

Testing for lead poisoning is a key component of childhood lead poisoning prevention. Early detection of a child's elevated blood lead level permits timely identification of possible lead hazards in order to prevent further elevation of the child's blood lead levels. Surveillance data of universal childhood blood lead testing can provide an assessment of the risk for lead poisoning in subpopulations and thereby inform public health education and lead hazard remediation efforts.

Since 1993, New York State (NYS) law has mandated blood lead testing in children. NYS law specifies that all children at age 1 and at age 2 must be tested for lead poisoning. Additionally, for ages 6 months to less than 6 years, providers must annually assess each child's risks for lead poisoning and test those children found to be at high risk.¹⁰ Since 1994, NYS has mandated reporting of all blood lead tests regardless of blood lead level. Laboratories must report all blood lead levels to the NYS Department of Health within five business-days of analysis.¹¹ Since 1995, (on average) each year NYC receives approximately 400,000 blood lead tests for children ages 6 months to less than 6 years, representing approximately 300,000 children annually.¹²

Blood lead tests can be collected by either venous or capillary (e.g., fingerstick) samples. Since 1995, (on average) among NYC children tested for lead poisoning, most (80%) children tested are tested by a venous blood test. The data in this chapter represent tests for lead poisoning via any sampling method (venous, capillary, or unspecified method) regardless of a child's prior blood lead tests or blood lead levels. (See Appendix, Technical Notes: Blood lead levels - limitations)

The first set of graphs in this chapter provide analyses of the percent of children tested before their third birthday (the denominator for these analyses was the number of children born in 1997). These analyses assess compliance with NY State's universal screening law that mandates testing at age one and at age two. The second set of graphs, the percent of children tested in a given calendar year are presented to describe annual testing rates for children less than six years of age (the denominator for these analyses was NYC births 1990-2000) (see Appendix, Technical Notes: Calculating rates).

¹⁰New York State Public Health Law Part 67-1 of Title X NYCRR, Lead Screening and Follow-up, 12/23/03.

¹¹There are more stringent requirements for children with blood lead levels ≥ 45 $\mu\text{g}/\text{dL}$ (New York State Public Health Law, Part 67-3 of Title X, Reporting of Blood Lead Levels, 10/13/93).

¹²Unless a newborn has been exposed to high maternal blood lead levels, infants (ages 0 to less than 6 months) are not routinely tested for lead poisoning because they are not mobile enough to come into contact with lead-based paint or dust.

NY State law mandates testing children for lead poisoning at age 1 and at age 2. An estimated 81% of NYC children born in 1997 were tested for lead poisoning at least once before their third birthday. The majority (63%) of children were tested around age one (between 6 months and less than 24 months). Approximately one-quarter (27%) of children were tested both around age one (between 6 months and less than 24 months) and age two (between 24 months and less than 36 months) and approximately one-fifth of children did not receive any blood lead test before their third birthday. (Analyses of children born in 1995 and 1996 were consistent with the analysis for children born in 1997.) (For further discussion of these data indicators see Appendix, Technical Notes: Calculation of rates, Testing rates - percent of children tested before their third birthday)

The percent of children tested for lead poisoning at least once before their third birthday varied by borough. Testing rates for lead poisoning were highest in the Bronx (91%) and lowest in Staten Island (64%).

Figure 1. Percent of children tested for lead poisoning before their third birthday: New York City, children born in 1997. (Sources: NYS DOH Bureau of Biometrics, and NYC DOH LPPP)

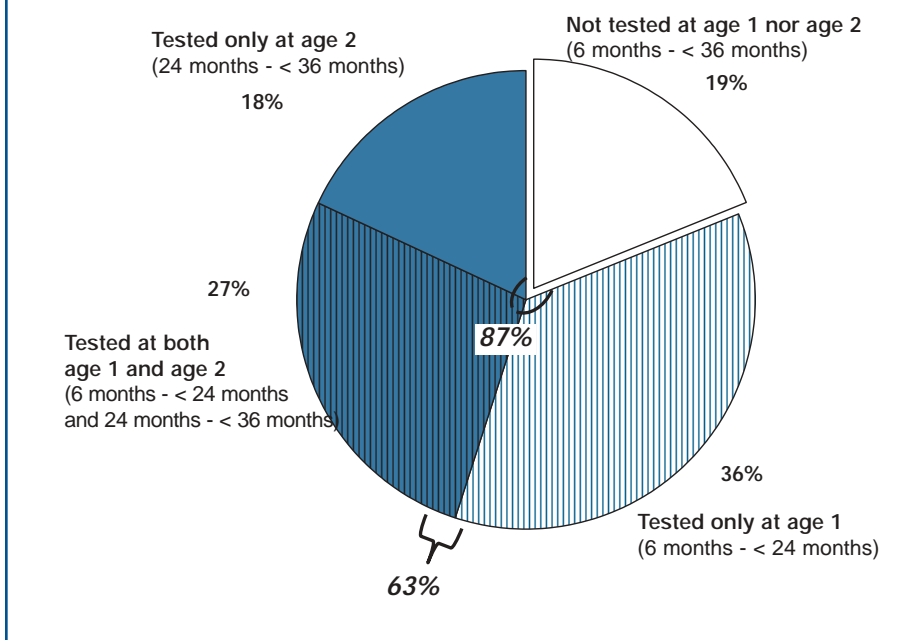
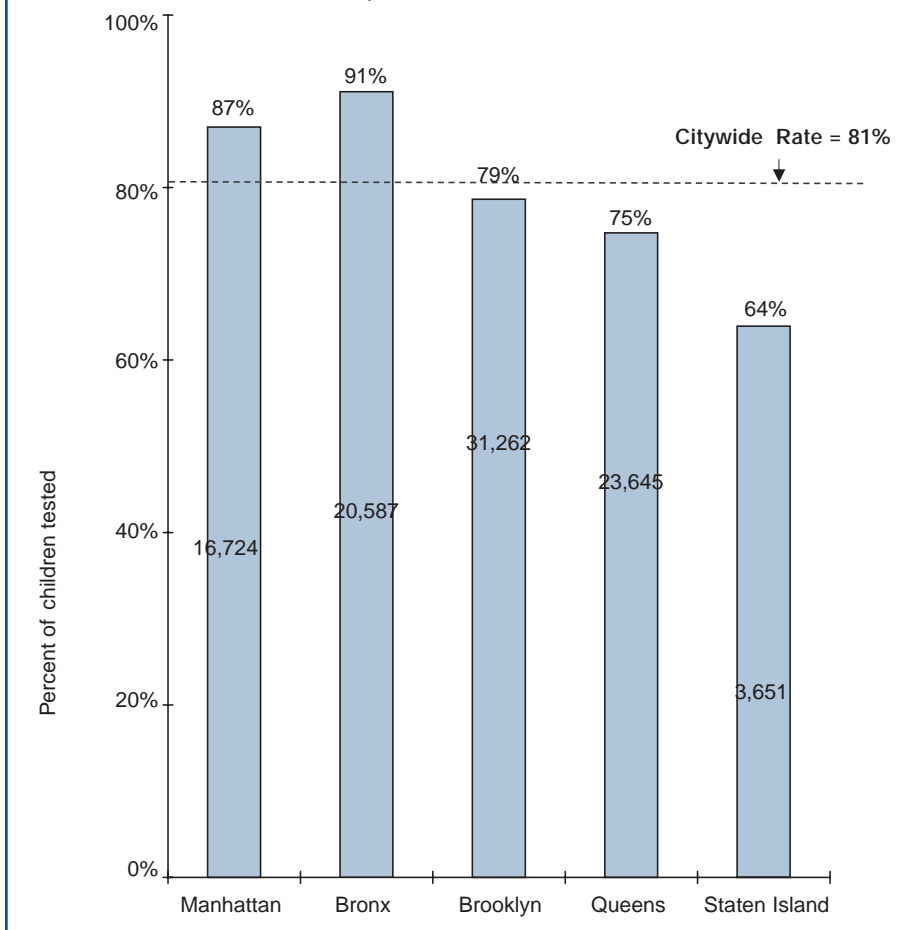


Figure 2. Percent of children tested for lead poisoning before their third birthday, by borough: New York City, children born in 1997. (Sources: NYS DOH Bureau of Biometrics, and NYC DOH LPPP)



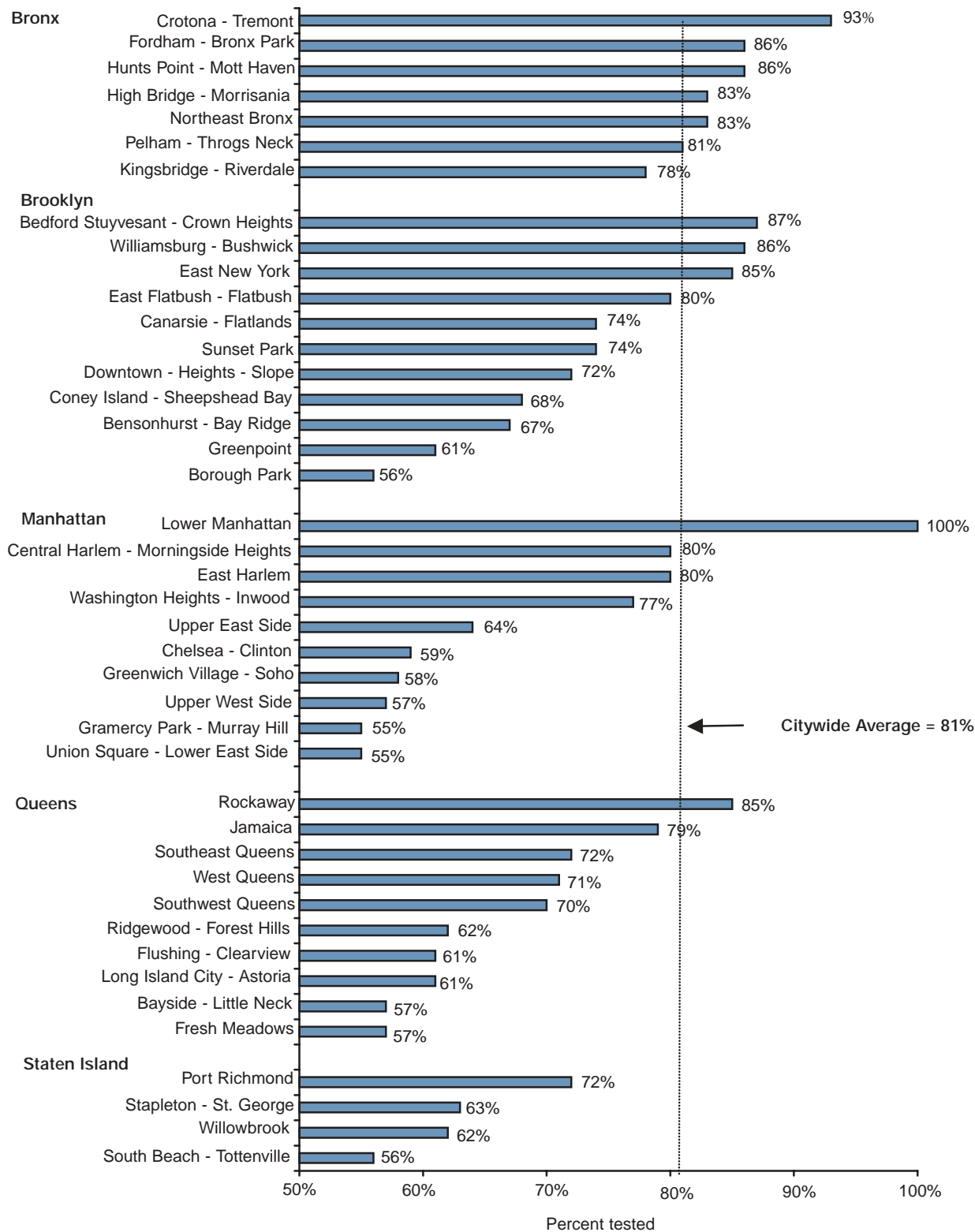
Testing rates for children 6 months to less than 6 years varied by neighborhood from 55% to 100%.¹³

Neighborhoods in the Bronx had the highest testing rates, ranging from 78%-93%. Ten neighborhoods, concentrated in Brooklyn and the Bronx, had testing rates above the citywide average.¹⁴

¹³Please note, these rates are imprecise and thus can only viewed as a 'general picture' of testing rates (see Appendix, Technical Notes: Calculation of rates, Testing rates - percent of children tested by their third birthday). Lower Manhattan had the highest testing rate for a UHF in NYC but had a relatively small number of births in 1997 (n=323) (see Appendix, Table 1).

¹⁴Citywide, neighborhoods with above-average testing rates were in Manhattan: Lower Manhattan; in the Bronx: Crotona-Tremont, Fordham-Bronx Park, Hunts Point-Mott Haven, Northeast Bronx, High Bridge-Morrisania; in Brooklyn: Bedford Stuyvesant-Crown Heights; Williamsburg-Bushwick, and East New York; and in Queens: Rockaway.

Figure 3. Percent of children tested for lead poisoning before their third birthday, by United Hospital Fund neighborhood: New York City, children born in 1997. (Sources: NYS DOH Bureau of Biometrics, and NYC DOH LPPP)



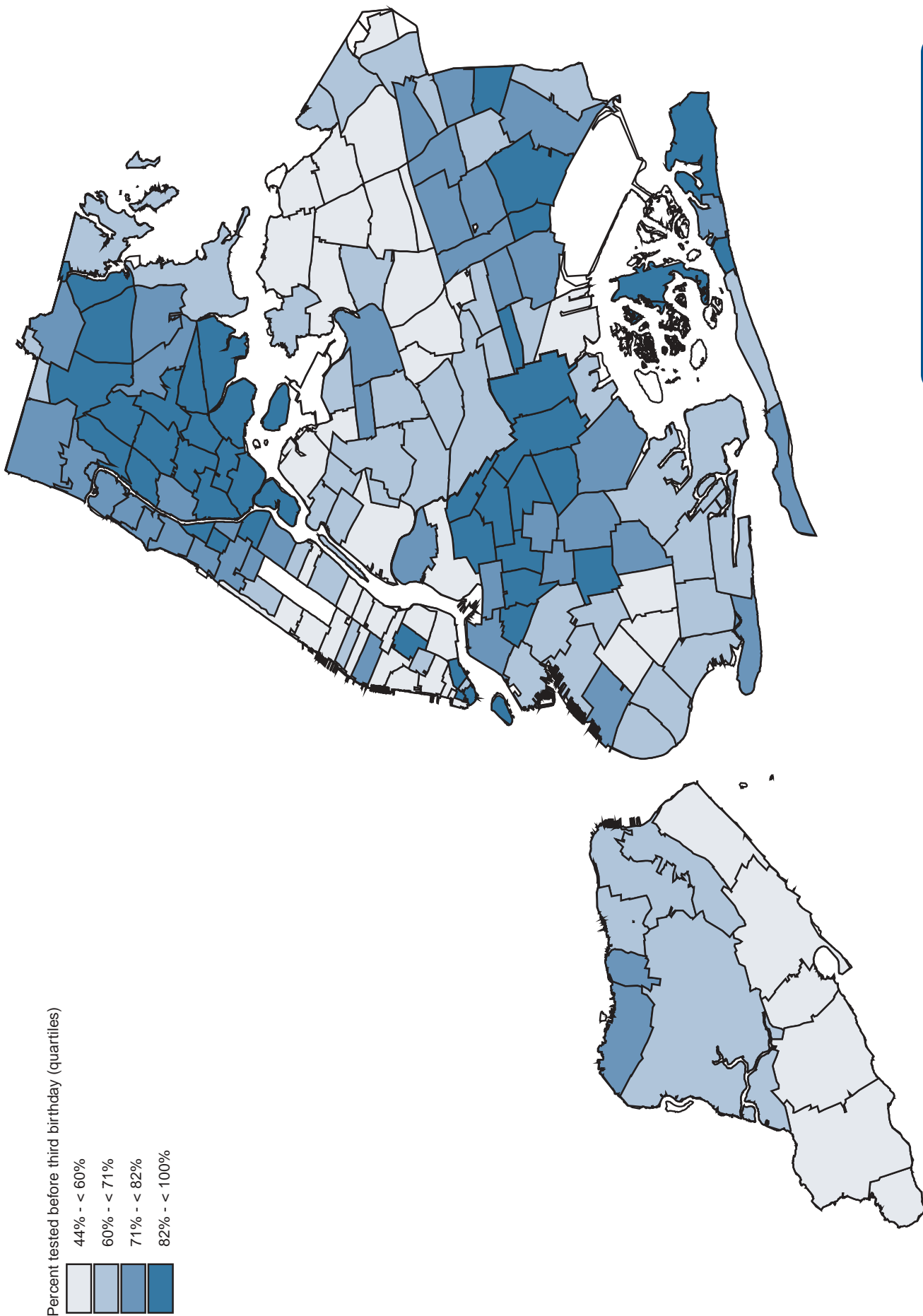
The rates of NYC children born in 1997 who were tested for lead poisoning at least once before their third birthday varied by ZIP code from 44% to 100%. As seen in the map, ZIP codes with especially high¹⁵ testing rates were mostly located in the Bronx and Brooklyn.¹⁶ ZIP codes with the lowest¹⁷ testing rates were: 11204 and 11219 (both in Borough Park) and 10002 (in Union Square-Lower East Side). (See Appendix, Technical Notes: Calculation of rates, Testing rates - percent of children tested by their third birthday.)

¹⁵At least 87% of children were tested before age 3.

¹⁶These ZIP codes were in the Bronx 10454 and 10474 (both in Hunts Point-Mott Haven), 10457 (Crotona-Tremont), 10467 (Fordham-Bronx Park), 10469 (Northeast Bronx), 10473 (Pelham-Throgs Neck; in Brooklyn: 11233 and 11212 (both in Bedford Stuyvesant-Crown Heights), 11221 (Williamsburg-Bushwick), 11207 (East New York) and in Queens: 11691 (Rockaway), 11434 (Jamaica); and in Manhattan: 10038 and 10004 (both in Lower Manhattan), 11030 (Central Harlem-Morningside Heights).

¹⁷ZIP codes included in the ranking had at least 1,000 children born in 1997. For more discussion of denominators, see Appendix, Technical Notes: calculation of rates - testing rates.

Figure 4 Percent of children tested for lead poisoning before their third birthday, by ZIP code: New York City, children born in 1997. (Sources: NYS DOH Bureau of Biometrics, and NYC DOH LPPP)

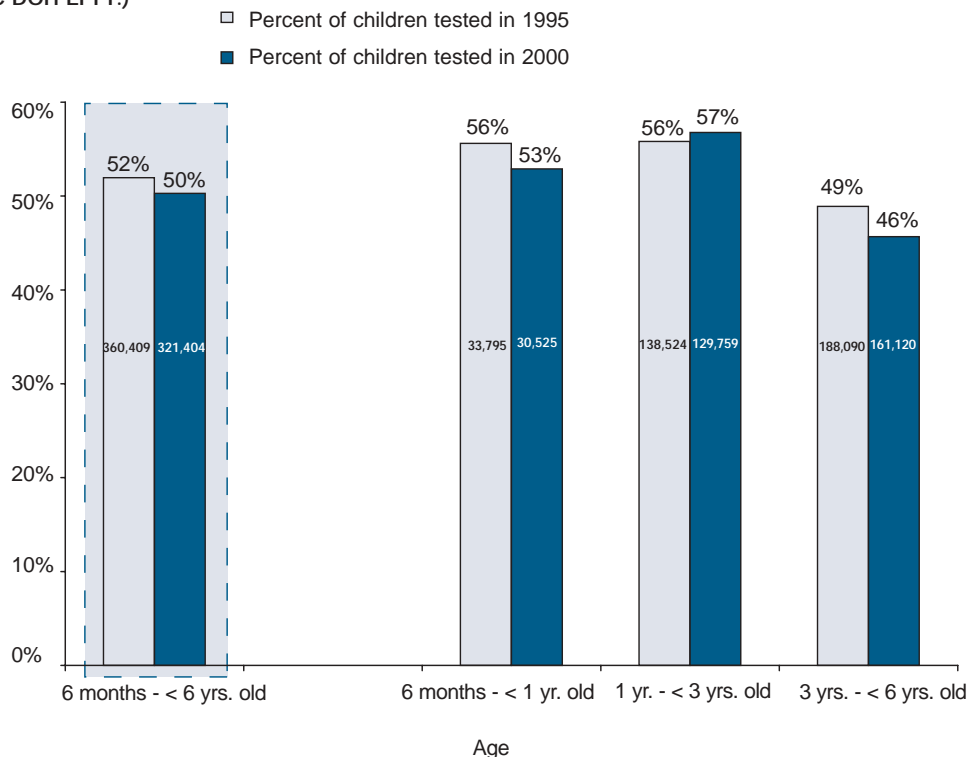


Testing

CHILDREN TESTED FOR LEAD POISONING IN A GIVEN CALENDAR YEAR

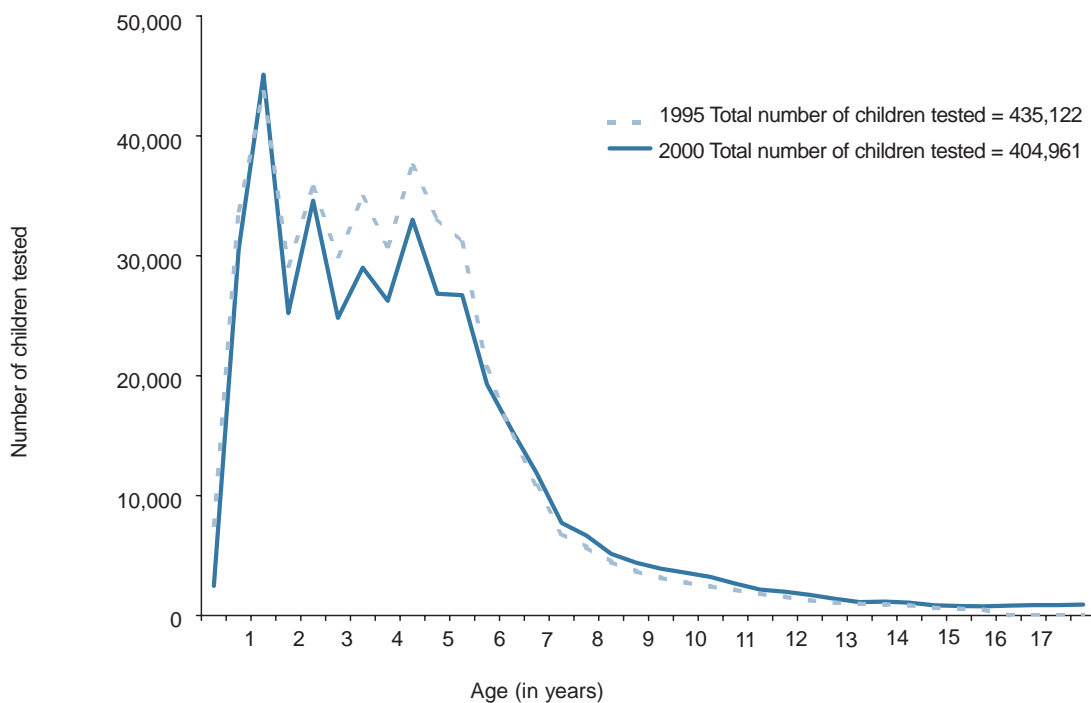
Since 1995, each year, the percent of one and two year olds tested for lead poisoning remained stable at approximately 56% (data for 1996-1999 not shown, see Appendix, Table 2). For ages 6 months to less than 1 year and ages 2 to less than 3 years, testing rates slightly declined between 1995 and 2000 (from 56% to 53% and from 49% to 46%, respectively). (See Appendix, Technical Notes: Calculation of rates, Testing rates - the percent of children tested for lead poisoning in a given calendar year.)

Figure 5. Percent of children tested for lead poisoning in a given calendar year, ages 6 months to less than 6 years, by age: New York City, 1995 and 2000. (Sources: NYC DOH Bureau of Vital Statistics, and NYC DOH LPPP)



For 1995 and 2000, the distribution of tests according to age remained basically the same: children less than age 5 and one-half years represented the bulk of children tested (80%). Blood lead testing peaked among children 1 to less than 1 and one-half years.¹⁸ The peaks in numbers for the first six months of each age-year is likely a reflection of the age schedule for well-child visits.

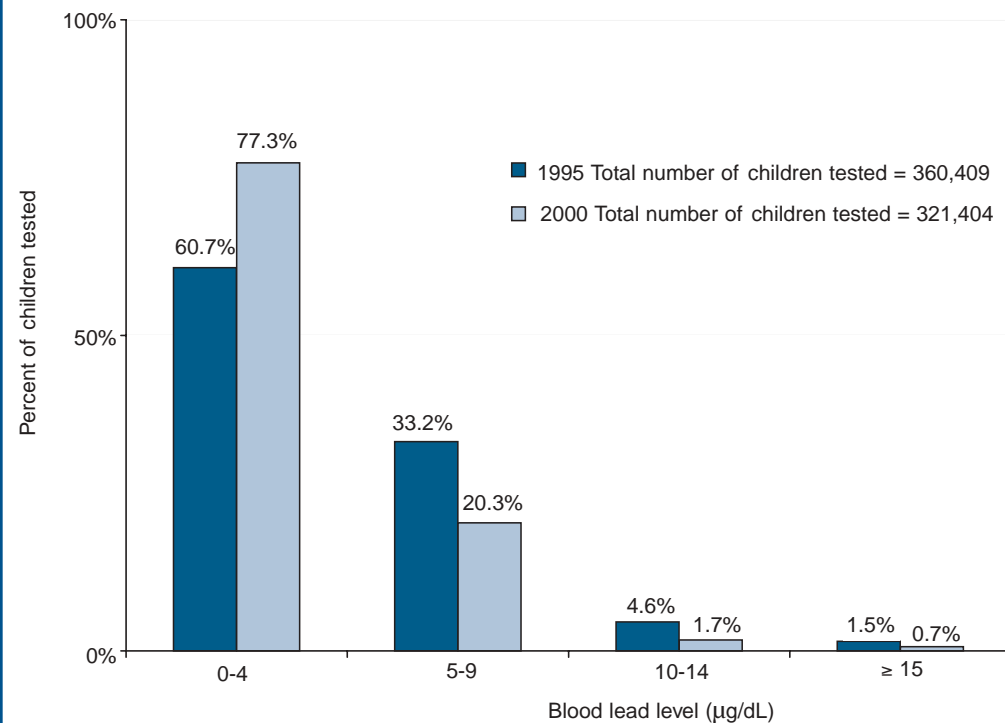
Figure 6. Number of children tested for lead poisoning in a given calendar year, ages 0 to less than 18 years: New York City, 1995 and 2000.



¹⁸In 2000, 45,116 children aged 12 - 17 months old were tested for lead poisoning.

The percent of NYC children with elevated blood lead levels has declined. In 1995, 6% of children had blood lead levels of 10 µg/dL or greater while in 2000 this proportion decreased to 2% (a decline from 22,024 to 7,657). Correspondingly, the proportion of blood lead levels below 5 µg/dL increased 27% (from 61% to 77%). (See discussion in Appendix, Technical Notes: Selection of blood tests - children with multiple tests within a year. Also see next chapter Elevated Blood Lead Levels.)

Figure 7. Distribution of children tested for lead poisoning, ages 6 months to less than 6 years, by blood lead level: New York City, 1995 and 2000.



Testing for lead poisoning appears to have a seasonal pattern. Consistent with other years (not shown), the number of children tested in 1995 and 2000 peaked in August and September and declined sharply during the months of November and December. High testing numbers in August and September are presumed to reflect lead testing requirements for day care and school.

Figure 8. Number of children tested for lead poisoning, ages 6 months to less than 6 years, by calendar month: New York City, 1995 and 2000.

