These 5 graphics show the prevalence of childhood lead poisoning

By Matt Rocheleau

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Lead poisoning has become less common over the past decades, but it still affects thousands of children in Massachusetts and across the nation.

The toxic substance can cause serious damage to the brain, kidneys, nervous system, and red blood cells. It's particularly harmful to children.

Lead pipes can leach the metal into drinking water. The alarmingly high lead levels in the water in Flint, Mich., have prompted renewed scrutiny of water supplies nationwide.

But lead-based paint — which is estimated to remain on the walls of tens millions of homes nationwide despite being banned in 1978 — is believed to be the main source of elevated lead levels in children.

Children can get exposed by ingesting chipping, flaking, and peeling paint, particularly if it is disturbed by remodeling. Exposure can also come from household dust, soil, food, and certain types of pottery, porcelain, and pewter.

The following graphics detail the prevalence of childhood lead poisoning in the US, the state, and

Boston:

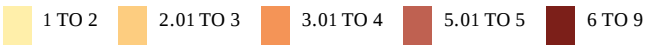
1. Lead levels in American children's blood streams have been reduced dramatically

This chart shows that the percentage of children under age 6 in the US who tested to have at least 10 micrograms per deciliter of lead in their blood has declined significantly since the 1990s. Still, the 0.53 percent of children who tested for such levels in 2014 amounted to about 13,000 of the 2.5 million children screened. In recent years, the CDC lowered the threshold for elevated levels to 5 micrograms. Experts now say the latest research indicates that no amount of lead is safe.

SOURCE: US Centers for Disease Control and Prevention
MATT ROCHELEAU / GLOBE STAFF

2. Some states have higher rates of children who test to have elevated blood lead levels; many states don't report data to the CDC

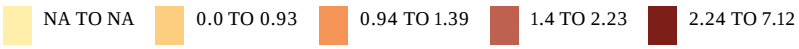
This map shows the percentage of children under age 6 in each state who tested to have blood lead levels of 5 micrograms or higher in 2014. The data indicates that in Massachusetts, 3.4 percent of children who were screened had those lead levels.



SOURCE: US Centers for Disease Control and Prevention
MATT ROCHELEAU/GLOBE STAFF

3. Within Massachusetts, rates of children who have elevated blood lead levels vary across different cities and town

This map shows the percentage of children under age 6 who were found to have blood lead levels of 5 micrograms or higher, according to screening done between 2010 and 2014. This data, which comes from the state health department, is not directly comparable to the CDC's national and state-by-state figures shown in the charts and map above. That's because the state says it uses stricter criteria for when it considers test results confirmed.



SOURCE: Massachusetts Department of Public Health's Bureau of Environmental Health
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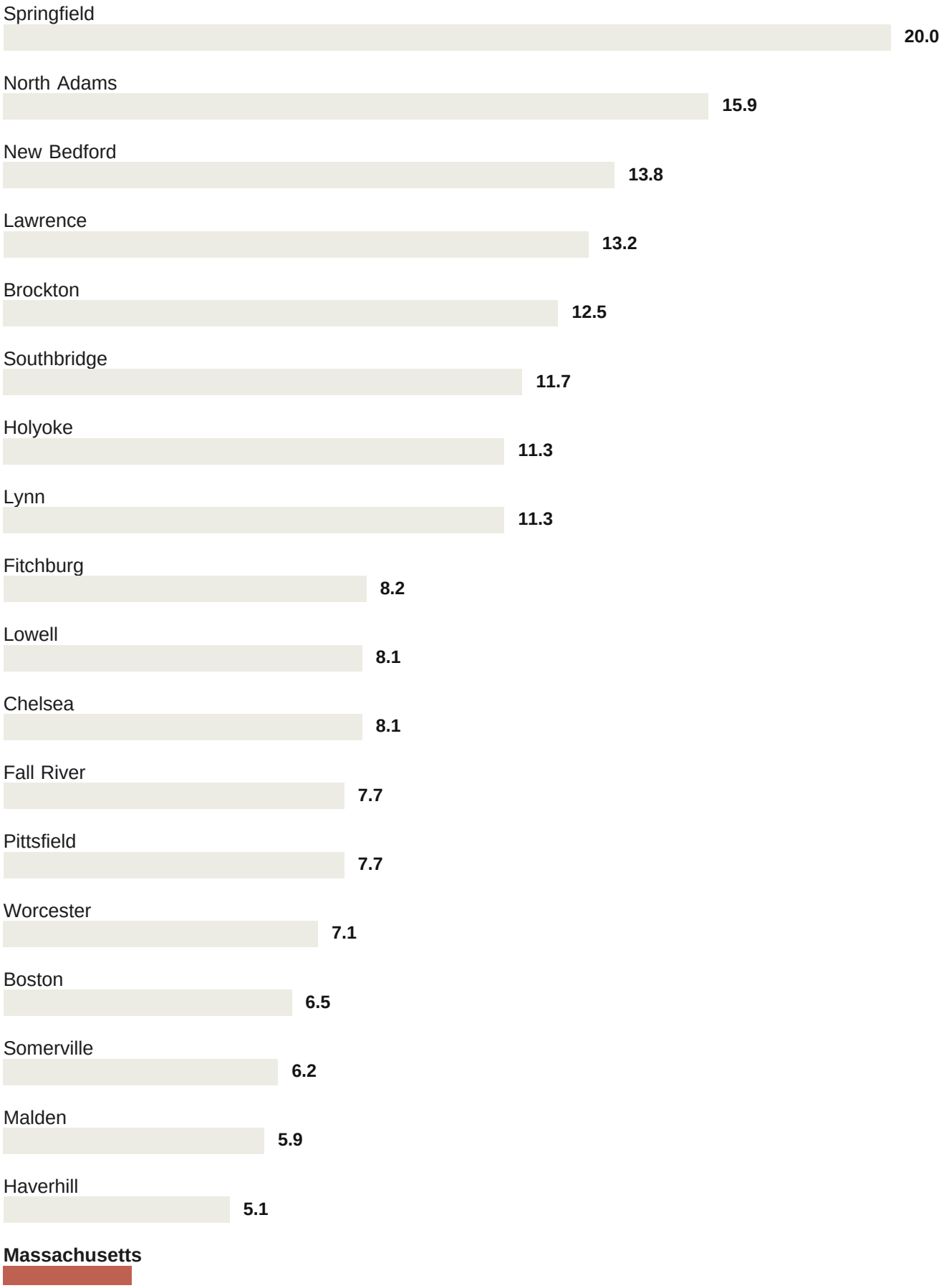
4. The state considers some cities and towns to be at high risk for childhood lead poisoning

The Massachusetts Department of Public Health has labeled certain cities and towns as being at high risk for

childhood lead poisoning, based on factors such as the rate of cases in the past five years, the percentage of low- and moderate-income families, and the age of homes. The department gives a score to each such community. Below are the communities and their scores from 2010 to 2014.

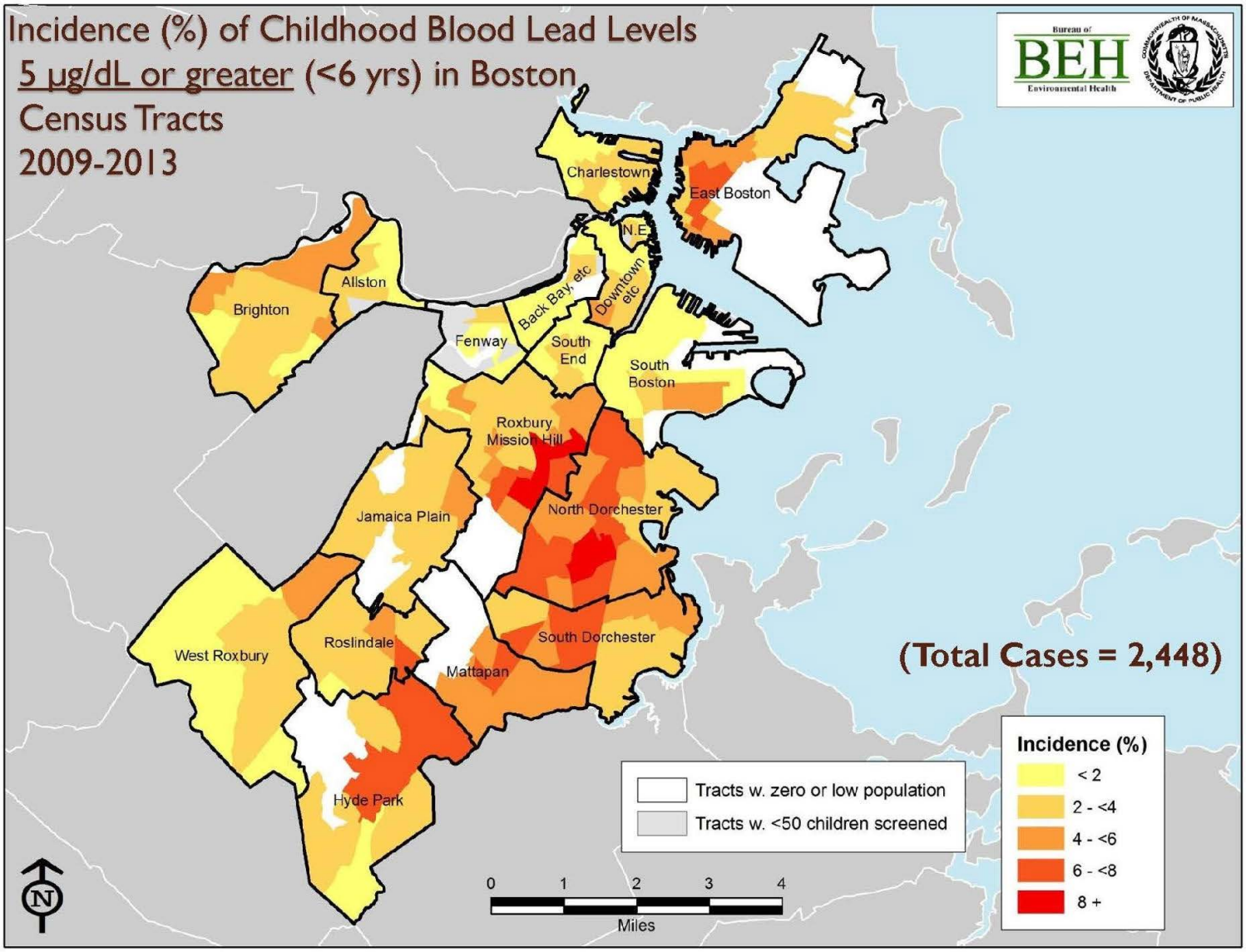


2.9

SOURCE: Massachusetts Department of Public Health

5. Within Boston, some neighborhoods have higher rates than others

The three graphics below — from a presentation by Robert Knorr, director of environmental epidemiology at the Massachusetts Department of Public Health — show that Boston's lower-income neighborhoods are hot spots for lead poisoning. That's because poorer families are more likely to live in homes that have not been deleaded. Knorr explained: "Being poor and being a minority not only increases the risk of blood lead poisoning but makes it difficult to find a safe home."



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