MASSACHUSETTS DEPARTMENT OF PUBLIC HEALTH

2020 Annual Childhood Lead Poisoning Surveillance Report

Highlights

- Lead paint is the primary source of childhood lead exposure and Massachusetts has the 3rd oldest housing stock in the country, making lead exposure a significant health risk for Massachusetts children.
- 420 children were identified as having lead poisoning in 2020, a venous BLL ≥ 10 µg/dL, and 1,880 children were estimated to have a BLL ≥ 5 µg/dL**.**
- Due to impacts from the COVID-19 pandemic, lead screening was down 10% for the year in 2020 and the prevalence of lead poisoning increased.
- In 2020, 17 high-risk communities were identified, representing more than half of lead poisoning cases.
- Lead exposure is more than an urban issue, impacting all areas of the state, including rural areas where the prevalence of elevated BLLs is often higher per capita.
- Children living in low-income communities are nearly 4 times more likely to have elevated BLLs than those in high-income communities.
- Multi-race children are 3 times more likely to have lead poisoning than white children.
- To address health inequities and the impacts of the COVID-19 pandemic on childhood lead exposure, the CLPPP is targeting expanded outreach to high-risk populations and family care practitioners.

1. BACKGROUND

While the Commonwealth has made substantial gains in mitigating the harmful effects of lead exposure through public health interventions over the past 45 years, **lead exposure remains a significant health risk for children across Massachusetts**. There is no safe level of lead in blood and **childhood exposure to relatively low levels can cause severe and irreversible health effects**[1], including damage to a child's mental and physical development[2]. Numerous studies have documented correlations between childhood lead poisoning and future school performance, unemployment, crime, violence, and incarceration, making lead exposure an important factor in the social determinants of health[3,4,5]. Lead exposure is also a health equity issue, in which social position (e.g. socio-economic status) and socially assigned circumstances (e.g. race, ethnicity, etc.) prevent equal opportunities in attaining one's full health potential.

Lead paint is the primary source of exposure for lead-poisoned children. **Most often, exposure occurs through ingestion of dust or soil contaminated by loose or deteriorated lead paint**, frequently on windows and exteriors, or disturbed by unsafe renovation work. Historically, lead paint has accounted for 95% of all lead poisoning cases in Massachusetts. In more recent years, lead paint has accounted for 88%, while exposure from alternative sources such as spices and herbal remedies has increased, accounting for 9% of lead poisoning cases. Exposure sources for the remaining 3% of cases could not be identified.

The Massachusetts Lead Law (see MGL c. 111, §§ 189A-199B) **requires any dwelling unit where a child under six years of age resides to be lead safe,** regardless of a child's blood lead level (BLL) or whether the property is owner-occupied. To implement the law, the Department of Public Health's (DPH) Childhood Lead Poisoning Prevention Program (CLPPP) operates an integrated program of laboratory services, mandatory

blood lead screening, medical case management for children with elevated blood lead levels, health education, environmental follow-up, and training and licensure of public and private lead inspectors.

This report for the year 2020 contains results of the DPH Childhood Lead Poisoning Prevention Program's annual review of screening rates and blood lead level prevalence, high-risk communities for lead poisoning, and special analyses designed to identify high-risk populations and evaluate progress towards health equity.

2. BLOOD LEAD SCREENING AND PREVALENCE OF EXPOSURE

The screening rate decreased from 72% in 2019 to 62% in 2020.

The prevalence of BLLs ≥5 ug/dL increased from 1.1% in 2019 to 1.3% in 2020.

The prevalence of BLLs ≥10 ug/dL increased slightly from 0.26% in 2019 to 0.28% in 2020.

Massachusetts lead regulations (105 CMR 460.050) **require that all children be tested for blood lead between 9 and 12 months of age and, again, at ages 2 and 3 years.** Additionally, all children should be tested at age 4 years if they live in a high-risk community. In 2020, statewide screening rates for 1- and 2-year-old children were 67% and 65%, respectively—lower than typical years, but still surpassing the screening rate of 3-year-old children (58%). Screening children through age 3 is vital since approximately 15% of newly elevated blood lead levels (≥5 µg/dL) are in 3-year-olds and the large majority of those (80% on average) were tested regularly at younger ages with no previous elevations. Failure to continue regular screening through age 3 results in a significant number of unidentified children with elevated lead levels who will not receive necessary preventative services.

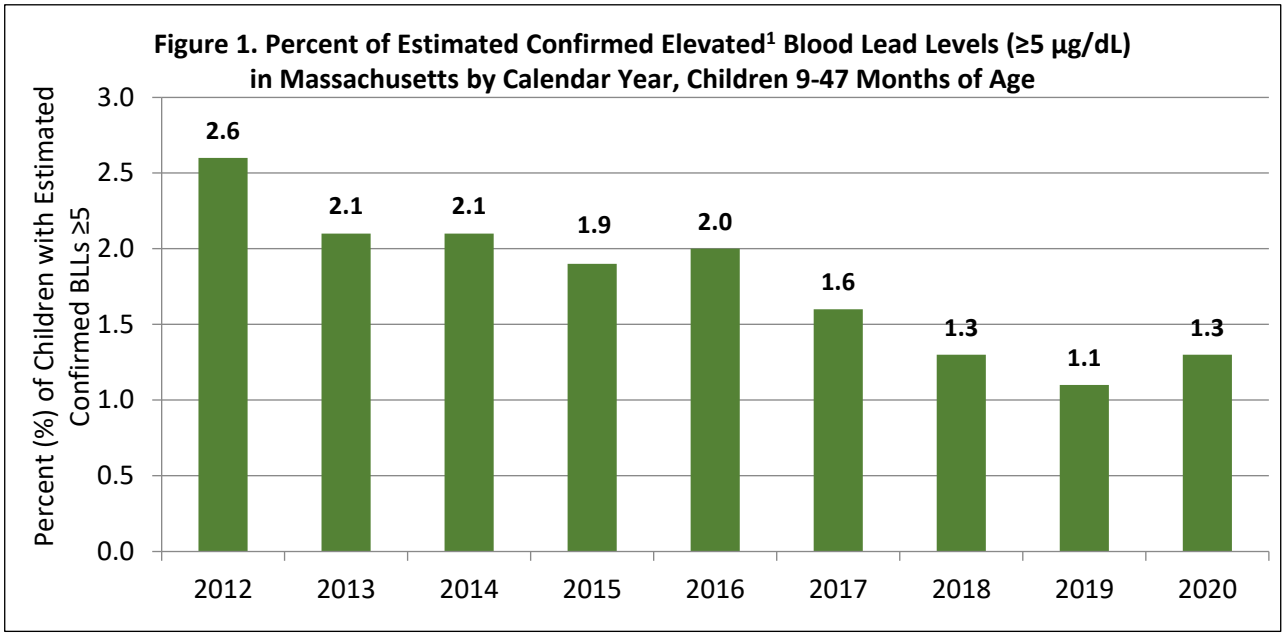
On December 1, 2017, the DPH CLPPP began **requiring venous confirmation of capillary blood lead specimens ≥5 µg/dL**, the federal Centers for Disease Control and Prevention's (CDC) reference value in effect from 2012 to 2021. Children with BLLs above 5 µg/dL should receive intervention such as lead education, environmental investigation, and additional medical monitoring. Capillary specimens are a useful tool for preliminary lead screening; they are easier to conduct than venous tests and a negative result is, typically, very reliable. However, a single elevated capillary result (≥5 µg/dL) provides only a 30% chance of being truly elevated upon confirmation testing due to frequent sample contamination. Venous confirmation of elevated capillary results is an important part of preventing lead poisoning. The rate of confirmatory venous testing increased with the regulatory requirement but remains low. In 2020, only 63% of children received the required venous follow-up test, leaving many children without important follow-up support.

1,880 children had an estimated confirmed BLL ≥5 µg/dL in 2020, CDC's previous reference value for triggering intervention.

420 children were identified as having lead poisoning in 2020, a BLL ≥10 µg/dL.

At the community-level, 75% of communities saw a 2020 screening rate that was similar to or higher than the 2019 screening rate. The remaining communities saw an average screening rate decrease of 13% in 2020. Efforts are ongoing to identify characteristics of the communities that experienced the greatest decreases in screening and to determine potential solutions to any barriers to screening in those communities.

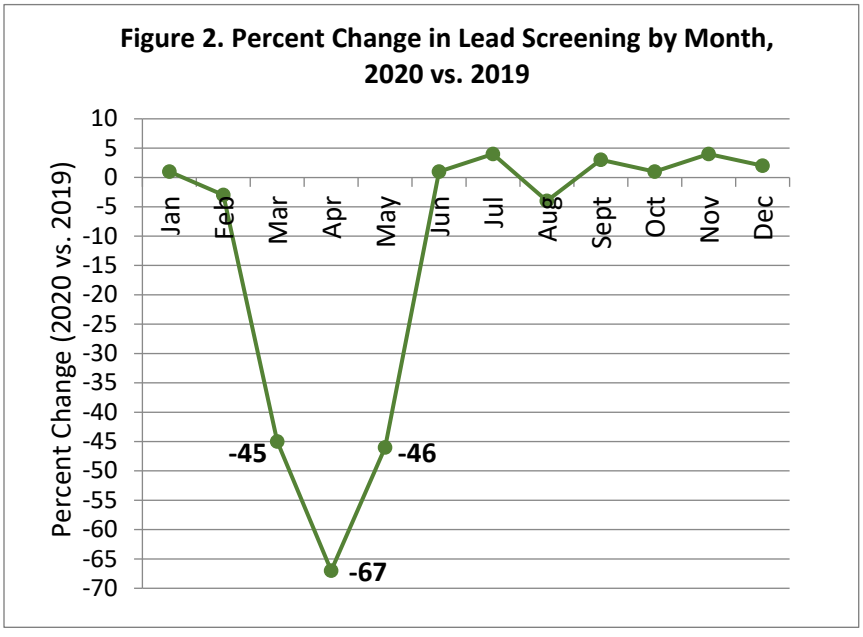
Since regulatory changes in 2017, the percentage of children with elevated blood lead levels and lead poisoning in Massachusetts has historically declined each year, with elevated blood lead levels ≥5 µg/dL displaying a substantial decrease (Figure 1). However, in 2020, both elevated and poisoned blood lead levels increased slightly compared to 2019.



[1]Estimated confirmed BLLs ≥5 µg/dL include both confirmed results (venous and confirmed capillary tests) and a proportion of unconfirmed capillary results estimated to be truly elevated based on known capillary test reliability.

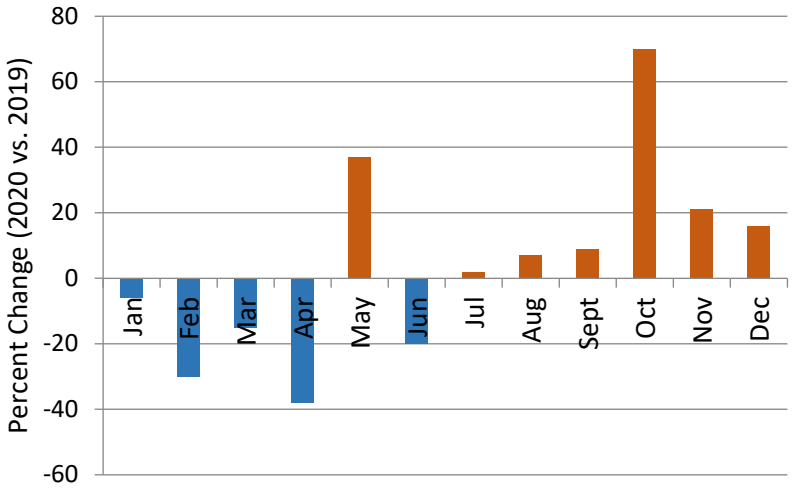
3. IMPACT OF COVID-19 PANDEMIC

In March 2020, the world saw the outbreak of a coronavirus pandemic. To protect public health and preserve life, Massachusetts issued stay-at-home orders on March 16, 2020. Clinical offices were closed or limited to urgent care, schools and early childhood facilities were closed, and well-child visits were transitioned to a telehealth model. These events had a significant impact on lead screening in 2020. The number of children screened for lead fell dramatically during the first wave of the pandemic compared to 2019 (Figure 2). Though screening rates recovered in June, the number of children screened since the stay-at-home orders went into effect was down by 15% through the end of the year.



Monthly prevalence estimates of lead poisoning varied greatly from March through June (Figure 3) but were consistently higher beginning in July with a particularly striking increase in October. On average, an increase in lead poisoning of 20% was observed from July-December. This is a concerning increase since, on an annual basis, rates have historically stayed stable or decreased over time, in large part due to the CLPPP's efforts.

Figure 3. Percent Change in Lead Poisoning Prevalence (BLLs ≥10 µg/dL) by Month, 2020 vs. 2019



See Appendix III for detailed monthly lead poisoning case counts from 2019-2020.

Some possible reasons for increased lead poisoning rates observed include:

- An increase in home improvement and renovation projects undertaken during the pandemic, a common source of lead poisoning for those living in older homes containing lead-based paint;
- A major shift in the environments of many young children as daycare centers were closed and children were spending more time indoors at home than usual; and
- Reduced rates of lead screening may have slowed the early identification of lead exposures that usually serves to prevent lead poisoning.

Lead inspections and de-leading activities in 2020 were also greatly impacted by Massachusetts stay-at-home orders. Field work completed by Community Health Workers (CHWs) and inspectors was targeted to only include homes where a child's BLL was greater than or equal to 25 µg/dL. In many instances, in-home visits by CHWs were replaced with telehealth visits and inspectors conducted only exterior inspections and consultations. The return to revised field work began in May and inspectors resumed full inspections in late August.

To address the impacts of the COVID-19 pandemic, the CLPPP is expanding outreach to family care practitioners and to high-risk and/or low-screened areas. For example, CLPPP collaborates with the New England Pediatric Environmental Health Specialty Unit (PEHSU) in providing targeted training to clinicians using a tele-mentoring platform consisting of a series of collaborative webinars. The training has focused on the impacts of the COVID-19 pandemic on childhood lead screening and exposure to increase knowledge, comfort, and competence among participants in preventing and addressing lead poisoning. The CLPPP is also increasing capacity for clinical care coordination, increasing direct networking with family care practices, and expanding our clinical in-service program to reach more practitioners and to incorporate a new provider-specific feedback tool describing screening performance and lead exposure metrics.

4. PRIMARY PREVENTION ACTIVITIES

Primary prevention is vital to eradicating childhood lead exposure. While Massachusetts is fortunate to have an active private sector of lead inspectors and de-leading contractors, **we also have the third oldest housing stock in the country, with approximately 69% of housing units built before 1978** when lead was banned in residential paint.

Code enforcement lead determinations (abbreviated lead inspections) are key to local primary prevention efforts. Under the Massachusetts Lead Law, all parents or guardians with a child under 6 years of age who rent a home built before 1978 can request the local health department, or, if there is no local capacity, DPH's CLPPP, to inspect their home for lead violations and enforce de-leading. Currently, CLPPP licenses 119 local Boards of Health to help enforce the Lead Law in their communities. To better communicate with families and

educate the public about lead poisoning prevention, CLPPP offers educational materials in six languages. Staff can communicate in nine languages in addition to English.

CLPPP authorizes owners and agents (who work on behalf of owners) to safely do low- or moderate-risk de-leading work. More than 18,000 owners and agents have become trained and authorized to fix the lead hazards in their homes. **In FY 2020, MassHousing's *Get the Lead Out* loan program loaned more than $1.6 million to qualified property owners to de-lead their homes.**

CLPPP currently licenses 79 private lead inspectors. Each year, more than 6,000 homes are characterized as free from lead hazards or lead-safe by these inspectors, including newly de-leaded homes and those found to be lead-safe after initial inspection.

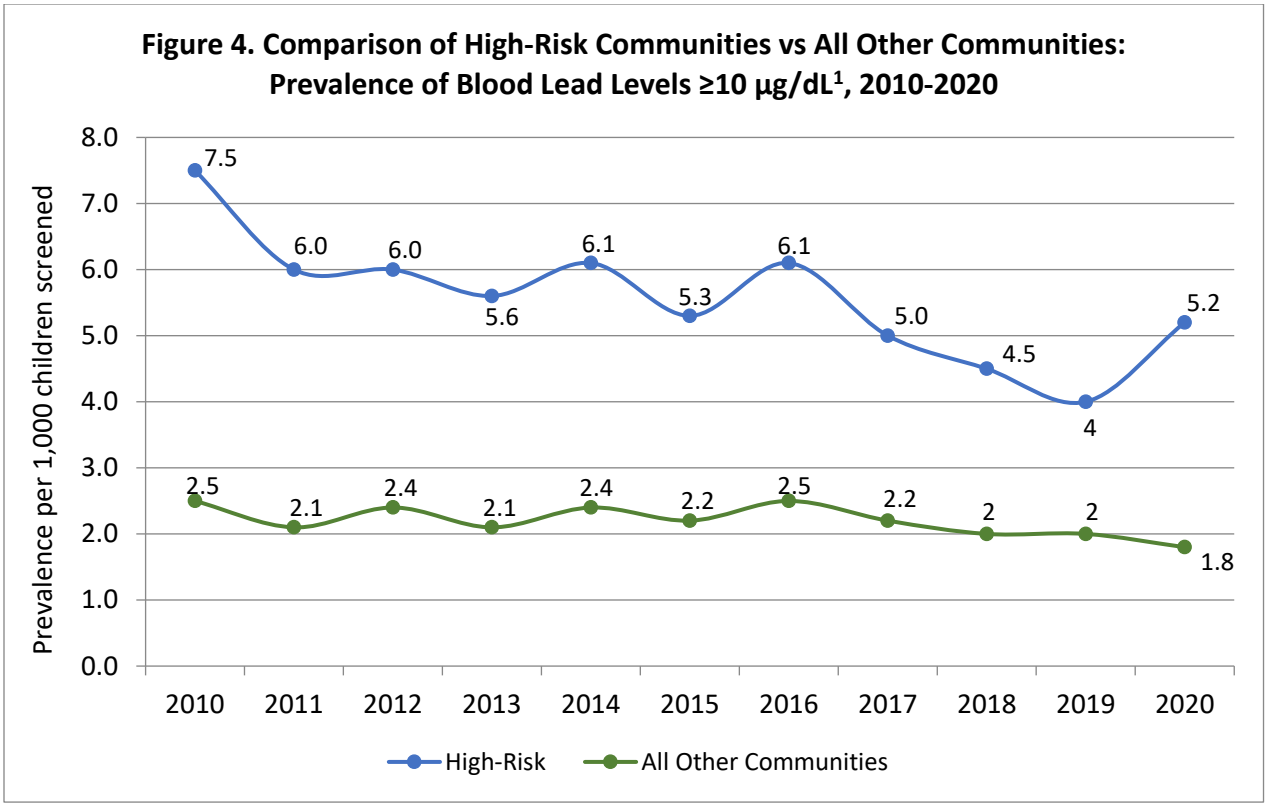
5. HIGH-RISK COMMUNITIES

Each year, DPH identifies communities with a higher risk of childhood lead poisoning to better target resources and reduce health inequities associated with lead exposure in those communities. DPH determines risk by examining rates of newly poisoned children, the age of housing, and income levels for each of the state's 351 cities and towns. **High-risk communities span the state**. In 2020, 17 high-risk communities were identified. Chicopee was added to the 2020 high-risk community list, and Gardner dropped off the list since 2019. Children living in high-risk communities are more likely to have lead poisoning than those living in other parts of the state (Figure 4), though this disparity was narrowing until 2020.

2020 High-Risk Communities

- **Boston**
- **Brockton**
- **Chelsea**
- **Chicopee**
- **Everett**
- **Fall River**
- **Fitchburg**
- **Holyoke**
- **Lawrence**
- **Lowell**
- **Lynn**
- **Malden**
- **New Bedford**
- **Pittsfield**
- **Springfield**
- **Westfield**
- **Worcester**

Approximately 54% of identified cases of children with lead poisoning live in high-risk communities, even though only about one-third of Massachusetts children live in those communities. This inequity in the prevalence of poisoned childhood blood lead levels has persisted, despite reductions in BLLs overall. Since 2016 and until 2020, the data show this disparity has been shrinking as the rates of poisoned blood lead levels in children living in high-risk communities have been consistently decreasing (Figure 4). However, the pandemic has adversely impacted this trend, with poisoned blood lead level prevalence increasing in 2020 for children living in high-risk communities.



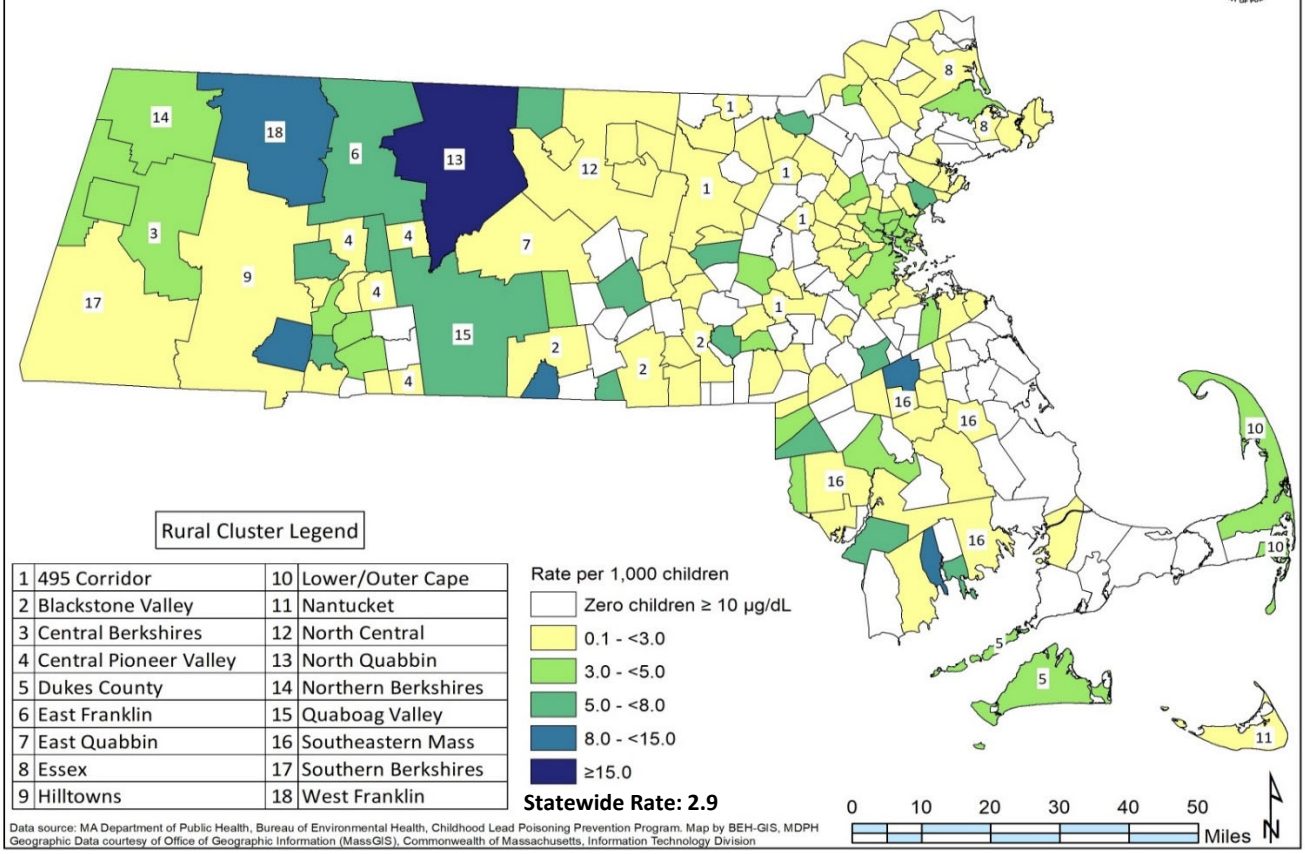
[1]Includes both venous tests and results of two capillary tests ≥10 µg/dL drawn within 84 days of each other.

6. RURAL COMMUNITIES

Rural communities with small populations may not meet the definition of a high-risk community. This is because, by definition, a high-risk community requires a minimum of 15 lead poisoning cases over 5 years. However, **non-high-risk communities can still have high incidence rates of childhood blood lead poisoning even though the total number of cases may be low, meaning that individual children in these communities *are* at high-risk**.

To address this issue, DPH now analyzes and maps screening rates and prevalence of elevated and poisoned blood lead levels by **rural clusters** (Map 1) in addition to individual communities. Rural clusters consist of neighboring or nearby rural communities grouped by the DPH Office of Rural Health and represent geographic areas that have been historically classified together in those regions. Clusters may represent areas of shared services, cultural commonality, or geographic cohesion. Grouping rural communities into clusters enables more robust and reliable blood lead level rates to be generated whereas rates for individual rural communities are frequently suppressed due to small numbers.

Map 1. Prevalence of Confirmed Blood Lead Levels ≥10 µg/dL[1] by Rural Clusters (Numbered)[2] and Urban Communities[3], 9-47 Months of Age, 2020

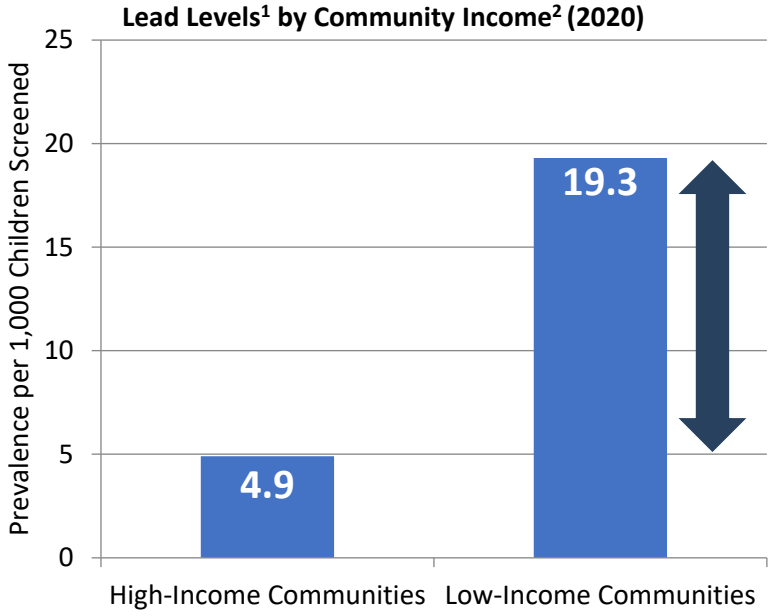


[1]BLLs ≥10 µg/dL are considered poisoned. A confirmed BLL ≥10 µg/dL is defined as a venous test or two capillary tests drawn within 84 days of each other.
[2]Rural definitions are created by the MA Office of Rural Health. See technical notes section for details. All clusters are considered rural and were identified by state rural partners, representing geographic areas that have been historically classified together in those regions.
[3]All other non-numbered geographies are considered urban and are mapped as individual communities/towns.

In addition to the 18 rural clusters identified by the DPH Office of Rural Health, the Office also classifies each community into two levels of rurality. Level 2 rural communities are less densely populated, more remote, and more isolated from urban core areas than Level 1 rural communities. In 2020, these most rural areas of the state (that is, Level 2 communities) had a screening rate of just 49% compared to the 63% screening rate in urban (non-rural) communities. When looking at the prevalence of blood lead levels ≥10 µg/dL, children living in these most rural areas had a rate that was more than double that of children living in urban communities or statewide.

7. HEALTH EQUITY

Figure 5. Prevalence of Children with Elevated Blood Lead Levels[1] by Community Income[2] (2020)

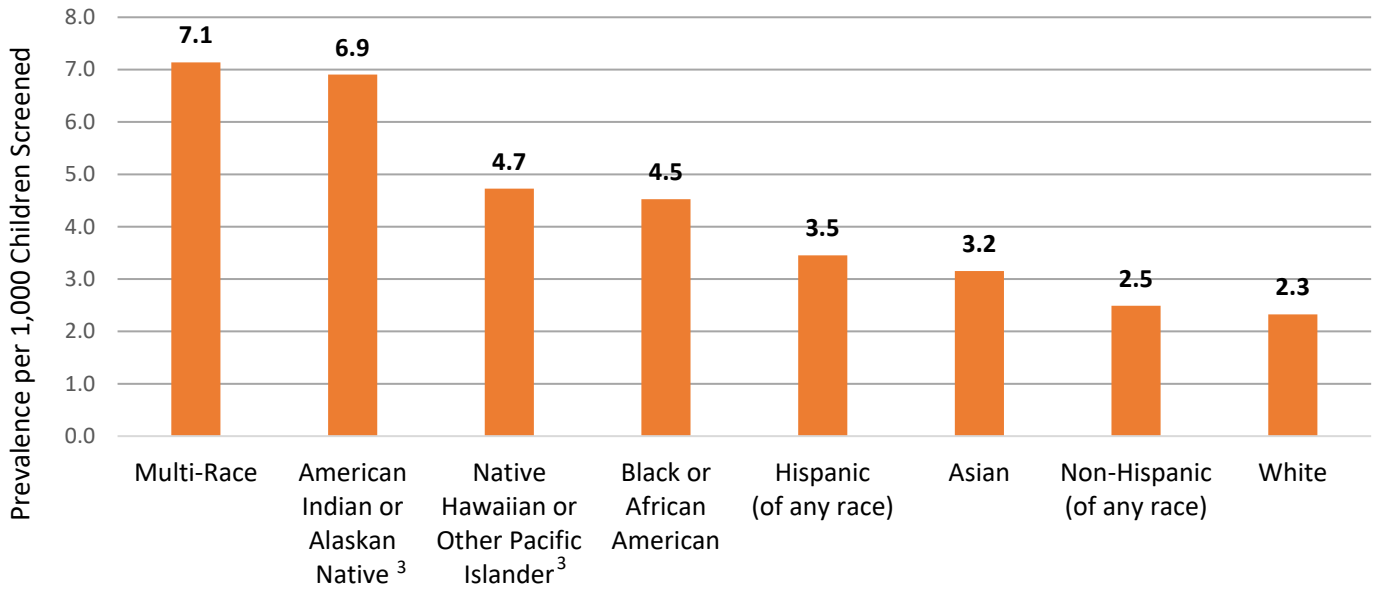


[1]Includes confirmed BLLs (one venous or two capillary blood tests ≥5 µg/dL within 84 days) and a proportion of unconfirmed blood lead tests (single capillary tests) for children 9-47 months of age.
[2]Lowest versus highest quartile of families living at or below 200% of the Federal Poverty threshold using poverty to income ratio data from the U.S. American Community Survey.

While lead continues to affect children in all communities across Massachusetts, data collected by DPH shows that **lead exposure disproportionately impacts lower income communities and communities of color**, making lead exposure a critical health equity issue. Specifically, **children living in low-income communities are nearly 4 times more likely to have elevated blood lead levels than children living in high-income communities** (Figure 5).

White children have the lowest risk of exhibiting lead poisoning, while **black children are nearly 2 times more likely to have lead poisoning than white children. Children that identify as multi-race are 3 times more likely to have lead poisoning than white children** (Figure 6). Historical housing policies that have perpetuated segregation and limited opportunity for home ownership, such as redlining, have led to the increase in risk factors for lead poisoning in black communities, including older housing stock, dilapidated housing, and fewer owner-occupied housing units[6,7].

Figure 6. Prevalence of Children with Blood Lead Levels ≥ 10 µg/dL[1] by Race[2]/Hispanic Ethnicity (2015-2019)



[1]Includes poisoned BLLs (defined as a venous test result ≥10 µg/dL) and results for children with two capillary tests ≥10 µg/dL drawn within 84 days of each other for children between 9 and 47 months of age.
[2]Each race category includes those of Hispanic and Non-Hispanic ethnicities.
[3]Prevalence values may be unstable due to small case counts.

Appendix I: High-Risk Communities for Childhood Lead Poisoning

Calendar Year: 2016 - 2020

Community	% 5-Year Screening	5-Year Cases	Incidence Rate per 1,000[1]	% PIR Below 2[2]	% Pre-1978 Housing Units[3]	High-Risk Score[4]
BOSTON	74%	214	2.7	28%	77%	5.0
BROCKTON	75%	98	5.5	30%	82%	11.4
CHELSEA	85%	19	2.2	39%	73%	5.4
CHICOPEE	61%	18	2.8	28%	81%	5.4
EVERETT	72%	27	3.4	29%	86%	7.2
FALL RIVER	74%	53	4.1	39%	82%	11.1
FITCHBURG	62%	16	2.8	28%	77%	5.2
HOLYOKE	66%	27	4.3	44%	81%	13.3
LAWRENCE	69%	53	3.3	45%	81%	10.2
LOWELL	66%	83	4.7	31%	63%	7.9
LYNN	77%	89	4.7	33%	66%	8.7
MALDEN	72%	34	3.5	28%	82%	6.8
NEW BEDFORD	79%	117	6.8	36%	46%	9.5
PITTSFIELD	72%	23	4.1	27%	59%	5.4
SPRINGFIELD	73%	106	4.5	46%	73%	12.7
WESTFIELD	58%	21	5.1	19%	69%	5.6
WORCESTER	73%	93	3.5	34%	78%	7.8
ALL HIGH-RISK	**72%**	**1,091**	**3.8**	**33%**	**78%**	**8.3**
MASSACHUSETTS	**70%**	**2,014**	**2.4**	**17%**	**69%**	**2.4**

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 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. An incident case is only counted once over the course of the 5-year time-period. MA CLPPP defines lead poisoning as a confirmed blood lead level ≥10 µg/dL.

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

[3] Percentage of housing units built prior to 1978 as estimated by the 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.

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

Appendix II: Screening and Prevalence of Childhood Blood Lead Levels for Children 9 months to less than 4 years of age by Community

Calendar Year 2020

Community	Population 9-47 mo.[1]	Total Screened	Percent Screened	Blood Lead Levels[2] (µg/dL) 0-4 N	0-4 (%)	5-9 N	5-9 (%)	10-24 N	10-24 (%)	≥25 N	≥25 (%)	Estimated Confirmed ≥5[3] N	Estimated Confirmed ≥5[3] (%)	Confirmed ≥10[4] N	Confirmed ≥10[4] (%)	Percent Pre-1978 Housing Units[5]
ABINGTON	708	473	67%	465	(98.3)	6	(1.3)	NS	(NS)	0	(0.0)	NS	(NS)	NS	(NS)	66%
ACTON	725	445	61%	441	(99.1)	NS	(NS)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	57%
ACUSHNET	280	206	74%	203	(98.5)	NS	(NS)	NS	(NS)	0	(0.0)	NS	(NS)	NS	(NS)	72%
ADAMS	229	178	78%	169	(94.9)	9	(5.1)	0	(0.0)	0	(0.0)	NS	(NS)	0	(0.0)	90%
AGAWAM	845	487	58%	479	(98.4)	7	(1.4)	NS	(NS)	0	(0.0)	7	(1.4)	NS	(NS)	68%
ALFORD	7	4	57%	NS	(NS)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	50%
AMESBURY	569	364	64%	358	(98.4)	6	(1.6)	0	(0.0)	0	(0.0)	NS	(NS)	0	(0.0)	66%
AMHERST	464	195	42%	193	(99.0)	NS	(NS)	NS	(NS)	0	(0.0)	0	(0.0)	NS	(NS)	60%
ANDOVER	1,174	654	56%	651	(99.5)	NS	(NS)	NS	(NS)	0	(0.0)	NS	(NS)	NS	(NS)	63%
AQUINNAH	12	3	25%	NS	(NS)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	41%
ARLINGTON	1,770	1,080	61%	1,070	(99.1)	8	(0.7)	NS	(NS)	0	(0.0)	7	(0.6)	NS	(NS)	86%
ASHBURNHAM	205	117	57%	115	(98.3)	NS	(NS)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	46%
ASHBY	107	63	59%	63	(100.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	58%
ASHFIELD	33	17	52%	15	(88.2)	NS	(NS)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	67%
ASHLAND	855	496	58%	485	(97.8)	9	(1.8)	NS	(NS)	NS	(NS)	7	(1.4)	NS	(NS)	42%
ATHOL	424	180	42%	165	(91.7)	11	(6.1)	NS	(NS)	NS	(NS)	12	(6.7)	NS	(NS)	74%
ATTLEBORO	1,871	1,149	61%	1,119	(97.4)	21	(1.8)	9	(0.8)	0	(0.0)	22	(1.9)	6	(0.5)	62%
AUBURN	507	351	69%	349	(99.4)	NS	(NS)	0	(0.0)	0	(0.0)	NS	(NS)	0	(0.0)	71%
AVON	133	116	87%	115	(99.1)	NS	(NS)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	89%
AYER	321	212	66%	209	(98.6)	NS	(NS)	NS	(NS)	0	(0.0)	NS	(NS)	NS	(NS)	58%
BARNSTABLE	1,405	915	65%	906	(99.0)	8	(0.9)	NS	(NS)	0	(0.0)	NS	(NS)	0	(0.0)	56%
BARRE	169	99	59%	96	(97.0)	NS	(NS)	NS	(NS)	0	(0.0)	NS	(NS)	NS	(NS)	60%
BECKET	43	24	56%	24	(100.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	52%

MASSACHUSETTS DEPARTMENT OF PUBLIC HEALTH
Childhood Lead Poisoning Prevention Program

Screening and Prevalence of Childhood Blood Lead Levels for Children 9 months to less than 4 years of age by Community

Calendar Year 2020

Community	Population 9-47 mo.[1]	Total Screened	Percent Screened	Blood Lead Levels[2] (µg/dL) 0-4 N	0-4 (%)	5-9 N	5-9 (%)	10-24 N	10-24 (%)	≥25 N	≥25 (%)	Estimated Confirmed ≥5[3] N	Estimated Confirmed ≥5[3] (%)	Confirmed ≥10[4] N	Confirmed ≥10[4] (%)	Percent Pre-1978 Housing Units[5]
BEDFORD	547	247	45%	245	(99.2)	NS	(NS)	NS	(NS)	0	(0.0)	NS	(NS)	NS	(NS)	60%
BELCHERTOWN	492	281	57%	272	(96.8)	8	(2.8)	NS	(NS)	0	(0.0)	NS	(NS)	NS	(NS)	39%
BELLINGHAM	760	294	39%	292	(99.3)	NS	(NS)	0	(0.0)	0	(0.0)	NS	(NS)	0	(0.0)	63%
BELMONT	1,093	509	47%	502	(98.6)	7	(1.4)	0	(0.0)	0	(0.0)	NS	(NS)	0	(0.0)	89%
BERKLEY	195	141	72%	139	(98.6)	NS	(NS)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	33%
BERLIN	89	67	75%	67	(100.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	42%
BERNARDSTON	43	28	65%	26	(92.9)	NS	(NS)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	66%
BEVERLY	1,490	1,016	68%	992	(97.6)	24	(2.4)	0	(0.0)	0	(0.0)	14	(1.4)	0	(0.0)	76%
BILLERICA	1,505	818	54%	815	(99.6)	NS	(NS)	NS	(NS)	0	(0.0)	NS	(NS)	NS	(NS)	62%
BLACKSTONE	304	131	43%	128	(97.7)	NS	(NS)	NS	(NS)	0	(0.0)	NS	(NS)	NS	(NS)	58%
BLANDFORD	22	27	>99%	27	(100.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	70%
BOLTON	156	140	90%	138	(98.6)	NS	(NS)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	43%
BOSTON	21,080	13,193	63%	12,974	(98.3)	172	(1.3)	43	(0.3)	4	(<0.1)	196	(1.5)	45	(0.3)	77%
BOURNE	502	322	64%	316	(98.1)	6	(1.9)	0	(0.0)	0	(0.0)	NS	(NS)	0	(0.0)	57%
BOXBOROUGH	128	100	78%	99	(99.0)	0	(0.0)	NS	(NS)	0	(0.0)	0	(0.0)	NS	(NS)	44%
BOXFORD	196	229	>99%	226	(98.7)	NS	(NS)	0	(0.0)	0	(0.0)	NS	(NS)	0	(0.0)	50%
BOYLSTON	144	117	81%	117	(100.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	55%
BRAINTREE	1,518	891	59%	885	(99.3)	6	(0.7)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	74%
BREWSTER	197	92	47%	92	(100.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	39%
BRIDGEWATER	799	670	84%	669	(99.9)	NS	(NS)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	51%
BRIMFIELD	90	57	63%	57	(100.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	46%
BROCKTON	4,691	3,084	66%	2,958	(95.9)	94	(3.0)	28	(0.9)	4	(0.1)	113	(3.7)	29	(0.9)	82%
BROOKFIELD	110	53	48%	52	(98.1)	NS	(NS)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	52%

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				0-4		5-9		10-24		≥25						
				N	(%)	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)	
BROOKLINE	2,312	1,236	53%	1,226	(99.2)	9	(0.7)	1	(0.1)	0	(0.0)	8	(0.6)	1	(0.1)	83%
BUCKLAND	43	20	47%	20	(100.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	73%
BURLINGTON	988	567	57%	566	(99.8)	NS	(NS)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	59%
CAMBRIDGE	2,957	1,930	65%	1,907	(98.8)	21	(1.1)	2	(0.1)	0	(0.0)	19	(1.0)	2	(0.1)	72%
CANTON	826	567	69%	565	(99.6)	NS	(NS)	NS	(NS)	0	(0.0)	NS	(NS)	NS	(NS)	58%
CARLISLE	123	90	73%	90	(100.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	52%
CARVER	356	179	50%	177	(98.9)	NS	(NS)	0	(0.0)	0	(0.0)	NS	(NS)	0	(0.0)	49%
CHARLEMONT	24	14	58%	14	(100.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	62%
CHARLTON	417	260	62%	260	(100.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	40%
CHATHAM	90	40	44%	39	(97.5)	NS	(NS)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	59%
CHELMSFORD	1,177	881	75%	868	(98.5)	11	(1.2)	NS	(NS)	0	(0.0)	8	(0.9)	NS	(NS)	66%
CHELSEA	2,023	1,292	64%	1,271	(98.4)	17	(1.3)	4	(0.3)	0	(0.0)	17	(1.3)	4	(0.3)	73%
CHESHIRE	69	60	87%	59	(98.3)	NS	(NS)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	64%
CHESTER	30	17	57%	15	(88.2)	NS	(NS)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	67%
CHESTERFIELD	21	17	81%	17	(100.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	66%
CHICOPEE	2,075	1,053	51%	1,022	(97.1)	26	(2.5)	NS	(NS)	0	(0.0)	18	(1.7)	NS	(NS)	81%
CHILMARK	17	8	47%	8	(100.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	52%
CLARKSBURG	43	39	91%	34	(87.2)	NS	(NS)	NS	(NS)	0	(0.0)	NS	(NS)	NS	(NS)	76%
CLINTON	558	340	61%	331	(97.4)	6	(1.8)	NS	(NS)	0	(0.0)	7	(2.1)	NS	(NS)	70%
COHASSET	239	231	97%	228	(98.7)	NS	(NS)	0	(0.0)	0	(0.0)	NS	(NS)	0	(0.0)	68%
COLRAIN	32	13	41%	13	(100.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	66%
CONCORD	449	272	61%	271	(99.6)	NS	(NS)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	64%
CONWAY	43	17	40%	16	(94.1)	0	(0.0)	NS	(NS)	0	(0.0)	0	(0.0)	NS	(NS)	50%

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				0-4		5-9		10-24		≥25						
				N	(%)	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)	
CUMMINGTON	11	7	64%	NS	(NS)	NS	(NS)	NS	(NS)	0	(0.0)	0	(0.0)	NS	(NS)	60%
DALTON	168	116	69%	112	(96.6)	NS	(NS)	0	(0.0)	0	(0.0)	NS	(NS)	0	(0.0)	79%
DANVERS	884	710	80%	698	(98.3)	10	(1.4)	NS	(NS)	0	(0.0)	7	(1.0)	NS	(NS)	68%
DARTMOUTH	765	554	72%	548	(98.9)	6	(1.1)	0	(0.0)	0	(0.0)	NS	(NS)	0	(0.0)	57%
DEDHAM	995	644	65%	640	(99.4)	NS	(NS)	0	(0.0)	0	(0.0)	NS	(NS)	0	(0.0)	75%
DEERFIELD	117	74	63%	74	(100.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	56%
DENNIS	283	174	61%	170	(97.7)	NS	(NS)	0	(0.0)	0	(0.0)	NS	(NS)	0	(0.0)	70%
DIGHTON	263	181	69%	178	(98.3)	NS	(NS)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	51%
DOUGLAS	319	135	42%	134	(99.3)	NS	(NS)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	43%
DOVER	139	111	80%	110	(99.1)	NS	(NS)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	64%
DRACUT	1,154	732	63%	726	(99.2)	6	(0.8)	0	(0.0)	0	(0.0)	NS	(NS)	0	(0.0)	55%
DUDLEY	340	232	68%	229	(98.7)	NS	(NS)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	65%
DUNSTABLE	65	66	>99%	66	(100.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	35%
DUXBURY	419	347	83%	347	(100.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	53%
EAST BRIDGEWATER	506	359	71%	357	(99.4)	0	(0.0)	NS	(NS)	0	(0.0)	0	(0.0)	0	(0.0)	61%
EAST BROOKFIELD	63	48	76%	47	(97.9)	0	(0.0)	NS	(NS)	0	(0.0)	0	(0.0)	NS	(NS)	63%
EAST LONGMEADOW	485	315	65%	312	(99.0)	NS	(NS)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	64%
EASTHAM	62	51	82%	50	(98.0)	0	(0.0)	NS	(NS)	0	(0.0)	0	(0.0)	NS	(NS)	52%
EASTHAMPTON	461	202	44%	201	(99.5)	NS	(NS)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	71%
EASTON	695	493	71%	489	(99.2)	NS	(NS)	NS	(NS)	0	(0.0)	NS	(NS)	NS	(NS)	53%
EDGARTOWN	134	79	59%	78	(98.7)	NS	(NS)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	33%
EGREMONT	18	17	94%	16	(94.1)	NS	(NS)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	65%
ERVING	57	26	46%	26	(100.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	73%

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				0-4		5-9		10-24		≥25						
				N	(%)	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)	
ESSEX	111	78	70%	77	(98.7)	NS	(NS)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	68%
EVERETT	2,228	1,331	60%	1,295	(97.3)	31	(2.3)	3	(0.2)	2	(0.2)	28	(2.1)	5	(0.4)	86%
FAIRHAVEN	399	305	76%	294	(96.4)	9	(3.0)	NS	(NS)	0	(0.0)	8	(2.6)	NS	(NS)	80%
FALL RIVER	3,544	2,384	67%	2,315	(97.1)	51	(2.1)	16	(0.7)	2	(0.1)	53	(2.2)	18	(0.8)	82%
FALMOUTH	771	507	66%	502	(99.0)	NS	(NS)	0	(0.0)	0	(0.0)	NS	(NS)	0	(0.0)	60%
FITCHBURG	1,836	1,029	56%	999	(97.1)	28	(2.7)	NS	(NS)	0	(0.0)	20	(1.9)	NS	(NS)	77%
FLORIDA	29	10	34%	9	(90.0)	NS	(NS)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	61%
FOXBOROUGH	665	468	70%	465	(99.4)	NS	(NS)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	57%
FRAMINGHAM	3,192	1,874	59%	1,853	(98.9)	14	(0.7)	6	(0.3)	1	(0.1)	18	(1.0)	7	(0.4)	76%
FRANKLIN	1,308	625	48%	620	(99.2)	NS	(NS)	0	(0.0)	0	(0.0)	NS	(NS)	0	(0.0)	39%
FREETOWN	212	186	88%	184	(98.9)	NS	(NS)	NS	(NS)	0	(0.0)	NS	(NS)	NS	(NS)	54%
GARDNER	772	380	49%	369	(97.1)	10	(2.6)	NS	(NS)	0	(0.0)	8	(2.1)	NS	(NS)	76%
GEORGETOWN	327	205	63%	202	(98.5)	NS	(NS)	0	(0.0)	0	(0.0)	NS	(NS)	0	(0.0)	57%
GILL	26	17	65%	17	(100.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	64%
GLOUCESTER	745	662	89%	640	(96.7)	21	(3.2)	NS	(NS)	0	(0.0)	16	(2.4)	NS	(NS)	76%
GOSHEN	31	8	26%	8	(100.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	69%
GOSNOLD	0	1	-	NS	(NS)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	80%
GRAFTON	791	461	58%	456	(98.9)	NS	(NS)	0	(0.0)	0	(0.0)	NS	(NS)	0	(0.0)	49%
GRANBY	141	94	67%	93	(98.9)	NS	(NS)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	59%
GRANVILLE	35	24	69%	23	(95.8)	NS	(NS)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	61%
GREAT BARRINGTON	136	81	60%	76	(93.8)	NS	(NS)	0	(0.0)	0	(0.0)	NS	(NS)	0	(0.0)	75%
GREENFIELD	568	236	42%	228	(96.6)	6	(2.5)	NS	(NS)	0	(0.0)	7	(3.0)	NS	(NS)	79%
GROTON	366	219	60%	219	(100.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	45%

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				0-4		5-9		10-24		≥25						
				N	(%)	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)	
GROVELAND	190	143	75%	137	(95.8)	NS	(NS)	NS	(NS)	0	(0.0)	NS	(NS)	NS	(NS)	64%
HADLEY	125	61	49%	61	(100.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	59%
HALIFAX	248	183	74%	183	(100.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	50%
HAMILTON	266	222	83%	221	(99.5)	NS	(NS)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	75%
HAMPDEN	106	61	58%	61	(100.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	75%
HANCOCK	18	11	61%	11	(100.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	42%
HANOVER	473	394	83%	390	(99.0)	NS	(NS)	0	(0.0)	0	(0.0)	NS	(NS)	0	(0.0)	64%
HANSON	335	230	69%	228	(99.1)	NS	(NS)	0	(0.0)	0	(0.0)	NS	(NS)	0	(0.0)	62%
HARDWICK	124	35	28%	35	(100.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	67%
HARVARD	112	81	72%	80	(98.8)	NS	(NS)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	65%
HARWICH	272	165	61%	159	(96.4)	NS	(NS)	NS	(NS)	0	(0.0)	NS	(NS)	NS	(NS)	57%
HATFIELD	64	37	58%	37	(100.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	74%
HAVERHILL	2,975	1,656	56%	1,625	(98.1)	27	(1.6)	4	(0.2)	0	(0.0)	24	(1.4)	4	(0.2)	65%
HAWLEY	7	1	14%	NS	(NS)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	57%
HEATH	10	6	60%	NS	(NS)	NS	(NS)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	59%
HINGHAM	891	608	68%	606	(99.7)	NS	(NS)	NS	(NS)	0	(0.0)	0	(0.0)	0	(0.0)	63%
HINSDALE	34	40	>99%	37	(92.5)	NS	(NS)	NS	(NS)	0	(0.0)	NS	(NS)	NS	(NS)	62%
HOLBROOK	405	311	77%	308	(99.0)	NS	(NS)	NS	(NS)	0	(0.0)	NS	(NS)	NS	(NS)	76%
HOLDEN	685	420	61%	417	(99.3)	NS	(NS)	NS	(NS)	0	(0.0)	NS	(NS)	NS	(NS)	60%
HOLLAND	68	50	74%	50	(100.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	57%
HOLLISTON	467	306	66%	301	(98.4)	NS	(NS)	0	(0.0)	0	(0.0)	NS	(NS)	0	(0.0)	70%
HOLYOKE	1,878	949	51%	932	(98.2)	13	(1.4)	NS	(NS)	0	(0.0)	15	(1.6)	NS	(NS)	81%
HOPEDALE	173	112	65%	106	(94.6)	6	(5.4)	0	(0.0)	0	(0.0)	NS	(NS)	0	(0.0)	59%

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				0-4		5-9		10-24		≥25						
				N	(%)	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)	
HOPKINTON	593	493	83%	487	(98.8)	NS	(NS)	NS	(NS)	0	(0.0)	NS	(NS)	0	(0.0)	38%
HUBBARDSTON	135	69	51%	67	(97.1)	NS	(NS)	0	(0.0)	0	(0.0)	NS	(NS)	0	(0.0)	30%
HUDSON	747	482	65%	475	(98.5)	6	(1.2)	NS	(NS)	0	(0.0)	6	(1.2)	NS	(NS)	57%
HULL	240	130	54%	128	(98.5)	NS	(NS)	0	(0.0)	0	(0.0)	NS	(NS)	0	(0.0)	77%
HUNTINGTON	56	27	48%	24	(88.9)	NS	(NS)	0	(0.0)	0	(0.0)	NS	(NS)	0	(0.0)	68%
IPSWICH	338	207	61%	200	(96.6)	6	(2.9)	NS	(NS)	0	(0.0)	NS	(NS)	NS	(NS)	63%
KINGSTON	450	279	62%	277	(99.3)	NS	(NS)	0	(0.0)	0	(0.0)	NS	(NS)	0	(0.0)	53%
LAKEVILLE	347	258	74%	256	(99.2)	NS	(NS)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	46%
LANCASTER	185	145	78%	145	(100.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	70%
LANESBOROUGH	68	55	81%	54	(98.2)	NS	(NS)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	67%
LAWRENCE	4,808	2,670	56%	2,638	(98.8)	22	(0.8)	6	(0.2)	4	(0.1)	31	(1.2)	10	(0.4)	81%
LEE	143	76	53%	75	(98.7)	NS	(NS)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	72%
LEICESTER	322	201	62%	198	(98.5)	NS	(NS)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	63%
LENOX	90	54	60%	53	(98.1)	0	(0.0)	NS	(NS)	0	(0.0)	0	(0.0)	NS	(NS)	69%
LEOMINSTER	1,455	1,034	71%	1,023	(98.9)	10	(1.0)	NS	(NS)	0	(0.0)	8	(0.8)	NS	(NS)	66%
LEVERETT	36	18	50%	17	(94.4)	NS	(NS)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	57%
LEXINGTON	951	388	41%	386	(99.5)	NS	(NS)	NS	(NS)	0	(0.0)	NS	(NS)	NS	(NS)	71%
LEYDEN	11	14	>99%	14	(100.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	58%
LINCOLN	518	150	29%	149	(99.3)	NS	(NS)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	56%
LITTLETON	329	251	76%	250	(99.6)	NS	(NS)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	54%
LONGMEADOW	463	258	56%	256	(99.2)	NS	(NS)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	80%
LOWELL	5,305	2,867	54%	2,791	(97.3)	56	(2.0)	19	(0.7)	1	(<0.1)	62	(2.2)	18	(0.6)	63%
LUDLOW	508	374	74%	369	(98.7)	NS	(NS)	NS	(NS)	0	(0.0)	NS	(NS)	NS	(NS)	59%

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Community	Population 9-47 mo.[1]	Total Screened	Percent Screened	Blood Lead Levels[2] (µg/dL)								Estimated Confirmed ≥5[3]		Confirmed ≥10[4]		Percent Pre-1978 Housing Units[5]
				0-4		5-9		10-24		≥25						
				N	(%)	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)	
LUNENBURG	327	254	78%	252	(99.2)	NS	(NS)	NS	(NS)	0	(0.0)	NS	(NS)	0	(0.0)	85%
LYNN	5,008	3,446	69%	3,324	(96.5)	101	(2.9)	20	(0.6)	1	(<0.1)	97	(2.8)	20	(0.6)	66%
LYNNFIELD	323	360	>99%	359	(99.7)	NS	(NS)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	76%
MALDEN	2,664	1,690	63%	1,654	(97.9)	31	(1.8)	5	(0.3)	0	(0.0)	27	(1.6)	5	(0.3)	82%
MANCHESTER	119	68	57%	67	(98.5)	NS	(NS)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	48%
MANSFIELD	825	548	66%	544	(99.3)	NS	(NS)	NS	(NS)	0	(0.0)	NS	(NS)	NS	(NS)	85%
MARBLEHEAD	548	426	78%	418	(98.1)	8	(1.9)	0	(0.0)	0	(0.0)	NS	(NS)	0	(0.0)	58%
MARION	113	82	73%	81	(98.8)	NS	(NS)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	58%
MARLBOROUGH	1,924	971	50%	949	(97.7)	16	(1.6)	NS	(NS)	NS	(NS)	18	(1.9)	6	(0.6)	64%
MARSHFIELD	881	586	67%	583	(99.5)	NS	(NS)	0	(0.0)	0	(0.0)	NS	(NS)	0	(0.0)	25%
MASHPEE	407	262	64%	261	(99.6)	NS	(NS)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	62%
MATTAPOISETT	115	83	72%	82	(98.8)	NS	(NS)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	67%
MAYNARD	467	226	48%	225	(99.6)	NS	(NS)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	60%
MEDFIELD	375	349	93%	346	(99.1)	NS	(NS)	NS	(NS)	0	(0.0)	NS	(NS)	NS	(NS)	80%
MEDFORD	2,037	1,237	61%	1,210	(97.8)	22	(1.8)	5	(0.4)	0	(0.0)	19	(1.5)	4	(0.3)	54%
MEDWAY	457	240	53%	237	(98.8)	NS	(NS)	NS	(NS)	0	(0.0)	0	(0.0)	NS	(NS)	85%
MELROSE	1,114	879	79%	859	(97.7)	16	(1.8)	NS	(NS)	0	(0.0)	13	(1.5)	NS	(NS)	40%
MENDON	168	99	59%	99	(100.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	41%
MERRIMAC	133	150	>99%	148	(98.7)	NS	(NS)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	62%
METHUEN	2,148	1,080	50%	1,067	(98.8)	11	(1.0)	NS	(NS)	NS	(NS)	11	(1.0)	NS	(NS)	50%
MIDDLEBOROUGH	917	518	56%	509	(98.3)	8	(1.5)	NS	(NS)	0	(0.0)	6	(1.2)	NS	(NS)	49%
MIDDLEFIELD	11	6	55%	6	(100.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	38%
MIDDLETON	242	175	72%	174	(99.4)	NS	(NS)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	64%

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				0-4		5-9		10-24		≥25						
				N	(%)	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)	
MILFORD	1,223	716	59%	688	(96.1)	22	(3.1)	NS	(NS)	NS	(NS)	24	(3.4)	NS	(NS)	61%
MILLBURY	441	282	64%	279	(98.9)	NS	(NS)	NS	(NS)	0	(0.0)	0	(0.0)	NS	(NS)	54%
MILLIS	276	184	67%	183	(99.5)	NS	(NS)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	49%
MILLVILLE	102	41	40%	39	(95.1)	NS	(NS)	0	(0.0)	0	(0.0)	NS	(NS)	0	(0.0)	83%
MILTON	1,001	785	78%	779	(99.2)	6	(0.8)	0	(0.0)	0	(0.0)	NS	(NS)	0	(0.0)	72%
MONROE	1	1	100%	NS	(NS)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	57%
MONSON	217	114	53%	113	(99.1)	NS	(NS)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	81%
MONTAGUE	254	102	40%	102	(100.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	56%
MONTEREY	22	6	27%	6	(100.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	54%
MONTGOMERY	26	14	54%	13	(92.9)	NS	(NS)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	62%
MOUNT WASHINGTON	2	4	>99%	NS	(NS)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	86%
NAHANT	54	57	>99%	55	(96.5)	NS	(NS)	0	(0.0)	0	(0.0)	NS	(NS)	0	(0.0)	37%
NANTUCKET	514	217	42%	208	(95.9)	8	(3.7)	0	(0.0)	NS	(NS)	NS	(NS)	0	(0.0)	63%
NATICK	1,432	968	68%	958	(99.0)	9	(0.9)	NS	(NS)	0	(0.0)	7	(0.7)	NS	(NS)	68%
NEEDHAM	1,102	844	77%	841	(99.6)	NS	(NS)	0	(0.0)	0	(0.0)	NS	(NS)	0	(0.0)	75%
NEW ASHFORD	3	1	33%	NS	(NS)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	85%
NEW BEDFORD	4,479	3,268	73%	3,101	(94.9)	128	(3.9)	35	(1.1)	4	(0.1)	132	(4.0)	36	(1.1)	46%
NEW BRAINTREE	27	14	52%	14	(100.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	64%
NEW MARLBOROUGH	27	13	48%	12	(92.3)	NS	(NS)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	59%
NEW SALEM	23	9	39%	8	(88.9)	NS	(NS)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	60%
NEWBURY	193	125	65%	122	(97.6)	NS	(NS)	NS	(NS)	0	(0.0)	0	(0.0)	0	(0.0)	74%
NEWBURYPORT	492	310	63%	307	(99.0)	NS	(NS)	0	(0.0)	0	(0.0)	NS	(NS)	0	(0.0)	82%
NEWTON	2,974	1,699	57%	1,684	(99.1)	14	(0.8)	1	(0.1)	0	(0.0)	11	(0.6)	1	(0.1)	42%

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				0-4		5-9		10-24		≥25						
				N	(%)	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)	
NORFOLK	348	323	93%	323	(100.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	86%
NORTH ADAMS	435	255	59%	239	(93.7)	15	(5.9)	NS	(NS)	0	(0.0)	10	(3.9)	NS	(NS)	53%
NORTH ANDOVER	1,086	651	60%	645	(99.1)	6	(0.9)	0	(0.0)	0	(0.0)	NS	(NS)	0	(0.0)	59%
NORTH ATTLEBOROUGH	1,151	617	54%	602	(97.6)	12	(1.9)	NS	(NS)	0	(0.0)	10	(1.6)	NS	(NS)	70%
NORTH BROOKFIELD	171	64	37%	60	(93.8)	NS	(NS)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	58%
NORTH READING	539	359	67%	357	(99.4)	NS	(NS)	NS	(NS)	0	(0.0)	0	(0.0)	NS	(NS)	74%
NORTHAMPTON	648	334	52%	328	(98.2)	NS	(NS)	NS	(NS)	0	(0.0)	NS	(NS)	NS	(NS)	54%
NORTHBOROUGH	372	345	93%	344	(99.7)	0	(0.0)	NS	(NS)	0	(0.0)	0	(0.0)	0	(0.0)	62%
NORTHBRIDGE	723	275	38%	268	(97.5)	7	(2.5)	0	(0.0)	0	(0.0)	NS	(NS)	0	(0.0)	63%
NORTHFIELD	64	29	45%	27	(93.1)	NS	(NS)	NS	(NS)	0	(0.0)	0	(0.0)	NS	(NS)	44%
NORTON	605	360	60%	356	(98.9)	NS	(NS)	NS	(NS)	0	(0.0)	NS	(NS)	NS	(NS)	67%
NORWELL	369	325	88%	324	(99.7)	NS	(NS)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	77%
NORWOOD	1,212	842	69%	826	(98.1)	13	(1.5)	NS	(NS)	0	(0.0)	11	(1.3)	NS	(NS)	43%
OAK BLUFFS	177	59	33%	58	(98.3)	NS	(NS)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	42%
OAKHAM	41	18	44%	18	(100.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	73%
ORANGE	275	72	26%	65	(90.3)	6	(8.3)	NS	(NS)	0	(0.0)	NS	(NS)	NS	(NS)	57%
ORLEANS	84	42	50%	40	(95.2)	NS	(NS)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	61%
OTIS	43	19	44%	18	(94.7)	NS	(NS)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	62%
OXFORD	457	261	57%	259	(99.2)	NS	(NS)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	70%
PALMER	334	236	71%	226	(95.8)	7	(3.0)	NS	(NS)	0	(0.0)	9	(3.8)	NS	(NS)	70%
PAXTON	144	80	56%	79	(98.8)	NS	(NS)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	67%
PEABODY	1,774	1,369	77%	1,358	(99.2)	10	(0.7)	1	(0.1)	0	(0.0)	8	(0.6)	1	(0.1)	59%
PELHAM	31	11	35%	11	(100.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	53%

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				0-4		5-9		10-24		≥25						
				N	(%)	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)	
PEMBROKE	643	407	63%	406	(99.8)	NS	(NS)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	50%
PEPPERELL	382	235	62%	229	(97.4)	6	(2.6)	0	(0.0)	0	(0.0)	NS	(NS)	0	(0.0)	54%
PERU	17	14	82%	14	(100.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	68%
PETERSHAM	32	18	56%	16	(88.9)	NS	(NS)	0	(0.0)	0	(0.0)	NS	(NS)	0	(0.0)	45%
PHILLIPSTON	41	22	54%	20	(90.9)	NS	(NS)	NS	(NS)	0	(0.0)	0	(0.0)	NS	(NS)	83%
PITTSFIELD	1,557	945	61%	900	(95.2)	41	(4.3)	NS	(NS)	NS	(NS)	30	(3.2)	NS	(NS)	59%
PLAINFIELD	19	13	68%	13	(100.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	44%
PLAINVILLE	338	219	65%	219	(100.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	52%
PLYMOUTH	2,091	817	39%	813	(99.5)	NS	(NS)	0	(0.0)	0	(0.0)	NS	(NS)	0	(0.0)	50%
PLYMPTON	73	63	86%	63	(100.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	50%
PRINCETON	72	59	82%	58	(98.3)	NS	(NS)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	70%
PROVINCETOWN	29	13	45%	13	(100.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	70%
QUINCY	3,423	2,209	65%	2,179	(98.6)	26	(1.2)	4	(0.2)	0	(0.0)	25	(1.1)	3	(0.1)	68%
RANDOLPH	1,327	772	58%	770	(99.7)	NS	(NS)	NS	(NS)	0	(0.0)	0	(0.0)	NS	(NS)	50%
RAYNHAM	507	410	81%	407	(99.3)	NS	(NS)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	47%
READING	1,088	606	56%	604	(99.7)	NS	(NS)	NS	(NS)	0	(0.0)	0	(0.0)	NS	(NS)	70%
REHOBOTH	354	191	54%	191	(100.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	74%
REVERE	2,443	1,481	61%	1,460	(98.6)	15	(1.0)	6	(0.4)	0	(0.0)	18	(1.2)	6	(0.4)	40%
RICHMOND	15	17	>99%	14	(82.4)	NS	(NS)	0	(0.0)	0	(0.0)	NS	(NS)	0	(0.0)	60%
ROCHESTER	133	130	98%	128	(98.5)	NS	(NS)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	79%
ROCKLAND	750	419	56%	418	(99.8)	NS	(NS)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	75%
ROCKPORT	129	89	69%	87	(97.8)	NS	(NS)	0	(0.0)	0	(0.0)	NS	(NS)	0	(0.0)	49%
ROWE	12	4	33%	NS	(NS)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	54%

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				0-4		5-9		10-24		≥25						
				N	(%)	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)	
ROWLEY	200	122	61%	122	(100.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	64%
ROYALSTON	36	14	39%	14	(100.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	44%
RUSSELL	63	34	54%	31	(91.2)	NS	(NS)	NS	(NS)	0	(0.0)	0	(0.0)	0	(0.0)	80%
RUTLAND	313	182	58%	181	(99.5)	NS	(NS)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	50%
SALEM	1,682	1,032	61%	998	(96.7)	33	(3.2)	NS	(NS)	0	(0.0)	25	(2.4)	NS	(NS)	56%
SALISBURY	244	127	52%	127	(100.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	41%
SANDISFIELD	20	14	70%	14	(100.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	72%
SANDWICH	561	374	67%	372	(99.5)	NS	(NS)	0	(0.0)	0	(0.0)	NS	(NS)	0	(0.0)	57%
SAUGUS	842	603	72%	599	(99.3)	NS	(NS)	NS	(NS)	0	(0.0)	NS	(NS)	NS	(NS)	74%
SAVOY	16	5	31%	NS	(NS)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	65%
SCITUATE	559	510	91%	509	(99.8)	NS	(NS)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	61%
SEEKONK	337	247	73%	242	(98.0)	NS	(NS)	0	(0.0)	NS	(NS)	NS	(NS)	NS	(NS)	67%
SHARON	621	384	62%	383	(99.7)	NS	(NS)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	79%
SHEFFIELD	56	51	91%	48	(94.1)	NS	(NS)	0	(0.0)	0	(0.0)	NS	(NS)	0	(0.0)	65%
SHELBURNE	40	16	40%	15	(93.8)	NS	(NS)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	58%
SHERBORN	87	96	>99%	94	(97.9)	NS	(NS)	0	(0.0)	0	(0.0)	NS	(NS)	0	(0.0)	51%
SHIRLEY	239	131	55%	127	(96.9)	NS	(NS)	NS	(NS)	NS	(NS)	NS	(NS)	NS	(NS)	51%
SHREWSBURY	1,394	810	58%	802	(99.0)	7	(0.9)	NS	(NS)	0	(0.0)	7	(0.9)	NS	(NS)	81%
SHUTESBURY	37	17	46%	17	(100.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	86%
SOMERSET	510	303	59%	298	(98.3)	NS	(NS)	0	(0.0)	0	(0.0)	NS	(NS)	0	(0.0)	67%
SOMERVILLE	2,191	1,418	65%	1,395	(98.4)	18	(1.3)	5	(0.4)	0	(0.0)	17	(1.2)	5	(0.4)	56%
SOUTH HADLEY	420	228	54%	228	(100.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	46%
SOUTHAMPTON	158	84	53%	84	(100.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	78%

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Community	Population 9-47 mo.[1]	Total Screened	Percent Screened	Blood Lead Levels[2] (µg/dL)								Estimated Confirmed ≥5[3]		Confirmed ≥10[4]		Percent Pre-1978 Housing Units[5]
				0-4		5-9		10-24		≥25						
				N	(%)	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)	
SOUTHBOROUGH	290	221	76%	221	(100.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	54%
SOUTHBRIDGE	638	370	58%	354	(95.7)	12	(3.2)	NS	(NS)	0	(0.0)	12	(3.2)	NS	(NS)	67%
SOUTHWICK	257	151	59%	148	(98.0)	NS	(NS)	0	(0.0)	0	(0.0)	NS	(NS)	0	(0.0)	83%
SPENCER	354	222	63%	219	(98.6)	NS	(NS)	NS	(NS)	0	(0.0)	NS	(NS)	NS	(NS)	51%
SPRINGFIELD	6,378	3,878	61%	3,760	(97.0)	100	(2.6)	15	(0.4)	3	(0.1)	101	(2.6)	17	(0.4)	73%
STERLING	223	136	61%	136	(100.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	75%
STOCKBRIDGE	22	16	73%	13	(81.3)	NS	(NS)	0	(0.0)	0	(0.0)	NS	(NS)	0	(0.0)	69%
STONEHAM	678	585	86%	579	(99.0)	NS	(NS)	NS	(NS)	0	(0.0)	NS	(NS)	NS	(NS)	50%
STOUGHTON	951	750	79%	742	(98.9)	NS	(NS)	NS	(NS)	NS	(NS)	NS	(NS)	NS	(NS)	53%
STOW	252	155	62%	151	(97.4)	NS	(NS)	0	(0.0)	0	(0.0)	NS	(NS)	0	(0.0)	59%
STURBRIDGE	425	180	42%	180	(100.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	59%
SUDBURY	585	435	74%	434	(99.8)	NS	(NS)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	49%
SUNDERLAND	85	42	49%	42	(100.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	81%
SUTTON	228	194	85%	192	(99.0)	NS	(NS)	0	(0.0)	0	(0.0)	NS	(NS)	0	(0.0)	68%
SWAMPSCOTT	446	423	95%	418	(98.8)	NS	(NS)	NS	(NS)	0	(0.0)	NS	(NS)	NS	(NS)	63%
SWANSEA	405	271	67%	270	(99.6)	NS	(NS)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	53%
TAUNTON	2,288	1,521	66%	1,482	(97.4)	33	(2.2)	5	(0.3)	1	(0.1)	31	(2.0)	5	(0.3)	48%
TEMPLETON	332	135	41%	132	(97.8)	NS	(NS)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	54%
TEWKSBURY	999	627	63%	627	(100.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	47%
TISBURY	146	96	66%	94	(97.9)	NS	(NS)	NS	(NS)	0	(0.0)	0	(0.0)	NS	(NS)	68%
TOLLAND	14	1	7%	NS	(NS)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	60%
TOPSFIELD	138	133	96%	132	(99.2)	NS	(NS)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	57%
TOWNSEND	281	204	73%	200	(98.0)	NS	(NS)	NS	(NS)	0	(0.0)	NS	(NS)	0	(0.0)	29%

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				0-4		5-9		10-24		≥25						
				N	(%)	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)	
TRURO	25	10	40%	10	(100.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	61%
TYNGSBOROUGH	359	247	69%	244	(98.8)	NS	(NS)	0	(0.0)	0	(0.0)	NS	(NS)	0	(0.0)	58%
TYRINGHAM	2	3	>99%	NS	(NS)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	87%
UPTON	289	185	64%	185	(100.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	75%
UXBRIDGE	505	202	40%	198	(98.0)	NS	(NS)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	44%
WAKEFIELD	944	677	72%	669	(98.8)	8	(1.2)	0	(0.0)	0	(0.0)	NS	(NS)	0	(0.0)	45%
WALES	63	27	43%	27	(100.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	73%
WALPOLE	923	695	75%	694	(99.9)	NS	(NS)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	53%
WALTHAM	2,269	1,295	57%	1,272	(98.2)	18	(1.4)	5	(0.4)	0	(0.0)	20	(1.5)	3	(0.2)	58%
WARE	362	156	43%	148	(94.9)	NS	(NS)	NS	(NS)	0	(0.0)	0	(0.0)	NS	(NS)	74%
WAREHAM	797	468	59%	458	(97.9)	9	(1.9)	NS	(NS)	0	(0.0)	NS	(NS)	NS	(NS)	67%
WARREN	189	50	26%	45	(90.0)	NS	(NS)	0	(0.0)	0	(0.0)	NS	(NS)	0	(0.0)	70%
WARWICK	17	6	35%	6	(100.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	60%
WASHINGTON	9	7	78%	7	(100.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	62%
WATERTOWN	1,132	787	70%	779	(99.0)	8	(1.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	78%
WAYLAND	401	331	83%	328	(99.1)	NS	(NS)	0	(0.0)	0	(0.0)	NS	(NS)	0	(0.0)	74%
WEBSTER	659	392	59%	381	(97.2)	8	(2.0)	NS	(NS)	0	(0.0)	0	(0.0)	NS	(NS)	70%
WELLESLEY	1,140	530	46%	528	(99.6)	NS	(NS)	0	(0.0)	0	(0.0)	NS	(NS)	0	(0.0)	77%
WELLFLEET	43	18	42%	17	(94.4)	NS	(NS)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	53%
WENDELL	17	6	35%	6	(100.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	44%
WENHAM	94	95	>99%	94	(98.9)	NS	(NS)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	70%
WEST BOYLSTON	176	127	72%	126	(99.2)	NS	(NS)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	67%
WEST BRIDGEWATER	204	218	>99%	216	(99.1)	NS	(NS)	0	(0.0)	0	(0.0)	NS	(NS)	0	(0.0)	71%

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				0-4		5-9		10-24		≥25						
				N	(%)	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)	
WEST BROOKFIELD	94	57	61%	57	(100.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	66%
WEST NEWBURY	95	99	>99%	98	(99.0)	NS	(NS)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	50%
WEST SPRINGFIELD	1,115	592	53%	580	(98.0)	8	(1.4)	NS	(NS)	0	(0.0)	10	(1.7)	NS	(NS)	77%
WEST STOCKBRIDGE	15	12	80%	12	(100.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	60%
WEST TISBURY	68	38	56%	35	(92.1)	NS	(NS)	0	(0.0)	0	(0.0)	NS	(NS)	0	(0.0)	30%
WESTBOROUGH	692	511	74%	501	(98.0)	9	(1.8)	NS	(NS)	0	(0.0)	8	(1.6)	NS	(NS)	52%
WESTFIELD	1,392	654	47%	634	(96.9)	14	(2.1)	6	(0.9)	0	(0.0)	17	(2.6)	6	(0.9)	69%
WESTFORD	660	512	78%	506	(98.8)	NS	(NS)	NS	(NS)	0	(0.0)	NS	(NS)	0	(0.0)	43%
WESTHAMPTON	43	14	33%	14	(100.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	56%
WESTMINSTER	190	164	86%	164	(100.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	60%
WESTON	300	204	68%	201	(98.5)	NS	(NS)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	73%
WESTPORT	391	272	70%	269	(98.9)	NS	(NS)	0	(0.0)	0	(0.0)	NS	(NS)	0	(0.0)	61%
WESTWOOD	472	367	78%	367	(100.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	64%
WEYMOUTH	2,193	1,457	66%	1,445	(99.2)	7	(0.5)	5	(0.3)	0	(0.0)	11	(0.8)	5	(0.3)	75%
WHATELY	39	29	74%	29	(100.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	58%
WHITMAN	640	348	54%	341	(98.0)	6	(1.7)	NS	(NS)	0	(0.0)	6	(1.7)	NS	(NS)	77%
WILBRAHAM	393	312	79%	310	(99.4)	NS	(NS)	0	(0.0)	0	(0.0)	NS	(NS)	0	(0.0)	74%
WILLIAMSBURG	59	27	46%	27	(100.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	67%
WILLIAMSTOWN	117	100	85%	92	(92.0)	7	(7.0)	NS	(NS)	0	(0.0)	NS	(NS)	0	(0.0)	79%
WILMINGTON	932	489	52%	489	(100.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	57%
WINCHENDON	337	190	56%	181	(95.3)	8	(4.2)	NS	(NS)	0	(0.0)	6	(3.2)	NS	(NS)	50%
WINCHESTER	800	541	68%	537	(99.3)	NS	(NS)	NS	(NS)	0	(0.0)	NS	(NS)	NS	(NS)	77%
WINDSOR	9	12	>99%	10	(83.3)	NS	(NS)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	48%

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WINTHROP	584	387	66%	375	(96.9)	10	(2.6)	NS	(NS)	0	(0.0)	8	(2.1)	NS	(NS)	87%
WOBURN	1,588	1,013	64%	996	(98.3)	14	(1.4)	NS	(NS)	0	(0.0)	11	(1.1)	NS	(NS)	67%
WORCESTER	7,321	4,421	60%	4,343	(98.2)	56	(1.3)	20	(0.5)	2	(<0.1)	71	(1.6)	22	(0.5)	78%
WORTHINGTON	13	17	>99%	16	(94.1)	NS	(NS)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	63%
WRENTHAM	366	307	84%	305	(99.3)	NS	(NS)	NS	(NS)	0	(0.0)	NS	(NS)	NS	(NS)	52%
YARMOUTH	652	340	52%	334	(98.2)	NS	(NS)	NS	(NS)	0	(0.0)	NS	(NS)	0	(0.0)	67%
Total for MA	240,575	150,092	62%	147,452	(98.2)	2,161	(1.4)	438	(0.3)	41	(<0.1)	1,880	(1.3)	430	(0.3)	69%

Comments:

N = number (counts of children)

NS = number or prevalence is not shown when N is between 1-5 and total screened is less than 1,200. These small numbers are suppressed to protect privacy.

Footnotes:

[1] This report uses 2019 population estimates. Population count for children 9 to 47 months of age is obtained from UMass Donahue Institute population estimates. For more information, see "About our Data" on mass.gov/dph/matracking. According to MA state regulations (105 CMR 460.050), children are not required to be screened until 9 months of age.

[2] Blood lead levels (BLLs) include both confirmed and unconfirmed blood lead tests. A confirmed test is either a single venous specimen of any value, or two capillary specimens ≥5 µg/dL drawn within 12 weeks of each other. A single capillary blood test of any value is considered unconfirmed.

[3] The CDC uses a reference value of 5 µg/dL to identify children whose BLLs are higher than 97.5% of all U.S. children's levels, based on the National Health and Nutrition Examination Survey (NHANES). There is no safe blood lead level. The number of children with estimated confirmed BLLs ≥5 µg/dL is calculated as the sum of those with confirmed BLLs ≥5 µg/dL and a proportion of unconfirmed capillary tests estimated to be truly ≥5 µg/dL based on known capillary test reliability. The CDC reference value of 5 µg/dL was in effect from 2012-2021.

[4] MA CLPPP defines lead poisoning as a confirmed BLL ≥10 µg/dL.

[5] Percentage of housing units built prior to 1978 as estimated by the 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.

APPENDIX III: Monthly Lead Poisoning Cases Data Table

Date Range	Number of Children with Venous Confirmed BLLs ≥10 µg/dL (9-47 months)
1/1/19 - 1/31/19	56
2/1/19 - 2/28/19	60
3/1/19 - 3/31/19	60
4/1/19 - 4/30/19	69
5/1/19 - 5/31/19	57
6/1/19 - 6/30/19	65
7/1/19 - 7/31/19	79
8/1/19 - 8/31/19	66
9/1/19 - 9/30/19	75
10/1/19 - 10/31/19	59
11/1/19 - 11/30/19	55
12/1/19 - 12/31/19	53
1/1/20 - 1/31/20	54
2/1/20 - 2/29/20	41
3/1/20 - 3/31/20	28
4/1/20 - 4/30/20	14
5/1/20 - 5/31/20	42
6/1/20 - 6/30/20	51
7/1/20 - 7/31/20	84
8/1/20 - 8/31/20	68
9/1/20 - 9/30/20	84
10/1/20 - 10/31/20	101
11/1/20 - 11/30/20	69
12/1/20 - 12/31/20	63

Due to the frequency of follow-up testing for lead poisoned children, the same child may have had multiple poisoned lead results across multiple months. For this reason, monthly case counts should not be summed to obtain annual case counts because this may lead to an overestimate.

APPENDIX IV: Technical Notes

High-Risk Community Report:

- **High-Risk Communities**: Communities with a 5-year incidence of confirmed ≥ 10 µg/dL cases of at least 15 and with a 5-year incidence rate that is above the state rate 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. More information about the *Get the Lead Out* program can be found here.
- **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 two 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. To determine the blood lead level of a child with multiple tests within the period of evaluation, venous specimens take priority followed by confirmed capillary specimens. Single unconfirmed capillary specimens are not included in the incidence rate.
- **% PIR Below 2**: The poverty to income 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.
- **High-Risk Score**: This score is used to determine which communities are at highest risk for childhood lead poisoning. 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.

Annual Screening and Prevalence Report:

- **Total Screened**: The total number of children 9 to 47 months of age screened for lead poisoning in the given calendar year.
- **Percent Screened**: The percentage of children 9 to 47 months of age who were screened for lead poisoning in the given calendar year. This is calculated by dividing the total number of children screened by the underlying population in the geographic area based on the population estimate for the given calendar year. The 2020 report uses 2019 population estimates to calculate percent screened because the 2020 decennial census population estimates were not available at the time of publication. As such, screening rate data in this report may differ from other publications that follow or are updated more frequently, such as Environmental Public Health Tracking (EPHT) data. In considering which data source to use, screening rate estimates in this report are most useful when comparing community-level screening rate trends across time up to 2020. Screening rate data on EPHT, on the other hand, may be considered to be the most accurate for 2020 and beyond due to significant updates to population estimates with the 2020 U.S. Census.
- **µg/dL**: micrograms per deciliter, the unit of measurement for blood lead specimens.

- **Blood lead levels**: The number and percentage of children within each blood lead level category, out of all children screened 9 to 47 months of age. Only one blood lead specimen is counted per child. If a child has had more than one blood lead specimen within the designated time-period, then the highest specimen is counted, with venous specimens taking priority, followed by confirmed capillary specimens and, finally, unconfirmed capillary specimens when no confirmed specimens are available. On December 1, 2017, the MA CLPPP began requiring venous confirmation of capillary blood lead specimens ≥5 µg/dL. Prior to that date, capillary blood lead specimens between 5 and 9 µg/dL were frequently unconfirmed. Unconfirmed capillary blood lead specimens ≥10 µg/dL are less common but may exist due to a failure to re-test according to guidelines. In December 2017, the MA CLPPP also revised its regulations to define childhood lead poisoning as a venous blood lead level ≥10 µg/dL and to define a blood lead level of concern as one between 5 and 9 µg/dL. The CDC reference level for blood lead in children, in effect from 2012-2021, is 5 µg/dL. For more information regarding the CDC reference level, please visit the CDC's information page on blood lead levels here.
- **Estimated confirmed ≥5**: Capillary blood tests can be a useful tool for preliminary lead screening because they are easier to conduct than venous tests, especially on children. However, a single capillary test does not provide adequate precision or reliability to be considered confirmatory of an elevated blood lead level. Only about 1/3 of capillary results in the 5-9 µg/dL range are found to be truly ≥5 µg/dL upon retest. Until confirmatory testing of preliminary capillary results 5-9 µg/dL becomes standard practice in Massachusetts, as required by MA CLPPP as of December 1, 2017, a calculation is employed to estimate the true number of children with blood lead levels ≥5 µg/dL. The number of children with estimated confirmed ≥5 µg/dL blood lead levels is calculated as the sum of those with confirmed blood lead levels ≥5 µg/dL and a proportion of those having unconfirmed blood lead levels ≥5 µg/dL. The proportion of unconfirmed blood lead levels ≥5 µg/dL estimated to be truly elevated is based on the annual statewide proportion of capillary results in the 5-9 µg/dL range found to be truly ≥5 µg/dL upon retest (positive predictive value).

Other:

- **Rural cluster definitions**: Rural levels and clusters are defined by the MA Office of Rural Health. More detail can be found here.

APPENDIX V: References

1. Advisory Committee on Childhood Lead Poisoning Prevention for the Centers for Disease Control and Prevention. Low Level Lead Exposure Harms Children: A Renewed Call for Primary Prevention. January 2012: http://www.cdc.gov/nceh/lead/acclpp/final_document_030712.pdf

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For More Information

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