

NEW YORK CITY PLAN
TO ELIMINATE CHILDHOOD LEAD POISONING

Lead Poisoning Prevention Program
New York City Department of Health and Mental Hygiene

December 2005

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ABOUT THIS DOCUMENT

Background

This document outlines a comprehensive plan for New York City (NYC) to meet the national goal of eliminating childhood lead poisoning by 2010. Achieving that goal in NYC will require the development of new prevention programs that leverage limited public resources and that target activities to communities and populations at greatest risk. It also will require increased collaboration and expanded partnerships among government and non-government organizations involved with maternal and child health, environmental health and housing. The comprehensive plan will help to coordinate the activities of those participants. The plan was prepared by the New York City (NYC) Department of Health and Mental Hygiene (DOHMH) Lead Poisoning Prevention Program (LPPP) with input from other city agencies and from the department's Lead Poisoning Prevention Technical Advisory Committee (LPPTAC). (See Appendix A for a list of the LPPTAC members.)

Incorporating Public Comments

In January 2005, a draft of the plan was released for public comment to elected officials and to more than 60 organizations concerned with children's health, environmental health and housing. This revised plan, which was posted on the DOHMH website in December 2005, reflects the public comments and recommendations. The most significant change from the January 2005 draft of the plan (which was previously posted on this website) is the establishment of a more ambitious goal for activities to promote blood lead testing of children, particularly at ages 1 and 2. Objective IIIa – which previously called for testing 80% of 1 year olds and 80% of 2 year olds – now calls for testing 90% of each age group. Revisions in other sections of the plan primarily involve edits to more clearly and fully describe proposed activities.

INTRODUCTION AND EXECUTIVE SUMMARY

Focus on Prevention

Lead from household paint and other sources can poison young children. Children with elevated levels of lead in their blood are at risk for learning and behavioral problems, reduced intelligence and other serious health effects. Research shows that these problems may persist long after a child's blood lead level is reduced and that the damage may be permanent.

Preventing exposure to lead is the only effective way to ensure that children do not suffer long-term consequences of lead poisoning. Prevention requires reducing the sources of lead in the environment and/or protecting children from exposure to those sources.

New York City (NYC) has made great strides in reducing the number of childhood lead poisoning cases; since 1995 there has been an 82% decline in the number of NYC children less than 6 years of age who are newly identified each year with elevated blood lead levels (BLLs).^{1,2} Despite this progress, however, 3,490 NYC children were identified with elevated BLLs in 2003. Thus, lead poisoning remains an important public health problem.

By developing this comprehensive lead poisoning prevention plan, NYC is participating in the national effort to eliminate childhood lead poisoning as a public health problem by 2010. Statistical analysis using historical data on lead poisoning in NYC predicts that by December 31, 2010 about 900 children less than 6 years of age will be newly identified with elevated BLLs. Reducing that number to zero will require creative prevention strategies that coordinate and leverage resources and that target interventions to communities and populations at greatest risk. It also will require increased collaboration among government and non-government organizations involved with maternal and child health, environmental health, housing and housing finance.

This plan describes the activities that will be undertaken by the NYC Department of Health and Mental Hygiene (DOHMH) and collaborating organizations and agencies in order to meet the goals and measurable objectives established in the plan. Some activities will be completed in the first and second year of the plan and others are expected to continue through 2010 and beyond.

¹ The Centers for Disease Control and Prevention (CDC) defines an elevated blood lead level (BLL) as greater than or equal to 10 micrograms of lead per deciliter of blood ($\geq 10\mu\text{g/dL}$). The New York City Health Code defines lead poisoning as a blood lead level $\geq 10\mu\text{g/dL}$. (See 24 RCNY §11.03)

² Unless otherwise stated, this document reports data on children up to 6 years of age. This age group is the focus of the efforts to eliminate childhood lead poisoning that are detailed in this plan. Data provided in the 2001, 2002 and 2003 annual reports of the DOHMH LPPP, on the other hand, includes children up to 18 years of age. The larger age range is appropriate for the annual reports because LPPP provides services for lead poisoned children from 0 to 18 years of age.

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It is anticipated that the plan will be modified over time to address newly identified needs, build on successful projects and phase out less productive efforts.

Challenges Ahead

While elimination of childhood lead poisoning is clearly desirable, it will be difficult to achieve. Identifying and repairing lead paint hazards in apartments that house young children can substantially reduce exposure to lead but keeping the apartments lead-safe requires ongoing maintenance using appropriate work practices. Efforts to provide an adequate supply of lead-safe housing for children are also complicated by the severe shortage of affordable housing in NYC and the 26% poverty rate among children less than 6 years of age.

Lead-based paint is not the only sources of lead exposure for NYC children. In some cases, children are exposed to lead in their country of origin and come to the United States with lead poisoning. In other cases, lead exposure in the US occurs through the use of imported products that contain lead. The plan includes activities to educate families about such hazards but it is difficult to change behavior when cultural traditions support continued use of familiar products. Prenatal exposure -- another source of exposure to lead -- also cannot be completely eliminated in the immediate future because some women (both native and foreign-born) carry stores of lead in their bones from childhood exposure; those lead stores may be released into the blood stream during pregnancy and may be carried across the placenta, thereby exposing the fetus to lead.

In addition, of course, success in eliminating lead poisoning depends in part on the ability of the public and private sectors to finance the activities outlined in the plan and there is no way to assure in advance that sufficient funds will always be available. While recognizing these and other obstacles to complete elimination of lead poisoning, NYC will strive to meet the elimination goal by developing an array of strategies and activities that focus on groups at greatest risk.

To evaluate NYC's progress in achieving elimination of lead poisoning, this plan establishes three key goals and four objectives which are listed below. These goals and objectives are ambitious and, for a host of reasons (unforeseen and otherwise), may not be fully achieved by the target dates set in the plan. As with the federal elimination goal, NYC has chosen to aim high in order to foster maximum effort rather than setting goals and objectives that can easily be achieved.

GOALS AND OBJECTIVES

Goal I: Prevent exposure of children to lead paint.

Lead paint and household dust contaminated with lead are the primary sources of exposure to lead in children.

Objective IA: By December 31, 2010, identified lead paint hazards will be safely corrected in at least 21,600 apartments.

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Objective IB: Lead paint hazards will be annually assessed and safely repaired in all group day care facilities.

Goal II: Prevent exposure of children to non-paint lead sources.

Potential sources of lead exposure other than paint include imported products such as food, cosmetics, spices and traditional medicines that contain lead; imported lead-glazed pottery; lead-contaminated drinking water or soil; and exposures associated with occupations or hobbies.

Objective IIA: By December 31, 2010, reduce prenatal lead exposure and reduce maternal and child exposure to imported products that contain lead.

Goal III: Promote blood lead testing of children, especially those at high-risk for lead poisoning.

Although blood lead testing identifies children who already have elevated blood lead levels, it also contributes to prevention in several ways.

- *If a child is found to have an elevated BLL, action can be taken to protect that child from additional exposure to lead and thus prevent even more serious health consequences.*
- *If damaged lead paint is found in the home of a poisoned child and necessary repairs are ordered, the repair work may protect siblings and future occupants of the apartment against exposure to lead.*
- *Surveillance data on children with elevated blood lead levels is used to identify populations at elevated risk for lead poisoning and target them for prevention activities.*

Objective IIIA: By December 31, 2010, 90% of 1-year-old children and 90% of 2-year old children will be tested for lead poisoning.

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Part I

Childhood Lead Poisoning in New York City

Childhood Lead Poisoning in NYC

Still A Serious Public Health Problem

Childhood lead poisoning continues to be a serious public health problem in New York City (NYC). In 2003, 3,490 NYC children less than 6 years of age were newly identified with elevated blood lead levels ($\geq 10 \mu\text{g}/\text{dL}$).³ In the same year, 487 NYC children less than 6 years of age were newly identified with blood lead levels (BLLs) at or above the Environmental Intervention Blood Lead Level (EIBLL), which is the level that triggers case coordination and environmental assessment by DOHMH.⁴

Children with elevated BLLs are at risk for learning and behavioral problems, reduced intelligence and other serious health effects. Recent research has indicated that there are harmful effects even at blood lead levels below $10 \mu\text{g}/\text{dL}$.⁵ Research also suggests that the adverse effects on intelligence and behavior may persist long after a child's BLL is reduced and, indeed, may be irreversible.⁶

Preventing exposure to lead is the only effective way to protect children from the long-term consequences of lead poisoning. Prevention requires reducing the sources of lead in the environment and/or protecting children from exposure to those sources.

While emphasizing prevention of lead poisoning, DOHMH also promotes blood lead testing of young children in order to identify those with elevated BLLs. Early detection of these children is essential so they can be protected against additional exposure to lead, exposure that could result in increasingly serious health effects.

³ See footnotes 1 and 2.

⁴ As of August 2, 2004, the EIBLL is a venous BLL $\geq 15 \mu\text{g}/\text{dL}$. Previously, the EIBLL was one venous BLL $\geq 20 \mu\text{g}/\text{dL}$ or two BLLs of $15\text{-}19 \mu\text{g}/\text{dL}$, taken at least 3 months apart.

⁵ Schwartz J. Low-level lead exposure and children's IQ: A meta-analysis and search for a threshold. *Environ Research*. 1994; 65:42-55; Lanphear BP, Dietrich K, Auinger P, Cox C. Cognitive deficits associated with blood lead concentrations $< 10 \text{ mcg}/\text{dL}$ in US children and adolescents. *Public Health Reports*. 2000; 115:521-29; Canfield RL, Henderson CR Jr., Cory-Slechta DA, Cox C, Jusko TA, Lanphear BP. Intellectual impairment in children with blood lead concentrations below $10 \mu\text{g}$ per deciliter. *N Engl J Med* 2003; 348:1517-1526. See also Centers for Disease Control and Prevention *Managing Elevated Blood Lead Levels Among Young Children: Recommendations from the Advisory Committee on Childhood Lead Poisoning Prevention*. Atlanta GA: Centers for Disease Control and Prevention, 2002.

⁶ Needleman HL, Schell A, Bellinger D, Leviton A, Allred E. The long-term effects of exposure to low doses of lead in childhood: an 11-year follow-up report. *N Engl J Med*. 1990;322:83-88; White RF, Diamond R, Proctor S, Morey C, Hu H. Residual cognitive deficits 50 years after lead poisoning during childhood. *Br J Ind Med* 1993;50:613-622; Tong S, Baghurst PA, Sawyer MG, Burn J, McMichael AJ. Declining blood lead levels and changes in cognitive functioning during childhood: the Port Pirie Cohort Study. *JAMA* 1998; 280:1915-1919; Stokes, L, Letz R, Gerr F, et al. Neurotoxicity in young adults 20 years after childhood exposure to lead: The Bunker Hill experience. *Occup Environ Med* .1998; 55: 507-516.

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Progress in Preventing Childhood Lead Poisoning

Over the last three decades, New York City has made dramatic progress in preventing childhood lead poisoning. Both the number and severity of lead poisoning cases have decreased substantially. From 1995 through 2003, the number of NYC children (less than 6 years of age) newly identified each year with elevated BLLs ($\geq 10 \mu\text{g}/\text{dL}$) decreased 82%, from 19,541 children to 3,490 children. Only 8 children less than 18 years of age were newly identified with BLLs $\geq 60 \mu\text{g}/\text{dL}$ in 2003 as compared with 2,679 children in 1970; of the 8 children, 7 were less than 6 years of age.

Glossary

Blood Lead Level (BLL) – The concentration of lead in the blood, measured in micrograms (μg) of lead per deciliter (dL) of blood.

Elevated BLL – A blood lead level equal to or greater than $10\mu\text{g}/\text{dL}$.

Environmental Intervention Blood Lead Level (EIBLL) – The blood lead level at which DOHMH provides environmental intervention services for poisoned children. As of August 2, 2004, the EIBLL is a venous BLL $\geq 15 \mu\text{g}/\text{dL}$. Previously, the EIBLL was one venous BLL $\geq 20\mu\text{g}/\text{dL}$ or two BLLs of $15\text{-}19\mu\text{g}/\text{dL}$, taken at least 3 months apart.

This progress is particularly striking given the large stock of older housing units in NYC. More than 2 million dwelling units were built before 1960 – the year NYC banned the interior, residential use of lead paint – and many of them are in deteriorated condition. Many property owners, particularly in low-income communities, have been delinquent in their responsibilities or have not had sufficient revenue to support the costs of proper maintenance and repair. In addition, much of the public -- including parents, property owners, and health care providers -- may be unaware of lead paint hazards and of the steps necessary to prevent lead poisoning. Finally, with the large immigrant population in NYC, exposures to lead prior to immigrating to the US are of increasing concern as are continued exposures in the US from sources such as imported folk remedies, cosmetics, food and spices.

Declines in BLLs over the past three decades can be attributed largely to government regulations that banned the use of lead in gasoline, household paint, drinking water pipes, lead solder for food cans and other consumer products. Abatement and remediation of lead-based paint hazards in housing and increased public awareness of lead hazards have also contributed to lowering BLLs.

NYC has long played a leadership role in lead poisoning prevention. The city banned the use of lead-based paint in residential buildings eighteen years before the 1978 federal ban took effect. In 1982, NYC adopted one of the first laws in the nation to require building owners to address lead paint hazards in apartments of young children before the children were poisoned. The law was replaced with new provisions in 1999, and again in 2004, but its focus on preventive repairs has remained.

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The Continuing Challenge

Despite the dramatic progress just described, lead poisoning continues to disproportionately affect young children living in the most economically disadvantaged neighborhoods in the city. Approximately half of the children newly identified with EIBLLs in 2003 lived in just 10 of 42 neighborhoods in NYC.⁷ In those 10 neighborhoods, 33% of the children live below the poverty line. Reducing lead poisoning in low-income communities where lead poisoning has remained a persistent problem is the highest priority of this prevention plan.

The burden of lead poisoning also continues to fall disproportionately on children of color. According to the 2000 US Census survey, the population in NYC, less than 6 years of age, was 35% Hispanic, 27% African-American, 9% Asian and 24% White. By contrast, of the 487 children newly identified with EIBLLs in 2003, 38% were Hispanic, 33% were African-American, 17% were Asian and only 10% were White.⁸ Children residing in Brooklyn also are disproportionately affected by lead poisoning; 34% of children in NYC live in Brooklyn but 43% of children newly identified with EIBLLs in 2003 were Brooklyn residents.

While this plan emphasizes prevention of lead poisoning through education and action to reduce sources of lead exposure in the environment, it also includes activities to promote identification -- through blood lead testing -- of children whose BLLs are already elevated. Early identification is essential so children with elevated BLLs can be protected against additional exposure. Abatement of lead paint hazards in the apartment of a lead-poisoned child also contributes to lead poisoning prevention for the community as a whole by, for example, protecting siblings and future occupants against exposure to lead paint.

New York State (NYS) law requires that every child have a blood lead test at age 1 and again at age 2. It also requires that health care providers continue to test children up to their 6th birthday if an annual risk assessment indicates that they may be exposed to lead. While NYC has one of the highest blood lead testing rates in the nation --in 2003, 84% of children were tested at least once before age 3-- only 30% of NYC were tested at both ages 1 and 2 as required by NYS law.⁹

Sources of Childhood Exposure to Lead

Lead paint

Lead paint and lead dust in housing remain the primary sources of childhood lead poisoning in NYC. In 2003, DOHMH found deteriorating or peeling paint in the homes or supplementary addresses of two thirds of children with EIBLLs.

Homes built before the 1960 NYC ban on residential use of lead paint still contain lead in older layers of paint. The presence of lead-based paint can become a hazard when:

⁷ The boundaries of the “neighborhoods” referred to here follow the map established by the United Hospital Fund which has aggregated contiguous NYC Zip codes into 42 neighborhoods for use in data analysis.

⁸ “Other” or “unknown” ethnicity was reported for 5% of NYC population less than 6 years of age and for 2 % of children with EIBLLs.

⁹ In 2003, 66% of one year olds and 56% of two year olds were tested for lead poisoning.

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- Aging paint peels or flakes, depositing lead dust on floors, windowsills, and other surfaces in the home.
- Paint is damaged by water leaks or by friction on windows or doors.
- Unsafe repair or renovation work on painted surfaces creates lead dust that can contaminate the work area and the rest of the home.

Children less than 3 years of age are at greatest risk for exposure to lead paint. Their normal hand-to-mouth behavior can result in ingestion of lead, if their hands, toys, bottles and pacifiers are contaminated with lead dust. They are also more vulnerable to adverse health effects than older children and adults for several reasons. The percent of ingested lead absorbed in the gastrointestinal tract is substantially higher in young children. In addition, the neurotoxic effects of elevated BLLs are greatest for the youngest children whose brains and bodies are undergoing rapid development.¹⁰

Poverty contributes to the risk of lead poisoning for children. Because poverty limits a family's housing choices, low-income families often reside in older, deteriorated housing. Nationally, among children 1- 5 years of age living in older housing, those in low-income families were four times more likely to have blood lead levels ≥ 10 ug/dL than children in middle-income households.¹¹ Children of color are also disproportionately affected by lead poisoning, both nationally and in NYC.¹²

Non-Paint Sources

Although lead paint and dust are still the main source of lead poisoning in NYC children, a growing portion of cases may be associated with exposure to non-paint lead sources. Between 1995 and 2003, the percent of children (less than 6 years of age) with EIBLLs for whom no lead paint hazards were identified rose from 25% to 32%.

Recognized non-paint lead sources include imported food, spices, cosmetics and folk remedies that are sometimes contaminated with lead, as well as imported lead-glazed pottery that is used to prepare or serve food. Foreign-born families are more likely to use these products. Families who recently immigrated to the US also may have been exposed to lead in their country of origin from leaded gasoline and/or industrial emissions.

Other potential lead sources include drinking water or soil contaminated with lead and hobbies and jobs of family members. Children may also sustain prenatal exposure to lead which may be associated with the same type of cognitive and developmental delays reported in young children exposed to lead. Controlling these exposures often requires different strategies than those employed for preventing exposure to residential lead paint.

¹⁰ Goldstein GW. Lead poisoning and brain cell function. *Environ Health Perspect* 1990;89:91-4; Ziegler EE, Edwards BB, Jensen RL, Mahaffey KR, Fomon SJ. Absorption and retention of lead by infants. *Pediatr Res.* 1979; 12:29-34.

¹¹ Pirkle JL, Kaufmann RB, Brody DJ, Hickman T, Gunter EW, Paschal DC. Exposure of the US population to lead, 1991-1994. *Environ Health Perspect* 1998; 106: 745-50.

¹² See footnote 13.

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Targeting Resources to Protect Groups at Greatest Risk

In order to eliminate lead poisoning as quickly as possible, this plan targets prevention activities to neighborhoods and populations at greatest risk of exposure to lead. Those populations include: children less than 3 years of age; children of color; foreign born children; children from low-income families living in older, deteriorated housing; and children living in Brooklyn.

In 2003, of the 487 children less than 6 years of age newly identified with EIBLLs:

- 67% were less than 3 years old.
- 88% were African-American, Hispanic or Asian, even though these groups constituted 71% of the city's population in 2000.
- 11% were foreign-born as compared to 6% of all NYC children.
- More than half lived in just 10 of 42 NYC neighborhoods; one third of the children residing in those neighborhoods live in poverty.
- 43% lived in Brooklyn, as compared with 34% of NYC children as a whole.

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Part II

The New York City Plan To Eliminate Childhood Lead Poisoning

The New York City Plan To Eliminate Childhood Lead Poisoning Plan

By developing this comprehensive lead poisoning prevention plan, NYC is participating in the national effort to eliminate childhood lead poisoning as a public health problem by 2010. Statistical analysis, using data on the decline in NYC lead cases in the recent past to estimate future trends, predicts that by December 31, 2010 about 900 children less than 6 years of age will be newly identified with elevated BLLs. Reducing that number to zero will require creative prevention strategies that coordinate and leverage resources and that target interventions to communities and populations at greatest risk. It also will require increased collaboration among government and non-government organizations involved with maternal and child health, environmental health, housing and housing finance.

This plan describes the activities that will be undertaken by the NYC Department of Health and Mental Hygiene (DOHMH) and collaborating organizations and agencies in order to meet the goals and measurable objectives established in the plan. Some activities will be completed in the first and second year of the plan and others are expected to continue through 2010 and beyond. It is anticipated that the plan will be modified over time to address newly identified needs, build on successful projects and phase out less productive efforts

Challenges Ahead

While elimination of childhood lead poisoning is clearly desirable, it will be difficult to achieve. Identifying and repairing lead paint hazards in apartments that house young children can substantially reduce exposure to lead but keeping the apartments lead-safe requires ongoing maintenance using appropriate work practices. Efforts to provide an adequate supply of lead-safe housing for children are also complicated by the severe shortage of affordable housing in NYC and the 30% poverty rate among children less than 18 years of age.

Lead-based paint is not the only sources of lead exposure for NYC children. In some cases, individuals are exposed to lead in their country of origin and come to the United States with lead poisoning. In other cases, lead exposure occurs in the US through the use of imported products that contain lead. The plan includes activities to educate families about such hazards but it is difficult to change behavior when cultural traditions support continued use of familiar products. Prenatal exposure – another sources of lead exposure for NYC children -- also cannot be completely eliminated in the immediate future because some women (both native and foreign-born) carry stores of lead in their bones from childhood exposure; those lead stores may be released into the blood stream during pregnancy and may be carried across the placenta, thereby exposing the fetus to lead.

In addition, of course, success in eliminating lead poisoning depends in part on the ability of the public and private sector to finance the activities outlined in the plan and there is no way to assure in advance that sufficient funds will always be available. While recognizing these and

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other obstacles to complete elimination of lead poisoning, NYC will strive to meet the elimination goal by developing an array of strategies and activities that focus on groups at greatest risk.

To evaluate NYC's progress in achieving elimination of lead poisoning, this plan establishes three key goals and four objectives. These goals and objectives are ambitious and, for a host of reasons (unforeseen and otherwise) may not be fully achieved by the target dates set in the plan. As with the federal elimination goal, NYC has chosen to aim high in order to foster maximum effort rather than setting goals and objectives that can easily be achieved.

GOAL I: PREVENT EXPOSURE OF CHILDREN TO LEAD PAINT

Background

The activities described in the first section of the plan are designed to achieve Goal I by reducing exposure to lead paint in housing and day care facilities. Strategies employed include:

- Source control measures, including both mandated and voluntary action to limit lead paint hazards in the community.
- Increased education and training of workers, contractors and homeowners in order to support safe repair, renovation and lead hazard abatement.
- Expanded public education to promote awareness of lead paint hazards, effective prevention measures and landlord responsibilities under the law.

These activities are supported by a strong public policy infrastructure that includes Local Law 1 of 2004, which requires preventive lead hazard repair in apartments with young children and in day care centers, as well as the NYC Health Code which includes provisions that require lead hazard abatement for poisoned children and the use of specific safety procedures for work that disturbs lead paint. (See Appendices B, C, and D)

To have the greatest impact in reducing lead poisoning, prevention activities are targeted especially to communities and populations at greatest risk. The neighborhoods and populations are identified by using lead poisoning surveillance data, census information and information on housing conditions.

Objective IA: By December 31, 2010, identified lead paint hazards will be safely corrected in at least 21,600 apartments.¹³

¹³ The term “apartments” as used here includes the dwelling units in 1-family and 2-family homes (counted as 1 and 2 apartments, respectively) as well as apartments in buildings that have 3 or more dwelling units. The estimate that 21,600 apartments will have lead hazards corrected (or an average of 3,600 units a year over the 6 year period from 1/1/05 – 12/31/10) is based on current repair experience adjusted to anticipate the impact of Local Law 1 of 2004, recent changes in the NYC Health Code and the activities outlined in this plan. The apartments counted toward the achievement of Objective IA will include an estimated 2,500 apartments repaired from 1/1/05 – 12/31/10 as a result of abatement orders issued by DOHMH (activities 1 and 8), 18,000 apartments repaired during the same period as a result of lead violations issued to building owners by HPD (Activities 3,4, and 5); 800 apts. repaired with loans provided to bldg. owners through the HUD-funded lead hazard reduction project (Activity 6) and an estimated 300 apts. repaired through assistance to owners of 1 and 2 family homes (Activity 7) This count greatly underestimates anticipated progress in lead hazard repair because it does not include apts. repaired by bldg. owners who take the initiative to comply with the requirements of Local Law #1 without enforcement action or financial assistance from NYC government. At this time there is no way to document the number of apts. in the latter category.

Strategy A: Continue to order abatement of lead paint hazards in homes of children with Environmental Intervention Blood Lead Levels (EIBLLs)

Activity 1: Inspect apartments of children with EIBLLs for lead paint hazards and order the building owners to abate the hazards identified. (Parties responsible: DOHMH and the NYC Department of Housing Preservation and Development)

The DOHMH provides a range of services --including case coordination and environmental intervention -- for lead-poisoned children. As recommended by the Centers for Disease Control and Prevention, the type of intervention is guided by the child's BLL. For children with Environmental Intervention Blood Lead Levels,¹⁴ DOHMH inspects the child's home and supplementary addresses (such as babysitters or relatives with whom the child spends time) for possible lead exposures sources and orders the building owner to abate any lead paint hazards identified. If the building owner fails to make the repairs ordered by DOHMH, the apartment is referred to the Emergency Repair Program (ERP) at the Department of Housing Preservation and Development (HPD).

Lead hazard abatement in the apartment of a child who already has been poisoned is necessary in order to protect that child from additional exposure to lead. The repair work also helps to protect future occupants of the apartment. Thus, DOHMH counts the number of apartments repaired for EIBLL children when it measures NYC's progress in achieving Objective IA.

Strategy B: Promote compliance with Local Law 1 requirements for lead paint hazard identification and repair through education and enforcement.

Local Law 1 of 2004, New York City's new lead poisoning prevention law requires that owners of multiple dwellings (buildings with 3 or more apartments) annually identify and repair lead paint hazards in apartments with children less than 7 years of age. This requirement applies to buildings that were constructed before 1960 as well as buildings constructed between 1960 and 1978 if the owner knows the building contains lead paint. The law took effect on August 2, 2004. (See Appendices B, C, and D for a summary of the law.)

Activity 2: Develop and disseminate educational materials for building owners and tenants, targeting outreach to high-risk buildings and neighborhoods. (Parties responsible: DOHMH and HPD)

The DOHMH and HPD have developed new information materials on Local Law 1 for building owners, contractors and tenants. These materials summarize the provisions of Local Law 1 and describe the responsibilities of each party. The materials have been distributed through mass mailings to building owners, tenants associations, social service agencies and community-based organizations (CBOs). In addition, HPD and DOHMH staff distributes them when they inspect

¹⁴ See footnote 4.

apartments and when they make educational presentations in high-risk neighborhoods. The brochures also are posted on the DOHMH website: www.nyc.gov/html/doh/html/lead/lead.shtml

Activity 3: Inspect apartments in response to tenant complaints and order building owners to correct any lead-based paint violations identified. (Parties responsible: HPD)

In response to tenant complaints, HPD inspects apartments in multiple dwellings for compliance with housing maintenance regulations. Local Law 1 requires that every apartment inspection – regardless of the nature of the complaint – include an assessment for lead paint hazards if a child less than 7 years of age resides there and if the building was constructed before 1960. If lead-based paint hazards are identified, HPD requires the building owner to correct the violations. If the owner fails to make the repairs within the specified time frame, the apartment is referred to HPD’s Emergency Repair Program (ERP). ERP does the repair work and bills the owner for the cost of the repairs.

Strategy C: Proactively identify “high-risk” buildings¹⁵ and apartments for Local Law 1 inspections and other lead poisoning prevention activities.

Activity 4: Refer entire building to HPD for building-wide action whenever DOHMH identifies lead paint hazards in the apartment of a child with an Environmental Intervention Blood Lead Level. (Parties responsible: DOHMH and HPD.)

Peeling paint in one apartment often reflects poor maintenance throughout the building. Local Law 1 requires DOHMH to refer to HPD every building where DOHMH, in its investigations associated with a lead poisoned child, has identified lead paint hazards and issued a Commissioner’s Order to Abate (COTA). The building is referred to HPD for building-wide assessment to determine compliance with Local Law 1. HPD audits the building owner’s records and if it is determined that the owner has not complied with the lead hazard identification and repair requirements of Local Law 1, HPD inspects apartments in the building where a child less than 7 years of age resides. If lead hazards are identified, HPD will issue an order to remediate the lead hazards. (DOHMH retains responsibility for enforcement of the COTA ordering the building owner to abate lead hazards in the apartment of the poisoned child)

Activity 5: Proactively identify apartments with lead paint hazards by incorporating visual inspections for peeling paint into DOHMH programs that make home visits to families with young children; refer apartments with deteriorating paint to HPD for Local Law 1 inspection. (Parties responsible: DOHMH and HPD)

In order to proactively identify additional apartments with lead paint hazards before children are poisoned, the DOHMH has integrated visual lead hazard assessments into two DOHMH projects that make home visits. These projects are the Healthy Neighborhoods Program and the newborn outreach project of the DOHMH Maternal, Infant and Reproductive Health Program. When staff of these projects identify deteriorating paint in an apartment, the apartment is referred to HPD for a Local Law 1 inspection. These projects are being evaluated and, if found to be successful, will be expanded.

¹⁵ High-risk buildings are identified using the following criteria: age of the building; history of lead paint violations; history of lead poisoning cases; and percent of neighborhood residents living in poverty.

Activity 6: Continue the HUD-funded project that provides loans to eligible building owners to enable them to make lead hazard repairs. (Parties responsible: DOHMH and HPD)

With financial support from the US Department of Housing and Urban Development (HUD), HPD and DOHMH administer a lead hazard reduction program that provides forgivable loans for lead hazard repair to building owners with low-income tenants. The program targets high-risk neighborhoods. Home visits are made to each family affected by the repairs to provide information about lead poisoning prevention and blood lead testing. Education about lead paint hazards and lead-safe work practices is provided for the building owners. As of July 15, 2004, more than 1,700 units have been upgraded through this program, which started in 1995. By March 31, 2008, lead hazard repairs will be completed in at least an additional 800 apartments.

Strategy D: Promote lead paint hazard repair in 1 and 2-family homes, particularly in high-risk neighborhoods.

Activity 7: Develop and implement a plan to promote preventive lead hazard repair in 1 and 2-family homes (Parties responsible: DOHMH, HPD, and other partners)

Approximately 30% of NYC's 3.2 million apartments are located in 1 and 2-family homes but most of the provisions of Local Law 1 -- NYC's lead poisoning prevention law -- apply only to buildings with 3 or more apartments. Thus, owners of 1 and 2 family homes are not required to annually inspect apartments with young children and repair any lead hazards identified. This is a problem, given that approximately one third of lead poisoning cases in NYC that are associated with lead paint hazards occur in 1-family and 2-family homes. In 2003, for example, LPPP inspections in the homes of children (less than 18 years of age)¹⁶ newly identified with EIBLLs found lead paint hazards in 396 units; of these units 33% were located in 1 and 2-family homes.

To address this problem, DOHMH and HPD will work together to develop a plan to encourage preventive lead hazard repair in 1 and 2 family homes and to promote the use of lead-safe work practices for home renovation and repair.

Activity 8: Continue to respond to complaints of peeling paint in 1 and 2-family homes and order repairs of any hazards that are identified. (Parties responsible: DOHMH)

HPD is not required by Local Law 1 to respond to complaints of peeling paint from tenants in 1 and 2-family homes. The DOHMH responds to those complaints and uses its authority under Section 173.13 (d) (1) of the Health Code to order remediation of any lead paint hazards identified. Unlike the inspections it makes in the homes of children with EIBLLs, no evidence is required that a child has an elevated BLL in order for the inspection to take place. In 2003, DOHMH responded to complaints at 48 addresses and ordered repair of lead paint hazards identified in 28 of the units inspected.

¹⁶ Data on children up to 18 years is presented here – rather than children up to 6 – in order to count all of the apartments receiving inspection and lead hazard abatement through DOHMH environmental intervention for children with EIBLLs.

Strategy E: Increase the number of trained workers and promote the use of lead-safe work practices during lead hazard repair and other work that disturbs paint.

Activity 9: Publicize the Local Law 1 training and safety requirements by distributing brochures to building owners and contractors. (Parties responsible: DOHMH and HPD)

New brochures on Local Law 1 for building owners and contractors have been published. They include detailed information about the requirements on worker training and lead-safe work practices. These brochures will be distributed through large-scale mailings to building owners and contractors. They also will be distributed by HPD staff as part of their outreach to building owners about HPD programs. These brochures also are posted on the DOHMH website: www.nyc.gov/html/doh/html/lead/lead.html)

Activity 10: Offer classes that prepare workers and supervisors to meet the training requirements established by Local Law 1 and the NYC Health Code (Parties responsible: HPD)

Local Law 1 requires owners of pre-1960 multiple dwellings to employ workers trained in lead safe work practices if they undertake any renovation and repair work in apartments with young children or in common areas of such buildings.¹⁷ The type of training required depends on the size of the job and other factors. (See Appendix D) For some jobs, workers and supervisors must have completed an EPA approved training class and passed a test for EPA certification. For other jobs, completion of the shorter training curriculum approved by US Department of Housing and Urban Development (HUD) is sufficient.

Through its Housing Education Program, HPD offers classes to the public for EPA certification as lead abatement worker, supervisor and inspector. HPD also offers HUD training classes for building maintenance employees and shorter lead hazard awareness classes for building owners and the general public. In 2004, HPD expects to train more than 15,000 workers including HPD staff.

Activity 11: Sponsor an educational campaign on lead-safe work practices at hardware and paint stores and other community-based venues. (Parties responsible: DOHMH, HPD and community-based partners.)

In collaboration with HPD and community-based partners, DOHMH has initiated a safety campaign in hardware stores and paint stores serving high-risk neighborhoods. The target audience includes small contractors and do-it-yourselfers. Educational displays and take-home fact sheets have been developed. The stores are also encouraged to display supplies for lead-safe work (e.g. spray bottles, HEPA vacuums, plastic sheeting) together in one location and to post the warning signs now required under the NYC Health Code. These signs inform patrons that dry scraping and sanding on painted surfaces is prohibited.

¹⁷ The requirements apply to all multiple dwellings (3 or more units) built before 1960 as well as multiple dwellings constructed from 1960 to 1978 if the owner knows that the building contains lead paint. They do not apply to work that disturbs less than 2 square feet of painted surfaces.

Strategy F: Educate parents and the general public about lead paint hazards and about ways to prevent exposure to lead.

Activity 12: Continue to develop, update and translate educational materials about lead poisoning prevention. (Parties responsible: DOHMH and HPD)

Brochures, pamphlets, newsletters and other educational materials will be continuously developed, updated and translated into multiple languages including Bengali, Chinese, Haitian Creole, Spanish, and Urdu. The materials will include information about building owners' responsibilities under Local Law 1 and will publicize the 311 help line which tenants can call if their landlord fails to make lead hazard repairs. These materials will also emphasize the importance of blood lead testing for young children. The materials will be distributed through the activities described in Activity 13.

Activity 13: Continue outreach to high-risk populations through workshops, health fairs, home visits, and other community-focused activities. (Parties responsible: DOHMH and community partners)

The education unit of the LPPP will continue to (1) staff a lead poisoning hot line; (2) participate in health fairs in high-risk communities; (3) conduct workshops for parents in high-risk neighborhoods --the workshops are sponsored by community-based organizations and social service providers such as WIC, Early Head Start/Head Start, and day care centers that work with parents of young children; (4) collaborate with CBOs and social services organizations that work with immigrant populations in high-risk communities; and (5) conduct "train the trainer" workshops that teach staff of social service providers to incorporate lead poisoning prevention education into their ongoing programs. All of these activities will educate families about the importance of lead poisoning prevention (including the control of lead paint hazards) and blood lead testing.

Activity 14: Continue to promote lead paint hazard reduction through periodic, high profile educational campaigns targeted to high-risk communities. (Parties responsible: DOHMH)

DOHMH will regularly sponsor intensive educational campaigns to inform the public about ways to protect children from exposure to lead paint. Campaign messages will provide information about Local Law 1 and publicize the 311 help line while also promoting blood lead testing. The campaigns may use billboards, radio spots, and posters in subways, buses, laundromats, supermarkets, and other neighborhood settings to reach high-risk populations.

Objective IB: Lead paint hazards will be annually assessed and repaired at all group day care facilities.

Strategy A: Promote safe lead paint hazard repair in day care facilities.

Activity 15: Assist the DOHMH Bureau of Day Care to use education and enforcement to promote compliance with Local Law 1 in group day care facilities regulated by NYC. (Parties responsible: DOHMH Bureau of Day Care)

Local Law 1 applies to group day care facilities that serve 7 or more children up to 6 years of age. The operators of the facilities and the building owners are required to identify and repair lead paint hazards using safe work practices and trained workers. (See Appendix C for specific requirements.)

The DOHMH Bureau of Day Care is responsible for enforcing the day care provisions of Local Law 1. DOHMH will educate owners and operators about their Local Law 1 responsibilities, inspect group day care centers for lead paint hazards and order repairs when hazards are identified.

Activity 16: Explore new options for promoting lead paint safety in family day care facilities in NYC that are regulated by the New York State Department of Health (NYSDOH) rather than the New York City DOHMH.

The day care provisions of Local Law 1 apply only to the category of day care facilities called "group day care" which are regulated by NYC. The rules do not apply to facilities classified as "family day care" or "group family day care," which are regulated by NYS. DOHMH will seek to identify new options to promote identification and safe repair of lead paint hazards in family day care centers in collaboration with NYSDOH and the DOHMH Bureau of Day Care.

GOAL II: PREVENT EXPOSURE OF CHILDREN TO NON-PAINT LEAD SOURCES

Background

Potential sources of lead exposure other than lead paint include lead-glazed pottery and imported foods, spices, cosmetics and folk remedies contaminated with lead. These products are most often used by foreign-born families. Individuals also may come to this country with elevated BLLs, if they are emigrating from countries where lead exposure is widespread. Other potential lead sources include lead-contaminated water or soil and exposures associated with occupations or hobbies.

Although lead paint and lead dust remain the primary source of lead poisoning in NYC children, surveillance data suggest that a growing portion of EIBLL cases in NYC may not be associated with exposure to lead paint. Between 1995 and 2003, the percent of EIBLL children for whom DOHMH inspectors did not find peeling or deteriorated lead paint in their home or supplementary address (such as the home of a babysitter) rose from 25% to 32%.

Surveillance data also suggest that foreign-born children in NYC are particularly at risk for lead poisoning and that sources other than lead paint may be implicated. In 2003, 11% of the children (less than 6 years of age) identified with EIBLLs were foreign-born while only 6% of NYC children in the same age group were born abroad. Moreover, in 2003, only 55% of the foreign-born children with EIBLLs were found to have peeling or deteriorating paint in their homes or supplementary addresses as compared with 73% of US-born children with EIBLLs. The most frequently reported countries of birth among foreign-born EIBLL children were Pakistan, Mexico, Haiti, Dominican Republic, and India, in descending order.

During 2005 and 2006, activities to reduce non-paint exposure to lead will focus primarily on two issues: imported products that contain lead and prenatal exposure. In both of these areas, DOHMH will develop new initiatives. Thus, the first step in both cases will be the development of a plan in collaboration with partners outside the agency that have relevant expertise. DOHMH also has begun to work with NYC Department of Environmental Protection, which is responsible for monitoring the lead content of the city's drinking water, to review possible new areas for collaboration.

Imported Products

Increased concern about exposure to lead in imported products that are used by immigrant groups reflects, in part, the rapid increase in immigration to the NYC over the last decade. In 2000, 36% of New Yorkers were foreign-born as compared with 28% in 1990.

Use of folk remedies and cosmetics that contain lead are often rooted in long-standing cultural traditions, as is the use of lead-glazed pottery in food preparation. Messages discouraging their

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use will have to be presented in a manner that is respectful to those traditions and outreach may be most effective if respected community leaders present the messages. Thus, DOHMH plans to collaborate with representatives of the communities at risk in developing culturally specific outreach and educational activities.

Public education about the risk of lead exposure associated with some imported products is critical but not sufficient. Thus, the DOHMH is collaborating with city, state and federal agencies to limit the sale and distribution of products that contain lead.

While it is important to focus attention on the potential role of imported products and cultural traditions in lead poisoning cases among immigrant children, lead paint continues to be an important exposure source in immigrant populations. As noted above, DOHMH found lead paint hazards in the homes or supplementary addresses of nearly half of the foreign-born children with EIBLLs.

Prenatal Exposure to Lead

Prenatal exposure is another route through which some children are exposed to lead. If a pregnant woman has lead in her blood, the lead can cross the placenta to the fetus. Research shows that an elevated BLL in the newborn may be associated with post-natal developmental delays.¹⁸ In addition, lead poisoning in pregnant women may be associated with spontaneous abortion, stillbirth, pre-term delivery, and pregnancy-related hypertension.¹⁹

Elevated maternal blood lead levels may be the result of recent exposure to lead or may reflect exposure earlier in life. Research indicates that women who received substantial exposure to lead as children may have bone stores of lead that will be mobilized during pregnancy, resulting in exposure of the fetus to elevated maternal blood lead.²⁰ This suggests that any increase in emigration from countries where individuals are likely to be exposed to lead may result in an increase in the number of children with prenatal exposure to lead.

Protecting children from prenatal exposure to lead will require:

- Educating prenatal health care providers about the importance of complying with NY State requirements that they:
 1. Provide anticipatory guidance on lead poisoning prevention to all pregnant women.
 2. Assess, at the first prenatal visit, the woman's risk of high-dose lead exposure.
 3. Test, or refer for blood lead testing, pregnant women found to be at risk.

¹⁸ Baghurst PA, Robertson EF, Michael AJ, et al. The Port Pirie cohort study: lead effects on pregnancy outcome and early childhood development. *Neurotoxicology* 1987;8:395-402.

¹⁹ Nordstrom S, Beckman L and Nordensen I. Occupational and environmental risks in and around a smelter in northern Sweden: Spontaneous abortion among female employees and decreased birth weight in their offspring. *Hereditas* 1979; (90):291-296; Min YI, Correa-Villasnor A, Stewart PA, Parents' occupational lead exposure and low birth weight. *Amer Jour Indus Med* 1996; 30(05):569-578.

²⁰ Gulson BL, Jameson CW, Mahaffey KR, Mizon KJ, Korsch MJ and G Vimpani, Pregnancy increases mobilizations of lead from maternal skeleton, *J Lab Clin Med* 1997; 130:51-62.

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4. Provide pregnant women who have a BLL ≥ 10 $\mu\text{g/dL}$ with risk reduction counseling and refer those with possible occupational exposure to an occupational health clinic.
- Providing prenatal care providers with guidelines for medical management of pregnant women with elevated BLLs in order to minimize exposure to the fetus.
 - Educating women of child-bearing age about ways to avoid exposure to lead and about the importance of blood lead testing at the first prenatal visit

Since February 2001, LPPP has been providing services for pregnant women with elevated BLLs and for their children.²¹ From 2001 through 2003, of the 121 pregnant women in LPPP's caseload:

- 96% were foreign-born; (by comparison, in 2002, 52% of all NYC women giving birth were foreign-born)
- 64% were born in Mexico.
- 70% had immigrated to the US within the 5 years prior to their initial blood test.
- 22% percent reported eating dirt, clay or crushed pottery during pregnancy.

Objective II A: By December 31, 2010, reduce prenatal exposure to lead and reduce maternal and child exposure to imported products that contain lead.²²

Strategy A: Increase DOHMH's ability to identify non-paint sources of lead exposure and to assess their impact on NYC children.

Activity 17: Continue to gather and evaluate information on non-paint sources of exposure to lead. (Parties responsible: DOHMH)

DOHMH will continue to gather local, national and international data on non-paint exposure to lead and utilize this information to guide its primary prevention programs. Information gathering activities include:

- Regularly updating LPPP's database of scientific literature on lead poisoning and non-paint exposure sources.
- Exchanging information about non-paint sources and prevention strategies with city and state departments of health throughout the US.
- Implementing the use of an enhanced risk assessment protocol for children with EIBLLs; this will result in more systematic collection of information about non-paint lead exposure sources in the child's environment.

²¹ Prior to an August 2, 2004 change in the health code, a BLL ≥ 20 $\mu\text{g/dL}$ in a pregnant woman was considered elevated; now the intervention level is a BLL ≥ 15 $\mu\text{g/dL}$.

²² Progress in reducing these exposures will be assessed through quantitative and qualitative measures focusing on the hazards targeted for priority intervention: imported products that contain lead and prenatal lead exposures. Once specific interventions for Activities 18-20 have been developed, appropriate progress measures will be selected and incorporated in the evaluation plan.

Strategy B: Educate the general public and at-risk immigrant groups about products such as food, spices, pottery, and folk remedies that may contain lead.

Activity 18: Develop and implement an education and outreach plan targeted to one or more immigrant groups that are at risk for lead exposure from lead-contaminated products. (Parties responsible: DOHMH and community-based partners)

In order to develop outreach strategies and educational materials that are culturally appropriate for each of the affected immigrant groups, DOHMH will work with members of the targeted communities to understand the cultural traditions that may encourage use of the product, to identify the best ways to distribute information in the community, and to develop educational materials in the group's language. The plan also will include outreach to pediatric and prenatal health care providers and social service providers who work with children and women of childbearing ages.

Strategy C: Explore options for reducing the availability of lead-containing products.

Activity 19: Collaborate with other government agencies to limit distribution and sale of imported products that contain lead. (Parties responsible: DOHMH, NYS Department of Agriculture and Markets, US Food and Drug Administration, Centers for Disease Control and Prevention)

DOHMH will continue to work with local, state and federal government agencies that have responsibility for the safety of domestic and imported products sold in the United States (including the Food and Drug Administration and the NY State Department of Agriculture and Markets) as well as with CDC and other city and state health departments, to identify legal and educational strategies to protect consumers from products that contain lead.

Strategy D: Reduce prenatal exposure to lead through outreach to medical providers and women at risk.

Activity 20: Develop a plan for educating health care providers and women at risk about the hazards of prenatal exposure to lead and the importance of blood lead testing for women at risk for lead exposure. (DOHMH)

The plan will include activities designed to educate prenatal and pediatric health care providers about NYS requirements for risk assessment, blood lead testing and risk reduction education for pregnant women. (See Appendix E) These activities also will publicize the recommendations, developed by an expert panel convened by DOHMH, for appropriate medical management of pregnant women with elevated BLLs. The plan will also include outreach to women of childbearing age to educate them about ways to avoid exposure to lead before and during pregnancy. This outreach will be targeted to immigrant communities since DOHMH surveillance

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data shows that 96% of pregnant women with elevated BLLs during the period 2001 to 2003 were foreign-born.

Strategy E: Protect infants and children from exposure to lead in drinking water by collaborating with the NYC Department of Environmental Protection (DEP).

Activity 21: Collaborate with DEP to update educational materials and identify new opportunities for public education and prevention of exposure to lead. (Parties responsible: DOHMH and DEP)

Current activities by DEP to protect the public from exposure to lead in drinking water include water testing -- both system-wide and in response to individual requests -- and distribution of educational materials that provide information on ways to minimize exposure to lead in water. DOHMH will work with DEP to update educational materials and identify new opportunities for public education and prevention of exposure to lead in drinking water.

**GOAL III: PROMOTE BLOOD LEAD TESTING OF CHILDREN, ESPECIALLY
THOSE AT HIGH-RISK FOR LEAD POISONING**

Background

Although blood lead testing identifies children who already have elevated blood lead levels, it also contributes to prevention of lead poisoning in several ways.

- Action to protect children with elevated BLLs from additional lead exposure prevents increasingly serious health consequences.
- Repair of lead paint hazards in the homes of poisoned children may protect siblings and future occupants of the apartment against exposure to lead.
- Surveillance data on children with elevated blood lead levels is used to target prevention activities to high-risk communities.

For these reasons, activities to promote blood lead testing are an important component of a comprehensive plan to prevent lead poisoning.

New York State law requires that primary health care providers:

- Assess annually every child from 6 months up to 6 years of age for risk of exposure to lead. (The provider can assess the risk by administering a risk assessment questionnaire.)
- Test every child found to be at risk.
- Test every child for lead poisoning at both 1 and 2 years of age, regardless of the results of the risk assessment.

Medicaid has similar requirements. Every child enrolled in Medicaid must be tested at 1 and 2 years of age. Children up to 6 years of age must be tested if there is no record of a previous blood lead test.

In 2003, 66% of 1-year olds and 56% of 2-year olds in NYC were tested for lead poisoning. Among the cohort of children born in 2000 and turning 3 years old in 2003, an estimated 84% were tested at least once by their 3rd birthday – a major achievement – but only 30% had been tested at both ages 1 and 2, as the law requires.

In order to increase the number of children tested at 1 and 2 years of age for lead poisoning, particularly in populations at risk for lead exposure, DOHMH targets its outreach work to parents and doctors in neighborhoods with older, deteriorated housing, substantial low income populations, and a history of higher than average lead poisoning case rates. In addition, DOHMH has developed programs that are designed to increase testing of children enrolled in Medicaid and children enrolled in the DOHMH Early Intervention Program which provides services for children with developmental delays.

Objective IIIA: By 2010, 90% of 1-year old children and 90% of 2-year old children will be tested for lead poisoning.²³

Strategy A: Educate health care providers, especially those serving high risk populations, about NY State blood lead testing regulations and the importance of testing children at 1 and 2 years of age.

Activity 22: Send educational material to health care providers in NYC at least annually. (Parties responsible: DOHMH)

Copies of the September 2004 issue of the DOHMH City Health Information (CHI) newsletter—which focuses exclusively on lead poisoning prevention and medical management – have been mailed and distributed to more than 40,000 medical providers and health care facilities in NYC. This is the third CHI since 1995 to focus on lead poisoning prevention. DOHMH plans to send updates to the CHI and/or other educational materials on lead poisoning to health care providers at least once a year. Educational materials also will be distributed through projects (such as Activity 23) that involve direct contact with medical providers and health care institutions.

Activity 23: Visit medical practices and provider groups in high-risk neighborhoods to promote lead testing, risk assessment and appropriate medical management of lead-poisoned children. (Parties responsible: DOHMH)

On-site visits to medical providers will include chart reviews to evaluate compliance with NYS testing requirements, review of in-house protocols to determine whether they adequately support such compliance, and consultation with the staff to identify practical strategies for improving performance with regard to blood lead testing, reporting and follow-up. Review of immunization records will be conducted simultaneously.

Activity 24: Promote use of the new Online Registry which enables medical providers to determine if their pediatric patients have received all required immunizations and lead tests. (Parties responsible: DOHMH)

Through the Online Registry, which was launched on March 14, 2004 and contains mechanisms to safeguard confidential information, medical providers can obtain a record of their pediatric patients' vaccines and blood lead test results. Medical providers also can obtain recommendations for follow-up testing of their patients and get educational materials such as brochures to distribute to parents. Providers gain access to this information by registering and obtaining a password. LPPP and the DOHMH Immunization Program will collaborate to promote use of the registry among medical providers.

Strategy B. Educate families with young children about the importance of blood lead testing, especially at 1 and 2-years of age.

²³ As noted earlier, 66 % of 1-year olds and 56% of 2-year olds were tested were tested in 2003.

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Activity 25: Continue to promote testing of children at 1 and 2-years of age through periodic, high profile educational campaigns targeted to high-risk communities. (Parties responsible: DOHMH)

See Activity 14

Activity 26: Continue outreach about blood lead testing to high-risk populations through workshops, health fairs, home visits and other community-focused activities. (Parties responsible: DOHMH, CBOs)

See Activity 13

Activity 27: Continue to send information on lead poisoning prevention and testing to parents of every newborn. (Parties responsible: DOHMH)

The health promotion brochure sent by DOHMH to the parents of every newborn along with the child's birth certificate includes a newly updated section on lead poisoning prevention and blood lead testing. The DOHMH will regularly review the content of the brochure to determine if any additional updates are necessary.

Activity 28: Continue to send a letter about blood lead testing to every family with young children living in an apartment where HPD has identified lead paint violations. (Parties responsible: DOHMH and HPD)

HPD provides DOHMH with access to the names and address of families with children less than 7 years of age who live in apartments where HPD has issued lead paint violations. The DOHMH sends a letter to each family which recommends that the children be tested for lead poisoning and provides information on lead poisoning prevention.

Strategy C. Increase testing of children from low-income families by collaborating with Medicaid Managed Care Organizations (MMCOS)

Activity 29: Continue the data-matching project with Medicaid Managed Care Organizations (MMCOS) to identify children who have not been tested and to encourage testing by their medical providers. (Parties responsible: DOHMH and MMCOS)

Over the last year, with the assistance of the DOHMH Division of Health Care Access and Improvement, LPPP has developed data-matching agreements with the 17 MMCOS that provide services for Medicaid eligible children under contract with NYC. About 70% of NYC's Medicaid children are enrolled in MMCOS. In the data-matching project, LPPP uses its database of blood lead test results, in conjunction with names of children who are enrolled with the MMCOS affiliated providers, to identify children who have not received blood lead tests. The MMCOS agreed, in a memorandum of understanding (MOU) with the DOHMH, to follow-up by contacting the medical providers of children who have not been tested in order to encourage them to order the necessary blood lead tests. The MOU also requires that the MMCOS send a letter to the parents of children who have not been tested urging them to schedule an appointment for a blood lead test as soon as possible.

Strategy D: Increase testing of children with developmental delays by collaborating with the DOHMH Early Intervention Program.

Activity 30: Continue collaboration between LPPP and DOHMH Early Intervention Program in order to increase testing of children enrolled in the program. (Parties responsible: DOHMH)

The DOHMH Early Intervention (EI) Program provides services to children less than 3 years of age with developmental delays or with mental or physical conditions that are likely to result in such delays. The data-matching project with the LPPP identifies children enrolled in EI who are over 15 months of age and have not received a blood lead test within the past year. Follow-up with contracted service coordinators and parents is conducted by EI to promote testing of children identified as not tested. In addition, EI is working on a plan to require proof of a lead as part of the physical required for each child before services are authorized.

Evaluation Plan

The DOHMH has developed an evaluation plan for assessing the implementation and impact of the NYC Comprehensive Plan to Eliminate Childhood Lead Poisoning. The evaluation has two primary goals:

- 1) To measure NYC's progress in eliminating childhood lead poisoning.
- 2) To provide ongoing feedback about the implementation and effectiveness of plan activities.

Evaluation of Progress in Eliminating Childhood Lead Poisoning

To measure progress in the elimination of childhood lead poisoning, the number and rate of children newly identified with elevated blood lead levels and Environmental Intervention Blood Lead Levels (EIBLLs) will be tracked on regular basis. These measures will be calculated for the entire city as well as for high-risk geographic areas (for example, by borough and neighborhoods) and population groups (for example, children less than 3 years of age and children enrolled in Medicaid). This will help DOHMH assess the progress we are making toward the elimination goal, particularly in persistently high-risk populations that are targeted in the plan activities.

Evaluation of Implementation of Plan Activities

In order to assess the contribution of the comprehensive lead poisoning prevention plan to the elimination of lead poisoning, it is important to assess progress made towards fulfillment of the plan's more proximal outcomes as well as monitor the plan's implementation. The evaluation seeks to learn about the effectiveness of plan activities in meeting four objectives; those objectives are, in turn, designed to measure progress in achieving the three key goals established in the plan. Process evaluation measures developed for each plan activity will be used to track progress in, and identify barriers to, implementing planned activities.

Goal I: Reduce exposure of children to lead paint

Progress in reducing exposure to lead paint hazards will be measured by documenting the number of housing units and day care units in which lead paint hazards have been identified and corrected through regulatory action and other strategies.

Examples of process evaluation measures include the number of addresses where lead paint hazards have been abated for children with EIBLLs, the number of dwelling units where lead paint hazards identified by HPD has been corrected, and the number of dwelling units with lead paint hazard repaired through HUD-funded forgivable loans.

Goal II: Reduce exposure to non-paint sources of lead

Progress in reducing exposure to non-paint hazards will be assessed through quantitative and qualitative measures focusing particularly on the hazards targeted for priority intervention: (1) imported products that contain lead and (2) prenatal lead exposure. For both of these hazards, as

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noted in the plan, DOHMH will be developing intervention plans that target high-risk populations.

Once specific activities have been selected for incorporation in the intervention plans, appropriate evaluation measures will be developed. Process evaluation measures may include data on non-paint sources of exposure for children with EIBLLs as well as documentation of activities undertaken to limit the distribution and sale of lead-contaminated products in NYC neighborhoods and activities to educate families about the hazards associated with these products.

Goal III: Promote blood lead testing of children, especially those at high risk for lead poisoning

Success in promoting early identification of children with elevated blood lead levels will be measured by documenting the number and percent of children receiving blood lead tests, especially in 3 high-risk groups: (1) 1-year and 2-year-old children, (2) Medicaid-enrolled children and (3) children receiving Early Intervention services.

Examples of process evaluation measures include the number of patient searches conducted using the web-based integrated lead and immunization databases, number of children enrolled in Medicaid managed care organizations who are identified as lacking appropriate testing and number and proportion of those receiving testing after follow-up action.

APPENDICES

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Appendix B: Local Law 1 - Lead Paint Hazard Identification and Repair

The purpose of Local Law 1 is to prevent lead poisoning by protecting children from exposure to lead paint hazards in housing and day care facilities.

Local Law 1 applies to:

- Residential buildings that contain 3 or more apartments and were built before 1960.
- Residential buildings with 3 or more apartments that were built between 1960 and 1978 if the building owner knows that the building contains lead paint.
- Group day care facilities. (*See Appendix C*)

Owners of residential buildings covered by the law are required to identify and safely repair lead paint hazards:

- In apartments inhabited by children less than 7 years of age. (Building owners are required to inspect these apartments at least once a year; they also must inspect if the tenant reports lead hazards.)
- In common areas like lobby and halls.
- In all apartments at turnover (when a tenant moves out). (*Lead hazard repair at turnover also is required in rental units in 1 and 2 family homes that were built before 1960.*)

Lead paint hazards, as defined by the law, include:

- Peeling paint.
- Deteriorated sub-surfaces, including crumbling plaster and broken wood frames or moldings.
- Friction surfaces, including painted doors and windows that bind or rub together.
- Impact surfaces, including painted baseboards, moldings, and doors that show evidence of damage by repeated, sudden force.
- Chewable surfaces, including all painted windowsills and other surfaces that may have been chewed by children.

To correct lead paint violations, owners may:

- Wet-scrape peeling paint and repaint.
- Remove lead paint using safe methods.
- Enclose the lead-painted surface by installing sheetrock or another rigid barrier.
- Remove the lead painted components and install new ones. (Example: replacing a window)
- Seal lead paint with approved “encapsulants” which are durable, long-lasting coatings used to contain paint.

Anyone disturbing more than 2 square feet of painted surfaces in the course of renovation or lead hazard repairs is required by Local Law 1 to comply with certain training requirements and safety procedures. (*See Appendix D*)

Complaints to the Department of Housing Preservation and Development

If a tenant in an apartment building calls 311 to report peeling paint or other housing code violations such as lack of heat or hot water, HPD will send an inspector. If the inspector finds lead paint hazards – and if the apartment is located in a pre-1960 building and houses a child less than 7 years of age – HPD will order the building owner to repair the hazards. If the building owner fails to comply with the order within the mandated time frames, HPD will make the repairs and place a lien on the building in order to recover its costs.

Appendix C: Local Law 1 – Day Care Facilities

Local Law 1 applies to group day care facilities in New York City that serve 7 or more children up to 6 years of age. *

To comply with Local Law 1, operators and owners of group day care facilities must:

- Presume that all painted surfaces in buildings built before 1978 contain lead paint.
- Complete and submit an annual survey that includes an inspection of lead-based paint hazards.
- Remediate identified lead-based paint hazards immediately, using trained workers and safe work practices.

Local Law 1 also requires that all equipment that is painted must be painted with lead-free paint.

Enforcement of Local Law 1 in day care facilities

The Department of Health and Mental Hygiene is responsible for enforcing the day care provisions of Local Law 1. If lead-based paint hazards are found during DOHMH inspections, the day care operator and the owner of the facility will be ordered to make the necessary repairs. If the operator and owner do not correct lead-based paint hazards in the mandated time frame, they may be subject to:

- Monetary penalties.
- Closure of day care facility.
- A lien on the property for the costs incurred by the City to remediate.

Anyone making lead hazard repairs is required by Local Law 1 to comply with certain training requirements and safety procedures. (See Appendix D)

Local Law 1 requires that all records relating to the inspection and remediation of lead-based paint hazards must be kept for 10 years and transferred to any subsequent owner.

* Local Law #1 does not apply to Family Day Care and Group Family Day Care facilities which are regulated by New York State law, rather than by NYC law. The NYC Plan to Eliminate Childhood Lead Poisoning includes activities to promote lead hazard repair in those facilities. (See Activity 16).

Appendix D: Local Law 1 - Training and Work Practices

Local Law 1 requires that building owners employ workers who have completed HUD or EPA approved training and follow specified safety procedures for all renovation and repair work (such as fixing plumbing, repainting a room or replacing windows) that disturbs more than 2 square feet of painted surfaces.

These training and work practice requirements apply to work that takes place (a) in the apartment of a child less than 7 years of age which is located in a pre-1960 multiple dwelling or (b) in common areas (such as lobby or hallways) in such buildings if there are children in residence. The requirements also apply to buildings constructed from 1960 to 1978 if the owner knows that the building contains lead paint. The specific procedures that must be followed and the type of training required vary depending on whether the work was undertaken voluntarily or was ordered by HPD. Training and work practice requirements also vary with the size of the job.

- ❖ **For jobs that disturb at least 2 square feet of painted surfaces but less than 100 square feet, the required safety procedures include:**
 - Use workers who are trained in lead safe work practices
 - Prepare the work area by washing or using a HEPA vacuum to clean floors, furniture etc. and then remove cleaned items from the work area or cover them with plastic sheeting.
 - Seal doorways, windows, vents and floors with plastic sheeting.
 - Perform daily and final clean-up as specified in regulations.
 - Have a 3rd party –independent of building owner and contractor -- take clearance dust wipe samples to determine if dust levels meet standards specified by regulation.

- ❖ **For work that disturbs more than 100 square feet of painted surfaces, or requires replacement of 2 or more windows, building owners must:**
 - Employ a contractor that is certified for lead abatement work by the US Environmental Protection Agency (EPA) and workers who are trained in lead-safe work practices.
 - Follow all procedures for jobs that disturb from 2 to 100 square feet of paint.
 - Use double layers of plastic sheeting.
 - Notify DOHMH 10 days before work begins.

- ❖ **For work to correct lead hazard violations issued by HPD, building owners must:**
 - Employ a contractor that is certified for lead abatement work by the EPA and workers who are trained in lead-safe work practices.
 - Follow all procedures for jobs that disturb 2-100 square feet of paint.
 - Use double layers of plastic sheeting.

**Appendix E: NY State Requirements for Anticipatory Guidance,
Risk Assessment and Blood Lead Testing of Pregnant Women**

New York State requires that health care providers:

Provide anticipatory guidance on lead poisoning prevention to all pregnant women.

Assess, at the first prenatal visit, the woman's risk of high-dose lead exposure.

Test, or refer for blood lead testing, pregnant women found to be at risk.

Provide pregnant women who have a BLL $\geq 10\mu\text{g/dL}$ with risk reduction counseling and refer those with possible occupational exposure to an occupational health.