



NEW YORK CITY DEPARTMENT OF
HEALTH AND MENTAL HYGIENE
Ashwin Vasani, MD, PhD
Commissioner

**Report to the New York City Council on
Progress in Preventing Elevated Blood Lead Levels in New York City**

**Submitted by New York City Department of Health & Mental Hygiene
September 2022**

About This Report

Local Law 1 of 2004 requires the New York City Department of Health and Mental Hygiene (DOHMH) to annually report to the New York City Council on the City's progress toward reducing elevated blood lead levels among children and increasing blood lead testing in New York City. This report is submitted in compliance with this requirement.

Data in the report are presented in six sections:

- *Section I* presents data on New York City children under 6 years of age with blood lead levels at or above 5 micrograms per deciliter (mcg/dL). Young children are at greatest risk for elevated blood lead levels.
- *Section II* presents data on elevated blood lead levels for children under 18 years of age including by type of housing (public or private), and by borough.
- *Section III* presents data on pregnant women with elevated blood lead levels. New York State law requires health care providers to assess all pregnant New Yorkers for risk of lead exposure at their first prenatal visit.
- *Section IV* presents data on blood lead testing for children turning 3 years of age in 2021. New York State law requires health care providers to test all children at or around ages 1 and 2.
- *Section V* presents data on safe work practices, including the number of addresses inspected and violations issued. Building owners must use safe work practices and trained workers to fix lead paint hazards when doing abatement and general repair work that disturbs lead-based paint.
- *Section VI* presents data on implementation of education and outreach and outlines strategies for continued progress in the prevention of lead exposure among children and communities at high risk.

The COVID-19 public health emergency has led to significant changes in health care utilization – including a drop in blood lead testing among children. Because of these changes 2021 surveillance data should be interpreted with caution.



Section I: Elevated Blood Lead Levels Among Children Under 6 Years Old

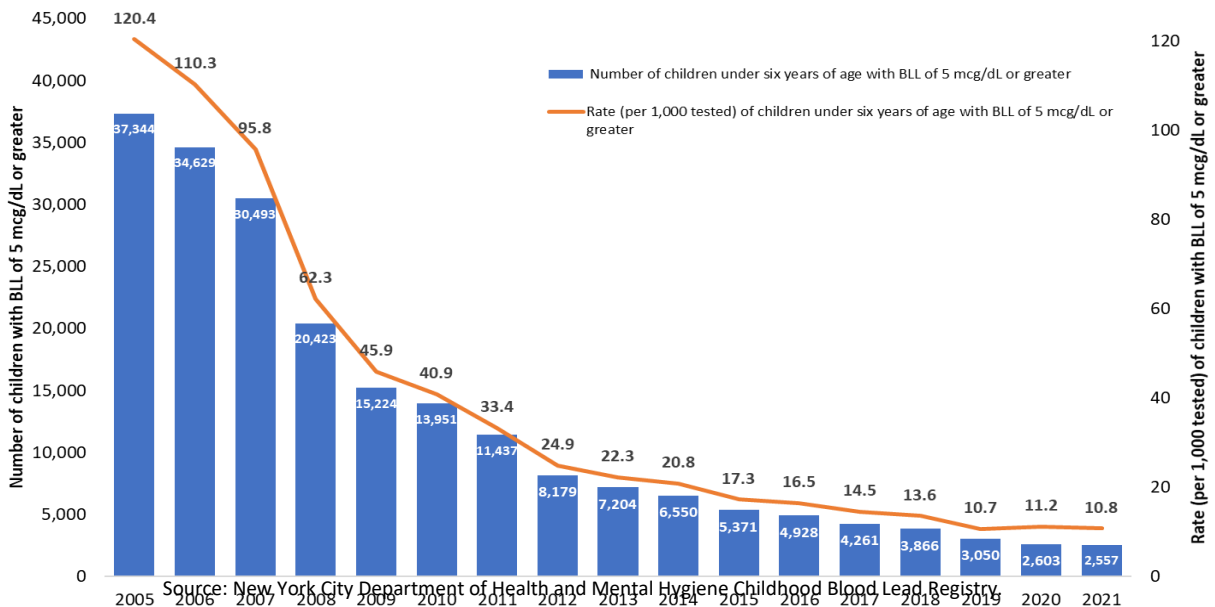
Lead exposure in childhood can lead to serious, long-term consequences, including learning difficulties and behavioral problems. Young children are especially at risk because they explore their environment by placing non-food items in their mouths, potentially exposing them to lead in dust and paint. Lead-based paint hazards remain the most commonly identified exposure source for New York City children with elevated blood lead levels. The number of children whose blood lead levels are at or exceed 5 micrograms per deciliter (mcg/dL) are at a historic low and continue to decline. Since 2005, there has been a 93% decline in the number of children under 6 years of age with a blood lead level of 5 mcg/dL or greater.

Children under age 6 with blood lead levels of 5 mcg/dL or greater

In 2021, 2,557 New York City children under 6 years of age were identified with a blood lead level of 5 mcg/dL or greater. This represents a 2% decline from 2020 when there were 2,603 children with blood lead levels of 5 mcg/dL or greater, and a 93% decline since 2005 when there were 37,344 children with blood lead levels of 5 mcg/dL or greater.

In 2021, the rate of children under 6 with elevated blood lead levels was 10.8 per 1,000 children tested, a decrease of 4% compared to 2020 when the rate was 11.2 per 1,000 children tested. The COVID-19 public health emergency has led to significant changes in health care utilization – including a drop in blood lead testing among children. Because of these changes, surveillance data trends since 2020 should be interpreted with caution.

Figure 1. The number and rate (per 1,000 tested) of New York City children under 6 years of age with a blood lead level (BLL) of 5 mcg/dL or greater



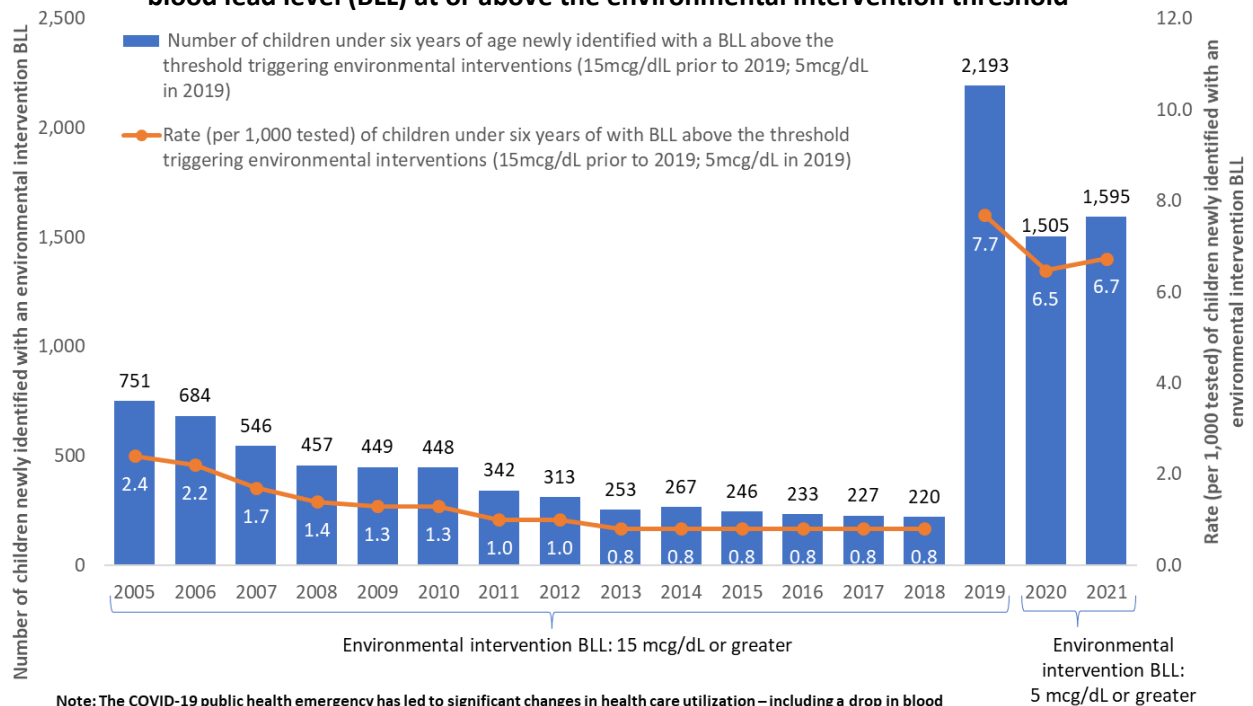
Note: The COVID-19 public health emergency has led to significant changes in health care utilization – including a drop in blood lead testing among children. For this reason, 2020 & 2021 surveillance data should be interpreted with caution.
The data above represent unique children per year. Included are all children tested in a calendar year with an elevated blood lead level, regardless of whether the test was confirmed or not, and regardless of whether they had an elevated test in previous years. Adding across years will result in duplicate counts of individual children over time. Between January 2005 and December 2022 there were 169,556 children under the age of 6 who had a blood lead level of 5 mcg/dL or greater.

Children under age 6 with blood lead levels at or above the environmental intervention threshold

Prior to June 2019, Local Law 1 of 2004 required DOHMH to conduct environmental investigations for New York City children with an elevated blood lead level of 15 mcg/dL or greater. Since July 2018, DOHMH has been conducting environmental investigations for all children with an elevated blood lead level at or above 5 mcg/dL.

In 2021, 1,595 children¹ younger than 6 years of age were newly identified with an environmental intervention blood lead level of 5 mcg/dL or greater. While this represents a 6% increase compared to 2020 when there were 1,505 children, this difference is not statistically significant.

Figure 2. The number and rate of New York City children under 6 years of age newly identified with a blood lead level (BLL) at or above the environmental intervention threshold



Note: The COVID-19 public health emergency has led to significant changes in health care utilization – including a drop in blood lead testing among children. For this reason, 2020 & 2021 surveillance data should be interpreted with caution.

Source: New York City Department of Health and Mental Hygiene Childhood Blood Lead Registry.

¹ This number includes only children with a confirmed elevated blood lead level, who had an elevated test for the first time in a given calendar year. Figure 1, in contrast, shows all children tested in a calendar year with an elevated blood lead level, regardless of whether the test was confirmed or not, and regardless of whether they had an elevated test in previous years.

The burden of lead exposure is highest among children of color and children living in high-poverty neighborhoods

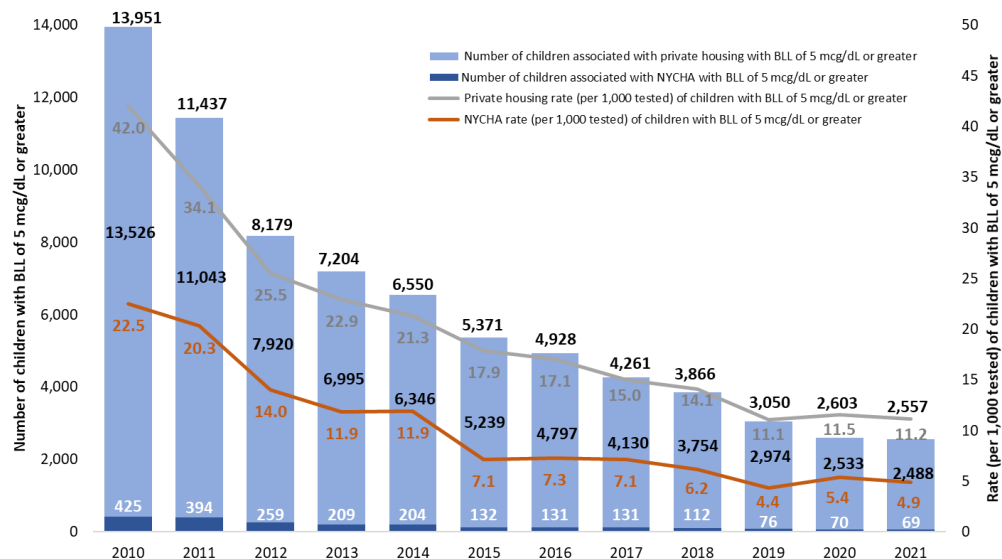
While the number of children with blood lead levels of 5 mcg/dL or greater has decreased over time across racial and ethnic groups and neighborhoods, the burden of lead exposure remains high for children of color and children living in moderate to high-poverty neighborhoods.

- In 2021, 88% of children under 6 years of age with blood lead levels of 5 mcg/dL or greater were from moderate (51%) to high-poverty neighborhoods (37%) (defined as zip codes with 10% to 20% and 20% or more of the population living below poverty level, respectively).
- The rate of children under 6 years of age with blood lead levels of 5 mcg/dL or greater in moderate poverty neighborhoods was 12.0 per 1,000 children tested, and in high poverty neighborhoods 11.2 per 1,000 children tested, 63% and 52% greater than the rate of 7.4 per 1,000 children tested in the wealthiest neighborhoods.
- In 2021, Asian, Black and Latino children represented 81% of children under age 6 newly identified with blood lead levels of 5 mcg/dL or greater.

Children living in public housing had a lower risk for lead exposure than children Citywide

Children living in homes maintained by the New York City Housing Authority (NYCHA) have, on average, a lower risk of lead exposure than those living in private housing. This difference in risk of exposure is likely because housing stock throughout the City is older than housing maintained by NYCHA.

Figure 3. Children under age 6 living in NYCHA housing have consistently lower rates of elevated blood lead levels (BLL) than children living in private housing, New York City 2010-2021



Note: The COVID-19 public health emergency has led to significant changes in health care utilization – including a drop in blood lead testing among children. For this reason, 2020 & 2021 surveillance data should be interpreted with caution. The data above represent unique children per year. Included are all children tested in a calendar year with an elevated blood lead level, regardless of whether the test was confirmed or not, and regardless of whether they had an elevated test in previous years. Adding across years will result in duplicate counts of individual children over time. Between January 2010 and December 2021 there were 59,815 children under the age of 6 who had a blood lead level of 5 mcg/dL or greater; 1,900 (3%) of these children were associated with NYCHA.

Source: New York City Department of Health and Mental Hygiene Childhood Blood Lead Registry.

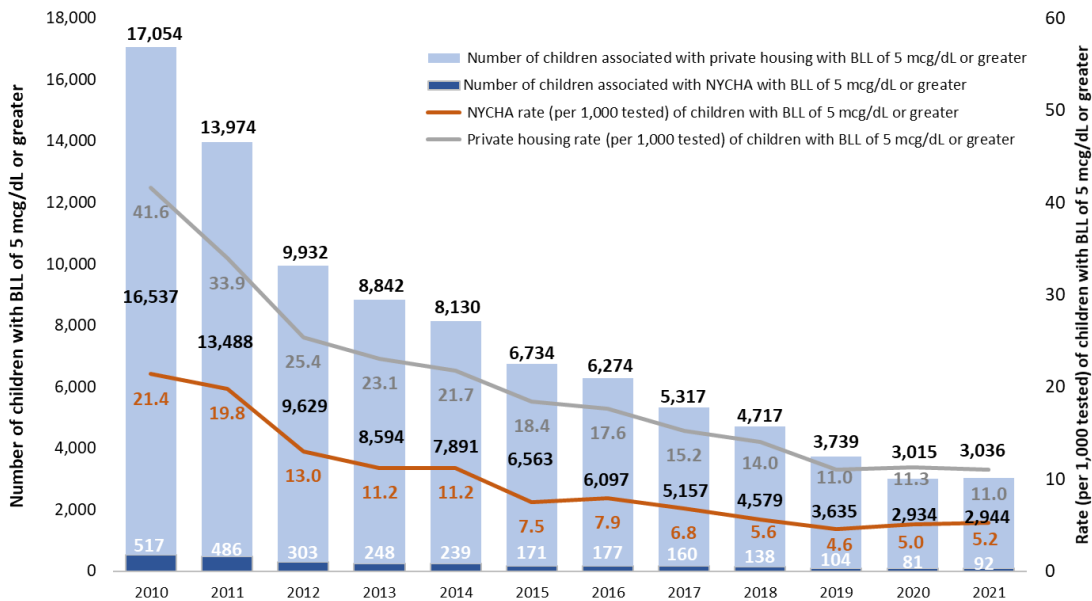


- In 2021, of more than 14,000 children under 6 years of age living in NYCHA housing who were tested for lead, 69 had blood lead levels at or above 5 mcg/dL. This represents a steady trend compared to 2020 when there were 70 children, and a decline of 84% since 2010, when there were 425 children living in NYCHA housing with an elevated blood lead level at or above 5 mcg/dL.
- In 2021, the rate of children less than 6 years old living in NYCHA housing with blood lead levels at or above 5 mcg/dL was 4.9 per 1,000 children tested, less than half the Citywide rate of 10.8 per 1,000 children tested and the rate for children living in private housing (11.2 per 1,000 tested).

Section II: Elevated Blood Lead Levels Among Children Under 18 Years Old

Blood lead levels among children under age 18 follow a similar pattern as blood lead levels for younger children. In 2021, the rate of children under age 18 living in NYCHA housing with blood lead levels at or above 5 mcg/dL was 5.2 per 1,000 children tested, less than half the Citywide rate and the rate among children living in private housing (10.6 per 1,000 children tested and 11.0 per 1,000 children tested, respectively).

Figure 4. Children under age 18 living in NYCHA housing have consistently lower rates of elevated blood lead levels (BLL) than children living in private housing, New York City 2010-2021



Note: The COVID-19 public health emergency has led to significant changes in health care utilization – including a drop in blood lead testing among children. For this reason, 2020 & 2021 surveillance data should be interpreted with caution.
The data above represent unique children per year. Included are all children tested in a calendar year with an elevated blood lead level, regardless of whether the test was confirmed or not, and regardless of whether they had an elevated test in previous years. Adding across years will result in duplicate counts of individual children over time. Between January 2010 and December 2021 there were 71,738 children under the age of 18 who had a blood lead level of 5 mcg/dL or greater; 2,278 (3%) of these children were associated with NYCHA.

Source: New York City Department of Health and Mental Hygiene Childhood Blood Lead Registry.

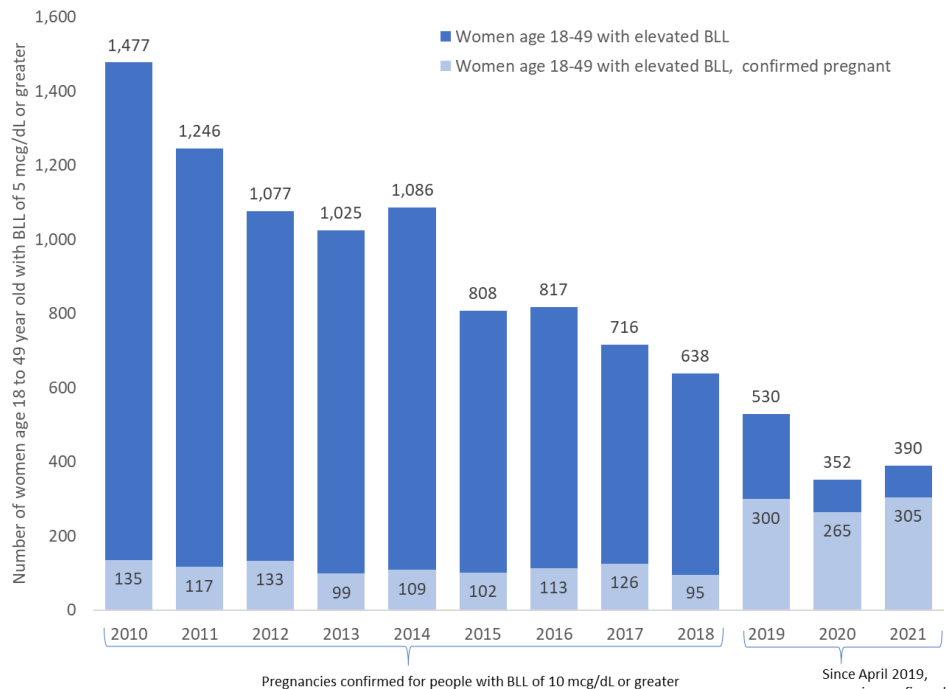
Section III: Pregnant People with Elevated Blood Lead Levels

Lead exposure can harm both the fetus and pregnant person, increasing the risk of miscarriage, causing birth defects and leading to learning and behavior problems in children. New York State law requires medical providers to assess pregnant people for lead exposure at their first visit. Prior to 2019, DOHMH provided risk assessments to all pregnant people with blood lead levels of 10 mcg/dL or greater. Since April 2019, DOHMH provides risk assessments to all pregnant people with a blood lead level of 5 mcg/dL or greater.

In 2021, 390 people of childbearing age (18 to 49 years old) were identified with elevated blood lead levels (5 mcg/dL or greater). Of these, 305 were confirmed pregnant. Country of birth was available for two thirds of them, and more than 80% were foreign-born, with 30 different countries of birth reported. People from only 6 countries represented more than 60% of all cases:

- 45% were born in Mexico
- 19% South Asian countries of Bangladesh, Pakistan, India, and Nepal
- 7% were born in Guatemala

Figure 6. Number of people of childbearing age (18 to 49 years) with blood lead levels (BLL) of 5 mcg/dL or greater, total and confirmed pregnant, New York City 2010-2021



Note: The COVID-19 public health emergency has led to significant changes in health care utilization. For this reason, 2020 & 2021 surveillance data should be interpreted with caution.

Source: New York City Department of Health and Mental Hygiene Adult Blood Lead Registry.

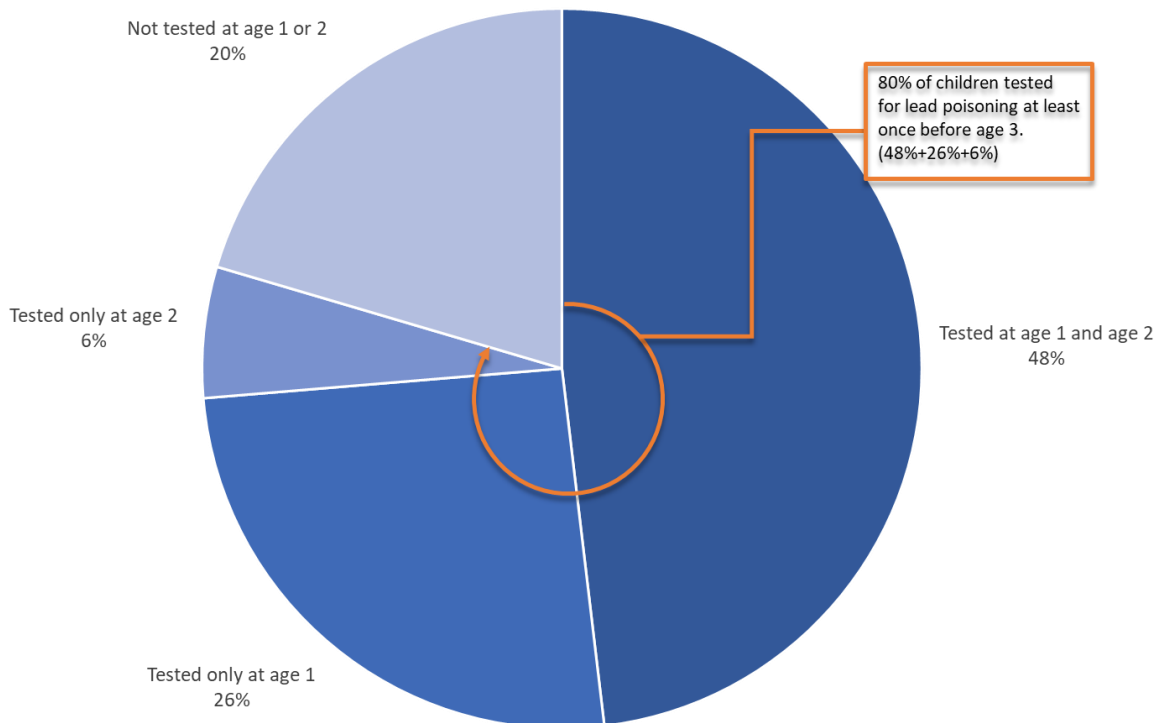
Section IV: Blood Lead Testing for Children Ages 3 Years and Younger

Early identification of lead-exposed children is critical to prevent further exposures. Since most children with elevated blood lead levels have no symptoms, blood lead testing is the only way to identify them. In New York State, health care providers are required by law to test all children at or around age 1 and age 2, and to assess and test those at risk of lead poisoning starting at age 6 months up to age 6.

Most New York City children were tested for lead poisoning at least once before age 3

- In 2021, an estimated 80% of New York City children turning 3 years of age were tested for lead poisoning at least once. Half (48%) of them were tested at or around age 1 and age 2, as required by New York State law.
- Although the COVID-19 public health emergency has led to significant changes in health care utilization – including a drop in blood lead testing – the impact was the greatest on older children. In 2021, compared to 2019, there was a 20% decline in testing among 3 to 5-year-olds, and 28% decline among children age 6 and older as compared to a 15% decline among children under 3. Most children turning 3 years old in 2021 received at least one blood lead test.

Figure 6. Most New York City children are tested for lead poisoning at least once before age 3



Note: The COVID-19 public health emergency has led to significant changes in health care utilization – including a drop in blood lead testing among children. For this reason, 2021 surveillance data should be interpreted with caution.

Source: New York City Department of Health and Mental Hygiene Childhood Blood Lead Registry and Office of Vital Statistics.



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Section V: Safe Work Practices

New York City's housing stock is old and many have older layers of lead-based paint in dwelling units or common areas, especially in buildings built prior to 1960. For this reason, to prevent potential lead exposure, building owners are required to take active measures to ensure that deteriorated surfaces are remediated and abated, and must use safe practices for any construction, abatement or repair activities that disturb painted surfaces.

DOHMH checks that property owners are using safe work practices when complying with a Health Commissioner's Order to abate a lead paint hazard. In 2021, DOHMH monitored 1,029 buildings for compliance with a Health Commissioner's Order to abate, conducted 1,942 inspections in these buildings, and issued 28 Orders or notices of violations in 22 of the monitored buildings. DOHMH also responds to 311 calls about unsafe work practices. In 2021, in response to 311 calls, DOHMH conducted 661 inspections in 306 buildings and found unsafe work practices in 107 of these buildings and issued 158 Orders or notices of violation.

Section VI: Education, Outreach and Strategies for Continued Progress

New York City has made great progress in reducing elevated blood levels in children. Between 2005 and 2021, there was a 93% decline in the number of children younger than 6 years of age with a blood lead level of 5 mcg/dL or greater. This success is the result of a proactive and comprehensive approach to preventing lead exposure in childhood. Nevertheless, living in older, poorly maintained housing where lead-based paint exists continues to be the most commonly identified risk factor for lead exposure among New York City children.

Education and outreach focused on childhood lead poisoning prevention

DOHMH conducts education and outreach throughout New York City. In 2021:

- DOHMH distributed more than 53,500 copies of printed educational materials on prevention of lead poisoning among children, pregnant persons, workers in high-risk occupations such as construction, as well as materials on lead contamination in consumer products. These materials were printed in 12 languages: English, Spanish, Bengali, Urdu, Hindi, Chinese, Arabic, Russian, Punjabi, French, Yiddish, and Haitian Creole.
- More than 17,500 New Yorkers participated in over 550 education and outreach events that raised awareness about need for timely testing of children for lead poisoning, home health hazards such as peeling paint, and health risks of exposure to lead-contaminated consumer products. These events were organized in collaboration with community- and faith-based organizations, government organizations, schools, hospitals, clinics, day cares and libraries.



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Strategies for Continued Progress

DOHMH implements targeted interventions for communities most at risk. Prevention strategies include:

- Eliminating or reducing lead-based paint hazards and other sources of lead in homes and communities through investigation, enforcement, education, and technical assistance.
- Promoting blood lead testing for children, pregnant people, and newborns through outreach to families, health care providers, and Medicaid Managed Care organizations.
- Increasing awareness about risk factors for lead exposure by targeting culturally appropriate advertising campaigns to communities at risk.
- Providing care coordination services to children with an elevated blood lead level, as well as pregnant people with an elevated blood lead level and their newborns.
- Building partnerships with community, social service, and faith-based organizations; home visiting programs; weatherization groups; neighborhood housing groups; medical providers; and agencies concerned with child and environmental health.
- Addressing other home-based health issues during prevention efforts, such as reducing home asthma triggers and safety hazards.

This report and more information about childhood lead levels are available through the NYC DOHMH website at: nyc.gov/lead

Additional data on childhood lead exposure are also available through the NYC DOHMH Environment and Health Data Portal at nyc.gov/health/tracking.