

CHILDHOOD LEAD EXPOSURE IN NEW JERSEY

ANNUAL REPORT

**STATE FISCAL YEAR 2016
(July 1, 2015– June 30, 2016)**

New Jersey Department of Health
Public Health Services Branch
Division of Family Health Services
Maternal and Child Health Services
Child and Adolescent Health Program
P.O. Box 364
Trenton, NJ 08625-0364

(609) 292-5666

<http://www.nj.gov/health/childhoodlead>

This page was intestinally left blank

TABLE OF CONTENTS

GLOSSARY OF TERMS AND ACRONYMS.....	4
LIST OF FIGURES AND TABLES	5
EXECUTIVE SUMMARY.....	7
CHAPTER ONE: TESTING CHILDREN FOR ELEVATED BLOOD LEAD LEVELS.....	9
CHAPTER TWO: PROFILE OF BLOOD LEAD TESTS PERFORMED AND PREVALENCE OF ELEVATED BLOOD LEAD LEVELS IN CHILDREN	13
CHAPTER THREE: SPOTLIGHT ON THE CITY OF NEWARK.....	27
CHAPTER FOUR: ENVIRONMENTAL INVESTIGATIONS BY LOCAL HEALTH DEPARTMENTS.....	32
CHAPTER FIVE: ADDRESSING ELEVATED BLOOD LEAD LEVELS IN NEW JERSEY’S CHILDRE.....	38

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 2016 includes the period of July 1, 2015 to June 30, 2016. 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.

LIST OF FIGURES AND TABLES

Figure 1a	10
Percentage of Children Who Turned Three (3) Years of Age During SFY 2016 and Had at Least One Blood Lead Test in their Lifetime	
Figure 1b	10
Percentage of Children Who Turned Six (6) Years of Age During SFY 2016 and Had at Least One Blood Lead Test in their Lifetime	
Figure 2	11
Trend in Percentage of Children (six (6) to 26/29 months of age) Tested by SFY	
Table 1	14
SFY 2016: Number of Children (six (6) to 26 months of age) by BLL and County of Residence	
Table 2	15-16
SFY 2016: Number of Children (six (6) to 26 months of age) by BLL and Municipality of Residence	
Figure 3	17
Trend in Percentage of Children (six (6) to 26*/29 months of age) with BLLs ≥ 10 $\mu\text{g/dL}$ by SFY	
Table 3	18
SFY 2016: Number of Children (<6 years of age) by BLL and County of Residence	
Table 4	19-20
SFY 2016: Number of Children (<6 years of age) by BLL and Municipality of Residence	
Figure 4a	21
SFY 2016: Breakdown of Children by Years of Age with BLLs ≥ 10 $\mu\text{g/dL}$	
Figure 4b	21
SFY 2016: Breakdown of Children by Years of Age with BLLs < 10 $\mu\text{g/dL}$	
Figure 5	22
SFY 2016: Percentage of Children by BLL	
Table 5	23
SFY 2016: Number of Children by BLL and County of Residence	
Figure 6a	24
Number of Children with BLLs ≥ 10 $\mu\text{g/dL}$ by SFY	
Figure 6b	25
Trends for Children <6 Years of Age: Testing Rates and Percentages of Newly Reported BLL by SFY	
Table 6	26
Children 5 Years of Age and their Blood Lead Levels, by Academic Year of Entering Kindergarten	

Figure 7.....28
SFY 2016: Percentage of EBLL Cases in the City of Newark Compared to the Rest of New Jersey

Figure 8.....28
SFY 2016: Percentage of EBLL Cases in the City of Newark Compared to Other Large Municipalities in New Jersey

Figure 929
SFY 2016: Large Municipalities (population of >35,000) with Highest Number of Children (<6 years of age) Reported with Elevated Blood Lead Levels

Figure 10.....30
SFY 2016: Local Health Departments with ≥ 20 New Environmental Cases

Figure 11.....31
SFY 2016: Top Ten Local Health Departments Comprising the Highest Percentages of New EBLL Cases and Compared to All Other Local Health Departments

Table 7.....33
SFY 2016: Environmental Case Activity Status by County

Table 8.....34
SFY 2016: Local Health Departments with ≥ 20 New Environmental Cases

Table 9.....35
Current Abatement Status of Cases by SFY: 1997-2016

Table 10.....36-37
SFY 2016: Environmental Case Activity by Local Health Department

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) 2016 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 2016 was 214,741, which represents an increase of 4.1% over the 206,221 children tested during SFY 2015. The SFY 2016 number of children tested also includes 94,909 children, or 44% 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.

The Department saw an increase of traditional laboratories and point-of-care test users who electronically reported blood lead test results. Currently, 99.8% of BLL results are reported electronically while the remainder are reported via facsimile or regular mail. This is an increase from 99.6%, the electronic laboratory reporting rate in SFY 2015.

While 213,717 (99.5%) children tested during SFY 2016 had blood lead levels (BLLs) below 10 µg/dL, 1,024 (0.47%) children had a test result at or above this threshold (10 µg/dL) and required public health action (case management and environmental investigation) by local health departments. In the fall of 2017, N.J.A.C. §8:51 was amended to require intervention when lower levels of lead are detected in a child, where case management and environmental investigation must be initiated at 5 µg/dL instead of 10 µg/dL. In 2016, there were 4,488 children reported with BLLs from 5 µg/dL to 9 µg/dL. Of those 4,488 children, 1,864 children were aged 6 to 26 months. The change in the actionable level will enable public health officials and medical providers to respond to this vulnerable population with education, case management, home visits and other measures at the earliest time possible.

Although the CDC has reduced grants to states by about 50% since 2009, New Jersey continues to invest in the reduction of lead exposure. In 2016, Governor Christie provided \$10 million to the Department of Education to reimburse schools for lead testing in drinking water and \$10 million to the Department of Community Affairs for lead remediation in homes. In 2017, to support the amended rule strengthening New Jersey's standard for responding to childhood lead exposure, the Governor added \$10 million to the Department of Health budget, to assist local health departments with increased caseloads. In addition to this new funding, the Department of Health's budget includes \$3.9 million for lead abatement programs and the training and certification of lead inspectors. There are also numerous federal, state and local agencies who, through regulatory authority, partner with the Department to reduce lead exposure, increase screening and respond to children with EBLLs, including the United States Environmental Protection Agency, the New Jersey Department of Environmental Protection, the New Jersey Department of Community Affairs, and local health departments.

In 2016, Department of Health Commissioner Cathleen Bennett formed the Population Health Action Team (PHAT) with seven other cabinet officers from New Jersey agencies including the Department of Education, the Department of Environmental Protection, the Department of Community Affairs, the Department of Children and Families, the Department of Human Services, the Department of Transportation and the Department of Agriculture. One of the key priorities of the PHAT is childhood lead prevention, and over the past year, the PHAT team assisted the Department with implementation of the #kNOwLEAD public awareness campaign which began during National Lead Poisoning Prevention Week in October 2016.

Urban centers such as the City of Newark continue to have the highest numbers of children with EBLs due to factors such as exposure to older housing stock, lower income level, and frequent travel to countries where products may contain lead. Initiatives such as Lead-Safe Houses and the Newark Partnership for Lead-Safe Children are examples of accomplishments that municipalities may implement to protect children and families at risk of exposure to lead.

In summary, over the past 20 years, the number of children who have been tested for lead has increased twenty-fold, while the number of children with EBLs has been reduced by 50% since 2009. While New Jersey's Healthy NJ 2020 goals for childhood lead testing have been met, we know there is no safe level of lead in children, and the Department and its partners will continue to collaborate to protect the state's most vulnerable population.

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 three (3) years of age or older 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.

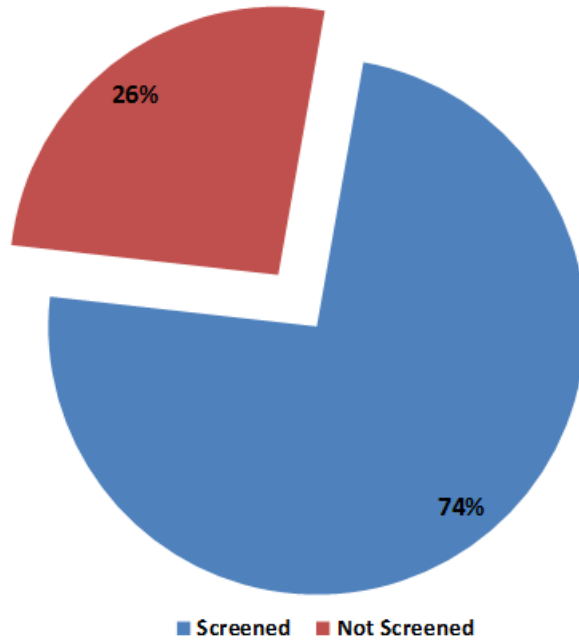
The figures and tables highlighting children between six (6) and 26 months of age closely represent the testing rates. However, the data displayed throughout these figures and tables also include children who were tested during SFY 2016 as their second test at two (2) years of age, while they may have been tested at one (1) year of age during SFY 2015.

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 2016.

Figure 1a

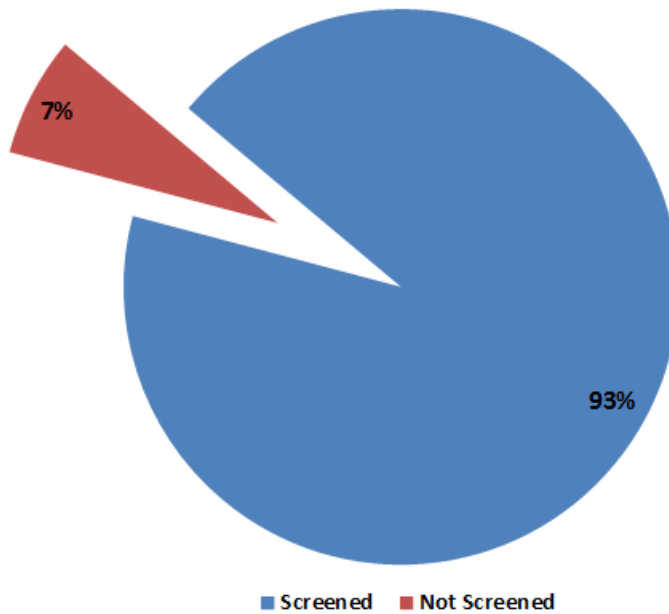
Percentage of Children* Who Turned Three (3) Years of Age During SFY 2016 and Had at Least One Blood Lead Test in their Lifetime



*Number of children born in New Jersey between July 1, 2012 and June 30, 2013 (103,089); Source: Birth Registry data

Figure 1b

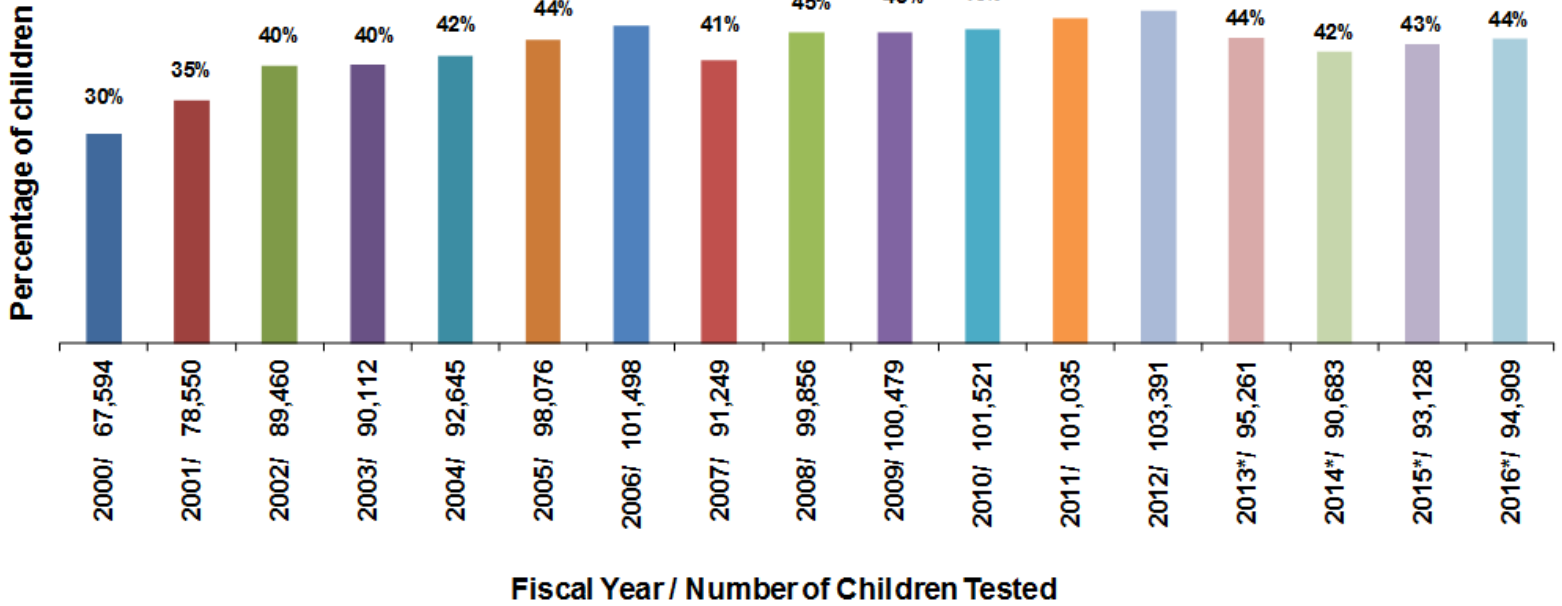
Percentage of Children* Who Turned Six (6) Years of Age During SFY 2016 and Had at Least One Blood Lead Test in their Lifetime



*Number of children born in New Jersey between July 1, 2009 and June 30, 2010 (107,394); 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 $n=214,727^2$)



¹The 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.

²The denominator for SFY 2011 to SFY 2016 uses the number of children who were one (1) and two (2) years of age, based on US Census 2010 data.

* For FY 2013, 2014, 2015 and 2016 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.

This page was intentionally left blank

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 EBLs in children in SFY 2016.

Table 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 2.8% (Evesham) to 78.9% (Plainfield), with a median screening rate of 37.7%. Figure 3 shows the prevalence of EBLs 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 2016, 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 2016 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 2016.

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 EBLs in children, Figures 4a, 4b, 5 and Table 5 focus on the entire population of children who were tested and reported during SFY 2016.

Figures 6a and 6b depict the trend in the number of children reported with an EBL 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 2016, counting the highest BLL reported per child.

Table 1

SFY 2016: Number of Children (six (6) to 26 months of age) by BLL and County of Residence

County	Total Children*	% Screened	BLL (µg/dL)						Total
			<5	5 - 9	10 - 14	15-19	20-44	≥ 45	
ATLANTIC	6,521	32.6%	2,060	56	10	1			2,127
BERGEN	19,955	42.1%	8,316	78	8	4	1	1	8,408
BURLINGTON	10,166	26.4%	2,648	37	1	1	1		2,688
CAMDEN	13,215	28.2%	3,650	63	12		3		3,728
CAPE MAY	1,822	21.7%	385	8	2				395
CUMBERLAND	4,368	37.5%	1,566	55	9	1	6	1	1,638
ESSEX	21,569	50.0%	10,278	419	57	14	22	2	10,792
GLOUCESTER	6,862	16.0%	1,072	23	2		2		1,099
HUDSON	17,288	50.2%	8,421	191	40	7	14	1	8,674
HUNTERDON	2,316	37.9%	868	8			1		877
MERCER	8,591	40.7%	3,358	112	15	6	2	1	3,494
MIDDLESEX	19,965	33.5%	6,569	96	15	10	6		6,696
MONMOUTH	13,371	30.0%	3,934	59	8	4	2		4,007
MORRIS	10,700	26.2%	2,766	32	4	2	2		2,806
OCEAN	15,532	46.5%	7,147	57	10	2	3		7,219
PASSAIC	13,727	51.9%	6,864	215	29	14	4		7,126
SALEM	1,549	33.9%	500	19	3	3			525
SOMERSET	7,581	25.5%	1,907	15	9	1	2		1,934
SUSSEX	3,099	24.3%	743	8	1				752
UNION	14,148	51.8%	7,126	155	32	6	8	1	7,328
WARREN	2,382	30.9%	715	16	4	1			736
Not Specified	N/A	N/A	11,716	142		1	1		11,860
Total	214,727	44.2%	92,609	1,864	271	78	80	7	94,909

*US Census 2010 data

Table 2**SFY 2016: Number of Children (six (6) to 26 months of age) by BLL and Municipality* of Residence**

Municipality	Total Children**	% Screened	BLL (µg/dL)						Total
			<5	5 - 9	10 - 14	15-19	20-44	≥ 45	
ATLANTIC CITY	1,249	53.8%	630	34	7	1			672
BAYONNE	1,528	34.0%	507	9	2		1		519
BELLEVILLE	869	46.7%	401	5					406
BERKELEY	509	5.1%	25		1				26
BLOOMFIELD	1,224	46.7%	557	11	2		1		571
BRICK	1,531	24.3%	365	6	1				372
BRIDGEWATER	978	36.8%	357	1	1		1		360
CAMDEN	2,838	42.8%	1,172	32	10		1		1,215
CHERRY HILL	1,449	31.5%	454	3					457
CLIFTON	2,123	49.8%	1,032	22	3	1			1,058
EAST BRUNSWICK	860	32.4%	278		1				279
EAST ORANGE	1,916	41.8%	746	42	6		4	2	800
EDISON	2,560	38.9%	957	28	6	2	2		995
EGG HARBOR	1,038	30.5%	312	5					317
ELIZABETH	3,943	58.2%	2,216	70	6	1	3		2,296
EVESHAM	1,016	2.8%	28						28
EWING	600	31.5%	187	2					189
FORT LEE	725	33.8%	245						245
FRANKLIN	1,759	8.2%	140	2	1		1		144
FREEHOLD	652	59.0%	378	6	1				385
GALLOWAY	724	27.5%	195	4					199
GLOUCESTER	1,520	6.8%	100	3					103
HACKENSACK	1,118	52.3%	573	10	2				585
HAMILTON	1,814	25.7%	453	8	3	1	1		466
HILLSBOROUGH	866	35.9%	309	2					311
HOBOKEN	1,467	55.3%	807	2	2				811
HOWELL	1,125	20.2%	227						227
IRVINGTON	1,692	58.3%	902	67	9	2	7		987
JACKSON	1,100	24.8%	270	2		1			273
JERSEY CITY	7,192	56.6%	3,908	124	26	3	12	1	4,074
KEARNY	895	48.3%	421	10	1				432
LAKEWOOD	6,556	77.4%	5,029	37	6		1		5,073
LINDEN	911	48.0%	430	6	1				437
MANALAPAN	778	22.0%	170	1					171
MANCHESTER	448	13.8%	60	2					62

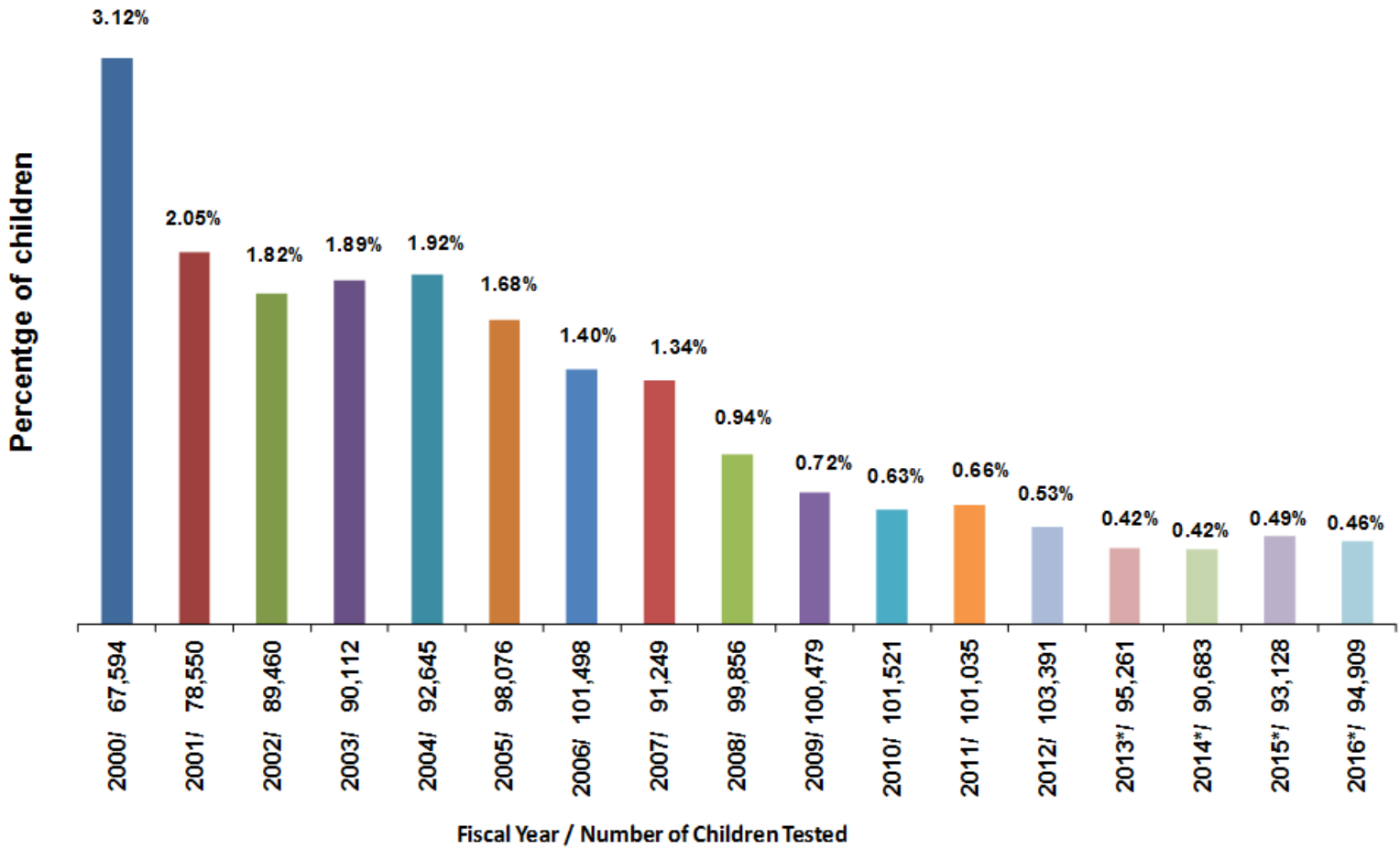
Municipality	Total Children**	% Screened	BLL (µg/dL)						Total
			<5	5 - 9	10 - 14	15-19	20-44	≥ 45	
MARLBORO	767	9.4%	72						72
MIDDLETOWN	1,444	14.4%	207	1					208
MONROE (Gloucester County)	898	5.3%	47				1		48
MONROE (Middlesex County)	655	18.8%	122				1		123
MONTCLAIR	869	33.9%	281	11		2	1		295
MOUNT LAUREL	886	36.2%	320	1					321
NEW BRUNSWICK	1,573	55.9%	856	15	2	4	2		879
NEWARK	8,382	58.6%	4,648	212	33	8	7		4,908
NORTH BERGEN	1,498	41.9%	615	10	1	1			627
NORTH BRUNSWICK	1,220	33.0%	397	4	1				402
OLD BRIDGE	1,478	20.2%	297				1		298
PARSIPPANY-TROY HILLS	1,207	5.4%	62		2		1		65
PASSAIC	2,767	63.3%	1,678	58	8	6	1		1,751
PATERSON	4,632	60.3%	2,666	103	14	7	2		2,792
PENNSAUKEN	845	31.5%	261	3	2				266
PERTH AMBOY	1,584	50.8%	790	12	2	1			805
PISCATAWAY	1,361	42.4%	565	12					577
PLAINFIELD	1,628	78.9%	1,212	52	12	4	4		1,284
SAYREVILLE	1,137	19.3%	218	1					219
SOUTH BRUNSWICK	935	7.6%	67	3	1				71
TEANECK	1,075	29.7%	318	1					319
TOMS RIVER	1,816	40.4%	729	4			1		734
TRENTON	2,786	62.6%	1,628	97	11	5	1	1	1,743
UNION CITY	1,880	41.8%	763	18	1	2	1		785
UNION	1,250	42.2%	521	4	2	1			528
VINELAND	1,729	41.8%	717	3	2				722
WASHINGTON (Gloucester County)	900	4.8%	42	1					43
WAYNE	995	45.7%	447	5	2		1		455
WEST NEW YORK	1,523	47.9%	716	10	2	1			729
WEST ORANGE	1,263	37.7%	464	8	3		1		476
WINSLOW	1,122	4.9%	54	1					55
WOODBIDGE	2,495	16.8%	409	6	2	3			420

*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 μ g/dL by SFY**



*For FY 2013, 2014, 2015 and 2016 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 2016: Number of Children (<6 years of age) by BLL and County of Residence

County	Total Children*	% Tested	Blood Lead Level (µg/dL)						Total
			<5	5-9	10-14	15-19	20-44	≥45	
ATLANTIC	19,909	19.8%	3,799	123	16	3		2	3,943
BERGEN	61,192	22.6%	13,677	152	13	8	1	1	13,852
BURLINGTON	31,546	12.6%	3,905	65	6	2	2		3,980
CAMDEN	40,195	13.4%	5,254	116	22	1	6		5,399
CAPE MAY	5,423	11.0%	578	14	2	1	0		595
CUMBERLAND	12,963	23.1%	2,851	112	24	3	8	1	2,999
ESSEX	64,591	41.1%	25,292	1,010	139	33	48	5	26,527
GLOUCESTER	21,059	7.5%	1,530	30	4	1	5		1,570
HUDSON	49,759	38.2%	18,457	407	80	16	23	5	18,988
HUNTERDON	7,484	13.6%	1,005	13			1		1,019
MERCER	26,052	23.5%	5,864	212	31	12	7	1	6,127
MIDDLESEX	60,249	20.9%	12,300	206	41	13	13		12,573
MONMOUTH	42,404	15.6%	6,468	137	16	4	3		6,628
MORRIS	33,493	12.6%	4,175	45	8	4	3		4,235
OCEAN	46,657	25.5%	11,801	94	14	3	3		11,915
PASSAIC	41,179	36.8%	14,618	451	58	21	11	1	15,160
SALEM	4,625	17.8%	757	50	12	4	0		823
SOMERSET	23,622	12.2%	2,820	34	15	2	4		2,875
SUSSEX	9,701	10.8%	1,034	13	3	1	0		1,051
UNION	43,085	34.3%	14,313	363	48	19	13	3	14,759
WARREN	7,434	13.0%	931	28	4	1	1		965
Not Specified	N/A	N/A	18,749	268		1	1		19,019
Total	652,622	26.8%	170,178	3,943	556	153	153	19	175,002

*US Census 2010 data

Table 4**SFY 2016: Number of Children (<6 years of age) by BLL and Municipality* of Residence**

Municipality	Total Children**	% Tested	Blood Lead Level (µg/dL)						Total
			<5	5-9	10-14	15-19	20-44	≥45	
ATLANTIC CITY	3,677	35.3%	1,208	74	11	3		2	1,298
BAYONNE	4,576	27.8%	1,245	19	4	1	1		1,270
BELLEVILLE	2,601	35.1%	901	9	1		1		912
BERKELEY	1,565	2.6%	40		1				41
BLOOMFIELD	3,575	30.8%	1,077	18	3		2	1	1,101
BRICK	4,558	15.3%	689	8	1	1			699
BRIDGEWATER	3,052	16.6%	504	2	1		1		508
CAMDEN	8,525	23.3%	1,898	71	15	1	1		1,986
CHERRY HILL	4,588	12.9%	589	4					593
CLIFTON	6,187	32.3%	1,967	28	4	1			2,000
EAST BRUNSWICK	2,725	17.8%	484		1				485
EAST ORANGE	5,534	36.4%	1,873	109	21	1	7	2	2,013
EDISON	7,774	24.0%	1,804	44	11	3	2		1,864
EGG HARBOR	3,341	16.4%	542	7					549
ELIZABETH	11,792	46.0%	5,226	175	14	3	3		5,421
EVESHAM	3,117	1.2%	37						37
EWING	1,797	17.5%	311	4					315
FORT LEE	2,171	19.7%	427						427
FRANKLIN	5,182	4.8%	235	8	3		1		247
FREEHOLD	2,156	29.1%	616	11	1				628
GALLOWAY	2,240	14.5%	320	5					325
GLOUCESTER	4,647	3.3%	150	4					154
HACKENSACK	3,223	36.3%	1,145	22	2				1,169
HAMILTON	5,480	15.3%	810	19	7	2	2		840
HILLSBOROUGH	2,736	15.7%	425	4					429
HOBOKEN	3,779	30.0%	1,130	3	2				1,135
HOWELL	3,591	10.0%	357	1					358
IRVINGTON	4,993	53.7%	2,460	175	30	7	10	1	2,683
JACKSON	3,649	13.4%	486	2		1			489
JERSEY CITY	20,393	44.1%	8,620	276	56	9	19	5	8,985
KEARNY	2,681	36.9%	974	13	2	1			990
LAKEWOOD	18,872	42.9%	8,020	67	9		1		8,097
LINDEN	2,726	33.8%	909	11	1				921
MANALAPAN	2,541	11.0%	279	1					280

Municipality	Total Children**	% Tested	Blood Lead Level (µg/dL)						Total
			<5	5-9	10-14	15-19	20-44	≥45	
MANCHESTER	1,372	7.7%	103	2					105
MARLBORO	2,606	5.9%	153						153
MIDDLETOWN	4,615	6.2%	281	3					284
MONROE (Gloucester County)	2,794	2.4%	67				1		68
MONROE (Middlesex County)	2,082	7.6%	156		1		2		159
MONTCLAIR	2,701	21.4%	555	20		2	1		578
MOUNT LAUREL	2,705	14.3%	386	2					388
NEW BRUNSWICK	4,753	34.5%	1,593	36	4	5	3		1,641
NEWARK	24,831	57.1%	13,519	559	72	18	21	1	14,190
NORTH BERGEN	4,473	30.9%	1,363	14	3	1			1,381
NORTH BRUNSWICK	3,502	20.8%	715	10	2				727
OLD BRIDGE	4,548	11.8%	531	3			1		535
PARSIPPANY- TROY HILLS	3,671	3.1%	107	2	4	1	1		115
PASSAIC	8,226	53.3%	4,231	127	16	10	3		4,387
PATERSON	13,987	45.7%	6,090	255	32	9	6	1	6,393
PENNSAUKEN	2,696	14.6%	385	6	3				394
PERTH AMBOY	4,756	42.5%	1,984	29	9	1			2,023
PISCATAWAY	3,903	25.7%	984	17			1		1,002
PLAINFIELD	4,961	63.4%	2,991	116	16	12	9		3,144
SAYREVILLE	3,338	12.9%	425	5	1				431
SOUTH BRUNSWICK	3,130	4.0%	114	8	2				124
TEANECK	3,142	16.1%	501	4					505
TOMS RIVER	5,617	24.1%	1,346	6	1		1		1,354
TRENTON	7,998	44.1%	3,307	180	23	10	4	1	3,525
UNION CITY	5,742	32.5%	1,820	38	4	2	2		1,866
UNION	3,701	26.8%	975	10	4	3		1	993
VINELAND	5,058	23.5%	1,173	10	4		2		1,189
WASHINGTON	2,968	1.8%	53	1					54
WAYNE	3,105	21.6%	662	5	3		2		672
WEST NEW YORK	4,258	41.8%	1,752	22	3	2	1		1,780
WEST ORANGE	3,635	23.4%	830	15	4		2		851
WINSLOW	3,336	2.3%	75	1	2				78
WOODBRIIDGE	7,326	11.1%	785	19	3	4	2		813

*Large Municipalities only

**US Census 2010 data

Figure 4a

SFY 2016: Breakdown of Children by Years of Age with BLLs ≥ 10 $\mu\text{g}/\text{dL}$

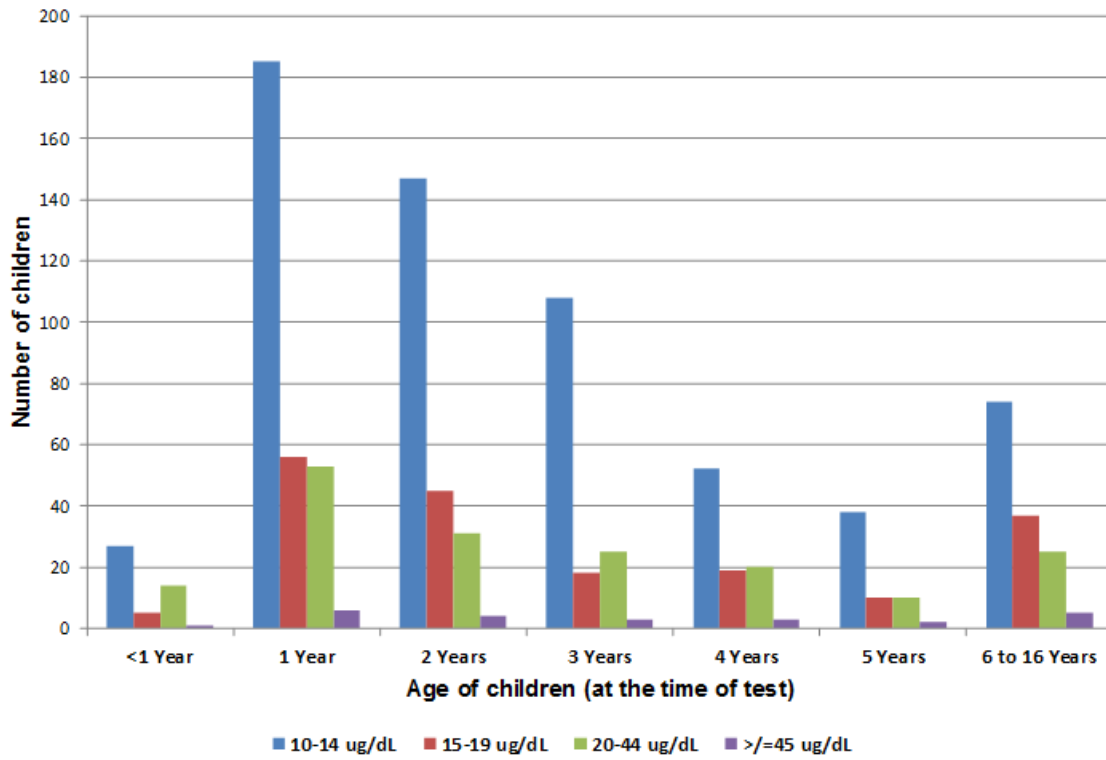


Figure 4b

SFY 2016: Breakdown of Children by Years of Age with BLL < 10 $\mu\text{g}/\text{dL}$

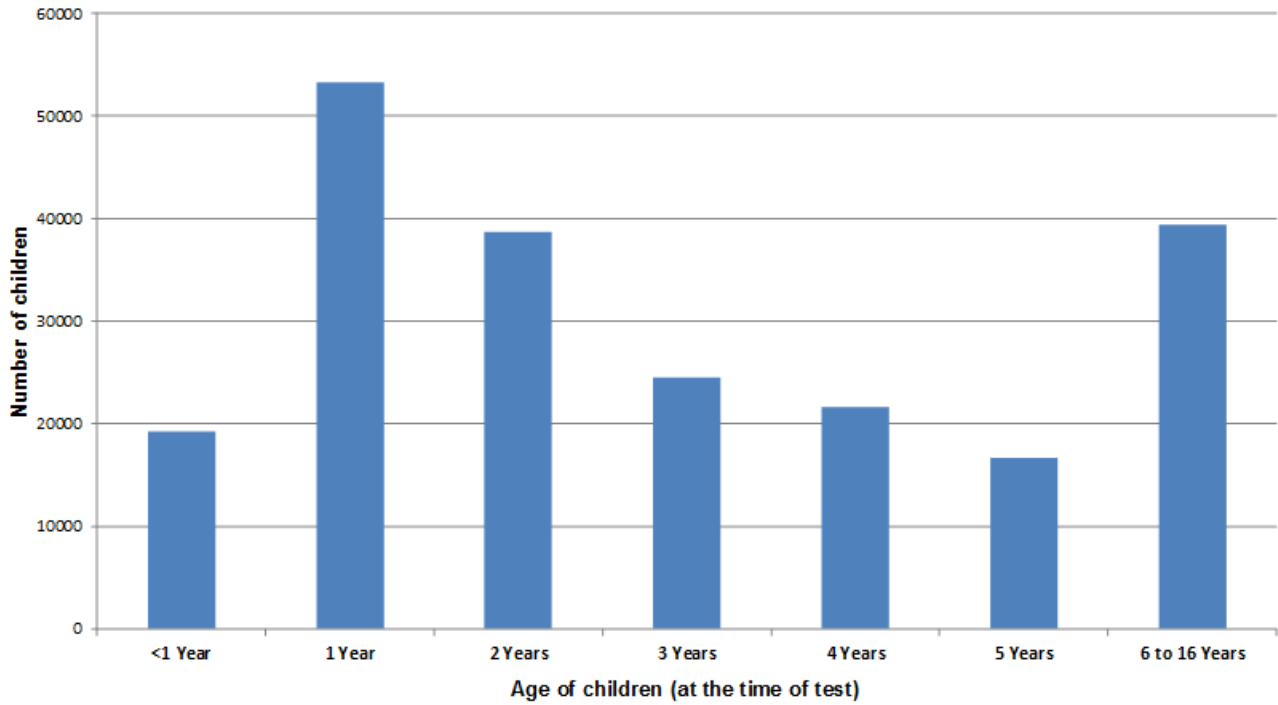


Figure 5

SFY 2016: Percentage of Children by BLL
(n=206,221)

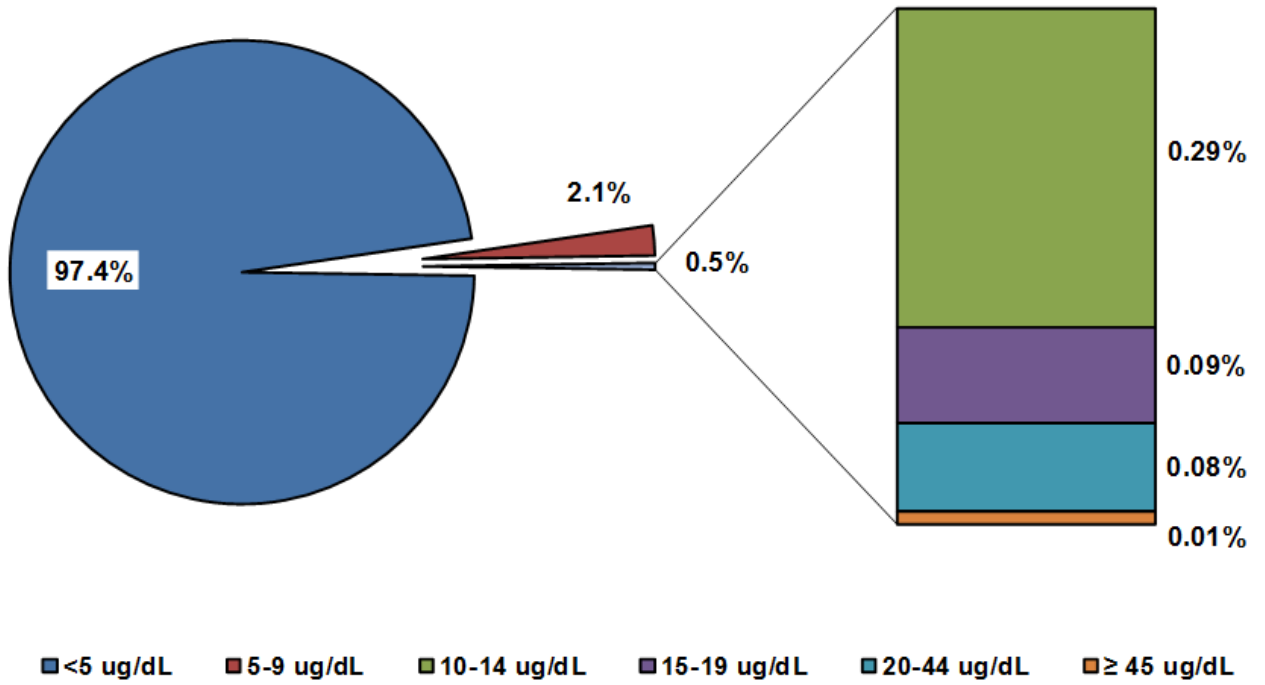


Table 5

SFY 2016: Number of Children by BLL and County of Residence

County	BLL (µg/dL)						Total
	<5	5-9	10-14	15-19	20-44	≥45	
ATLANTIC	4,225	134	17	3	1	5	4,385
BERGEN	15,987	167	18	9	1	1	16,183
BURLINGTON	4,203	66	8	2	2		4,281
CAMDEN	5,788	127	26	1	6		5,948
CAPE MAY	628	15	2	1	1		647
CUMBERLAND	3,510	129	26	5	8	1	3,679
ESSEX	35,574	1,183	153	44	56	5	37,015
GLOUCESTER	1,637	31	5	1	5		1,679
HUDSON	23,692	476	91	20	25	6	24,310
HUNTERDON	1,039	13			1		1,053
MERCER	7,376	229	35	16	10	1	7,667
MIDDLESEX	15,583	252	49	17	14		15,915
MONMOUTH	7,973	162	18	5	3		8,161
MORRIS	4,653	46	8	4	3		4,714
OCEAN	13,127	107	19	5	4		13,262
PASSAIC	17,878	499	63	23	17	2	18,482
SALEM	800	50	14	4	0		868
SOMERSET	3,319	41	20	5	4		3,389
SUSSEX	1,182	13	3	1			1,199
UNION	17,889	423	52	21	15	3	18,403
WARREN	1,022	29	5	2	1		1,059
Not Specified	22,144	296		1	1		22,442
Total	209,229	4,488	632	190	178	24	214,741

*For the EBLs reported with addresses that cannot be verified, the program staff and local health department 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

Number of Children with BLLs ≥ 10 $\mu\text{g/dL}$ by SFY

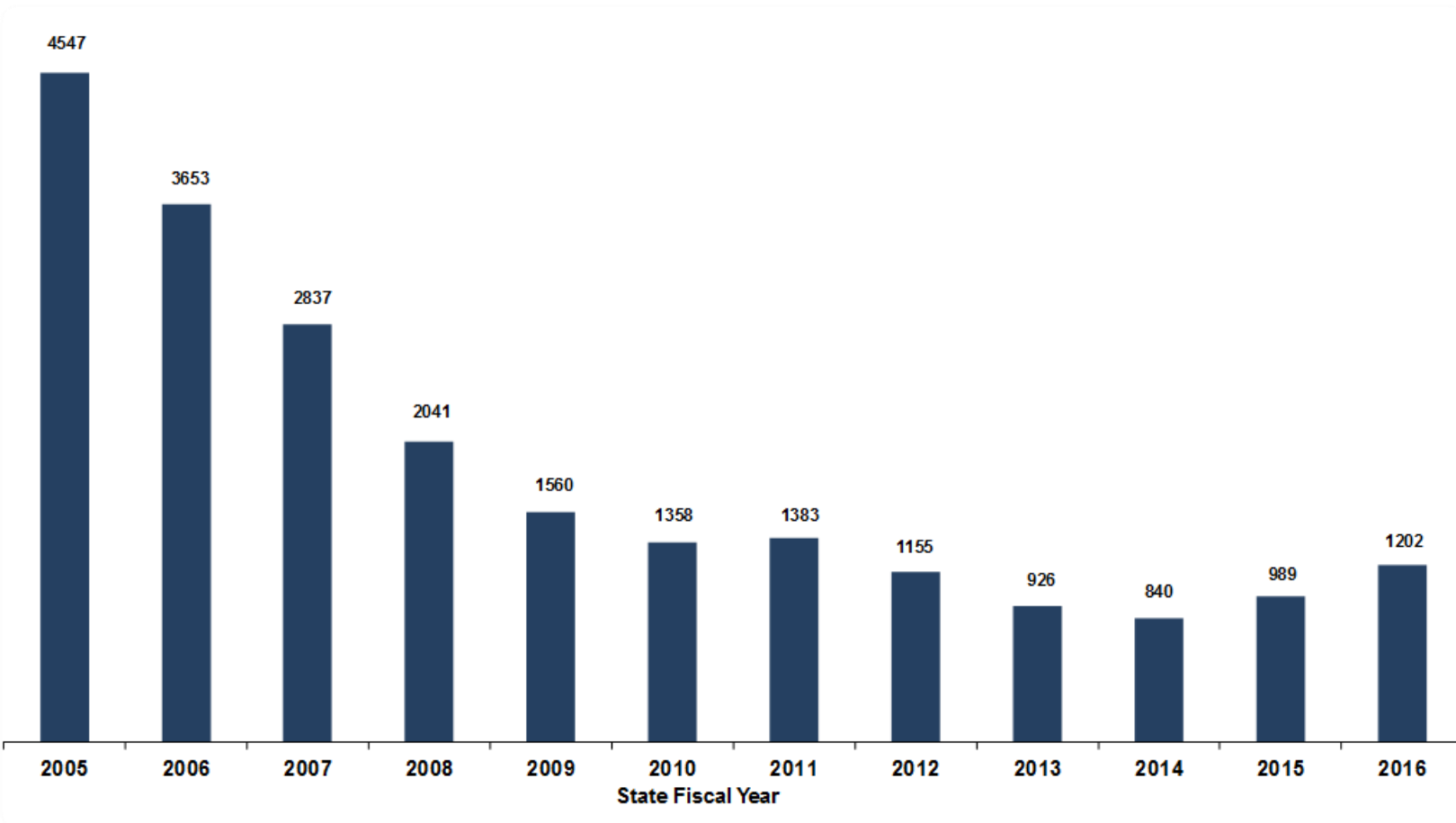
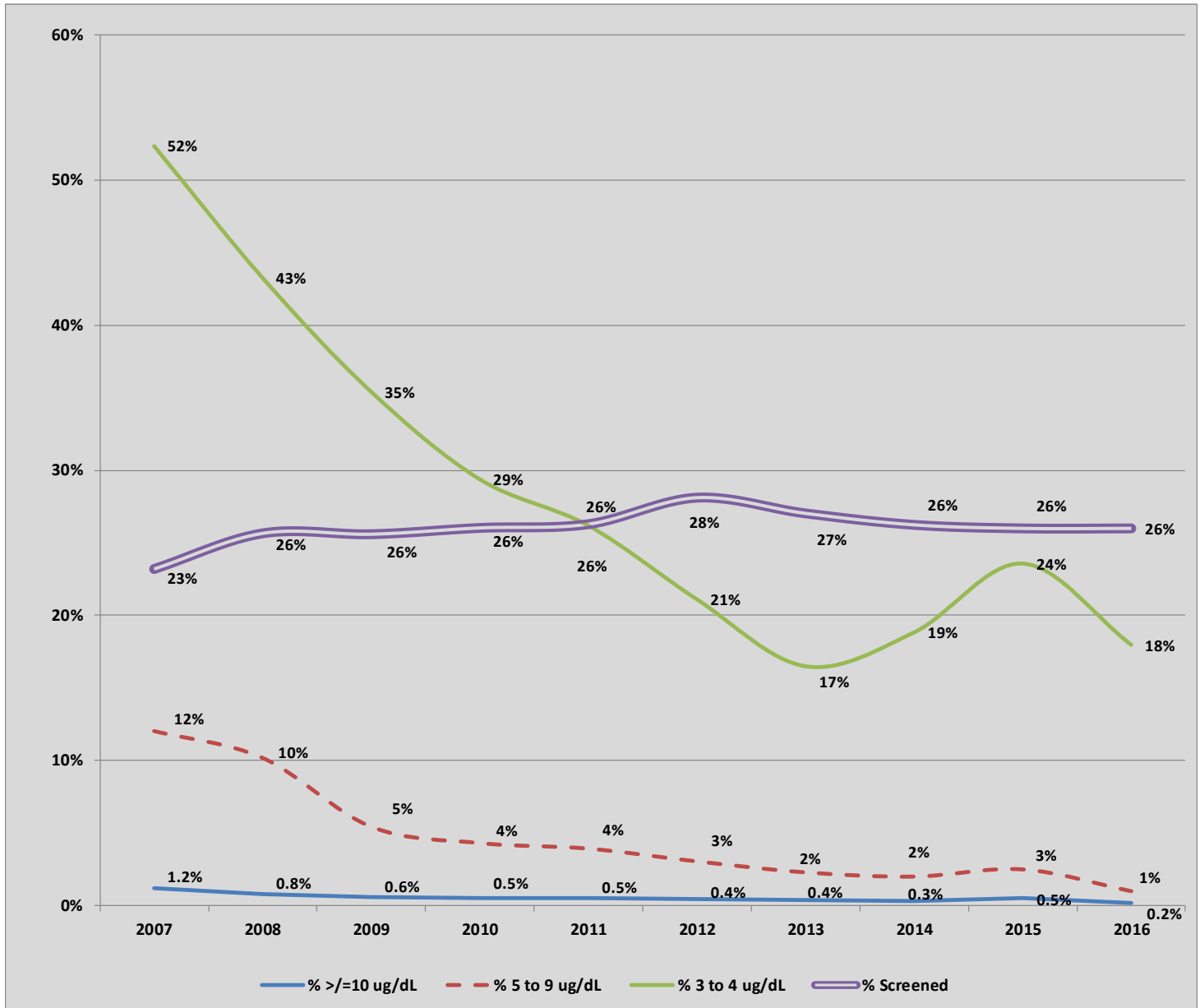


Figure 6b

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



While the testing rate is generally remaining steady, the percentage of EBLLs is generally declining.

Table 6**Children 5 Years of Age and their Blood Lead Levels, by Academic Year of Entering Kindergarten**

Academic Year of Entering Kindergarten	Blood Lead Level (µg/dL)						Total # of Children Tested
	10 to 14	15 to 19	20 to 44	>=45	Total # of Children with BLLs >= 10 ug/dL	% of Children with BLLs >= 10 ug/dL	
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
2014-'15	342	119	131	10	602	0.63%	95,864

CHAPTER THREE

SPOTLIGHT ON THE CITY OF NEWARK

The City of Newark has the greatest number of children with EBLs 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 EBL during SFY 2016, while only 3.8% of the entire State's population of children in that age group resides in Newark. Additionally, in SFY 2016 it comprised 18% of the total number of children younger than six (6) years of age with an EBL in all large municipalities.

Of all children* <6 years of age residing in Newark, 0.82% were reported with an EBL during SFY 2016. In two comparable large municipalities (by population*) this percentage was 0.82% (Jersey City), and 0.80% (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 EBL 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 2016: Percentage of EBLL Cases in the City of Newark Compared to the Rest of New Jersey (n=881)

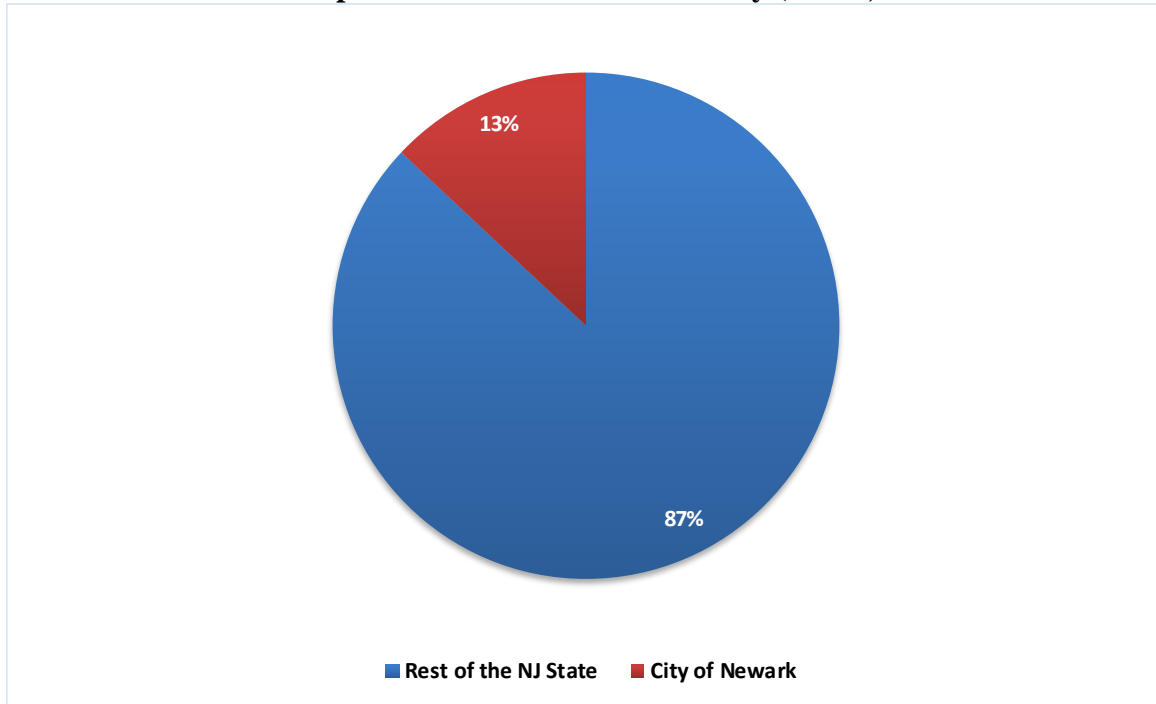
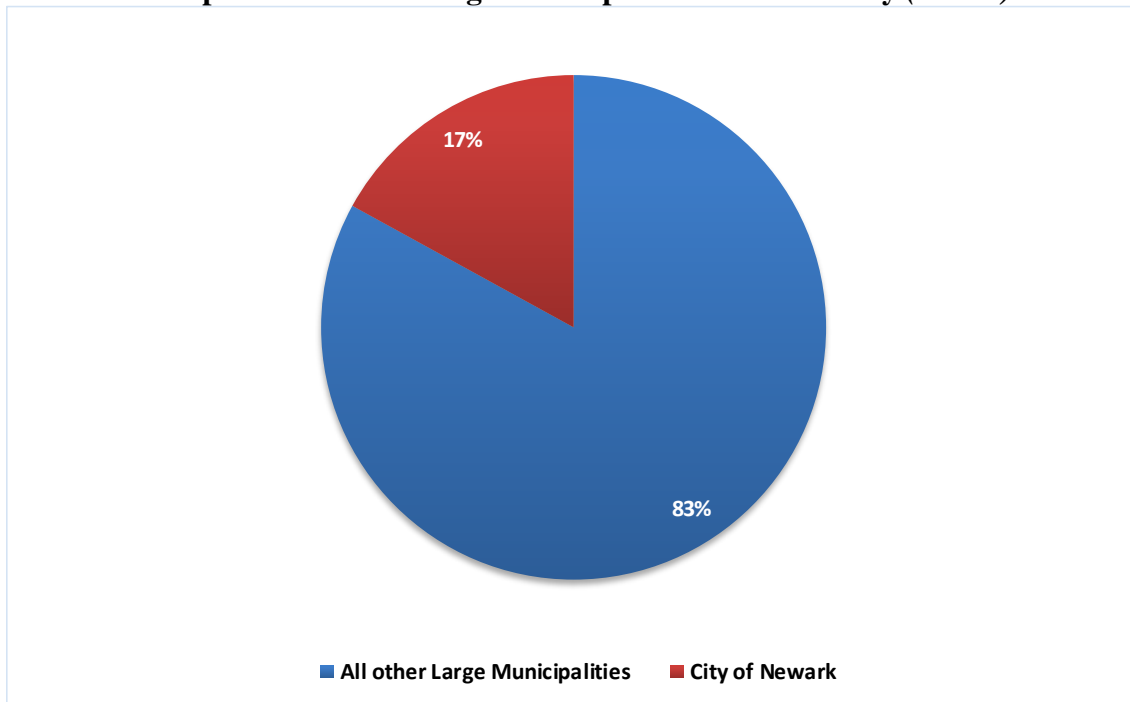


Figure 8

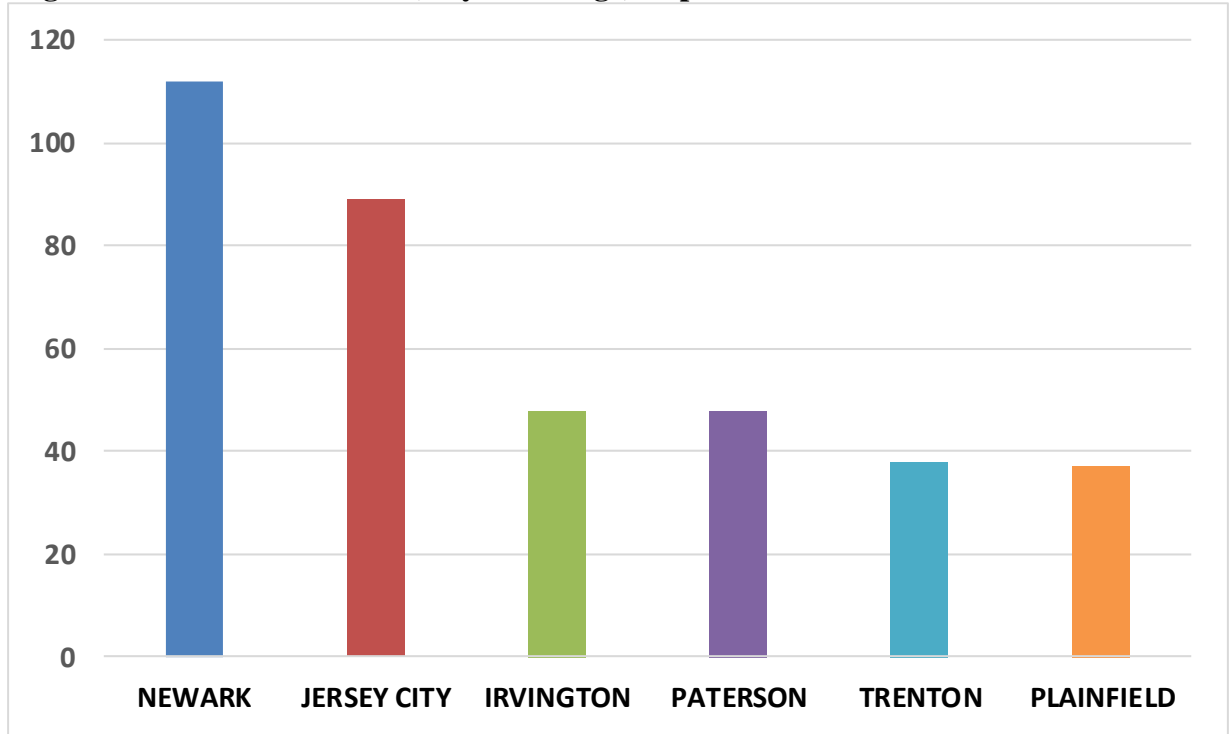
SFY 2016: Percentage of EBLL Cases in the City of Newark Compared to Other Large Municipalities in New Jersey (n=662)



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 112 children identified in the City of Newark during SFY 2016, only the highest blood lead test result per child is counted.

Figure 9

SFY 2016: Large Municipalities (population of >35,000) with Highest Number of Children (<6 years of age) Reported with Elevated Blood Lead Levels



The data are based on the total number of children who have a confirmed EBLL. Of the children reported with an EBLL during SFY 2016, only the highest blood lead test result per child is counted.

Figure 10

SFY 2016: Local Health Departments with ≥ 20 New Environmental Cases

The data are based on the total number of new environmental cases opened during SFY 2016. A new environmental case is opened based on a child's EBLL. Once a case is opened, the local health department is required to conduct an environmental investigation per N.J.A.C. §8:51-4.1.

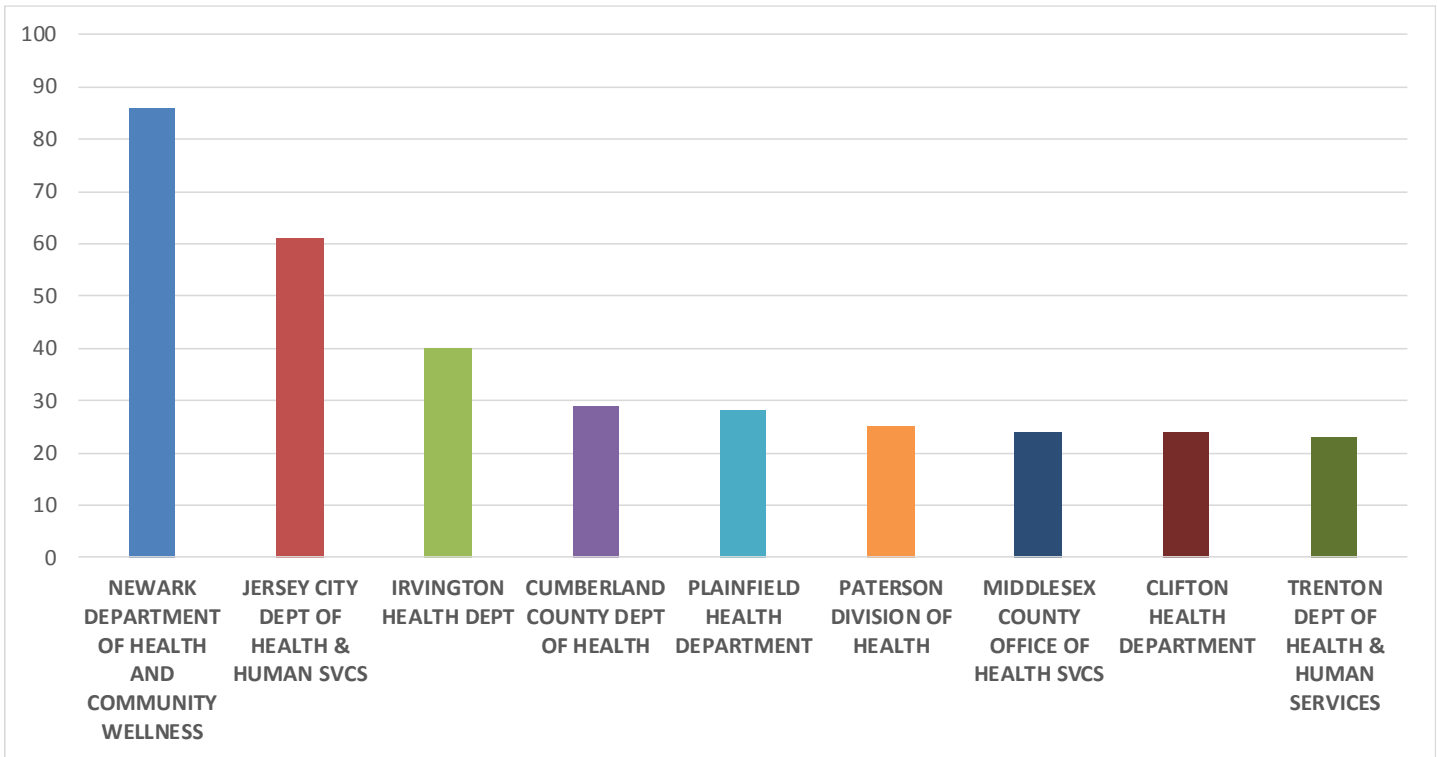
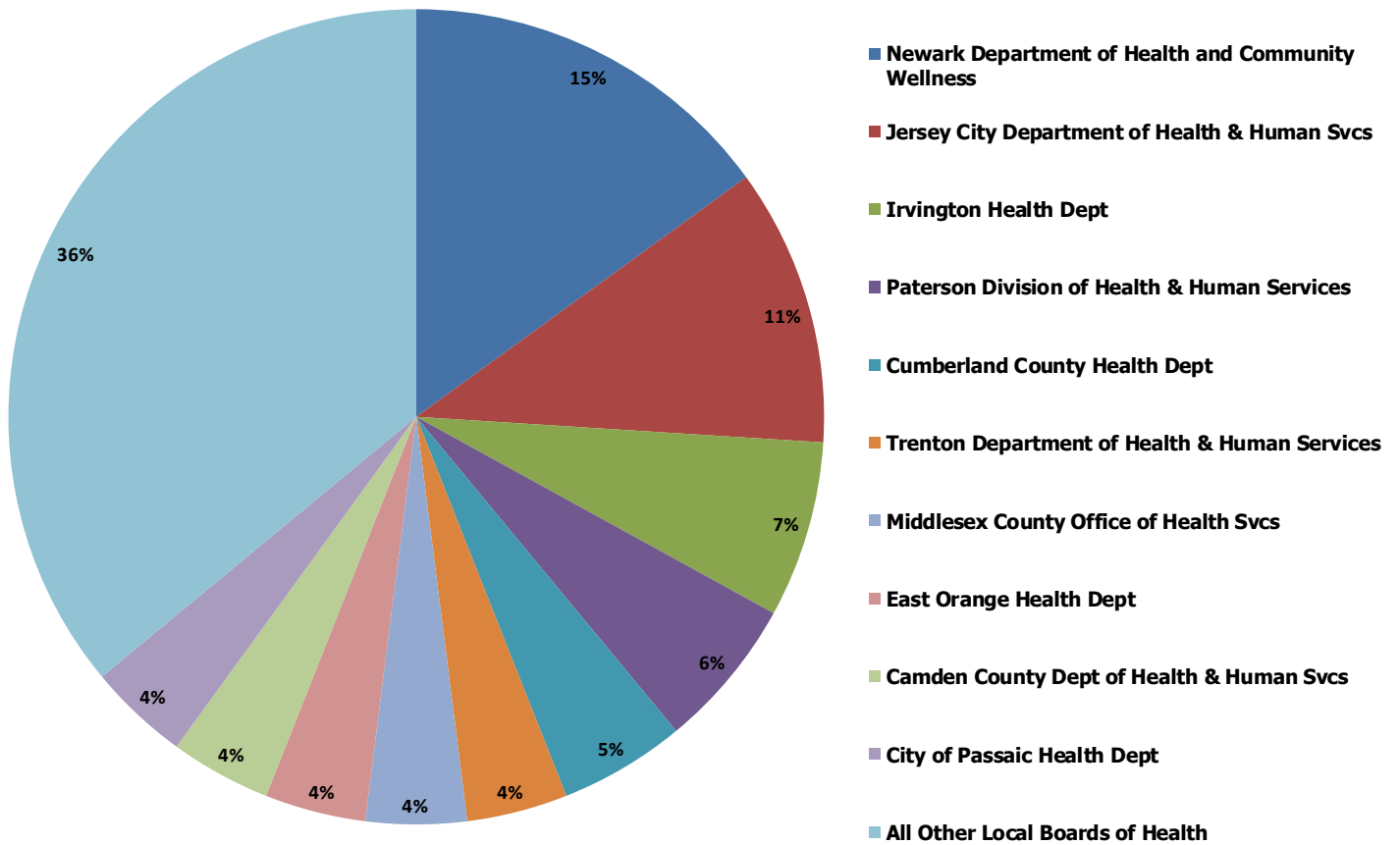


Figure 11

**SFY 2016: Top Ten Local Health Departments
Comprising the Highest Percentages* of New EBLL Cases
Compared to All Other Local Health Departments**



The data are based on the percentage of new cases of EBLs reported during SFY 2016. This chart does not rank local health departments 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 health departments.

**Percent share of all new cases of elevated blood lead levels during SFY 2016 in the entire State.*

CHAPTER FOUR

ENVIRONMENTAL INVESTIGATIONS BY LOCAL HEALTH DEPARTMENTS

New Jersey law (N.J.S.A. § 24:14A-6) requires local health departments to investigate all reported cases of EBLLs (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 an EBLL are specified in N.J.A.C. § 8:51. The local health department 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 health department 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 health departments. The data are accurate to the extent that local health departments 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 health departments.

Table 10 shows the environmental case activity within SFY 2016 by each local health department.

Table 7**SFY 2016: Environmental Case Activity Status by County**

County Name	Cases Referred	Investigation Required	Investigation Completed	% Investigation Completed	Abatement Required	Abatement Completed	% Abatement Completed
ATLANTIC	11	6	5	83%	3	1	33%
BERGEN	14	12	12	100%	5	3	60%
BURLINGTON	6	4	4	100%	0	0	N/A
CAMDEN	8	4	2	50%	1	0	0%
CAPE MAY	3	0	0	N/A	0	0	N/A
CUMBERLAND	35	30	30	100%	19	10	53%
ESSEX	176	103	69	67%	56	10	18%
GLOUCESTER	10	8	8	100%	5	4	80%
HUDSON	76	57	57	100%	23	9	39%
HUNTERDON	0	N/A	N/A	N/A	N/A	N/A	N/A
MERCER	38	13	12	92%	10	3	30%
MIDDLESEX	47	22	14	64%	4	0	0%
MONMOUTH	10	6	5	83%	2	1	50%
MORRIS	6	3	3	100%	1	0	0%
OCEAN	7	3	2	67%	2	2	100%
PASSAIC	53	36	35	97%	30	18	60%
SALEM	6	5	5	100%	3	1	33%
SOMERSET	12	6	6	100%	4	2	50%
SUSSEX	1	1	1	100%	0	0	N/A
UNION	46	20	19	95%	17	7	41%
WARREN	3	1	0	0%	0	0	N/A
Total	568	338	289	86%	185	71	38%

Table 7 above displays the environmental case activity in SFY 2016 for each county, based on the number of EBLL reports (referrals) for new environmental cases sent to the appropriate local health department.

A new environmental case is generated and referred to the appropriate local health department 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 2016: Local Health Departments with ≥ 20 New Environmental Cases**

Local Health Department	Cases Referred	Investigation Required	Investigation Completed	% Investigation Completed	Abatement Required	Abatement Completed	% Abatement Completed
Newark Department of Health and Community Wellness	86	38	6	16%	14	0	0%
Jersey City Department of Health & Human Services	61	45	44	98%	18	6	33%
Trenton Department of Health & Human Services	40	31	31	100%	24	3	13%
Paterson Division of Health	29	26	26	100%	15	8	53%
Irvington Health Department	28	12	12	100%	9	1	11%
Plainfield Health Department	25	19	18	95%	16	8	50%

See Table 10 for complete data on the status of all EBLL cases referred to local health departments during SFY 2016.

The data for this table is based on the environmental intervention activity information entered by local health departments as of July 15, 2016.

A new environmental case is generated and referred to the appropriate local health department 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: 1997-2016

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	728	100%	0	356	18	95%
2008	750	581	581	100%	0	260	18	94%
2009	583	500	500	100%	0	337	35	91%
2010	450	411	411	100%	0	245	70	78%
2011	573	554	554	100%	0	273	95	74%
2012	874	435	406	93%	29	186	84	69%
2013	502	354	353	99%	1	174	58	75%
2014	424	381	348	91%	33	117	54	68%
2015	483	303	301	99%	2	138	35	80%
2016**	568	338	289	86%**	49	71	114	38%

*Based on the information entered into the Childhood Lead Information Database as of July 15, 2016 by local health departments.

**For the cases opened during the end of SFY 2016, 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 2016: Environmental Case Activity by Local Health Department*

Local Health Department	Cases Referred	Investigation Required	Investigation Completed	Abatement Required	Abatement Completed
ATLANTIC CITY HEALTH DEPT	8	3	2	2	0
ATLANTIC COUNTY DIVISION OF PUBLIC HEALTH	3	3	3	1	1
BAYONNE HEALTH DEPT	2	1	1	1	1
BERGEN COUNTY DEPT OF HEALTH SVCS	8	7	8	3	1
BERGENFIELD HEALTH DEPT	1	0	0	0	0
BLOOMFIELD DEPT OF HEALTH & HUMAN SVCS	4	0	0	0	0
BRIDGEWATER TOWNSHIP HEALTH DEPT	1	1	1	1	1
BURLINGTON COUNTY HEALTH DEPT	6	4	4	0	0
CAMDEN COUNTY DEPT OF HEALTH & HUMAN SVCS	8	4	2	1	0
CAPE MAY COUNTY HEALTH DEPT	3	0	0	0	0
CLIFTON HEALTH DEPT	26	15	15	13	10
CUMBERLAND COUNTY DEPT OF HEALTH	29	26	26	15	8
EAST HANOVER HEALTH DEPT	1	1	1	0	0
EAST ORANGE HEALTH DEPT	19	18	16	9	4
EDISON DEPT OF HEALTH & HUMAN SVCS	12	8	3	0	0
ELIZABETH DEPT OF HEALTH & HUMAN SVCS	10	6	5	5	4
EWING TWP HEALTH DEPT	1	0	0	0	0
FREEHOLD HEALTH DEPT	2	2	2	1	1
GLOUCESTER COUNTY DEPT OF HEALTH & SENIOR SVCS	10	8	8	5	4
HACKENSACK DEPT OF HEALTH	1	1	1	0	0
HAMILTON TOWNSHIP DIVISION OF HEALTH	12	2	2	1	1
HILLSBOROUGH TOWNSHIP HEALTH DEPT	2	0	0	0	0
HOBOKEN HEALTH DEPT	1	0	1	0	0
IRVINGTON HEALTH DEPT	40	31	31	24	3
JERSEY CITY DEPT OF HEALTH AND HUMAN SVCS	61	45	44	18	6
KEARNY DEPT OF HEALTH	1	1	1	1	1
LINDEN BOARD OF HEALTH	1	0	0	0	0
LONG BEACH ISLAND HEALTH DEPT	1	1	1	1	1
MAPLEWOOD HEALTH DEPT	2	1	0	0	0
MIDDLE-BROOK REGIONAL HEALTH COMMISSION	2	2	2	1	0

*Local health departments that had at least one environmental case opened during SFY 2016

Local Health Department	Cases Referred	Investigation Required	Investigation Completed	Abatement Required	Abatement Completed
MIDDLESEX COUNTY OFFICE OF HEALTH SVCS	26	11	11	4	0
MONMOUTH COUNTY BOARD OF HEALTH	5	4	3	1	0
MONMOUTH COUNTY REGIONAL HEALTH COMMISSION #1	3	0	0	0	0
MONTCLAIR HEALTH DEPT	8	6	6	5	2
MT. OLIVE TOWNSHIP HEALTH DEPT	2	1	1	0	0
N.W. BERGEN REGIONAL HEALTH COMMISSION	3	3	3	2	2
NEWARK DEPT OF HEALTH & COMMUNITY WELLNESS	66	38	6	14	0
NORTH BERGEN HEALTH DEPT	7	5	6	2	1
OCEAN COUNTY HEALTH DEPT	6	2	1	1	1
PATERSON DIVISION OF HEALTH	25	19	18	16	8
PLAINFIELD HEALTH DEPT	28	12	12	9	1
PRINCETON HEALTH DEPT	1	0	0	0	0
RAHWAY HEALTH DEPT	2	2	2	2	1
RANDOLPH TOWNSHIP HEALTH DEPT	2	0	0	0	0
RIDGEFIELD HEALTH DEPT	1	0	0	0	0
ROSELLE HEALTH DEPT	1	0	0	0	0
SALEM COUNTY DEPT OF HEALTH	6	5	5	3	1
SOMERSET COUNTY DEPT OF HEALTH	7	3	3	2	1
SOUTH BRUNSWICK HEALTH DEPT	2	0	0	0	0
SOUTH ORANGE HEALTH DEPT	2	2	2	2	0
SUSSEX COUNTY DEPT HEALTH & ENV SVCS	1	1	1	0	0
TOWNSHIP OF HANOVER HEALTH DEPT	1	1	1	1	0
TRENTON DEPT OF HEALTH & HUMAN SVCS	23	11	10	9	2
UNION TWP DEPT OF HEALTH	3	0	0	0	0
VINELAND DEPT OF HEALTH	6	4	4	3	2
WARREN COUNTY HEALTH DEPT	3	1	0	0	0
WEST CALDWELL HEALTH DEPT	1	1	1	0	0
WEST NEW YORK HEALTH DEPT	4	4	4	1	0
WEST ORANGE HEALTH DEPT	16	9	9	3	1
WEST WINDSOR TOWNSHIP HEALTH DEPT	1	0	0	0	0
WESTFIELD REGIONAL HEALTH DEPT	1	1	1	1	1
WOODBRIIDGE TOWNSHIP HEALTH & HUMAN SVCS	7	0	0	0	0

*Local Health Departments that had at least one environmental case opened during SFY 2016

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 (≥ 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 2016: 5.0 µg/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 µg/dL.

Baseline: 3.2 µg/dL in 2005-2008

SFY 2016: 1.7 µg/dL

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