

PRIORITY: LEAD POISONING

According to *Healthy People 2010*,

During the 1990s, the decline in childhood lead poisoning in the United States represents a public health success. In 1984, between 2 million and 3 million children aged 6 months to 5 years had blood lead levels (BLLs) greater than 15 µg/dL, and almost a quarter of a million had BLLs above 25 µg/dL, a level that can affect vital organs and the brain. (Blood levels are measured in micrograms of lead found in a deciliter of blood.) By the early 1990s, fewer than 900,000 children had BLLs above 10µg/dL, the current standard for identifying children at risk.

The 2010 Initiative further points out that

This dramatic reduction is the result of research to identify persons at risk, professional and public education campaigns to “spread the word,” broad-based screening measures to find those at risk, and effective community efforts to clean up problem areas, namely, substandard housing units. However, despite the success achieved, more remains to be done before childhood lead poisoning becomes a disease of the past. Although childhood lead poisoning occurred in all population groups, the risk was higher for persons having low income, living in older housing, and belonging to certain racial and ethnic groups. For example, among non-Hispanic black children living in homes built before 1946, 22 percent had elevated BLLs. Because the risk for lead poisoning is not spread evenly throughout the population, efforts are continuing to identify children at risk and ensure that they receive preventive interventions.

Issues and Trends

The New York State Department of Health Childhood Lead Poisoning Prevention Program reports that for the years 2000-2001, data (exclusive of New York City) show that:

- The incidence and prevalence of lead poisoning in the period 2000-2001 declined across all categories and all blood lead levels.
- In 2001, the prevalence rate of children with levels of 10 micrograms per deciliter or greater was 2.73%, dropping from 3.31% in 2000.
- New York’s lead screening rate remained at a high level. Preliminary data for children born in 2000 show that 66.5% were tested before age two. Seventy-six percent of children enrolled in Medicaid managed care programs were screened for blood lead in New York State.
- In 2001, the data show that children with high blood lead levels were clustered mostly in urban areas, but children with elevated blood lead readings were found in almost every county (*New York State Maternal and Child Health Services Title V Block Grant Program, 2003 Annual Report*).

New York State Department of Health Childhood Lead Poisoning Prevention Program reports that for the years 2002-2003, data (exclusive of New York City) show that:

- The incidence and prevalence of lead poisoning in the period 2002-2003 declined across all categories and all blood lead levels, and screening rates continued to improve.
- The number of children newly identified with lead poisoning, defined as children with blood lead levels of 10 micrograms per deciliter or higher, declined.
- In 2003, the incidence rate declined to 1.57 from a 2002 incidence rate of 1.67. In 2002, the prevalence rate of children with levels of 10 micrograms per deciliter or greater was 2.6%. In 2003, the prevalence rate decreased to 2.5%.
- The number of children with higher blood lead levels requiring environmental intervention, defined as 20 micrograms per deciliter or higher, was stable over this period as expected, leveling off of the dramatic declines experienced in previous years. While total number of children declined an additional 4% over the two years studied from 440 in 2002 to 422 in 2003, incidence rates remained stable at 0.23 per 100 children screened.
(http://mole.health.state.ny.us/nysdoh/mchbg/docs/2007_mchbg_application.pdf)

According to the State Health Department, there are two major challenges for New York State in addressing childhood lead poisoning: the age of the housing stock and the number of children living in poverty. New York has the highest number of housing units built prior to 1950 in the nation. The federal Department of Housing and Urban Development has estimated that 75% of pre-1950 housing contains lead paint. Lead poisoning can reach across all socioeconomic levels, but poor children tend to be at greater risk, as these children are more likely to live in older, deteriorating housing with lead paint hazards. Table 1 illustrates some of these social and economic issues. The elevated blood levels of children living in pre-1946 housing are almost twice the levels of children in housing built between 1946 and 1973 (8.6 vs. 4.6), and they are more than five times higher than

in post-1973 housing (1.6 micrograms/deciliter blood). Blood levels are also higher in Black/African American, Mexican American, low income families, and urban children.

Table 1. Percent of U.S. Children Ages 1-6 with Elevated Blood Levels by Age of Housing, Race/Ethnicity, Family Income Level, and Geographic Location.

Children Ages 1 to 6 Years, 1991–94	Percent of Children With Blood Lead Levels Greater Than or Equal to 10 µg/dL			
	Residina in All Housina	Residina in Housina Built:		
		Before 1946*	1946 to 1973*	After 1973*
TOTAL	4.4	8.6	4.6	1.6
Race and ethnicity**				
Black or African American	11.5	22.7	13.2	3.3
White	2.6	6.6	1.9	1.4
Mexican American	4.0	13.0	2.3	1.6
Not Hisopanic or Latino	4.2	DNA	DNA	DNA
Black or African American	11.2	21.9	13.7	3.4
Familly income level†				
Low	1.9	4.1	2.0	0.4
Hiah	1.0	0.9	2.7	0
Georaphic location				
Population > 1 million	5.4	11.5	5.8	0.8
Population < 1 million	3.3	5.8	3.1	2.5

Data for "all houses" are from a separate analysis of NHANES data; data for specific periods of time provided for information purposes. DNA = Data have not been analyzed. **Data are statistically unreliable for the following groups: American Indian or Alaska Native, Asian or Pacific Islander, Asian, Native Hawaiian and other, and Hispanic or Latino.

†Income categories defined using poverty-income ratio (PIR) (the ratio of total family income to the poverty threshold for the year). Low equals PIR ≤1.300; middle equals PIR 1.301 – 3.500; high equals PIR ≥3.501.

Data Source: National Health and Nutrition Examination Survey (NHANES), CDC, NCHS

(http://www.healthypeople.gov/document/HTML/Volume1/08Environmental.htm#_Toc490564701).

Healthy People 2010 and Lead Poisoning

The following chart presents the *Healthy People 2010* targets for the objectives pertinent to eliminating lead in children and home environments, along with baseline data for the year(s) indicated. This chapter examines Chautauqua County data for the Priority: *Lead Poisoning* indicators listed in **bold type**.

Healthy People 2010 Baselines and Targets for Priority: Lead Poisoning

Objective		Baseline (as listed)	2010 Target
8.11	Eliminate elevated blood lead levels in children. (numerator = number ages 1-6 with >10 µg/dL)	4.4% of children ages 1 to 6 (1991-94)	0%
8.22	Increase the proportions of persons living in pre-1950s housing that have been tested for the presence of lead based-paint.	16% (1998)*	50%

* Age adjusted to 2000 population.

A. Health Data

1. Lead Levels in Chautauqua County Children

In Table 2, 2.24% of children tested before age 6 in Chautauqua County in 2002-2003 had blood lead levels greater than or equal to 10 µg/dL, which is slightly lower than the rate for New York State, excluding New York City (2.55%). Though for both Chautauqua County and NYS (excluding NYC) these data represent a decline from 2000-2001, the *Healthy People 2010* target of 0% has not been met.

Table 2. Confirmed Elevated Blood Lead Levels of Children Tested Before Age Six in Chautauqua County and New York State (excluding New York City), 2000-2003.

	Year of Test	Total Number of Children Tested	Prevalence	Prevalence	Overall
			Rate/100 Tests	Rate/100 Tests	Rate/100 Tests
			10-19µg/dL	≥ 20 µg/dL	≥ 10 µg/dL
Chautauqua County	2000-2001	5,028	3.02	0.36	3.38
	2002-2003	5,265	2.11	0.13	2.24
New York State (excluding New York City)	2000-2001	384,902	2.73	0.30	3.02
	2002-2003	378,240	2.32	0.23	2.55
Healthy People 2010 Target					0% (>10 µg/dL)

Data Source: Promoting Lead Free Children in New York State: A Report of Lead Exposure Status Among New York Children, 2000-2001 (http://www.health.state.ny.us/nysdoh/lead/exposure_report/table_2.htm) and 2002-2003 Supplement (http://www.health.state.ny.us/environmental/lead/exposure/report/docs/lead_exposure_status_among_new_york_children_2002-2003.pdf)

Table 3 shows that the incidence of elevated blood levels (greater than or equal to 10 µg/dL) in children under age 6 is about the same for Chautauqua County (1.57) as for New York State, excluding New York City (1.62). Both Chautauqua County and NYS (excluding NYC) have seen a decline from 2000-2001 to 2002-2003.

Table 3. New Case Rates* of Elevated Blood Lead Levels in Chautauqua County and New York State excluding New York City, 2000-2003.

		# Newly Identified 10-19ug/dL	# Newly Identified ≥ 20 ug/dL	Number of Children Screened	New Case Rate/ 100 Screened 10-19ug/dL	New Case Rate/ 100 Screened ≥ 20 ug/dL	Overall New Case Rate/ 100 Screened ≥ 10 ug/dL
Chautauqua County	2000-2001	92	14	4,854	1.90	0.29	2.18
	2002-2003	73	7	5,111	1.43	0.14	1.57
New York State (excluding NYC)	2000-2001	5,884	966	372,023	1.58	0.26	1.84
	2002-2003	5,117	862	368,196	1.39	0.23	1.62

*Children screened before age six with a newly confirmed elevated blood lead level at 10ug/dL or greater.

Data Source: Promoting Lead Free Children in New York State: A Report of Lead Exposure Status Among New York Children, 2000-2001 (http://www.health.state.ny.us/nysdoh/lead/exposure_report/table_3.htm) and 2002-2003 Supplement

(http://www.health.state.ny.us/environmental/lead/exposure/report/docs/lead_exposure_status_among_new_york_children_2002-2003.pdf)

Table 4 shows that 17 of 18 (94.4%) dwellings assessed in Chautauqua County in 2003 had lead hazards, and 12 of the 18 (66.7%) were assessed based on a child with elevated blood lead levels (between 10 - 19 µg/dL). In comparison, 63.2% of dwellings assessed in New York State (excluding NYC) during this time period had lead hazards, and 27.1% of the dwellings were assessed based on a child with elevated blood levels.

Table 4. Initial Environmental Assessments by Chautauqua County Health Department and New York State Totals, excluding New York City, 2001- 2003.

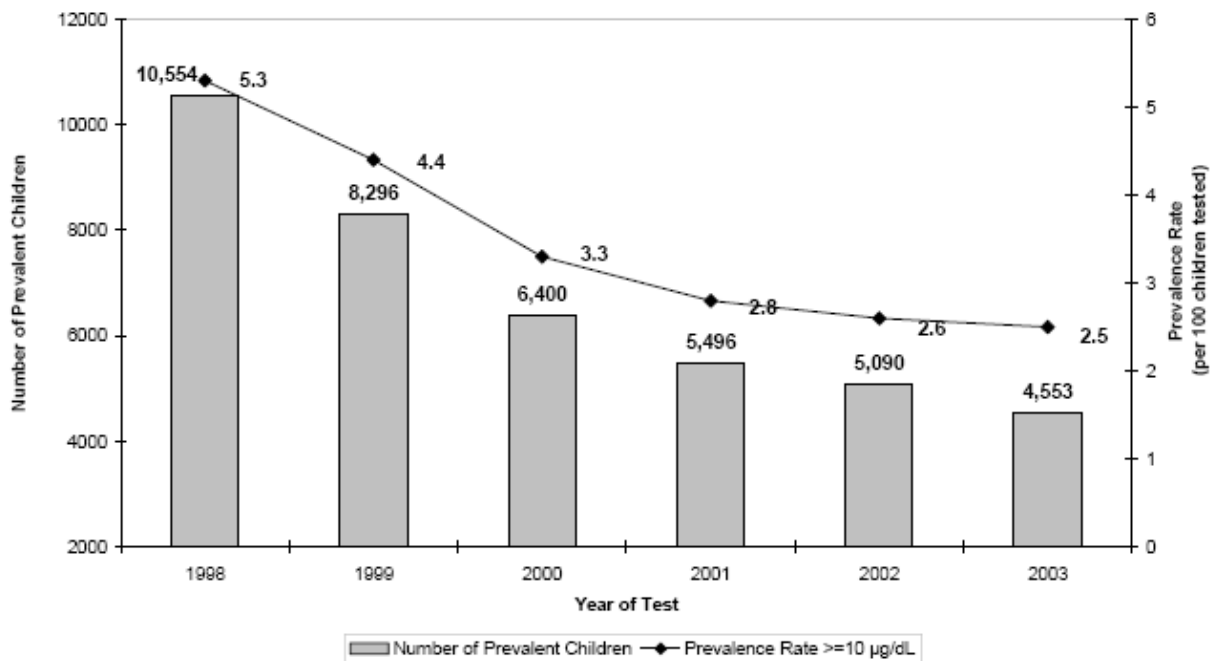
	Year	Number of children referred ≥ 20 ug/dL	Number of dwellings assessed	Number of dwellings with lead hazards	Number of dwellings with satisfied notice and demands	Dwellings assessed based on a child with BLL between 10 - 19 ug/dL	Number of field visits
Chautauqua County	2001	7	21	19	7	12	64
	2002	5	14	12	5	9	25
	2003	6	18	17	5	12	25
New York State Totals (exclusive of New York City)	2001	1,505	2,476	1,712	1,507	591	15,713
	2002	1,305	2,217	1,473	1,742	590	16,930
	2003	1,271	2,261	1,429	1,410	613	16,233

Data Source: Promoting Lead Free Children in New York State: A Report of Lead Exposure Status Among New York Children, 2000-2001 (http://www.health.state.ny.us/nysdoh/lead/exposure_report/table_9.htm) and 2002-2003 Supplement

(http://www.health.state.ny.us/environmental/lead/exposure/report/docs/lead_exposure_status_among_new_york_children_2002-2003.pdf)

Figure 1, below, shows the decline in the prevalence rate per 100 children tested, of children with elevated blood lead levels of greater than or equal to 10µg/dL from 1998 to 2003 for New York State, excluding New York City.

Figure 1: Prevalence Numbers and Rates of Children Identified with Elevated Blood Lead Levels $\geq 10\mu\text{g/dL}$ New York State excluding New York City



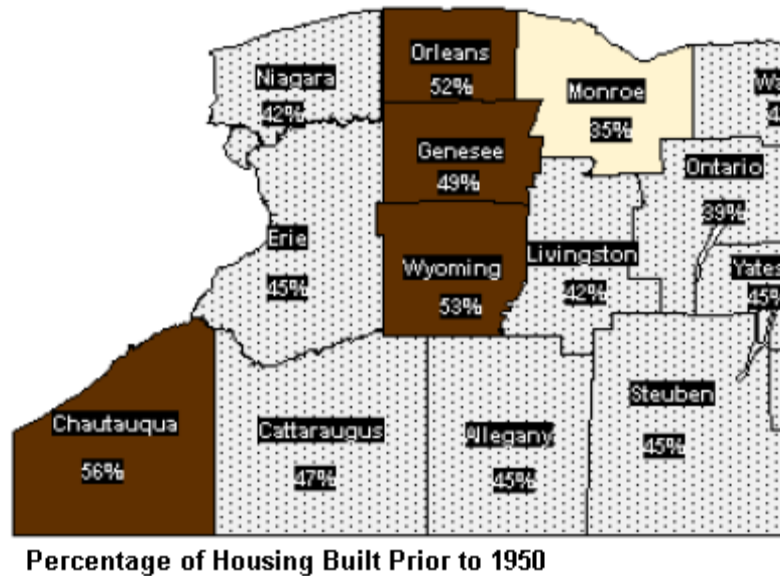
(http://www.health.state.ny.us/environmental/lead/exposure/report/docs/lead_exposure_status_among_new_york_children_2002-2003.pdf)

2. Lead in Older Homes

Figure 1 shows the percentages of pre-1950 homes in Chautauqua County and nearby counties. Fifty-six percent of the housing in Chautauqua County is at least 50 years old, and the county is above the 75% percentile statewide on pre-1950 houses.

(figure redone!)

Figure 1. Percentages of Housing Built Prior to 1950, Chautauqua County and Nearby Counties, 2000.



- High Percentage of Pre-1950 Housing - Above 75th Percentile
- ▨ Moderate Percentage of Pre-1950 Housing: Between 25th and 75th Percentile
- Low Percentage of Pre-1950 Housing: Below 25th Percentile
- ▨ Excluded From Analysis

Source: *Promoting Lead Free Children in New York State: A Report of Lead Exposure Status among New York Children 2000-2001* (http://www.health.state.ny.us/environmental/lead/exposure/report/docs/child_lead_exposure_report_2000-2001.pdf)

B. Unmet Needs

Summary: Lead Poisoning in Chautauqua County

Of children tested before age 6 in 2002-2003, in Chautauqua County, 2.24% had blood lead levels greater than or equal to 10 µg/dL, slightly lower than the rate for New York State, excluding New York City (2.55%). For both Chautauqua County and NYS excluding NYC, this represents a decline from 3.38% and 3.02%, respectively, in 2000-2001. The *Healthy People 2010* target is 0%. The incidence of elevated blood levels in this age group about the same for Chautauqua County as for New York State (excluding NYC).

Nearly all (94.4%) of the dwellings assessed in Chautauqua County in 2003 (n = 18) had lead hazards and 66.7% were assessed based on a child found with elevated blood lead levels. In comparison, 63.2% of dwellings assessed in New York State (excluding NYC) during that time (n = 2476) had lead hazards, and 27.1% of the dwellings were assessed based on a child with elevated blood levels. 56 percent of the housing in Chautauqua County, as of the 2000 census, was built prior to 1950, and the county is above the 75% percentile statewide for pre-1950 housing.

Healthy People 2010

Healthy People 2010 reports that:

Even at low levels of lead poisoning, the presence of lead in the body can slow the growth of children, impede hearing, interfere with healthy formation of key components of blood, and cause direct damage to the kidneys and the nervous system. Generally, unless children have a very high lead level, they may have either no symptoms or subtle developmental difficulties that may be interpreted as being within the acceptable range of child behavior. Blood lead screening identifies those children at risk. With respect to BLL, children from certain racial and ethnic groups are disproportionately affected.

C. Resources in Chautauqua County

The following are some of the Chautauqua County organizations, agencies and programs that offer health services and other forms of assistance related to detection of lead and its treatment.

- Chautauqua County Department of Health, Environmental Health Division, Mayville, Dunkirk
- Chautauqua County Lead Poisoning Prevention Program
- Chautauqua County Opportunities
- Joint Neighborhood Project, Jamestown (Spanish outreach program)
- Section 8 Housing Lead Testing Program, Chautauqua County Home Rehabilitation and Improvement Corporation (CHRIC)
- Success by Six (Lead Task Force Subcommittee)
- U.S. Department of Housing and Urban Development

D. Opportunities for Action

Opportunities for action in Chautauqua County pertinent to lead poisoning, adapted from the *Healthy People 2010* Initiative, include the following.

- Expand efforts to screen all children under age two for elevated blood lead levels, particularly in areas with high incidence and prevalence of childhood lead. Emphasis should be placed on universal screening of one- and two-year-olds, with a special emphasis on reaching young children in low income areas where there is very old housing.
- Strengthen efforts to make all housing stock "lead safe."
- Increase outreach and education on the EPA's regulation about lead hazards in residential property to increase compliance: Sellers of residential property in New York State built before 1978 are required to supply buyers with a booklet from the Environmental Protection Agency regarding lead paint hazards. Landlords are also responsible for distributing this material to renters.
- Expand efforts to better inform the general public, particularly all parents, about the importance of lead screening and lead hazards in the home.
- Use computer mapping technology such as GIS to target lead screening and other interventions, and provide an Internet-based reporting system to improve access to program data.

- Expand research efforts into the reasons children are not being screened.
- Enhance assistance to primary care providers, including provider education and assistance with setting up in-office recall systems, similar or identical to those set up for immunization recall.
- Strengthen collaboration with local and state agency partners who are key to the success of the program.