

# **New York City Childhood Lead Poisoning Prevention Program**

## **Annual Report 2004**



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*New York City  
Department of Health and Mental Hygiene*



*May 2006*

## Acknowledgments

The Annual Report 2004 of the Lead Poisoning Prevention Program was prepared by the following:

Text, Figures, and Tables: Deborah Nagin, Parisa Tehranifar, Diana P. DeMartini, Jennifer Fuld, Andrew Faciano, Carol Steinsapir, Danielle Greene, Nancy Clark, Jessica Leighton

Design and Layout: Vani Kurup

For copies of this report and/or more information about the Lead Poisoning Prevention Program of the New York City Department of Health and Mental Hygiene:

**Call 311 and ask for the Lead Poisoning Prevention hotline.**

This report can be downloaded as a PDF file from [www.nyc.gov/health](http://www.nyc.gov/health).

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# Contents

<b>Executive Summary</b>	<b>5</b>
<b>Childhood Lead Poisoning in NYC: Dramatic Progress and Continuing Challenges</b>	<b>8</b>
<b>Childhood Lead Poisoning in New York City in 2004</b>	<b>14</b>
<b>Accomplishments of the Lead Poisoning Prevention Program in 2004</b>	<b>26</b>
<b>Appendix</b>	<b>39</b>

## Figures

Figure 1	Steady Decline in Number of Lead-Poisoned Children	9
Figure 2	Fewer Severe Cases of Childhood Lead Poisoning	10
Figure 3	More 1-Year-Old and 2-Year-Old Children in New York City Need Testing for Lead Poisoning	15
Figure 4	Percent of Children Tested for Lead Poisoning Varied by Borough	16
Figure 5	Percent of Children Tested for Lead Poisoning Was Higher in Some Neighborhoods	17
Figure 6	Lead Poisoning Declines While More Children Receive Environmental Intervention at Lower Blood Lead Levels (BLLs)	18
Figure 7	Environmental Intervention Blood Lead Level (EIBLL) Case Rates Varied By Neighborhood	20
Figure 8	Rates of Children With Elevated Blood Lead Levels Were Higher in Some Neighborhoods	21
Figure 9	Environmental Intervention Blood Lead Level (EIBLL) Case Rates Were Higher in Some Neighborhoods	22
Figure 10	Brooklyn Children Were Over-Represented in the Environmental Intervention Blood Lead Level (EIBLL) Group	23
Figure 11	Children of Color Were Over-Represented in the Environmental Intervention Blood Lead Level (EIBLL) Group	24

## Tables

Table A-1	New York City intervention protocols for lead-poisoned children.	39
Table A-2	Demographic and environmental profile of children newly identified with blood lead levels at or above the Environmental Intervention Blood Lead Level, ages 0 months to less than 18 years (n = 764) and ages 6 months to less than 6 years (n = 659): New York City, 2004.	40
Table A-3	Numbers and rates of (1) children tested for lead poisoning; (2) children with elevated blood lead levels; and (3) children with an Environmental Intervention Blood Lead Level, ages 0 months to less than 18 years, by borough, and United Hospital Fund Neighborhood: New York City, 2004.	42
Table A-4	Numbers and rates of (1) children tested for lead poisoning; (2) children with elevated blood lead levels; and (3) children with an Environmental Intervention Blood Lead Level, ages 6 months to less than 6 years, by borough, and United Hospital Fund Neighborhood: New York City, 2004.	44
Table A-5	Neighborhood codes and their corresponding names, New York City.	47

# Executive Summary

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*This annual report describes the progress made in preventing childhood lead poisoning in New York City (NYC). It also summarizes the activities and accomplishments of the Lead Poisoning Prevention Program (LPPP) of the NYC Department of Health and Mental Hygiene (DOHMH) during 2004. Since LPPP provides services to lead-poisoned children less than 18 years of age, data presented in this report, except where specified, refer to children less than 18 years of age. However, the age group at greatest risk for lead poisoning includes children from 6 months to less than 6 years of age, especially those between 1 and 3 years. Data for these age groups are provided in some sections of this report.*

*This report reflects DOHMH's ongoing commitment to providing community members, policy makers, and health professionals with information on the health status of NYC residents.*

## Still a Public Health Problem, Despite Dramatic Progress

Childhood lead poisoning is a serious but preventable public health problem. In young children, exposure to lead can result in long-lasting neurological damage that may be associated with learning and behavioral problems, as well as lowered intelligence. These health effects may persist long after a child's blood lead level has declined. Preventing exposure to lead is the only effective way to ensure that children do not become

lead poisoned and suffer long-term consequences of lead poisoning.

In NYC over the past 10 years, both the number of lead poisoning cases and severity of lead poisoning have decreased dramatically.<sup>1</sup>

**In 2004,**

- 3,834 NYC children less than 18 years of age were newly identified with blood lead levels greater than or equal to 10 µg/dL — an 82% decrease since 1995.<sup>2</sup>

- 764 children less than 18 years of age were newly identified with an Environmental Blood Lead Level (EIBLL) — a 55% decline since 1995.<sup>3</sup>
- 15 children less than 18 years of age were newly identified with severe lead poisoning, (BLLs  $\geq$  45  $\mu\text{g}/\text{dL}$ ) as compared with 82 children in 1995 — an 82% decline.

Although lead poisoning can affect children of all ages, races, and income groups, certain populations are at greater risk for lead poisoning. These groups include children less than 3 years of age, low-income children living in older, deteriorated housing, and children of color. In addition, NYC children born outside the United States (U.S.) are over-represented among lead-poisoned children, with the largest number of foreign-born cases found in children from Haiti, Mexico, Pakistan, Bangladesh, and the Dominican Republic.

### Strong Lead Poisoning Prevention Policies

NYC has a strong policy and programmatic infrastructure to support lead poisoning prevention. In 2004, significant policy changes were made through adoption of a new lead poisoning prevention law, Local Law 1, and by amendments to the NYC Health Code.

NYC has developed a comprehensive plan to eliminate childhood lead poisoning. Working in collaboration with government and non-government partners in health and housing, and with community support, the plan targets communities and populations where lead poisoning persists. Our goal is to meet the national goal to eliminate childhood lead poisoning by 2010. Childhood lead poisoning is also included in the Take Care New York (TCNY) agenda, the DOHMH-wide initiative launched in 2003, further emphasizing the agency's commitment to eliminating childhood lead poisoning as a health problem.

### Childhood Lead Poisoning in NYC

Early identification of lead-poisoned children through blood lead testing to eliminating and quickly removing lead sources in their environments. Blood lead testing is particularly important for children less than 3 years old, the age group at greatest risk for lead poisoning. In New York State (NYS), blood lead testing is required for all children at both 1 and 2 years of age. NYS also requires that health care providers annually assess all children 6 months to less than 6 years of age for risk of lead exposure. Children found to be at risk should be tested.

#### Important Definitions in This Report

**Blood lead level (BLL)** is the concentration of lead in blood, measured in micrograms per deciliter ( $\mu\text{g}/\text{dL}$ ).

**Elevated blood lead level** is the term used by the U.S. Centers for Disease Control and Prevention (CDC) to describe a BLL  $\geq$  10  $\mu\text{g}/\text{dL}$ .

**Environmental Intervention Blood Lead Level (EIBLL)** is the term used by the NYC Department of Health and Mental Hygiene (DOHMH) to refer to the BLL at which care coordination and environmental intervention for lead-poisoned children are initiated. In August 2004 the EIBLL was reduced to a BLL  $\geq$  15  $\mu\text{g}/\text{dL}$ .<sup>3</sup>

**In 2004,**

- 72% of 1-year-olds and 60% of 2-year-olds were tested.
- An estimated 88% of children born in 2001 were tested for lead at least once before their third birthday. Only 37% had been tested at both ages 1 and 2.

**In 2004,** 764 children were newly identified with Environmental Intervention Blood Lead Levels (EIBLLs). Of these children:

- 86% lived in homes built before 1950.
- About half lived in just 9 of 42 NYC neighborhoods.
- 41% lived in Brooklyn.
- 58% were less than 3 years old.
- 91% were between 0 months and 6 years old.
- 86% were African American, Asian, or Hispanic.
- 18% were foreign-born.

## Lead Poisoning Prevention Program

The LPPP has developed a proactive, comprehensive approach to prevention and control of childhood lead poisoning. The main program areas include:

- Reduction of lead sources in homes and communities.
- Outreach and education to the public and health care providers.
- Care coordination for lead-poisoned children, as well as pregnant women with elevated blood lead levels and their newborns.
- Environmental inspection and enforcement.

To maximize the impact, the LPPP targets education and hazard reduction activities to

communities and populations at greatest risk. The LPPP also collaborates with community-based organizations, social service providers, government agencies, and other groups to increase the resources and expertise devoted to lead poisoning prevention. Whenever possible, the LPPP partners with organizations serving high-risk populations to develop interventions designed specifically for their communities.

**In 2004, LPPP:**

- Implemented Local Law 1, NYC's childhood lead poisoning prevention law.
- Amended the NYC Health Code requiring retailers who sell paint or paint removal supplies to post a sign alerting customers that the law prohibits dry scraping and dry sanding lead-based paint and paint of unknown lead content in homes, day care centers, and schools.
- Provided environmental intervention services to more children at lower blood lead levels.
- Implemented new, primary prevention initiatives in high-risk neighborhoods to address lead-based paint hazards in the homes of young children before lead poisoning occurs.
- Collaborated with 18 Medicaid managed care organizations and the DOHMH Early Intervention Program (EIP) to increase testing among high-risk children.
- Issued a health alert to warn New Yorkers about possible lead contamination in certain snacks and candies imported from Mexico.
- Continued the productive partnership with the NYC Department of Housing Preservation and Development (HPD) in a federally funded project that provides financial support for lead hazard repair in high-risk areas.

# Childhood Lead Poisoning in NYC: Dramatic Progress and Continuing Challenges

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*Childhood lead poisoning is a serious but preventable public health problem. In young children, exposure to lead can result in long-lasting neurological damage that may be associated with learning and behavioral problems, as well as lowered intelligence. Dramatic progress has been made in reducing the number of children with elevated blood lead levels. To continue this progress and reach the national goal of eliminating childhood lead poisoning by 2010, NYC is intensifying its lead poisoning prevention efforts, collaborating with new partners, and building on NYC's already substantial infrastructure of programs and policies to protect children from exposure to lead.*

## Significant Progress

The Lead Poisoning Prevention Program (LPPP) of the New York City Department of Health and Mental Hygiene (DOHMH) was established in 1970. The LPPP's mission is to prevent childhood lead poisoning, promote blood lead testing, and provide intervention services for lead-poisoned children and their families.

### Fewer Lead-Poisoned Children

The LPPP provides services to children less than 18 years of age who are identified with lead poisoning. The NYC Health Code defines lead poisoning as a blood lead level (BLL) greater than or equal to 10 micrograms of lead per deciliter of blood ( $\geq 10 \mu\text{g}/\text{dL}$ ). Blood lead levels  $\geq 10 \mu\text{g}/\text{dL}$  also are referred to as "elevated," following the

practice of the U.S. Centers for Disease Control and Prevention (CDC).

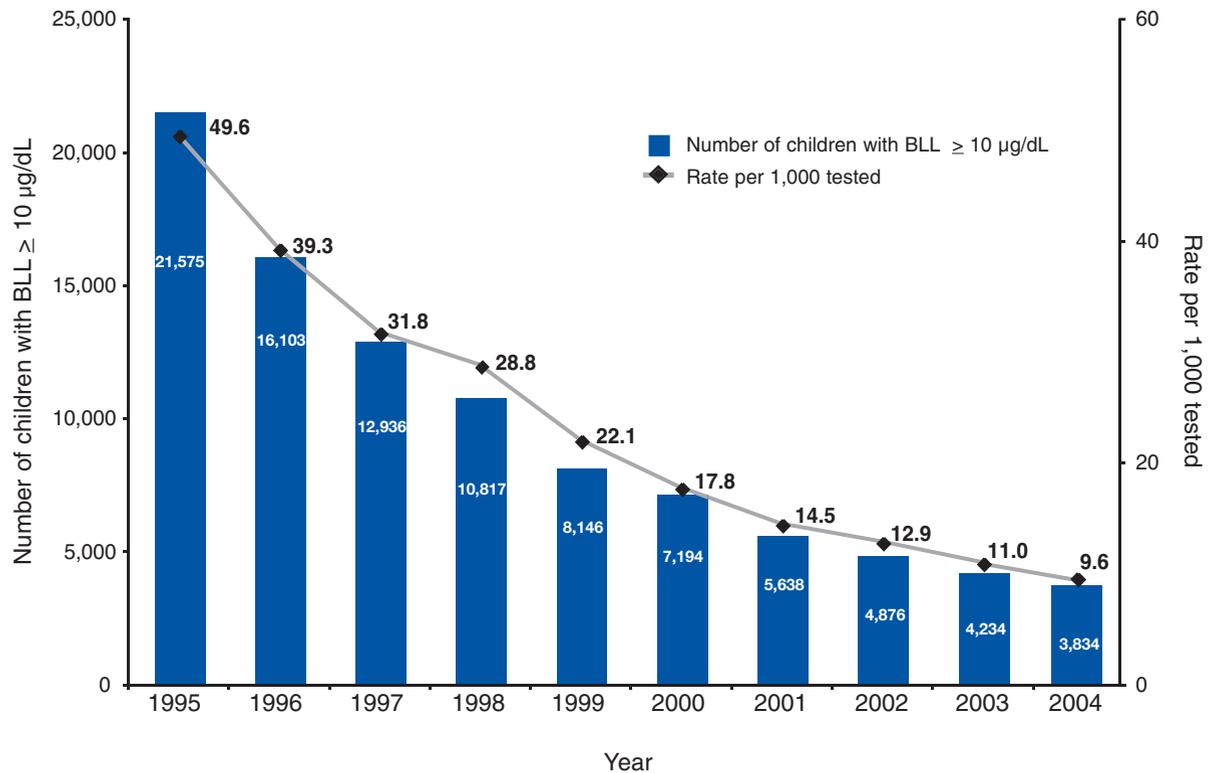
#### In 2004,

- 3,834 children less than 18 years of age were newly identified with a BLL  $\geq 10 \mu\text{g}/\text{dL}$ , as compared with 21,575 children in 1995 — an 82% decrease (Figure 1).
- 3,193 children from 6 months to less than 6 years of age were newly identified with a BLL  $\geq 10 \mu\text{g}/\text{dL}$ , as compared with 19,232 children in 1995 — an 83% decrease.

### Fewer Children with Severe Lead Poisoning

Today, the vast majority of children with elevated BLLs have no clinical symptoms.

**Figure 1**  
Steady Decline in Number of Lead-Poisoned Children\*



\* Number and rate (per 1,000 tested) of children, ages 0 to less than 18 years, newly identified with blood lead levels  $\geq 10$   $\mu\text{g/dL}$ , by year: NYC, 1995–2004.

Very few have BLLs  $\geq 45$   $\mu\text{g/dL}$ , the blood lead level that requires immediate medical intervention and may require hospitalization for chelation. Chelation is a medical treatment that speeds up the removal of lead from the body.

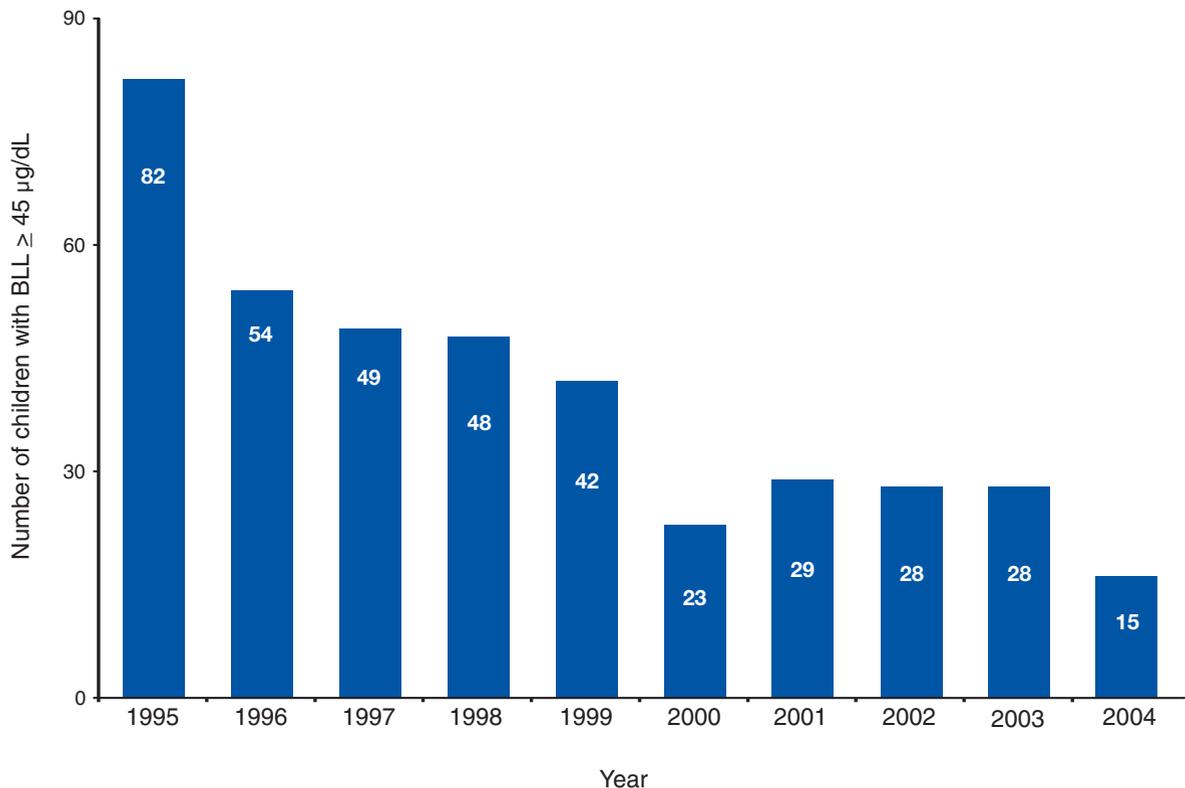
**In 2004,**

- 15 children less than 18 years of age were newly identified with BLLs  $\geq 45$   $\mu\text{g/dL}$ ,

as compared with 82 children in 1995 — an 82% decline (Figure 2).

- 3 children were newly identified with BLLs  $\geq 60$   $\mu\text{g/dL}$ , as compared with 25 in 1995 and 2,649 in 1970.

**Figure 2**  
Fewer Severe Cases of Childhood Lead Poisoning\*



\* Number of children, ages 0 to less than 18 years, newly identified with blood lead levels  $\geq$  45  $\mu\text{g/dL}$ , by year: NYC, 1995–2004.

## Progress Reflects the Impact of Government Regulations

The dramatic reduction in the number of lead-poisoned children in NYC is part of a larger nationwide decline over the last three decades. The National Health and Nutrition Examination Survey (NHANES) found that less than 2% of U.S. children, from 1 year to less than 6 years of age, had BLLs  $\geq$  10  $\mu\text{g/dL}$  in 1999–2000, in contrast with 88% of children in the same age group in 1976.

This progress in reducing childhood lead poisoning can largely be attributed to national and local government regulations that:

- Prohibit the use of lead in gasoline, paint, and other consumer products.
- Require the remediation of lead-based paint hazards in housing, using safe work practices.
- Promote early identification of children with elevated BLLs through blood lead testing.

## Lead is Still a Serious Public Health Problem

### Populations at Risk

While the number of children in NYC with elevated BLLs has decreased, childhood lead poisoning remains a significant problem in some NYC communities. Low-income children living in older, deteriorated housing and children of color are particularly at risk. In addition, children born outside the U.S. are over-represented among children with Environmental Intervention Blood Lead Levels (EIBLLs). Most of the foreign-born children with EIBLLs identified in 2004 were born in Haiti, Mexico, Pakistan, Bangladesh, and the Dominican Republic.

### Consequences of Low BLLs

While severe cases of lead poisoning are now infrequent, recent research shows that blood lead levels once considered safe can adversely affect

children's growth and development. These effects may go undetected until the child enters school, at which time the effects of lead poisoning may be reflected in poor academic performance.

### Prenatal Exposure

A pregnant woman with an elevated blood lead level passes the lead in her blood to the fetus. Research suggests that children born with elevated blood lead levels have an increased risk of cognitive problems and developmental delays. During pregnancy, maternal bone stores of calcium are released into the bloodstream to support development of the fetal bone structure; when this happens, bone stores of lead from past exposure may be released, as well. A pregnant woman's elevated BLL may reflect past exposure, instead of or in addition to recent exposure.

## NYC Prevention Policies Protect Children from Lead-Based Paint Exposure

Because even moderately elevated BLLs can be harmful, it is important to protect children from exposure by reducing lead in homes and communities. Common sources include lead-based paint and dust, still the primary sources of lead exposure, and imported products containing lead. Prevention also requires public education about the health effects of lead poisoning and about practical ways to minimize exposure to lead. Educational efforts should be targeted to key audiences such as families with young children, health care providers, landlords, and contractors.

NYC has developed strong policies to support lead poisoning prevention efforts. NYC was at the forefront of prevention efforts when, in 1960, it banned the use of lead-based paint in homes. Laws and regulations have been developed to (1) prevent exposure to lead before children are poisoned; and (2) protect children with elevated BLLs from further exposure. Because lead-based paint continues to be the primary source of lead exposure for NYC children, policies emphasize lead hazard control in housing, with a focus on young children. In addition, policies are in place to limit exposures to other, non-paint sources, including consumer products and drinking water.

### **Lead-Based Paint and Dust: A Health Hazard for Children**

NYC banned the use of lead-based paint in residential buildings in 1960, but homes built before the ban may still contain lead in older layers of paint. These older paint layers can become a hazard if the paint chips, flakes, or peels, releasing paint dust that contains lead. This dust can contaminate surfaces such as floors, windowsills, and children's hands, toys, and bottles. Young children who crawl on the floor and put things in their mouths are at greatest risk for lead poisoning through ingestion of lead dust.

Aging paint can release dust when routine maintenance is neglected or when friction on windows or doors abrades painted surfaces. Repair and renovation work conducted without appropriate dust control can also contaminate an apartment with lead.

### **Local Law 1 of 2004**

Local Law 1 requires owners of residential buildings with 3 or more dwelling units to determine annually if residents include children less than 7 years of age. Building owners must then inspect and repair all lead-based paint hazards found in apartments with young children. If the owner does not fix peeling paint, the tenant can complain to the NYC Department of Housing Preservation and Development (HPD). The HPD will inspect the apartment and order the landlord to safely repair any lead hazards that are found. If the owner fails to do the work, HPD's Emergency Repair Program will make the repairs.

### **NYC Health Code**

The NYC Health Code contains many provisions designed to prevent children's exposure to lead-based paint in homes. It also gives DOHMH the authority to order a building owner to abate lead-based paint hazards identified in the home and supplemental addresses of a lead-poisoned child.

Other Health Code provisions:

- Prohibit sale of lead-based paint for residential use.
- Require safe work practices when renovation or repair work disturbs lead-based paint.

## Current Public Policy Initiatives

### Comprehensive Plan to Eliminate Lead Poisoning

The U.S. Department of Health and Human Services has set a national goal of eliminating childhood lead poisoning by 2010. Elimination is defined as no children identified with BLLs  $\geq$  10  $\mu\text{g}/\text{dL}$ . To meet this goal, LPPP has developed a comprehensive plan with the assistance of a technical advisory committee. The activities in the plan are designed to:

- Prevent exposure to lead-based paint.
- Prevent exposure to non-paint sources of lead.
- Increase blood lead testing of young children.

To achieve these goals, the plan targets outreach, education, and environmental intervention activities in neighborhoods and populations that are at the greatest risk of lead poisoning. It also expands LPPP's collaboration with other government agencies and with community-based organizations, universities, medical professionals, building owners, retailers who sell paint, and other groups that have an important role to play in lead poisoning prevention. A draft of the plan is available at [www.nyc.gov/html/doh/html/lead/lead.shtml](http://www.nyc.gov/html/doh/html/lead/lead.shtml).

### Take Care New York

Take Care New York (TCNY) is a DOHMH agency-wide initiative launched in 2003. The goal of TCNY is to improve the health of NYC residents by addressing the 10 leading causes of preventable disease and death. Childhood lead poisoning is included in the TCNY agenda, as part of the step to "Make Your Home Safe and Healthy." Inclusion in the TCNY initiative underscores the DOHMH's commitment to eliminate childhood lead poisoning in NYC.

#### Take Care New York: 10 Steps to a Longer and Healthier Life

1. Have a Regular Doctor or Other Health Care Provider
2. Be Tobacco Free
3. Keep Your Heart Healthy
4. Know Your HIV Status
5. Get Help for Depression
6. Live Free of Dependence on Alcohol and Drugs
7. Get Checked for Cancer
8. Get the Immunizations You Need
- 9. Make Your Home Safe and Healthy:**  
*Have a home that is free from violence and free from lead-based paint hazards.*
10. Have a Healthy Baby

# Childhood Lead Poisoning in New York City in 2004

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*While lead poisoning can affect children of all ages, races, and income groups, certain populations are at greater risk for lead poisoning. These populations include children less than 3 years of age, children living in older, deteriorated housing, in low-income neighborhoods, and children of color.*

While NYC has made great progress in reducing childhood lead poisoning, the profile of lead-poisoned children underscores the need for continued prevention efforts. NYC's extensive older, deteriorated housing stock, concentrated in low-income neighborhoods, contributes to exposure to lead among some children.<sup>4</sup> More than 67% of the estimated 3,200,912 housing units in NYC were built before 1960, the year lead-based paint was banned for use inside NYC homes.

This chapter presents data on childhood lead poisoning and blood lead testing in NYC. Since LPPP provides services to lead-poisoned children less than 18 years of age, data presented in this report, except where specified, refer to children less than 18 years of age. However, the age group at greatest risk for lead poisoning includes children 6 months to less than 6 years of age, especially those between the ages of 1 and 3 years.

## Blood Lead Testing

Since most children with elevated blood lead levels have no symptoms, blood lead testing is the only practical way to identify these children. Early identification of lead-poisoned children can result in timely reduction of exposure.

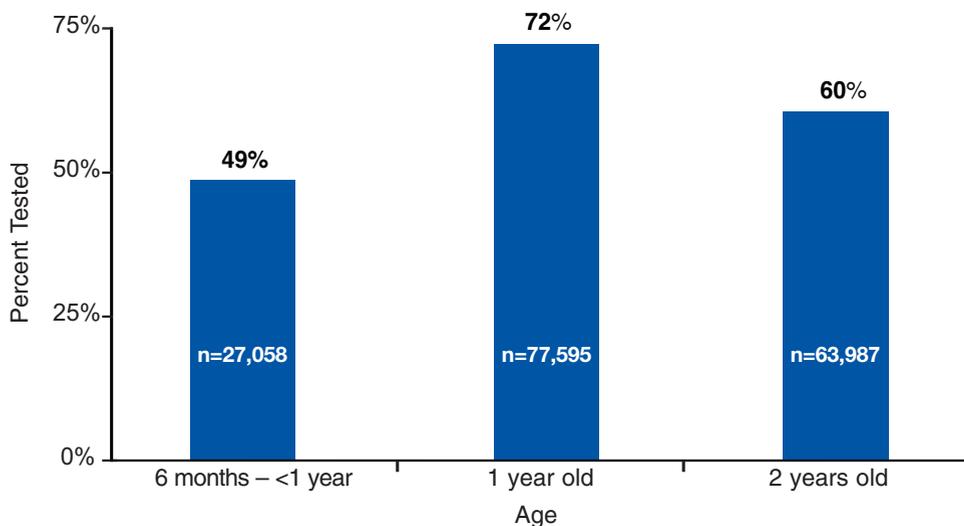
Blood lead testing is particularly important for children less than 3 years old, the group at greatest risk. In NYS, blood lead testing is required for all 1-year-old and 2-year-old children and for high-risk children from 6 months to less than 6 years of age.

### **In 2004,**

- 72% of 1-year-olds and 60% of 2-year-olds were tested (Figure 3).
- An estimated 88% of children born in 2001 were tested for lead poisoning at least once before their third birthday. Only 37% had been tested at both ages 1 and 2 as required by NYS law.

**Figure 3**

More 1-Year-Old and 2-Year-Old Children in New York City Need Testing for Lead Poisoning\*



\* Number and percent of children, ages 6 months to less than 3 years, tested for lead poisoning, by age: NYC, 2004. Sources: NYC DOHMH LPPP and US Census 2000 (Summary File 1).

In 2004, testing rates for 1- and 2-year-old children showed significant geographic variation:

- Across boroughs, ranging from 52% in Staten Island, to 71% in Manhattan (Figure 4).
- Among neighborhoods, ranging from 48% in Port Richmond, Staten Island, to 82% in East Harlem, Manhattan (Figure 5).

Information obtained from blood lead tests is also used to identify high-risk communities and populations and to target lead poisoning prevention activities.

### Environmental Intervention Blood Lead Levels (EIBLLs)

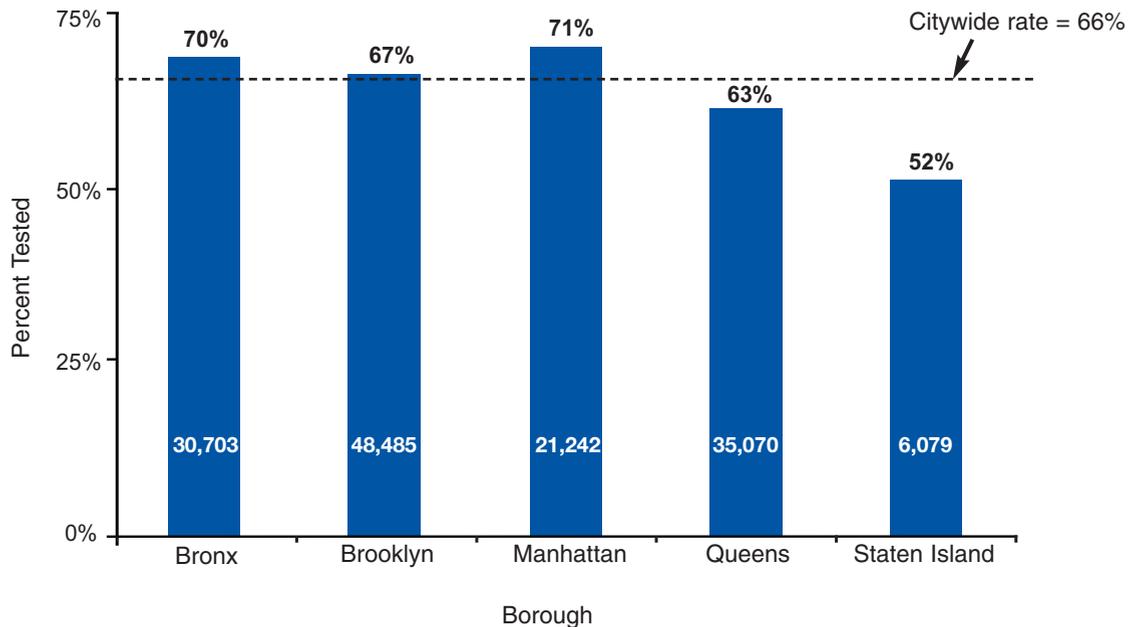
The LPPP provides environmental intervention and case management services for

children with blood lead levels at or above the EIBLL. The EIBLL has been reduced 6 times since it was first set at 60 µg/dL in 1970. Between 1999 and 2004, environmental investigation was undertaken for children with one blood lead level ≥ 20 µg/dL or two blood lead levels of 15–19 µg/dL, taken at least 3 months apart. In August 2004, the EIBLL was reduced to one blood lead level ≥ 15 µg/dL. This change resulted in the LPPP providing intervention services to more children with elevated blood lead levels.

In 2004,

- 764 children less than 18 years old were identified with an EIBLL — a 55% decline since 1995 (Figure 6).
- 659 children 6 months to less than 6 years old were identified with an EIBLL — a 58% decline since 1995.

**Figure 4**  
Percent of Children Tested for Lead Poisoning Varied by Borough\*



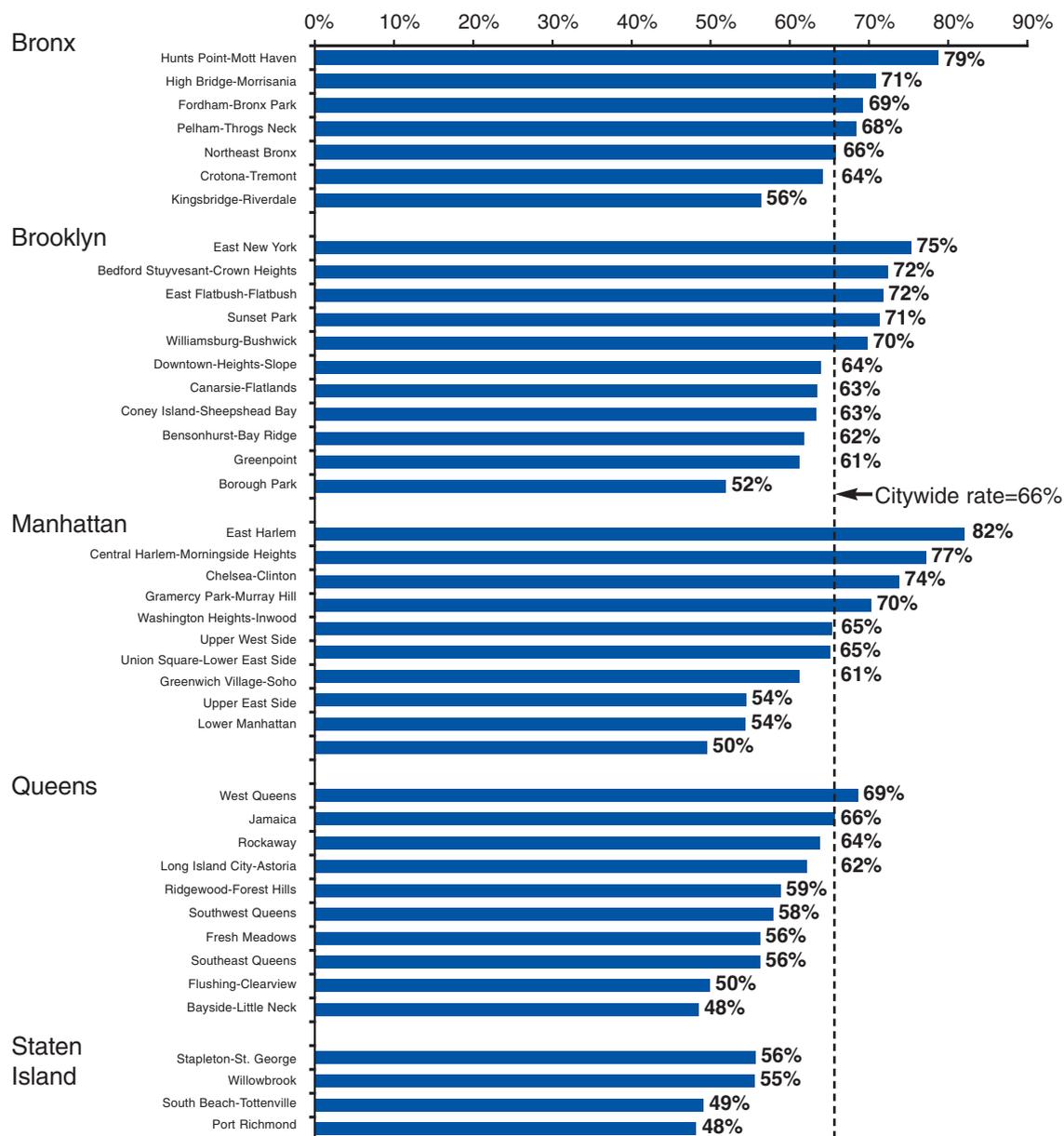
\* Percent of children, ages 1 year to less than 3 years, tested for lead poisoning, by borough: NYC, 2004. Sources: NYC DOHMH LPPP and US Census 2000 (Summary File 1).

The increase in the number of children who received environmental intervention services from 587 in 2003 to 764 in 2004 reflects the lowered threshold for providing these services, not a rise in the number of children with elevated blood lead levels. Figure 7 shows the downward trend in the number and rate of children with EIBLLs by blood lead level category. The steady decline is illustrated by the number and rate (per 1,000 children tested) of children newly identified with blood lead levels  $\geq 20$   $\mu\text{g}/\text{dL}$ . Blood lead levels in this range have been included in the definition of EIBLL since 1993.

**In 2004,**

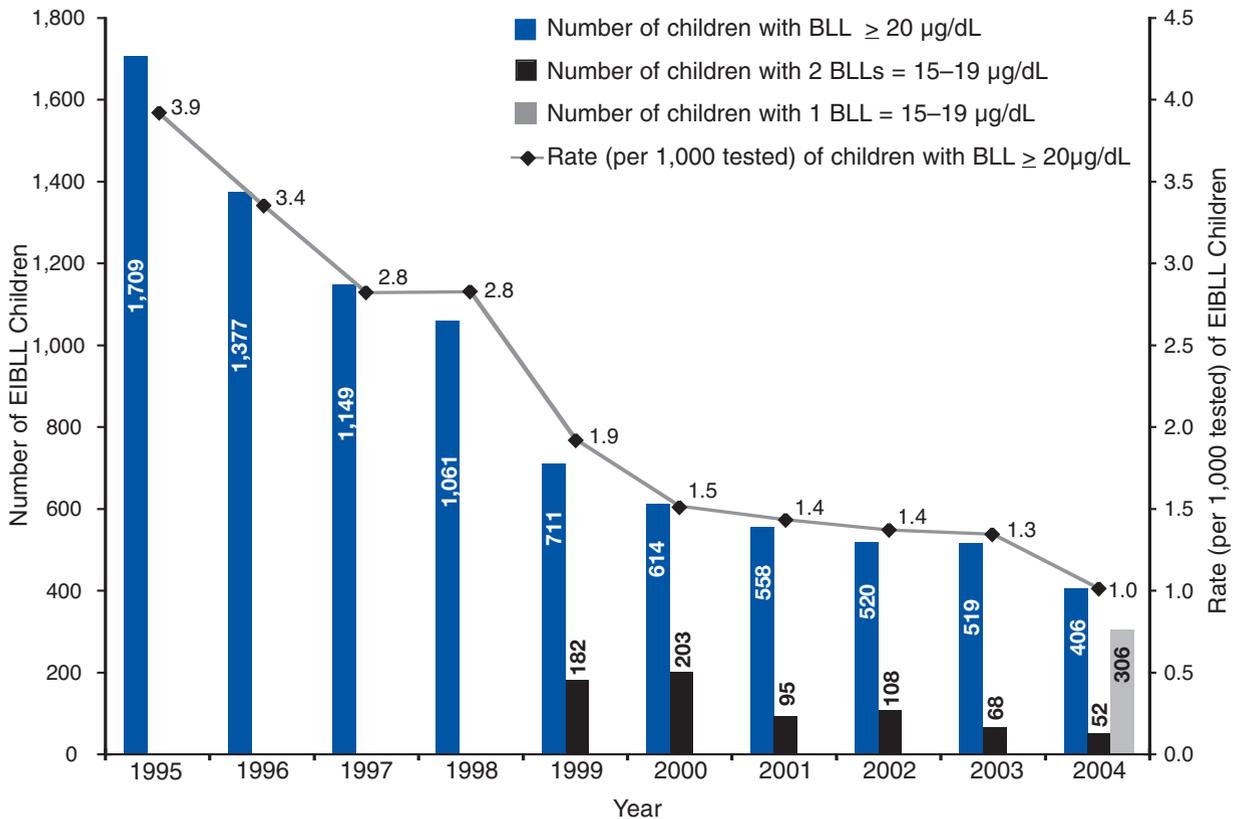
- 406 children, 0 to less than 18 years old, were newly identified with a BLL  $\geq 20$   $\mu\text{g}/\text{dL}$ , a 76% decline compared with 1,709 children in 1995, and a 22% decline compared with 519 children identified in 2003.
- 354 children, 6 months to less than 6 years old, were newly identified with a BLL  $\geq 20$   $\mu\text{g}/\text{dL}$ , a 78% decline compared with 1,578 children in 1995, and a 15% decline compared with 418 children identified in 2003.

**Figure 5**  
Percent of Children Tested for Lead Poisoning Was Higher in Some Neighborhoods\*



\* Percent of children, ages 1 year to less than 3 years, tested for lead poisoning, by United Hospital Fund Neighborhood: NYC, 2004. Sources: NYC DOHMH LPPP and US Census 2000 (Summary File 1).

**Figure 6**  
 Lead Poisoning Declines While More Children Receive Environmental Intervention at Lower Blood Lead Levels\* (BLLs)



\* Number of children, ages 0 to less than 18 years, newly identified with an Environmental Intervention Blood Lead Level (EIBLL), by year and blood lead level category; and Rate (per 1,000 children tested) of children, ages 0 to less than 18 years newly identified with blood lead levels ≥ 20 µg/dL: NYC, 1995–2004. From July 1999 through July 2004, the EIBLL was defined as either (a) one venous blood lead level ≥ 20 µg/dL, or (b) two blood lead levels 15–19 µg/dL that were drawn at least 3 months apart, where the second test was a venous test. As of August 2004, the EIBLL is defined as one venous blood lead level ≥ 15 µg/dL.

## Old Housing

Although children may be exposed to many sources of lead, the main source of childhood lead poisoning in NYC, as in most regions of the U.S., is lead-based paint in older, deteriorated housing. Nationwide, lead poisoning is associated with housing constructed before 1950, when lead-based paint was widely used and generally contained

more lead than in later decades. More than 50% of NYC housing stock was built before 1950, compared with about 22% of all U.S. housing.

### In 2004,

- 86% of children, less than 18 years old, newly identified with EIBLLs lived in dwellings built before 1950 (Table A-2).

- 88% of children, 6 months to less than 6 years old, newly identified with EIBLLs lived in dwellings built before 1950 (Table A-2).

**In 2004**, LPPP inspectors found peeling or deteriorated lead-based paint in the homes or supplementary addresses (such as the home of a babysitter) of:

- 73% of children, less than 18 years, newly identified with EIBLLs (Table A-2).
- 75% of children, 6 months to less than 6 years, newly identified with EIBLLs (Table A-2).

## Poverty

Poverty contributes to the risk of lead poisoning for children. Because poverty restricts a family's housing choices, low-income families often reside in older housing that is not well maintained. Nationally, among children 1 to 5 years of age living in older housing, those in low-income families were four times more likely to have elevated blood lead levels than children in middle-income families. Information on family income for lead-poisoned children in NYC is not available. However, lead poisoning in NYC continues to be concentrated in neighborhoods that have large low-income populations.

In NYC, 30% of all children less than 18 years live in poverty, as compared with 17% of U.S. children.

### **In 2004**,

- More than half of the children less than 18 years old who were newly identified with BLLs  $\geq 10$   $\mu\text{g}/\text{dL}$  lived in just 11 of 42 NYC neighborhoods (Table A-3). In these neighborhoods, 35% of children live in poverty.<sup>5</sup>

- More than half of the children less than 18 years old who were newly identified with EIBLLs lived in just 9 of 42 NYC neighborhoods (Table A-3). In these neighborhoods, 33% of children live in poverty.<sup>6</sup>

The map in Figure 7 highlights in dark blue the neighborhoods with the highest EIBLL case rates. Most of these are low-income communities. By contrast, the neighborhoods with the lowest EIBLL case rates, highlighted in light blue and white, are middle- to upper-income communities.

## Neighborhood

The disproportionate burden of lead poisoning in certain neighborhoods is evident when rates of elevated blood lead levels and EIBLLs in each community of NYC are compared to the citywide average.

**In 2004**, for children, less than 18 years, newly identified with BLLs  $\geq 10$   $\mu\text{g}/\text{dL}$ :

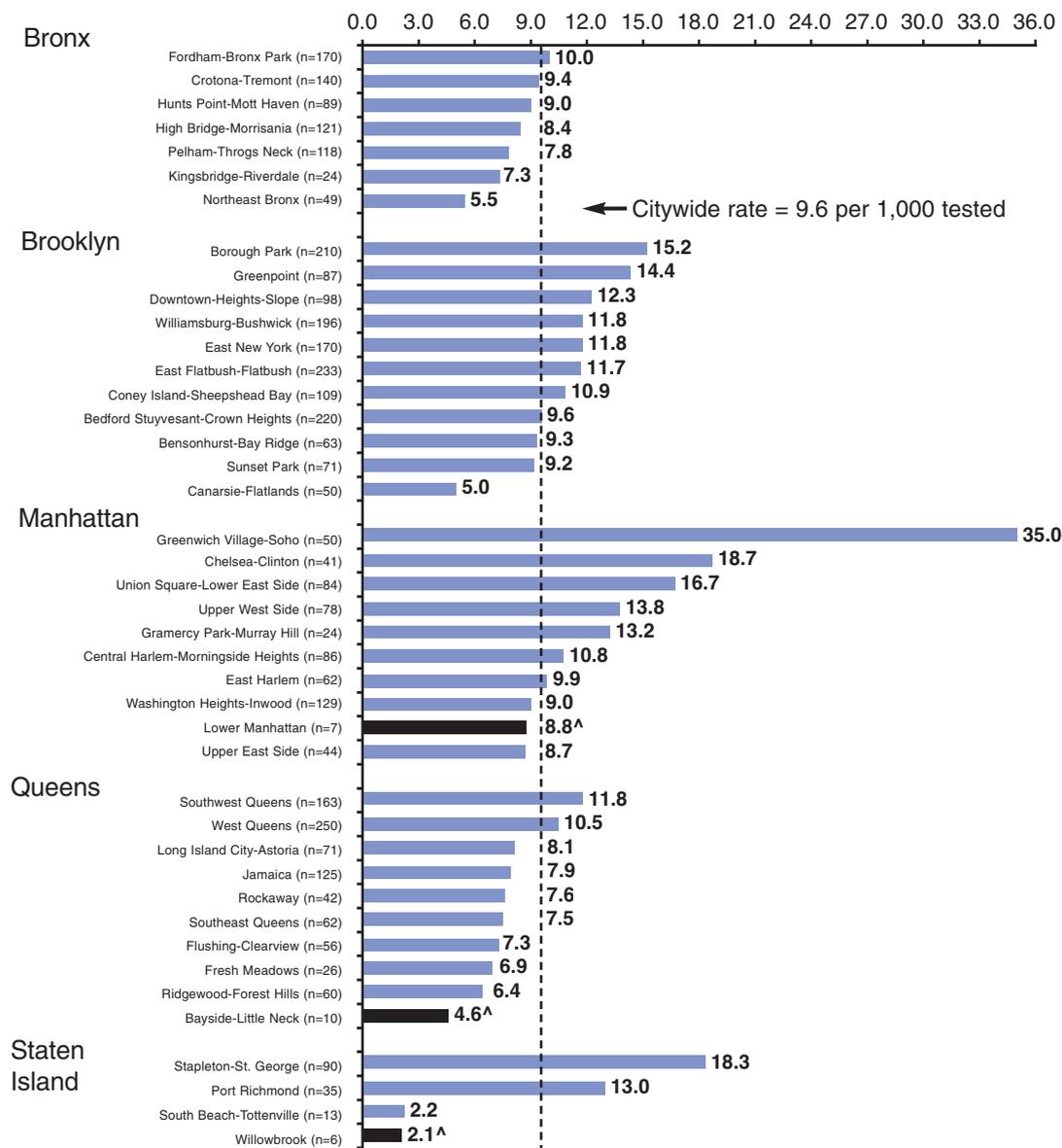
- The citywide rate was 9.6 for every 1,000 children tested.
- The rate was higher than the citywide average in 19 of 42 neighborhoods: 7 neighborhoods in Brooklyn, 7 in Manhattan, 1 in the Bronx, 2 in Queens, and 2 on Staten Island (Figure 8 and Table A-3).

**In 2004**, for children, less than 18 years, newly identified with EIBLLs:

- The citywide rate was 1.9 for every 1,000 children tested.
- The rate was higher than the citywide average in 15 of 42 neighborhoods: 6 neighborhoods in Brooklyn, 4 in Queens, 3 in the Bronx, and 2 on Staten Island (Figure 9 and Table A-3).



**Figure 8**  
**Rates of Children With Elevated Blood Lead Levels Were Higher in Some Neighborhoods\***

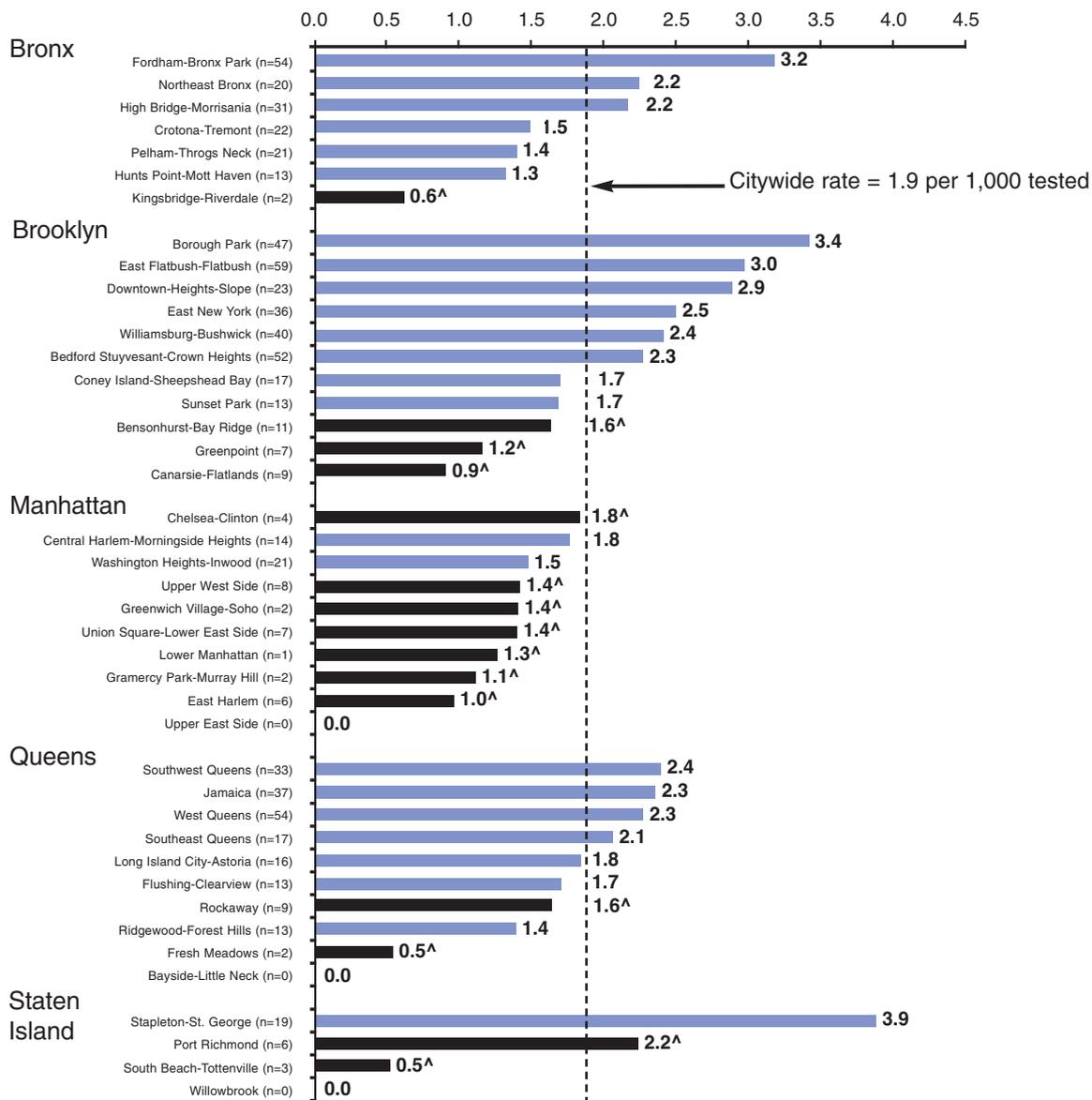


\* Number and rate (per 1,000 children tested) of children, ages 0 to less than 18 years, newly identified with an Elevated Blood Lead Level ( $\geq 10 \mu\text{g/dL}$ ), by United Hospital Fund Neighborhood (sorted highest to lowest within each borough): NYC, 2004.

<sup>A</sup> Elevated Blood Lead Level rates in neighborhoods represented by black bars were less precise (relative standard error  $\geq 30\%$ ) due to small numbers of children with elevated BLL. Caution should be used in interpreting these case rates.

Note: Number of cases with elevated BLLs in each neighborhood is reported in parentheses to the right of neighborhood name.

**Figure 9**  
**Environmental Intervention Blood Lead Level (EIBLL) Case Rates Were Higher in Some Neighborhoods\***



\* Number and rate (per 1,000 children tested) of children, ages 0 to less than 18 years, newly identified with an Environmental Intervention Blood Lead Level (EIBLL), by United Hospital Fund Neighborhood (sorted highest to lowest within each borough): NYC, 2004.

<sup>^</sup> Case rates in neighborhoods represented by black bars were less precise (relative standard error  $\geq$  30%) due to small numbers of cases. Caution should be used in interpreting these case rates.

Note: Number of cases with EIBLLs in each neighborhood is reported in parentheses to the right of neighborhood name.

## Borough

Brooklyn children are disproportionately affected by lead poisoning. About 34% of NYC children less than 18 years old, reside in Brooklyn, but the proportion of lead-poisoned children from that borough is considerably higher (Figure 10).

### In 2004,

- 39% of children less than 18 years old newly identified with BLLs  $\geq 10$   $\mu\text{g}/\text{dL}$  lived in Brooklyn (Table A-3).
- 41% of children less than 18 years old newly identified with EIBLLs resided in Brooklyn (Figure 10 and Table A-3).

The Bronx and Queens each accounted for approximately a quarter of children with EIBLLs. In 2003, while the number of lead-poisoned

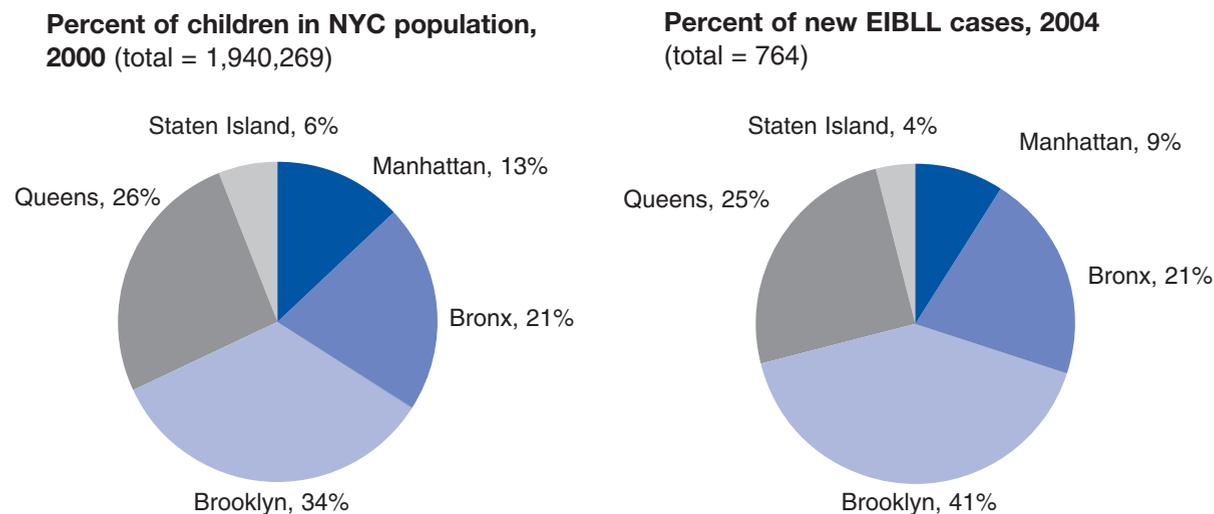
children from Staten Island remained lower than the numbers in other boroughs, the numbers of children with EIBLLs doubled from the previous year. In 2004, despite the lowering of the threshold for EIBLLs, both the number and rate of children newly identified with EIBLLs declined for Staten Island.

## Age

Young children, especially those less than 3 years of age, are at greatest risk for lead poisoning. They are more likely to ingest lead-based paint or lead dust because they crawl around on floors and put their hands and toys in their mouths. Lead is also more readily absorbed in the gastrointestinal tract of young children. Research suggests that children less than 2 years of age may be particularly vulnerable to the neurotoxic effects

**Figure 10**

**Brooklyn Children Were Over-Represented in the Environmental Intervention Blood Lead Level (EIBLL) Group\***



\* Distribution of children, ages 0 to less than 18 years, in the population, and distribution of children newly identified with an Environmental Intervention Blood Lead Level (EIBLL), by borough: New York City, 2004. Sources: NYC DOHMH LPPP and US Census 2000 (Summary File 1).

of lead because of their rapidly developing neurological systems.

**In 2004,**

- Among the 3,834 children newly identified with BLL  $\geq$  10  $\mu\text{g}/\text{dL}$ , 55% (2,124) were less than 3 years old, and another 29% (1,110) were 3 to less than 6 years of age.
- Among the 764 children newly identified with EIBLLs, 58% (443 children) were less than 3 years old, and another 29% (223 children) were 3 to less than 6 years of age (Table A-2).

**Gender**

The children newly identified with EIBLLs are generally evenly divided by gender, with slightly more males than females. In 2004, the proportion of male children with EIBLLs less than 18 years was 56% (Table A-2).

**Race/Ethnicity**

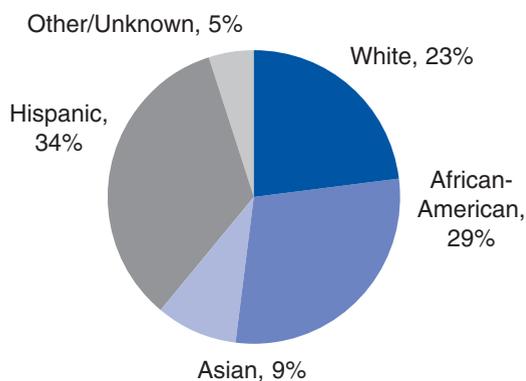
As in most parts of the U.S., lead poisoning in NYC disproportionately affects children of color (Figure 11). This disparity is determined by comparing the race/ethnicity of children with EIBLLs with the racial/ethnic composition of NYC's population.

**In 2004,**

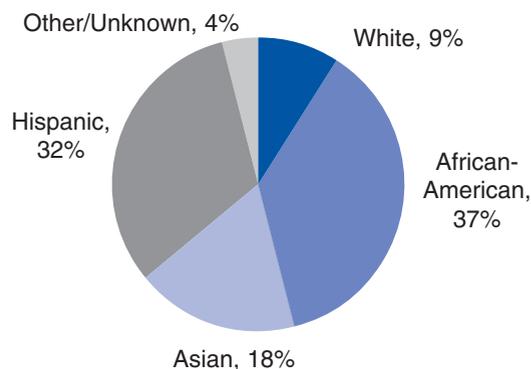
- African American non-Hispanic children represented 37% of EIBLL cases, but only 29% of NYC children (Figure 11 and Table A-2).
- Asian, non-Hispanic children made up 18% of EIBLL cases, but only 9% of NYC children as a whole.
- The proportion of Hispanic children among EIBLL cases, 32%, was similar to the proportion of Hispanic children in NYC, 34%.

**Figure 11**  
Children of Color Were Over-Represented in the Environmental Intervention Blood Lead Level (EIBLL) Group\*

**Percent of children in NYC population, 2000** (total = 1,940,269)



**Percent of new EIBLL cases, 2004** (total = 764)



\* Distribution of children, ages 0 to less than 18 years, in the population, and distribution of children newly identified with an Environmental Intervention Blood Lead Level (EIBLL), by race/ethnicity: New York City, 2004. Sources: NYC DOHMH LPPP and US Census 2000 (Summary File 1).

- White, non-Hispanic children represented only 9% of EIBLL cases, although 23% of NYC children are White, non-Hispanic.

### Country of Birth

In NYC, children born outside the U.S. are over-represented among lead-poisoned children.

#### **In 2004,**

- 18% of the 764 newly identified EIBLL cases were born outside the U.S., while 14% of all NYC children were foreign-born.
- The most frequently reported countries of birth among foreign-born EIBLL cases were Haiti, Mexico, Pakistan, Bangladesh, and Dominican Republic, in decreasing order of number of cases.

In 2004, as in previous years, deteriorated lead-based paint was found less often in the homes of foreign-born children with EIBLLs than in the homes of U.S.-born EIBLL children.

#### **In 2004,**

- Only 59% of foreign-born children with EIBLLs had peeling or deteriorated lead-based paint in their homes, compared with 77% of children with EIBLLs born in the U.S.

Sources of lead exposure, other than lead-based paint and dust, include imported health remedies, cosmetics, and food contaminated with lead. Children, particularly foreign-born children, or those frequently traveling to a foreign country may also have acquired lead poisoning from exposures outside the U.S.

# Accomplishments of the Lead Poisoning Prevention Program in 2004

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*The Lead Poisoning Prevention Program (LPPP) has developed a proactive, comprehensive approach to childhood lead poisoning prevention and control. Primary areas of activities include:*

- *Lead hazard reduction in homes and communities.*
- *Outreach and education to the public and health care providers to promote prevention and early detection of lead poisoning.*
- *Care coordination for lead-poisoned children as well as lead-poisoned pregnant women and their newborns.*
- *Environmental investigations and enforcement.*
- *Surveillance and research.*

## Highlights of Prevention Activities

The LPPP targets its intervention efforts to communities and populations at greatest risk. The LPPP partners with community-based organizations, social service providers, health care providers, and other government agencies to increase awareness and maximize resources devoted to lead poisoning prevention.

**In 2004**, LPPP expanded its primary prevention efforts, embarking on exciting new projects designed to prevent lead poisoning, while at the same time continuing to improve upon its secondary prevention services provided to lead-poisoned children and pregnant women.

**In 2004**, LPPP:

- Implemented Local Law 1, the NYC childhood lead poisoning prevention law.
- Amended the NYC Health Code requiring retailers who sell paint or paint removal supplies to post a sign alerting customers that the law prohibits dry scraping and dry sanding lead-based paint and paint of unknown lead content in homes, day care centers, and schools.
- Provided environmental intervention services to more children at lower blood lead levels.
- Implemented new, primary prevention initiatives in high-risk neighborhoods to

address lead-based paint hazards in the homes of young children before lead poisoning occurs.

- Collaborated with 18 Medicaid managed care organizations and the DOHMH Early Intervention Program (EIP) to increase testing among high-risk children.

- Issued a health alert to warn New Yorkers about possible lead contamination in certain snacks and candies imported from Mexico.
- Continued the productive partnership with the NYC Department of Housing Preservation and Development (HPD) in a federally funded project, that provides financial support for lead hazard repair in high risk areas.

## Preventing Exposure to Lead-Based Paint

### Implementing Local Law 1 of 2004

On August 2, 2004, the NYC Childhood Lead Poisoning Prevention Act, Local Law 1, went into effect. Local Law 1 expanded the duties of building owners, HPD, and DOHMH with regard to control of lead-based paint hazards. The law, for which HPD has the primary regulatory authority, requires owners of multiple dwellings (buildings with 3 or more apartments) to inspect annually and safely repair lead-based paint hazards in all apartments occupied by a child under 7 years of age. The law applies to buildings built before 1960, and to buildings constructed between 1960 and 1978 if the owner knows the building contains lead-based paint. The law also lowered the blood lead level triggering environmental investigations by LPPP.

To prepare for implementation of the law, LPPP developed new protocols and procedures, hired and trained new staff, reviewed and approved HPD regulations, and developed new educational materials.

The NYC Health Code was amended to assure consistency with Local Law 1 and was also strengthened by a new provision requiring warning signs in hardware and paint stores. The signs state that dry sanding or dry scraping lead-based paint or paint of unknown lead content in homes, day care centers, and schools are prohibited by law.

The LPPP also developed educational materials to promote awareness of the new law. In 2004, LPPP, in collaboration with HPD, disseminated more than 150,000 copies of “What Every Tenant Should Know About Local Law 1” to tenants and building owners. Produced in English and Spanish, the brochure was distributed at workshops, health fairs, to community-based organizations, and during HPD enforcement activities. Educational materials were developed and distributed to building owners and contractors. The LPPP also revised the DOHMH brochure distributed to every family with a newborn baby, modifying the lead poisoning prevention message to emphasize the importance of blood lead testing.

### Making Housing Safer for Children

Reducing lead-based paint hazards in NYC communities is an integral part of LPPP’s prevention strategy. Using its authority under the NYC Health Code, LPPP:

#### Orders Landlords to Correct Lead-Based Paint Hazards

The LPPP issues violations to landlords, ordering them to correct lead-based paint hazards in homes of children with Environmental Intervention Blood Lead Levels (EIBLLs).

**In 2004,**

- LPPP issued 625 violations for lead-based paint hazards in homes and supplemental addresses.
- Lead abatement work was completed in 429 homes by order of the LPPP.

### **Conducts Lead Hazard Investigations in 1-and 2-Family Homes**

The LPPP responds to complaints about peeling or deteriorated paint from tenants in 1- and 2- family homes, and orders landlords to repair identified lead-based paint hazards. HPD performs similar functions for tenants in dwellings with 3 or more units.

**In 2004,** LPPP conducted 116 inspections at 23 dwellings in 1- and 2- family homes.

### **Enforces Safe Work Practices**

The LPPP enforces health code regulations that require the use of safe work practices during lead abatement and remediation. Lead-safe work practices include methods to limit the generation and dispersion of dust to outside work areas. The LPPP sanitarians also investigate complaints of work creating potential lead hazards in and around homes of young children.

**In 2004,** LPPP conducted 1,616 safety inspections for work disturbing lead-based paint.

### **Collaborating on New Initiatives**

The LPPP uses health, housing, and demographic data to target its intervention efforts to communities and populations at greatest risk for lead poisoning. In 2004, LPPP embarked on three new collaborative projects. These new initiatives include:

#### **Targeting High-Risk Buildings**

Lead-based paint hazards are often the result of poor building maintenance. Peeling paint in one

apartment can often be an indicator of poor conditions throughout the building. Over the last few years, LPPP and HPD have targeted buildings for more intensive interventions using lead violation histories as a tool to identify buildings as high risk.

- In 2004, as required by Local Law 1, LPPP and HPD instituted a new routine referral system for high-risk buildings. When LPPP inspects the home of a lead-poisoned child and identifies lead-based paint hazards, the building owner is ordered to abate the hazards. The LPPP refers the building to HPD for building-wide action to assess compliance with Local Law 1 and inspect buildings when not in compliance.

From August to December 2004 LPPP referred 366 buildings to HPD for building-wide follow-up actions.

#### **Targeting High-Risk Dwellings through Home Visits**

The LPPP collaborated with two DOHMH home visiting programs. The LPPP provided technical support and training on visual inspections for lead and other environmental hazards:

- In a pilot project, LPPP supported the DOHMH Brooklyn District Public Health Office (DPHO) Healthy Neighborhoods Program (HNP) to target its intervention activities to high-risk families. The HNP makes home visits and provides education and visual assessment for lead and other environmental hazards. In addition to training, LPPP provided the HNP with building addresses in the catchment areas where children with blood lead levels (BLLs) of 10–14 µg/dL had been identified.
- The LPPP collaborated with the DOHMH Maternal and Child Health Program (MCH) on a pilot project targeting families of newborns in high-risk neighborhoods.

The project provides parenting education and promotes an environmentally safe home, by looking through homes for health hazards. When lead and/or other environmental hazards are identified, a referral to the appropriate agency for follow-up action is made. The LPPP also provided training to staff making these home visits.

**In 2004**, HNP and MCH staff visited 475 homes. Of these home visits, 213 had peeling paint conditions. Mothers were advised to call 311 or cases were referred to HPD for follow-up action.

### **Financial Assistance for Lead Hazard Reduction in Homes**

Since 1995, LPPP and HPD have collaborated on a project funded by the U.S. Department of Housing and Urban Development (HUD). The goal of this project is to improve the quality of NYC housing and make housing safer for NYC children. The project provides financial assistance through forgivable loans to building owners for lead hazard reduction. The LPPP is responsible for (1) identifying buildings with a history of lead-based paint hazard violations for recruitment into the project; (2) making home visits to families living in the buildings to provide lead poisoning prevention education; (3) monitoring dust lead

## **Safety Procedures for Home Repair and Renovation Work**

Lead-based paint is commonly found in NYC housing built before 1960. Lead-based paint dust can be created by paint that is peeling or damaged or during home repairs that disturb painted surfaces. Safe work practices can help reduce the risk of lead poisoning. Before disturbing lead-based paint, plan your job and get trained in safe work practices.

For work in buildings where young children live or on turnover, certain legal requirements may apply, such as using appropriately trained workers and dust clearance testing at the end of the job.

### ***Before You Begin***

- √ Keep children and pregnant women away from work area.
- √ Wet clean or HEPA vacuum floors, furniture, and draperies. Remove moveable furniture and other items.
- √ Seal off work area by covering floors, vents, doors, windows, and furniture with heavy plastic.

### ***While You Work***

- √ Use wet methods. Always mist before sanding, scraping, or performing other activities that disturb paint.
- √ Protect yourself by using safety goggles, gloves, and a respirator.
- √ Clean up daily by wet mopping (use separate wash and rinse water). HEPA vacuum too, if available. Dry sweeping can spread the dust.

### ***After You Are Done***

- √ Mist all dust and debris and place in double plastic garbage bag.
- √ HEPA vacuum, then wet mop, using separate wash and rinse water.
- √ Dust clearance tests may be required. Call 311 for more information.

levels in apartments undergoing remediation; and (4) monitoring blood lead levels for children less than 7 years of age residing in these apartments.

- From 1995 to 2004, more than 1,300 apartments received lead hazard repairs under

this project, with 203 apartments treated in 2004.

- In 2004, LPPP, in collaboration with HPD received a new award from HUD that will support continuation of this project for several years.

## Preventing Exposure to Non-Paint Sources of Lead

Lead-based paint and dust remain the primary sources of lead poisoning among NYC children. However, when LPPP inspects the homes and supplementary addresses (such as the home of a babysitter) of children with EIBLLs, inspectors are unable to identify lead-based paint hazards in 25% –33% of the cases. Non-paint lead sources may contribute to these elevated blood lead levels, which may also reflect past exposure, instead of or in addition to current exposure.

**In 2004,**

- No lead-based paint hazards were found in homes or supplemental addresses for 27% of children newly identified with EIBLLs.

The LPPP is working to better understand the range of non-paint lead sources in NYC to develop effective strategies to reduce exposure to these lead sources.

**In 2004, LPPP:**

- Issued staff alerts about non-paint sources of lead exposure.
- Improved its database on non-paint lead sources.
- Provided intensive staff training to improve risk assessment for non-paint sources of lead exposure.

## Sources of Childhood Lead Exposure in NYC Other Than Residential Lead-Based Paint

- Lead-glazed pottery, food, spices, health remedies, cosmetics, and other products contaminated with lead.
- Living in or traveling to foreign countries where lead contamination persists from gasoline, industrial emissions, consumer products, and paint.
- Lead brought into homes by family members whose jobs or hobbies are related to lead exposure.
- Soil and street grit contaminated with lead-based paint from deteriorating surfaces on building exteriors, bridges, and elevated subway tracks, or by previous industrial or motor vehicle emissions.
- Lead in drinking water.
- Prenatal exposure.

## Working with Immigrant Communities

The LPPP surveillance data indicate that foreign-born children with EIBLLs are less likely

than U.S.-born children with EIBLLs to have identified lead-based paint hazards in their homes or supplementary addresses.

**In 2004,**

- 59% of foreign-born children with EIBLLs were found to have lead-based paint hazards in their homes, as compared with 77% of U.S.-born children with EIBLLs.

Foreign-born children may be at greater risk for exposure to some non-lead sources than U.S.-born children. Potential sources include imported products such as food, spices, cosmetics, and medicines, and ceramic pottery used for cooking and food storage. Exposure may also be related to travel or living in a country where environmental lead levels are poorly controlled. Finally, some children may have had prenatal exposure to lead.

The LPPP works with community and social service organizations serving immigrant communities to build partnerships and increase awareness of lead poisoning.

**In 2004,** LPPP initiated intensive outreach and education in the Mexican and South Asian (Bangladesh and Pakistan) communities. Bilingual trainers are used where possible, and educational materials have been developed and translated to support these efforts. The LPPP continues to do similar work in other at-risk communities.

### Investigating Imported Products Contaminated with Lead

In August 2004, LPPP addressed lead contamination in candies and snacks imported from Mexico, especially products containing chili. Responding to a federal alert, DOHMH:

- Conducted an investigation with the New York State Department of Agriculture and Markets (NYSDAM) of Mexican candies and snacks sold in groceries, bodegas, bakeries, and restaurants in Sunset Park in Brooklyn, Corona and Jackson Heights in Queens, and East Harlem in Manhattan.
- Issued a press release in August 2004 alerting NYC consumers and vendors that various candies and snack products imported from Mexico contained lead. Consumers were advised that children and pregnant women should not eat these products. Vendors were advised to sell only products approved for sale in the U.S.

The LPPP remains concerned about potential exposures and will continue educational efforts targeted to communities at greatest risk.

## Public Education and Outreach

### 2004 Poster and Billboard Campaign

**In 2004,** LPPP mounted an educational campaign throughout the five boroughs. The health messages were displayed on subway cars, buses, bus shelters, and billboards. Companion educational materials also were developed for use by LPPP staff in other educational activities. The campaign educated families about the role of lead dust in poisoning young children.

The messages urged parents to:

- Call 311 if landlords fail to fix peeling paint in their homes.
- Wash floors, windowsills, children's hands, and toys often.
- Get children tested for lead poisoning, especially at 1-and 2-years of age.

## Educating Families and Community-Based Organizations

Targeted community outreach and education to high-risk groups and neighborhoods are important components of the LPPP's lead poisoning prevention strategy. Each year LPPP conducts dozens of workshops for parents and health/social service providers and participates in health fairs and community events.

The LPPP also publishes a wide range of educational materials in multiple languages. These include brochures for parents, tenants, landlords, contractors, and health care providers. English and Spanish brochures are available on the Internet at <http://www.nyc.gov/html/doh/html/lead/lead.shtml>.

## Educational Interventions in 2004

### Information Requests

- 3,057 calls to the LPPP Information Line handled.

### Dissemination of Educational Materials

- 14,355 fact sheets on Local Law 1 distributed.
- 19,310 copies of "What Every Tenant Should Know About Local Law 1" distributed.
- 28,707 copies of "Preventing Lead Poisoning" (in English and Spanish) disseminated.
- 2,666 posters (English and Spanish) displayed in media campaign.
- 4,720 posters distributed at workshops and through the information line.
- Over 1,000 copies of *2002 Annual Report* distributed.
- 49,030 Healthy Homes materials (English and Spanish) distributed to hardware and paint stores.

### Workshops and Health Fairs

- 565 parents educated at 33 workshops held at community-based organizations, schools, day care centers, Head Start programs, and Women, Infants, and Children (WIC) centers.
- 25,176 NYC residents reached at 157 health fairs.

## Promoting Blood Lead Testing

Early identification of lead-poisoned children through blood lead testing is essential to protect children from additional exposure to lead. NYS law requires that health care providers:

- Test every child at both 1 and 2 years of age.
- Test children from 6 months to less than 6 years of age if an annual risk assessment shows that they are at risk for lead exposure.

### Outreach to Health Care Providers

Health care providers play a key role in lead poisoning prevention. The LPPP uses multiple strategies to reach medical providers.

**In 2004**, the LPPP provided education on prevention, screening, and medical management of lead poisoned children by:

- Providing consultations to health care providers or parents about the management of an individual child.
- Educating health care providers at professional forums.
- Launching the Provider Online Registry, a secure Internet database that gives providers access to immunization and blood lead histories for their pediatric patients.

- Educating medical students and residents about public health and lead poisoning prevention through collaboration with two NYC medical school programs.
- Distributing over 40,000 copies of a special issue of the City Health Information (CHI) newsletter “Childhood Lead Poisoning Prevention and Management.”

### Assessing Risk of Childhood Lead Exposure

Health care providers in New York State are required to assess every child from 6 months to less than 6 years of age for risk of lead exposure. Children who have risk factors for lead poisoning should be tested. Risk factors include:

- A sibling, housemate, or playmate with lead poisoning.
- Residence in or visits to home or other building built before 1960 where renovation or remodeling has occurred.
- Residence or frequent contact with person whose job or hobby includes exposure to lead.
- Outdoor play in dirt that is contaminated with lead.
- A move within last year from or travel to a country that has been identified with lead contamination.
- Ingestion of imported health remedies, cosmetics, spices, or use of food served from lead-glazed pottery.

### Collaborations to Improve Screening Through Data Matching

The LPPP has developed data-matching collaborations with key health care and social service providers to improve blood lead testing in high-risk populations.

#### Medicaid Managed Care Data Match

In 2004, LPPP continued its data-matching project with 18 Medicaid managed care organizations (MMCOs) under contract with DOHMH Health Care Access Program to provide services for Medicaid-eligible children. Information on children enrolled in MMCOs is matched against LPPP’s blood lead registry to identify children who have not been tested. Each MMCO follows up with the children’s health care provider, encouraging them to order the necessary blood lead test. Memoranda of Understanding have been signed with each MMCO involved in the project.

#### Early Intervention Program (EIP) Data Match

LPPP has established a similar data-matching project with the DOHMH Early Intervention Program (EIP), which provides services for children up to 3 years of age who have or are at risk for developmental delays. The EIP program sends letters to parents of children identified by LPPP as lacking appropriate blood lead tests, encouraging them to have their child tested.

## Care Coordination and Environmental Intervention

### Coordinating Care for Children with EIBLLs

The LPPP initiates care coordination and environmental intervention services at the time a child is reported with a BLL greater than or equal to the EIBLL.

In 2004, LPPP strengthened care coordination services for children with EIBLLs by adding public health nurses to the care coordination team. These nurses work under the direction of the LPPP medical director. Care coordination includes:

- Educating the child's family and health care provider about ways to reduce the child's exposure to lead.
- Educating the child's health care provider about appropriate medical management, including appropriate intervals for follow-up blood testing.
- Tracking the results of follow-up blood lead tests to determine if BLLs are increasing or decreasing.
- Helping the family and provider with referrals to the DOHMH Early Intervention Program (EIP), which provides services for children at risk for developmental delays.
- Referring families to temporary lead-safe housing as necessary.
- Consulting with health care providers of children with BLLs  $\geq 45$   $\mu\text{g}/\text{dL}$  to ensure that they receive appropriate care, which may include medical treatment and hospitalization.

### Providing Environmental Intervention for Children with EIBLLs

In addition to care coordination, LPPP takes action to identify and eliminate sources of lead exposure in the child's environment.

Environmental intervention includes:

- Inspecting the child's home and supplementary addresses (babysitter, homes of relatives) and interviewing the child's family to identify potential sources of lead exposure.
- Ordering the building owner to conduct lead hazard abatement if lead-based paint hazards are found.
- Monitoring the abatement work for timely completion and use of lead-safe work practices.
- Referring the apartment to HPD to make the repairs if the building owner fails to do so within the mandatory time.
- Facilitating relocation to lead-safe apartments for families who need alternative housing during lead hazard abatement.

In 2004,

- 1,150 primary addresses and 265 supplementary addresses were inspected.
- 3,099 inspections were performed to monitor progress and safety of ordered abatements.
- 255 apartments were referred to HPD's Emergency Repair Program after landlords failed to make repairs.
- 41 families were accommodated in lead-safe apartments sponsored by the Northern Manhattan Improvement Corporation and the NYS Department of Health and Montefiore Medical Center.

### Monitoring Blood Lead Levels for Children with Elevated BLLs below EIBLL<sup>7</sup>

LPPP sends a letter and educational material to the family and health care provider of every child with a BLL  $\geq 10$   $\mu\text{g}/\text{dL}$  but less than the EIBLL:

- Recommending follow-up blood lead testing.

- Providing information on lead poisoning prevention.
- Referring families to the Healthy Neighborhood Program.
- Recommending that families report peeling paint to NYC's 311 hotline if the landlord fails to make repairs.

The LPPP also monitors the child's record in the blood lead test registry. If follow-up blood lead tests are not administered within the appropriate period, reminder letters are sent to the family and the health care provider.

## Care Coordination for Pregnant Women with Elevated BLLs and Their Newborns

A pregnant woman who has an elevated blood lead level passes the lead in her blood to the fetus. Research suggests that children born with elevated blood lead levels may suffer cognitive problems and developmental delays as a result of this prenatal exposure. In addition, lead poisoning during pregnancy is associated with spontaneous abortion, premature birth, and maternal hypertension.

As part of its efforts to protect children from prenatal exposure to lead, LPPP has been providing care coordination services to pregnant women with elevated BLLs since 2001. When LPPP is notified by the DOHMH adult lead poisoning program that a pregnant woman has an elevated BLL<sup>8</sup>, LPPP:

- Contacts both the woman and her health care provider to provide information on the consequences of prenatal exposure to lead.
- Assists the woman and her health care provider to identify possible sources of lead exposure.
- Follows the woman throughout her pregnancy and advises her health care provider on

appropriate medical management to minimize exposure to the fetus and newborn.

- Provides care coordination services for the newborn if the child is born with an elevated BLL.

### In 2004,

- 47 pregnant women with elevated BLLs received services from LPPP.

Of these 47 pregnant women:

- 91% were foreign-born (by comparison, in 2003, 52% of all women giving birth in NYC were foreign-born).
- 66% were from Mexico.
- 44% had immigrated to the U.S. within the year prior to their initial blood test.
- 32% reported using imported pottery or imported products, such as food, spices, make-up, or health remedies during pregnancy.
- 5% reported eating dirt, clay, or crushed pottery during pregnancy.
- No women reported recent occupational exposure.

### Lead Poisoning Prevention and Identification Guidelines for Prenatal Care Providers

New York State law requires prenatal care providers to:

- Educate each pregnant woman on lead poisoning prevention during pregnancy.
- Assess each pregnant women at the first prenatal visit for lead exposure.
- Test each pregnant woman found to be at risk for current lead exposure.

### Using Data Collection and Analysis to Strengthen LPPP

In 2004, LPPP continued to demonstrate the value of using data from the DOHMH blood lead registry and other sources such as housing and census data for program planning, implementation, and evaluation.

The lead registry includes:

- Results of every reported blood lead test administered to NYC children each year, including initial screening tests and follow-up tests for children with elevated BLLs.
- Demographic data on children with elevated BLLs, including address, age, gender, race/ethnicity, and country of birth.
- Dates and results of LPPP contacts with families and health care providers of children with EIBLLs.
- Dates and results of LPPP inspections in homes of children with EIBLLs.

The LPPP uses registry and surveillance data to:

- Track care coordination and environmental services provided for each EIBLL child and to monitor the results of the child's follow-up blood tests.
- Evaluate the timeliness of these services.
- Support data-matching collaborations that promote increased blood lead testing among high-risk children.

- Identify high-risk neighborhoods, populations, and buildings where children are at greatest risk for exposure to lead, so that prevention activities can be targeted to the families of those children.
- Monitor progress in eliminating lead poisoning by tracking the number of children tested and the number who are found to have elevated BLLs.

### Strategies for Continued Progress

New York City's goal is to eliminate childhood lead poisoning by the year 2010. While we have made tremendous progress over the past decades, lead poisoning remains a serious public health problem.

Reaching this goal will require innovative strategies as well as continued implementation of successful programs. Intervention efforts must be targeted to communities and populations at greatest risk. New partnerships must be developed in order to maximize our impact and leverage resources. In 2005, we will develop strategies that:

- Eliminate or reduce lead-based paint hazards in homes and communities.
- Reach tenants, landlords, housing organizations, contractors, hardware stores, and other agencies to increase knowledge of lead-safe work practices and NYC laws.

- Reach and educate high-risk immigrant communities about all sources of lead exposure.
- Improve screening for children through outreach to health care providers, community organizations, and families, and through data-matching projects to identify children who have not been tested.
- Identify non-paint lead sources and develop effective prevention activities through research, investigations, and collaborations with organizations serving high-risk groups.
- Prevent lead poisoning in pregnant women and their newborns through outreach, education, and appropriate medical management.

## Endnotes

- <sup>1</sup> Lead poisoning is defined in the NYC Health Code as a blood lead level (BLL) greater than or equal to 10 micrograms of lead per deciliter of blood.
- <sup>2</sup> Since 1994, laboratories have been required to report the results of all blood lead tests, not just elevated blood lead levels, to the New York State Department of Health. Because 1995 was the first complete year of mandatory reporting, that year is used as the basis for comparisons over time.
- <sup>3</sup> Environmental Intervention Blood Lead Level (EIBLL) is the BLL at which LPPP provides care coordination and environmental intervention to lead-poisoned children. Since August 2004, the EIBLL has been defined as a BLL  $\geq$  15  $\mu\text{g}/\text{dL}$ . From July 1999 to August 2004, the EIBLL was defined as a BLL  $\geq$  20  $\mu\text{g}/\text{dL}$  or two BLLs of 15–19  $\mu\text{g}/\text{dL}$  taken at least 3 months apart. The EIBLL has been reduced 6 times since it was set at 60  $\mu\text{g}/\text{dL}$  in 1970. In general, the reductions were made in response to emerging evidence of adverse health effects at successively lower BLLs.
- <sup>4</sup> In this report, neighborhoods are defined as those established by the United Hospital Fund, which has aggregated contiguous NYC ZIP codes into 42 neighborhoods.
- <sup>5</sup> The 11 neighborhoods were: Bedford Stuyvesant-Crown Heights, East Flatbush-Flatbush, Williamsburg-Bushwick, East New York, and Borough Park in Brooklyn; Crotona-Tremont and Fordham-Bronx Park in the Bronx; Washington Heights-Inwood in Manhattan; and Southwest Queens, Jamaica, and West Queens in Queens.
- <sup>6</sup> The 9 neighborhoods were: Bedford Stuyvesant-Crown Heights, East Flatbush-Flatbush, Williamsburg-Bushwick, East New York, and Borough Park in Brooklyn; Fordham-Bronx Park in the Bronx; Southwest Queens, Jamaica, and West Queens in Queens.
- <sup>7</sup> Since August 2004, this includes children with BLLs of 10–14  $\mu\text{g}/\text{dL}$ . Previously, children with BLLs of 10–19  $\mu\text{g}/\text{dL}$  received these services.
- <sup>8</sup> Prior to August 2004, LPPP provided services to pregnant women with BLLs  $\geq$  20  $\mu\text{g}/\text{dL}$ . In August 2004, the BLL that triggers intervention was reduced to 15  $\mu\text{g}/\text{dL}$  to correspond with the change in the EIBLL for children.

# Appendix

## Table A-1

### New York City intervention protocols for lead-poisoned children.

Category	BLL <sup>(a)</sup>	Intervention
Elevated BLL <sup>(b)</sup>	≥ 10 µg/dL	Contact with family and health care provider regarding exposure and follow-up blood testing; these services are provided to all lead-poisoned children. <sup>(c)</sup>
EIBLL <sup>(d)</sup>	<p>January–July 2004:            ≥ 20 µg/dL or            2 BLLs ≥ 3 months            apart of 15–19 µg/dL</p> <p>as of August 2004:            ≥ 15 µg/dL</p>	Environmental assessment to identify exposure or sources; enforcement of lead-based paint hazard abatement requirements.

(a) Blood Lead Levels (BLLs) are measured in micrograms (µg) of lead per deciliter (dL) of blood.

(b) Since 1992, the NYC Health Code has defined elevated lead level as a BLL ≥ 10 µg/dL.

(c) This includes children with Environmental Intervention Blood Lead Levels (EIBLL), those with BLLs of 10–19 µg/dL from January to July 2004, and BLLs of 10–14 µg/dL as of August 2004.

(d) Environmental Blood Lead Level (EIBLL) is the term used by the LPPP to designate cases for environmental inspection and enforcement of abatement requirements. The EIBLL was set at 20 µg/dL in 1992; children with persistent BLL of 15–19 µg/dL were included as of July 1999. The EIBLL was lowered to 15 µg/dL in August 2004.

**Table A-2**

**Demographic and environmental profile of children newly identified with blood lead levels at or above the Environmental Intervention Blood Lead Level (EIBLL), ages 0 months to less than 18 years (n = 764) and ages 6 months to less than 6 years (n = 659): New York City, 2004.**

	0 years – < 18 years			6 months – < 6 years		
	Number EIBLL <sup>(a)</sup>	Percent EIBLL	EIBLL Rate <sup>(b)</sup> (number per 1,000 tested)	Number EIBLL <sup>(a)</sup>	Percent EIBLL	EIBLL Rate <sup>(b)</sup> (number per 1,000 tested)
<b>Total</b>	764	100.0%	1.9	659	100.0%	2.1
<b>Age</b>						
Less than 6 months old	7	0.9%	4.3 <sup>(c)</sup>	—	—	—
6 months to less than 1 year old	40	5.2%	1.5	40	6.1%	1.5
1 year old	215	28.1%	2.8	215	32.6%	2.8
2 years old	181	23.7%	2.8	181	27.5%	2.8
3 years old	95	12.4%	1.8	95	14.4%	1.8
4 years old	74	9.7%	1.4	74	11.2%	1.4
5 years old	54	7.1%	1.4	54	8.2%	1.4
6 to less than 18 years old	98	12.8%	1.2	—	—	—
<b>Gender</b>						
Female	337	44.1%	1.8	290	44.0%	1.9
Male	427	55.9%	2.2	369	56.0%	2.4
<b>Borough</b>						
Manhattan	65	8.5%	1.2	50	7.6%	1.1
Bronx	163	21.3%	1.9	143	21.7%	2.2
Brooklyn	314	41.1%	2.2	274	41.6%	2.5
Queens	194	25.4%	1.9	165	25.0%	2.0
Staten Island	28	3.7%	1.7	27	4.1%	2.0
<b>Race/ethnicity</b>						
Hispanic	245	32.1%		209	31.7%	
Non-Hispanic African American	279	36.5%		238	36.1%	
Non-Hispanic White	72	9.4%		63	9.6%	
Asian	136	17.8%		120	18.2%	
Other/Unknown	32	4.2%		29	4.4%	
<b>Blood lead level at case assignment (µg/dL)</b>						
15–19	358	46.9%		305	46.3%	
20–29	308	40.3%		270	41.0%	
30–39	69	9.0%		60	9.1%	
40–49	19	2.5%		17	2.6%	
50–59	7	0.9%		5	0.8%	
60–69	2	0.3%		1	0.2%	
70+	1	0.1%		1	0.2%	

Table A-2 (continued)

	0 years – < 18 years			6 months – < 6 years		
	Number EIBLL <sup>(a)</sup>	Percent EIBLL	EIBLL Rate <sup>(b)</sup> (number per 1,000 tested)	Number EIBLL <sup>(a)</sup>	Percent EIBLL	EIBLL Rate <sup>(b)</sup> (number per 1,000 tested)
<b>Year primary residence was built</b>						
1939 or earlier	629	82.3%		555	84.2%	
1940–1949	29	3.8%		25	3.8%	
1950–1959	41	5.4%		28	4.2%	
1960–1969	30	3.9%		25	3.8%	
1970–present	35	4.6%		26	3.9%	
<b>Size of building where child resides</b>						
Building has fewer than 3 dwelling units	282	36.9%		249	37.8%	
Building has 3 or more dwelling units	482	63.1%		410	62.2%	
<b>Lead-based paint hazard identified at child's residence<sup>(d)</sup></b>						
No lead-based paint hazard identified	210	27.5%		167	25.3%	
Lead-based paint hazard identified	554	72.5%		492	74.7%	

- (a) From January through July 2004, the Environmental Intervention Blood Lead Level (EIBLL) was defined as a venous BLL  $\geq 20$   $\mu\text{g}/\text{dL}$  or 2 blood lead levels 15–19  $\mu\text{g}/\text{dL}$  that were drawn at least 3 months apart, where the second test was a venous sample. Beginning August 2004, the EIBLL was lowered to a venous BLL  $\geq 15$   $\mu\text{g}/\text{dL}$ , consistent with Local Law 1.
- (b) Data on some indicators were missing from a substantial number of tests reported to the LPPP; thus, case rates could not be calculated for all indicators because denominator data were not available.
- (c) The case rate for children younger than 6 months was very high because many of the infants tested were referred for testing due to their high risk for lead poisoning from prenatal exposure.
- (d) This included the child's primary residence and supplementary addresses where the child spent considerable time. Hazards were identified by March 31, 2005.

**Table A-3**

Numbers and rates of (1) children tested for lead poisoning; (2) children with elevated blood lead levels; and (3) children with an Environmental Intervention Blood Lead Level, ages 0 months to less than 18 years, by borough and United Hospital Fund Neighborhood: New York City, 2004.

**Ages 0 months to less than 18 years**

United Hospital Fund Neighborhood	(1) Tests <sup>(a)</sup>	(2) Elevated blood lead levels <sup>(b)</sup>		(3) Environmental Intervention Blood Lead Levels (EIBLL) <sup>(c)</sup>					
	Tested	Newly identified BLL $\geq 10$ $\mu\text{g/dL}$		Newly identified EIBLL					
	Number	Number	Rate BLL $\geq 10$ /1,000 tested	Number	Rate EIBLL /1,000 tested	Number	Rate EIBLL /1,000 tested	Low	High
<b>New York City total</b>	398,994	3,834	9.6	764	1.91	1,78	2.06		
NYC, unknown borough	12	0	-	0	-	-	-		
<b>Bronx85,380</b>	<b>712</b>	<b>8.3</b>	<b>163</b>	<b>1.91</b>	<b>1.63</b>	<b>2.23</b>			
Bronx unknown or invalid ZIP code	1,926	1	-	0	-	-	-		
Crotona - Tremont	14,847	140	9.4	22	1.48	0.93	2.24		
Fordham - Bronx Park	17,028	170	10.0	54	3.17	2.38	4.14		
High Bridge - Morrisania	14,347	121	8.4	31	2.16	1.47	3.07		
Hunts Point - Mott Haven	9,888	89	9.0	13	1.31	0.70	2.25		
Kingsbridge - Riverdale	3,273	24	7.3	2	0.61	0.07	2.21		
Northeast Bronx	8,951	49	5.5	20	2.23	1.36	3.45		
Pelham - Throgs Neck	15,120	118	7.8	21	1.39	0.86	2.12		
<b>Brooklyn</b>	<b>140,284</b>	<b>1,507</b>	<b>10.7</b>	<b>314</b>	<b>2.24</b>	<b>2.00</b>	<b>2.50</b>		
Brooklyn unknown or invalid ZIP code	3,897	0	-	0	-	-	-		
Bedford Stuyvesant - Crown Heights	22,960	220	9.6	52	2.26	1.69	2.97		
Bensonhurst - Bay Ridge	6,769	63	9.3	11	1.63	0.81	2.91		
Borough Park	13,800	210	15.2	47	3.41	2.50	4.53		
Canarsie - Flatlands	9,980	50	5.0	9	0.90	0.41	1.71		
Coney Island - Sheepshead Bay	10,041	109	10.9	17	1.69	0.99	2.71		
Downtown - Brooklyn Heights - Park Slope	7,998	98	12.3	23	2.88	1.82	4.31		
East Flatbush - Flatbush	19,927	233	11.7	59	2.96	2.25	3.82		
East New York	14,458	170	11.8	36	2.49	1.74	3.45		
Greenpoint	6,059	87	14.4	7	1.16	0.46	2.38		
Sunset Park	7,748	71	9.2	13	1.68	0.89	2.87		
Williamsburg - Bushwick	16,647	196	11.8	40	2.40	1.72	3.27		

Table A-3 (continued)

	(1) Tests <sup>(a)</sup>		(2) Elevated blood lead levels <sup>(b)</sup>		(3) Environmental Intervention Blood Lead Levels (EIBLL) <sup>(c)</sup>			
	Tested		Newly identified BLL $\geq 10$ $\mu\text{g}/\text{dL}$		Rate EIBLL /1,000 tested		95% CI	
	Number	Rate BLL $\geq 10$ /1,000 tested	Number	Rate BLL $\geq 10$ /1,000 tested	Number	Rate EIBLL /1,000 tested	Low	High
<b>United Hospital Fund Neighborhood</b>								
<b>Manhattan</b>	<b>54,174</b>	<b>11.2</b>	<b>606</b>	<b>11.2</b>	<b>65</b>	<b>1.20</b>	<b>0.93</b>	<b>1.53</b>
Manhattan unknown or invalid ZIP code	3,642	–	1	–	0	–	–	–
Central Harlem - Morningside Heights	7,985	10.8	86	10.8	14	1.75	0.96	2.94
Chelsea - Clinton	2,189	18.7	41	18.7	4	1.83	0.50	4.68
East Harlem	6,272	9.9	62	9.9	6	0.96	0.35	2.08
Gramercy Park - Murray Hill	1,812	13.2	24	13.2	2	1.10	0.13	3.99
Greenwich Village - Soho	1,428	35.0	50	35.0	2	1.40	0.17	5.06
Lower Manhattan	797	8.8	7	8.8	1	1.25	0.03	6.99
Union Square - Lower East Side	5,025	16.7	84	16.7	7	1.39	0.56	2.87
Upper East Side	5,060	8.7	44	8.7	0	0.00	–	–
Upper West Side	5,665	13.8	78	13.8	8	1.41	0.61	2.78
Washington Heights - Inwood	14,299	9.0	129	9.0	21	1.47	0.91	2.24
<b>Queens</b>	<b>102,760</b>	<b>8.4</b>	<b>865</b>	<b>8.4</b>	<b>194</b>	<b>1.89</b>	<b>1.63</b>	<b>2.17</b>
Queens unknown or invalid ZIP code	3,852	–	0	–	0	–	–	–
Bayside - Little Neck	2,174	4.6	10	4.6	0	0.00	–	–
Flushing - Clearview	7,657	7.3	56	7.3	13	1.70	0.90	2.90
Fresh Meadows	3,747	6.9	26	6.9	2	0.53	0.06	1.93
Jamaica	15,751	7.9	125	7.9	37	2.35	1.65	3.24
Long Island City - Astoria	8,741	8.1	71	8.1	16	1.83	1.05	2.97
Ridgewood - Forest Hills	9,390	6.4	60	6.4	13	1.38	0.74	2.37
Rockaway	5,510	7.6	42	7.6	9	1.63	0.75	3.10
Southeast Queens	8,266	7.5	62	7.5	17	2.06	1.20	3.29
Southwest Queens	13,830	11.8	163	11.8	33	2.39	1.64	3.35
West Queens	23,842	10.5	250	10.5	54	2.26	1.70	2.96
<b>Staten Island</b>	<b>16,384</b>	<b>8.8</b>	<b>144</b>	<b>8.8</b>	<b>28</b>	<b>1.71</b>	<b>1.14</b>	<b>2.47</b>
Staten Island unknown or invalid ZIP code	108	–	0	–	0	–	–	–
Port Richmond	2,696	13.0	35	13.0	6	2.23	0.82	4.84
South Beach - Tottenville	5,821	2.2	13	2.2	3	0.52	0.11	1.51
Stapleton - St. George	4,906	18.3	90	18.3	19	3.87	2.33	6.05
Willowbrook	2,853	2.1	6	2.1	0	0.00	–	–

(a) Test types: venous, capillary, unspecified.

(b) Elevated blood lead level was defined as a venous, capillary, or unspecified BLL  $\geq 10$   $\mu\text{g}/\text{dL}$ .(c) From January through July 2004, the Environmental Intervention Blood Lead Level (EIBLL) was defined as a venous BLL  $\geq 20$   $\mu\text{g}/\text{dL}$  or 2 blood lead levels of 15–19  $\mu\text{g}/\text{dL}$  that were drawn at least 3 months apart where the second test was a venous sample. Beginning August 2004, the EIBLL was lowered to a venous BLL  $\geq 15$   $\mu\text{g}/\text{dL}$ .

**Table A-4**

Numbers and rates of (1) children tested for lead poisoning; (2) children with elevated blood lead levels; and (3) children with an Environmental Intervention Blood Lead Level, ages 6 months to less than 6 years, by borough and United Hospital Fund Neighborhood: New York City, 2004.

	Ages 6 months to less than 6 years									
	(1) Tests <sup>(e)</sup>			(2) Elevated blood lead levels <sup>(b)</sup>			(3) Environmental Intervention Blood Lead Levels (EIBLL) <sup>(c)</sup>			
	Tested			Newly identified BLL $\geq$ 10 $\mu$ g/dL			Newly identified EIBLL			
	Number	Percent tested Vital records <sup>(d)</sup>	Census 2000 <sup>(e)</sup>	Number	Rate BLL $\geq$ 10 /1,000 tested	Number	Rate EIBLL /1,000 tested	95% CI		
<b>New York City total</b>	<b>314,001</b>	<b>50</b>	<b>53</b>	<b>3,193</b>	<b>10.2</b>	<b>659</b>	<b>2.10</b>	<b>1.94</b>	<b>2.27</b>	
NYC, unknown borough	6	—	—	0	—	0	—	—	—	
<b>Bronx66,371</b>	<b>56</b>	<b>54</b>	<b>599</b>	<b>9.0</b>	<b>143</b>	<b>2.15</b>	<b>1.82</b>	<b>2.54</b>		
Bronx unknown or invalid ZIP code	1,402	—	—	1	—	0	—	—	—	
Crotona-Tremont	11,468	52	51	120	10.5	22	1.92	1.20	2.90	
Fordham-Bronx Park	13,186	54	53	142	10.8	43	3.26	2.36	4.39	
High Bridge-Morrisania	11,252	54	56	105	9.3	26	2.31	1.51	3.39	
Hunts Point-Mott Haven	7,496	58	58	78	10.4	13	1.73	0.92	2.97	
Kingsbridge-Riverdale	2,818	53	49	21	7.5	2	0.71	0.09	2.56	
Northeast Bronx	7,086	62	51	46	6.5	18	2.54	1.51	4.01	
Pelham-Throgs Neck	11,663	55	50	86	7.4	19	1.63	0.98	2.54	
<b>Brooklyn</b>	<b>108,838</b>	<b>50</b>	<b>54</b>	<b>1,266</b>	<b>11.6</b>	<b>274</b>	<b>2.52</b>	<b>2.23</b>	<b>2.83</b>	
Brooklyn unknown or invalid ZIP code	2,745	—	—	0	—	0	—	—	—	
Bedford Stuyvesant-Crown Heights	16,739	58	59	182	10.9	46	2.75	2.01	3.67	
Bensonhurst-Bay Ridge	5,718	43	48	55	9.6	11	1.92	0.96	3.44	
Borough Park	11,576	34	39	176	15.2	44	3.80	2.76	5.10	
Canarsie-Flatlands	7,635	55	52	44	5.8	9	1.18	0.54	2.24	
Coney Island-Sheepshead Bay	8,645	46	49	90	10.4	14	1.62	0.89	2.72	
Downtown-Brooklyn Heights-Park Slope	6,321	41	46	83	13.1	18	2.85	1.69	4.50	
East Flatbush-Flatbush	15,491	54	58	183	11.8	42	2.71	1.95	3.66	
East New York	10,763	64	62	148	13.8	34	3.16	2.19	4.41	
Greenpoint	5,100	39	44	80	15.7	7	1.37	0.55	2.83	
Sunset Park	6,291	45	60	59	9.4	12	1.91	0.99	3.33	
Williamsburg-Bushwick	11,814	59	59	166	14.1	37	3.13	2.21	4.32	

Table A-4 (continued)

	(1) Tests <sup>(a)</sup>			(2) Elevated blood lead levels <sup>(b)</sup>			(3) Environmental Intervention Blood Lead Levels (EIBLL) <sup>(c)</sup>			
	Tested			Newly identified BLL $\geq 10$ $\mu\text{g}/\text{dL}$			Newly identified EIBLL			
	Number	Percent tested Vital records <sup>(d)</sup>	Census 2000 <sup>(e)</sup>	Number	Rate BLL $\geq 10$ /1,000 tested	Number	Rate EIBLL /1,000 tested	95% CI Low	High	
<b>Manhattan</b>	<b>43,882</b>	<b>40</b>	<b>54</b>	<b>511</b>	<b>11.6</b>	<b>50</b>	<b>1.14</b>	<b>0.85</b>	<b>1.50</b>	
Manhattan unknown or invalid ZIP code	2,801	—	—	1	—	0	—	—	—	
Central Harlem-Morningside Heights	6,310	51	55	71	11.3	9	1.43	0.65	2.71	
Chelsea-Clinton	1,931	30	55	36	18.6	3	1.55	0.32	4.54	
East Harlem	4,838	51	56	45	9.3	4	0.83	0.23	2.12	
Gramercy Park-Murray Hill	1,643	26	47	24	14.6	2	1.22	0.15	4.40	
Greenwich Village-Soho	1,274	30	46	49	38.5	2	1.57	0.19	5.67	
Lower Manhattan	666	28	46	7	10.5	1	1.50	0.04	8.37	
Union Square-Lower East Side	4,246	31	50	73	17.2	6	1.41	0.52	3.08	
Upper East Side	4,630	30	45	36	7.8	0	0.00	—	—	
Upper West Side	5,098	34	49	68	13.3	6	1.18	0.43	2.56	
Washington Heights-Inwood	10,445	45	51	101	9.7	17	1.63	0.95	2.61	
<b>Queens</b>	<b>81,289</b>	<b>53</b>	<b>52</b>	<b>701</b>	<b>8.6</b>	<b>165</b>	<b>2.03</b>	<b>1.73</b>	<b>2.36</b>	
Queens unknown or invalid ZIP code	2,229	—	—	0	—	0	—	—	—	
Bayside-Little Neck	1,852	65	38	10	5.4	0	0.00	—	—	
Flushing-Clearview	6,428	47	41	44	6.8	12	1.87	0.96	3.26	
Fresh Meadows	3,178	52	48	25	7.9	2	0.63	0.08	2.27	
Jamaica	12,339	59	56	95	7.7	31	2.51	1.71	3.57	
Long Island City-Astoria	6,913	47	49	56	8.1	14	2.03	1.11	3.40	
Ridgewood-Forest Hills	7,314	47	49	52	7.1	11	1.50	0.75	2.69	
Rockaway	4,536	65	49	40	8.8	8	1.76	0.76	3.48	
Southeast Queens	6,480	62	45	51	7.9	14	2.16	1.18	3.62	
Southwest Queens	10,556	53	50	139	13.2	31	2.94	2.00	4.17	
West Queens	19,464	48	57	189	9.7	42	2.16	1.56	2.92	

Table A-4 (continued)

	(1) Tests <sup>(a)</sup>		(2) Elevated blood lead levels <sup>(b)</sup>		(3) Environmental Intervention Blood Lead Levels (EIBLL) <sup>(c)</sup>				
	Number	Percent tested Vital records <sup>(d)</sup>	Census 2000 <sup>(e)</sup>	Newly identified BLL ≥ 10 µg/dL		Newly identified EIBLL			
				Number	Rate BLL ≥ 10 /1,000 tested	Number	Rate EIBLL /1,000 tested	95% CI Low	95% CI High
<b>Staten Island</b>	<b>13,615</b>	<b>43</b>	<b>41</b>	<b>116</b>	<b>8.5</b>	<b>27</b>	<b>1.98</b>	<b>1.31</b>	<b>2.89</b>
Staten Island unknown or invalid ZIP code	72	—	—	0	—	0	—	—	—
Port Richmond	2,121	39	38	30	14.1	6	2.83	1.04	6.16
South Beach-Tottenville	5,091	43	39	12	2.4	3	0.59	0.12	1.72
Stapleton-St. George	3,908	43	45	71	18.2	18	4.61	2.73	7.28
Willowbrook	2,423	44	42	3	1.2	0	0.00	—	—

(a) Test types: venous, capillary, unspecified.

(b) Elevated blood lead level was defined as a venous, capillary, or unspecified BLL ≥ 10 µg/dL.

(c) From January through July 2004, the Environmental Intervention Blood Lead Level (EIBLL) was defined as a venous BLL ≥ 20 µg/dL or 2 blood lead levels 15–19 µg/dL that were drawn at least 3 months apart where the second test was a venous sample.

(d) Beginning August 2004, the EIBLL was lowered to a venous BLL ≥ 15 µg/dL, consistent with Local Law 1. In this column, population counts used as the denominator for percent of children tested were calculated by summing NYC births 1999–2004. Data were obtained from the NYC DOHMH Office of Vital Statistics.

(e) In this column, population counts used as the denominator for the percent of children tested come from the US Census 2000.

**Table A-5****Neighborhood codes and their corresponding names, New York City.\***

	<b>Code</b>	<b>Neighborhood Name</b>
<b>Bronx</b>		
	BX1	Kingsbridge-Riverdale
	BX2	Northeast Bronx
	BX3	Fordham-Bronx Park
	BX4	Pelham-Throgs Neck
	BX5	Crotona-Tremont
	BX6	High Bridge-Morrisania
	BX7	Hunts Point-Mott Haven
<b>Brooklyn</b>		
	BK1	Greenpoint
	BK2	Williamsburg-Bushwick
	BK3	Downtown-Brooklyn Heights-Park Slope
	BK4	Bedford Stuyvesant-Crown Heights
	BK5	East New York
	BK6	Sunset Park
	BK7	Borough Park
	BK8	East Flatbush-Flatbush
	BK9	Canarsie-Flatlands
	BK10	Bensonhurst-Bay Ridge
	BK11	Coney Island-Sheepshead Bay
<b>Manhattan</b>		
	M1	Washington Heights-Inwood
	M2	Central Harlem-Morningside Heights
	M3	East Harlem
	M4	Upper West Side
	M5	Upper East Side
	M6	Chelsea-Clinton
	M7	Gramercy Park-Murray Hill
	M8	Greenwich Village-Soho
	M9	Union Square-Lower East Side
	M10	Lower Manhattan
<b>Queens</b>		
	Q1	Long Island City-Astoria
	Q2	West Queens
	Q3	Flushing-Clearview
	Q4	Bayside-Little Neck
	Q5	Ridgewood-Forest Hills
	Q6	Fresh Meadows
	Q7	Southwest Queens
	Q8	Jamaica
	Q9	Southeast Queens
	Q10	Rockaway
<b>Staten Island</b>		
	S1	Port Richmond
	S2	Stapleton-St. George
	S3	Willowbrook
	S4	South Beach-Tottenville

\* United Hospital Fund (UHF) classifies New York City into 42 neighborhoods, comprised of contiguous ZIP codes.

## Need Help or Information?

### *Call 311*

With just one phone call you can:

- Get information on lead poisoning prevention or treatment.
- Find out how to report peeling paint or unsafe lead-based paint removal work.
- Sign up for free workshops for parents, health care providers, building owners, and community leaders.
- Get information on early intervention services for children at risk for developmental delays or learning disabilities, and
- Arrange for an LPPP staff member to speak to your organization about lead poisoning prevention.



**Department of Health and Mental Hygiene  
The City of New York**

**Michael R. Bloomberg  
Mayor**

**Thomas R. Frieden, M.D., M.P.H.  
Commissioner**