children, de-duplicate records for each programs' databases using a built-in data cleaning tool, and update a child's Medicaid insurance coverage field within LeadTrax went live.

### **B. Superstorm Sandy Recovery Project**

The Department received Social Services Block Grant-Supplemental funding from the U.S. Department of Health and Human Services, Administration for Children and Families, to conduct public health interventions in the counties most affected by Superstorm Sandy. Those counties are: Bergen, Hudson, Essex, Union, Middlesex, Monmouth, Ocean, Atlantic, and Cape May.

The NJ Healthy Homes Training Center, a public/private partnership between Isles, Inc. and the Department, presented 90 half- and full-day courses with nearly 1,300 health, social services, and housing professionals trained in prevention of EBLL and other environmental health topics so that they can assist residents statewide in creating and maintaining healthy homes.

Three Regional Lead and Healthy Homes Coalitions, funded in part by the Department, conducted one-hour "Creating a Healthy Home After a Hurricane or Flood" educational sessions for the general public. The curriculum covered the seven (7) healthy homes principles, dangers of exposure to environmental toxins, including lead, when conducting recovery and rebuilding activities, and safety protocols when doing clean-up.

Through a Department grant the American Academy of Pediatrics, NJ Chapter, conducted one-hour continuing medical education sessions, for health care providers, titled "Identification and Management: Lead Poisoning and Asthma Care," were held for health care providers. In addition to face-to-face sessions a live webinar was held in June. The goal of this outreach was to assist health care providers in understanding the link between a change in housing status, such as after a natural disaster, and the health problems that are seen in the clinical setting.

Enhanced access to blood lead screenings for children, pregnant women and those who were exposed to recovery efforts was provided by local health departments using the point-of-care LeadCare II blood lead analyzer. Residents identified with elevated blood lead levels ( $\geq 5~\mu g/dL$ ) received limited nursing intervention which included monitoring for repeat and follow-up testing. This component of the Superstorm Sandy Lead Poisoning and Healthy Homes Initiative ended on June 30, 2016.

Residents in the target counties were offered dust and soil sampling to identify elevated levels of lead in their residential units and premises. Preliminary results indicate 34% of homes had elevated levels of lead in dust (n = 115), and 100% had elevated levels of lead in bare soil (n = 3). Households received information on how to minimize dust lead levels and soil remediation methods.

A healthy homes module, HomeTrax, was created to complement the Childhood Lead Information Database (LeadTrax) to capture other non-lead housing-based issues that may cause injury (e.g., tripping and fall hazards) and/or disease (e.g., pests, mold).

### C. Centers for Disease Control and Prevention Cooperative Agreement

In October 2014, the Department was awarded a three-year Cooperative Agreement for Childhood Lead Poisoning Prevention Surveillance. Over the three-year project period the Department will:

- Evaluate timeliness of environmental investigations conducted by local health department lead inspectors/risk assessors under N.J.A.C. §8:51 in ensuring lead-safe living environments for children with elevated blood lead levels, and
- Further quantify and qualify highest-risk geographic areas, underserved high-risk populations, and emerging sources of lead.