Bureau of BEH Environmental Health

Massachusetts Department of Public Health
Childhood Lead Poisoning Prevention Program

High Risk Community Incidence Rate Statistics
2006-2010 Calendar Year Data

Massachusetts lead regulation (105 CMR 460.050) requires that all children be tested for blood lead between the ages of 9 and 12 months, and again at ages 2 and 3. Additionally, all children should be tested at age 4 if they live in a high risk community in Massachusetts. The following table presents Massachusetts high risk communities for the past 5 calendar years based on a high risk score that incorporates the incidence rate of confirmed ≥ 10 µg/dL cases, the percentage of families living below 200% of their poverty threshold, and percentage of housing built before 1978. This information is relevant to assessing the need for treatment and prevention services at the community level in Massachusetts.

DATA DESCRIPTION

HIGH RISK COMMUNITIES: Communities with a 5 year incidence rate of confirmed ≥ 10 µg/dL cases that is above the state 5 year incidence rate of confirmed ≥ 10 µg/dL cases after adjusting for low to moderate income and old housing stock (built pre-1978). The combination of these factors places certain communities at greater risk of childhood lead poisoning. It is important for these communities to extend annual childhood blood lead screening through the age of 4. To help alleviate the burden of childhood lead exposure, an amendment to the Massachusetts Lead Law in 1988 established a Get the Lead Out program, which provides loans and grants to help pay for lead paint abatement. The law requires that 50% of the funding be used in high risk communities. For more information about the Get the Lead Out program, click here.

5 YEAR CASES: The number of children (9 to 47 months of age) identified for the first time with a confirmed blood lead level ≥ 10 µg/dL combined over the 5 calendar years for each high risk community. An incident case is only counted once over the course of the 5 year time period.

INCIDENCE RATE PER 1,000: The number of children (9 to 47 months of age per 1,000 children) identified for the first time with a confirmed blood lead level ≥ 10 µg/dL within the 5 year period. Confirmed cases are defined as either a single venous blood lead test or 2 capillary blood lead tests drawn within 12 weeks of each other. Incidence is calculated by dividing the number of first time cases by the total number of children screened in the geographic area and multiplied by 1,000. This determines the rate per 1,000 children. An incident case is only counted once over the course of the 5 year time period, with venous specimens taking priority, followed by confirmed capillary specimens. Single unconfirmed capillary specimens are not included in the incidence rate.

% PIR BELOW 2: The income to poverty ratio (PIR), provided by the US Census Bureau, represents the ratio of a family's income to their appropriate poverty threshold, which depends on the number and ages of individuals in the family. A PIR below 1.00 indicates that the income for the respective family is below the official definition of poverty, while a PIR greater than 1.00 indicates income above the poverty level. In identifying high risk communities we are interested in families with low to moderate income and have chosen a PIR of 2.00 to define this income cut off. A PIR of 2.00 translates to an income that is 200% of the poverty level. For a family of four

(two adults, two children), a PIR of 2.00 equates to an annual income of approximately $45,000. This data comes from the American Community Survey, 2010-2014.

% PRE-78 HOUSING: The percentage of all housing units built prior to 1978, as estimated by the 2010-2014 American Community Survey. In 1977, the Consumer Product Safety Commission banned lead-containing paint (16 C.F.R. 1303). Housing units built prior to this date may contain dangerous levels of lead in paint. According to Massachusetts regulations (105 CMR 460.000), removal or covering of lead hazards is required in units built before 1978 where a child under six years of age is living. This is a change from earlier high risk community incidence rate statistics (data prior to 2009-2013), which used the percentage of all housing units built prior to 1950.

HIGH RISK SCORE: This score is used to determine which communities are at highest risk for poisoned blood lead levels. The high risk score incorporates the 5 year incidence rate of blood lead levels ≥ 10 µg/dL, the percentage of families living below 200% of their poverty threshold and the percentage of housing built before 1978. The score for each community in Massachusetts with at least 15 cases is compared to the state high risk score. When the community high risk score exceeds the state high risk score by a statistically significant margin, that community is at high risk for childhood lead poisoning. The formula for the high risk score is below:

(5 Year Incidence Rate by Community) * (% Low-Moderate Income by Community / % Low-Moderate Income for MA) * (% Pre-78 by Community / % Pre-78 for MA)

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High Risk Communities for Childhood Lead Poisoning

January 1, 2006 through December 31, 2010

Community	% 5 Year Screening	5 Year Cases [1]	Incidence Rate per 1,000 [1]	% PIR Below 2 [2]	% Pre-1978 Housing Units [3]	High Risk Score [4]
BOSTON	86	616	6.8	33	81	12.8
BROCKTON	87	197	10.2	35	83	20.9
CHELSEA	97	76	7.7	45	79	19.3
EVERETT	85	39	5.1	35	89	11.2
FALL RIVER	78	74	5.1	42	83	12.5
FITCHBURG	72	47	7.3	33	75	12.7
GARDNER	68	17	6.1	30	77	9.9
GREAT BARRINGTON	98	16	18.5	20	76	19.8
HAVERHILL	73	60	5.8	25	65	6.6
HOLYOKE	83	58	6.9	49	85	20.2
LAWRENCE	80	102	6.2	55	81	19.5
LOWELL	78	136	6.9	35	78	13.3
LYNN	86	200	10.6	38	88	25.0
MALDEN	80	54	5.6	31	80	9.8
MILFORD	69	34	8.0	19	67	7.2
NEW BEDFORD	88	186	9.9	42	85	24.9
NORTH ADAMS	89	17	7.6	33	87	15.4
PITTSFIELD	86	55	7.5	32	81	13.7
SOMERVILLE	83	53	5.7	24	88	8.5
SOUTHBRIDGE	69	24	10.2	35	80	20.1
ALL HIGH RISK	**82**	**2619**	**7.5**	**36**	**81**	**15.4**
MASSACHUSETTS	**76**	**4110**	**4.4**	**20**	**71**	**4.4**

Comments:

The percent screened and number of newly identified cases with confirmed blood lead levels ≥ 10 µg/dL (children 9 to 47 months) have been identified for this 5 year period.

Communities with at least 15 cases and a High Risk Score statistically significantly higher than the state High Risk Score of 4.4 for this 5 year period have been included.

Footnotes:

[1] Number and rate of incident cases ≥10 µg/dL per 1,000 children (9 to 47 months) screened during this 5 year period.

[2] Percentage of families with an income to poverty ratio below 2.00 (i.e. < 200% of the poverty threshold).

[3] Percentage of housing units built prior to 1978 as estimated by the 2010-2014 American Community Survey.

[4] (5 Year Incidence Rate by community) * (% PIR below 2 by community / % PIR below 2 MA) * (% pre-1978 by community / % pre-1978 MA)

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Community	% 5 Year Screening	5 Year Cases [1]	Incidence Rate per 1,000 [1]	% PIR Below 2 [2]	% Pre-1978 Housing Units [3]	High Risk Score [4]
SPRINGFIELD	82	314	10.4	50	85	31.1
WARE	67	16	11.9	23	65	12.5
WEBSTER	67	17	7.5	27	75	10.7
WEST SPRINGFIELD	75	24	5.9	29	80	9.6
WINCHENDON	66	17	14.1	18	58	10.4
WORCESTER	74	170	6.0	35	79	11.7
ALL HIGH RISK	**82**	**2619**	**7.5**	**36**	**81**	**15.4**
MASSACHUSETTS	**76**	**4110**	**4.4**	**20**	**71**	**4.4**

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[2] Percentage of families with an income to poverty ratio below 2.00 (i.e. < 200% of the poverty threshold).

[3] Percentage of housing units built prior to 1978 as estimated by the 2010-2014 American Community Survey.

[4] (5 Year Incidence Rate by community) * (% PIR below 2 by community / % PIR below 2 MA) * (% pre-1978 by community / % pre-1978 MA)