



Preventing Childhood Lead Poisoning in Massachusetts

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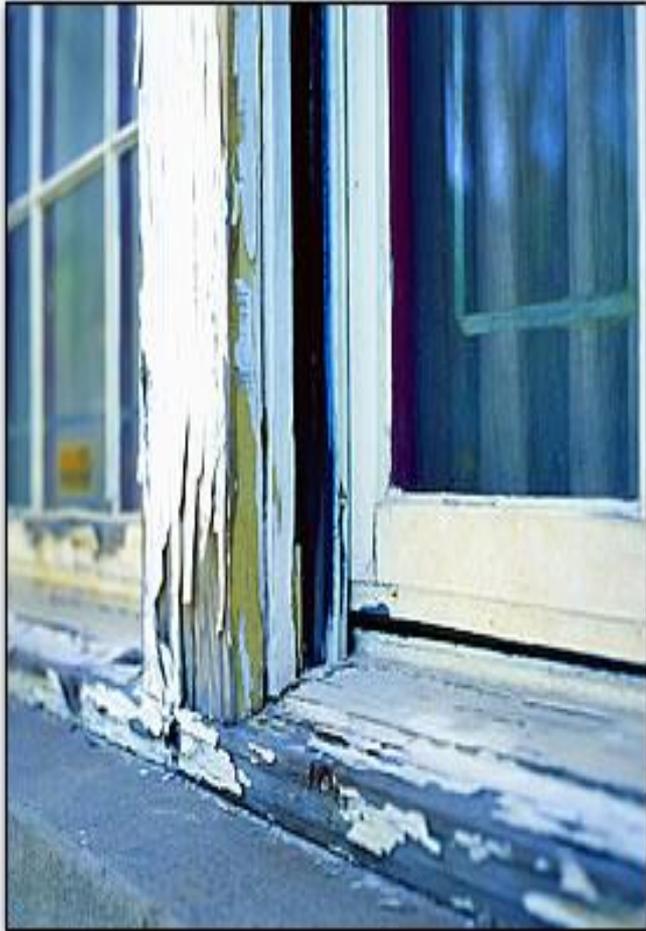
Bureau of Environmental Health

Massachusetts Department of Public Health

Outline

- I. DPH's Role in Preventing Childhood Lead Exposure
- II. Extent and Impact of Childhood Lead Exposure in Boston and Massachusetts
- III. Disparities in Childhood Lead Exposure
- IV. Prevention efforts
- V. Next Steps

DPH's Role in Preventing Childhood Lead Exposure

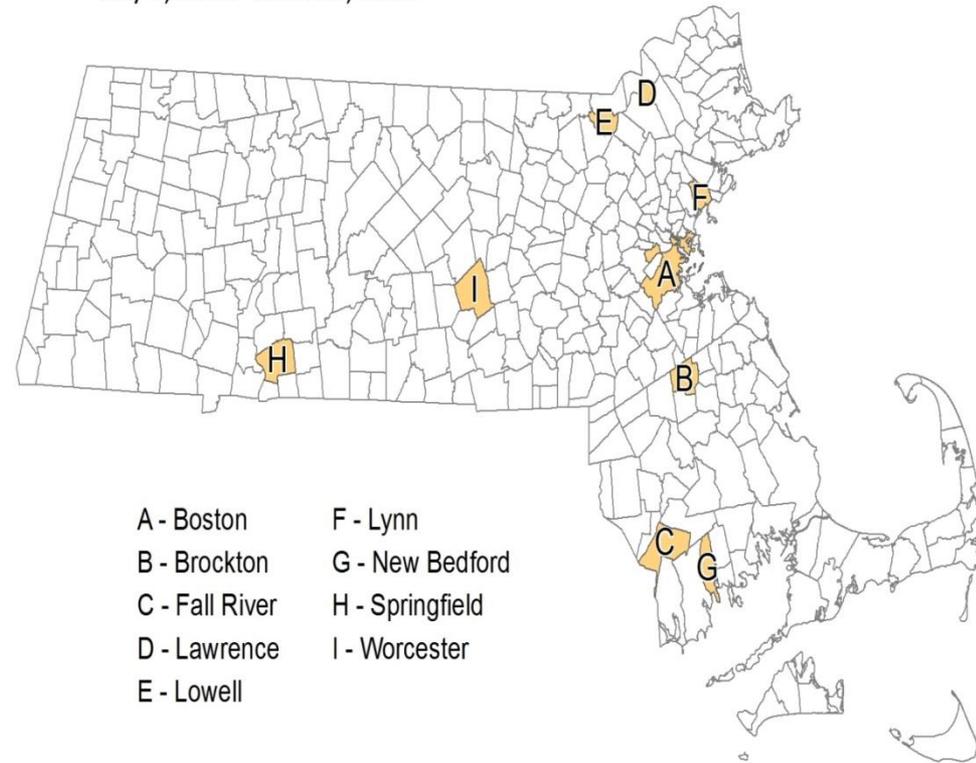


- DPH is charged with promoting health across the state, especially among vulnerable populations, such as children.
- The MA lead law combines incentives, mandated code enforcement for lead-poisoned children, and an assortment of civil and criminal penalties, making it one of the strongest lead laws in the country.
- Despite these measures, the battle has not been won and children aged 3 and under have the highest risk because of
 - Older housing stock in MA
 - Hand-to-mouth activity & dust-coated toys
 - Lead dust, paint flakes, and renovations

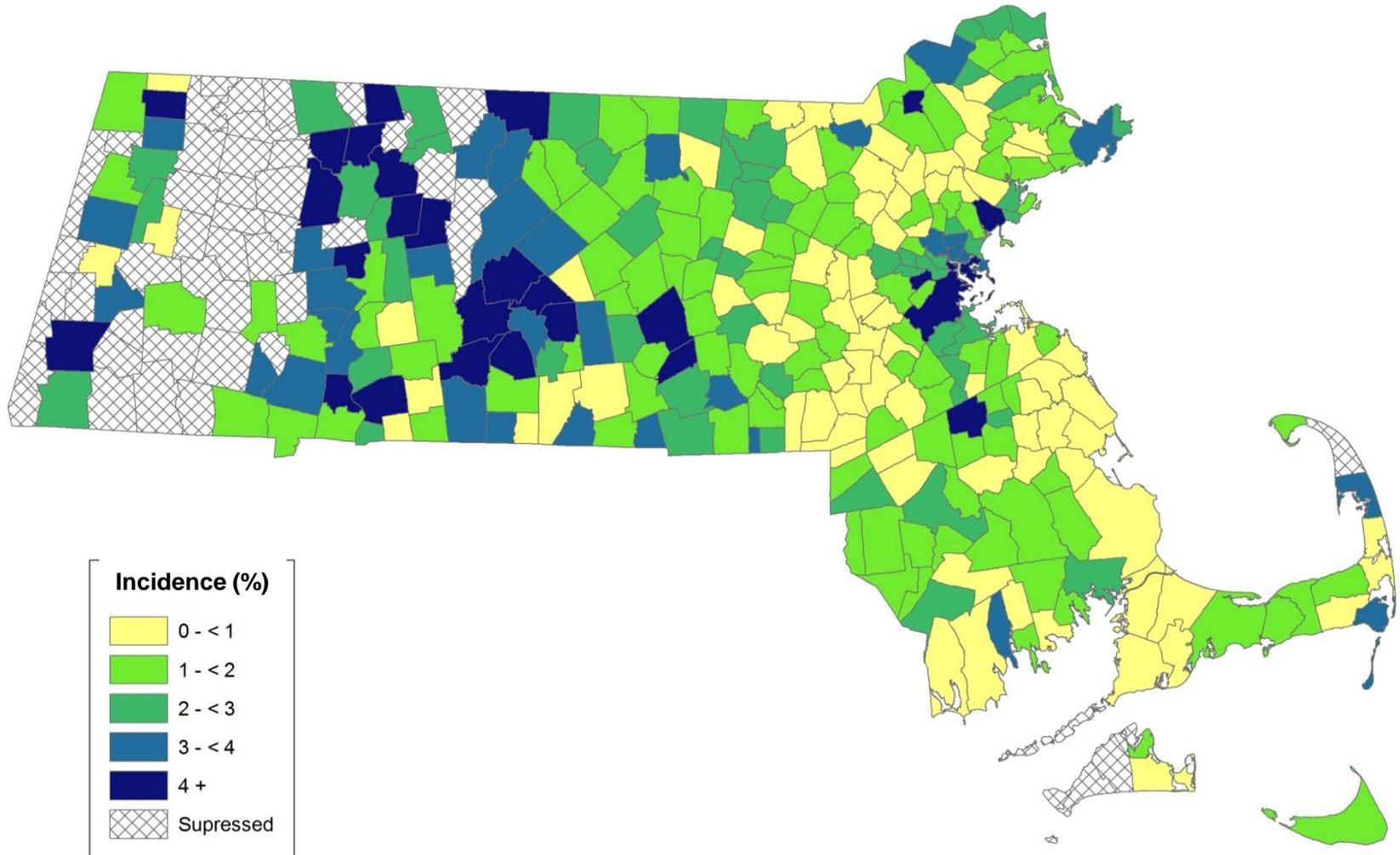
Extent and Impact of Lead Exposure

- 78% of Massachusetts homes were built before 1978, when lead paint was prohibited.
- Recent science has shown that even lower blood lead levels may contribute to severe, irreversible negative health impacts.
- Childhood lead poisoning prevention is also critical for health equity: according to the CDC, children living at or below the poverty line are at a significantly elevated risk of exposure to lead.

High-Risk Communities for Childhood Lead Poisoning
July 1, 2008 - June 30, 2012



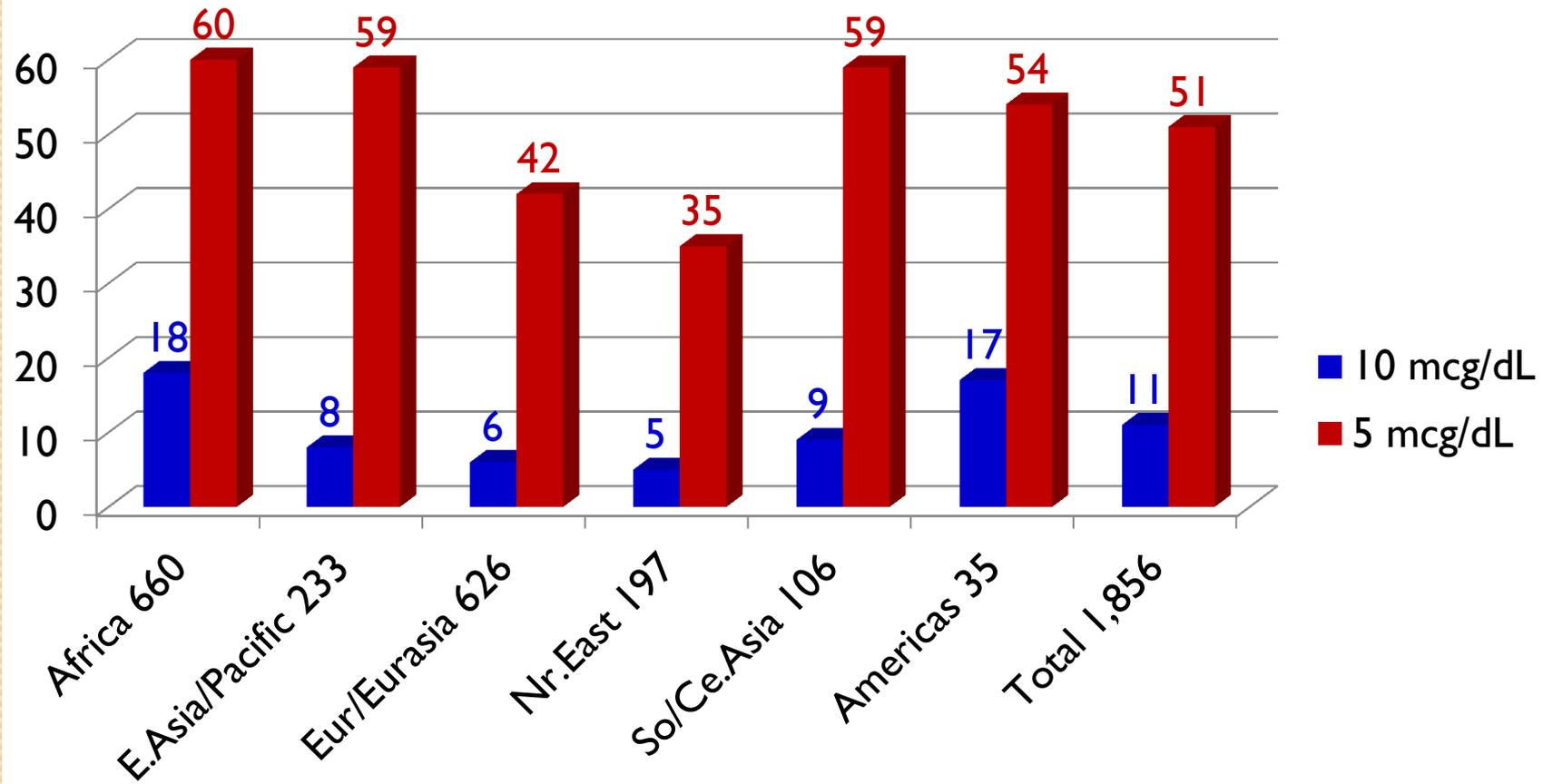
Incidence (%) of Childhood Blood Lead Levels 5 $\mu\text{g}/\text{dL}$ or greater (<6 yrs), by community, 2009-2013



(Total Cases = 14,958)

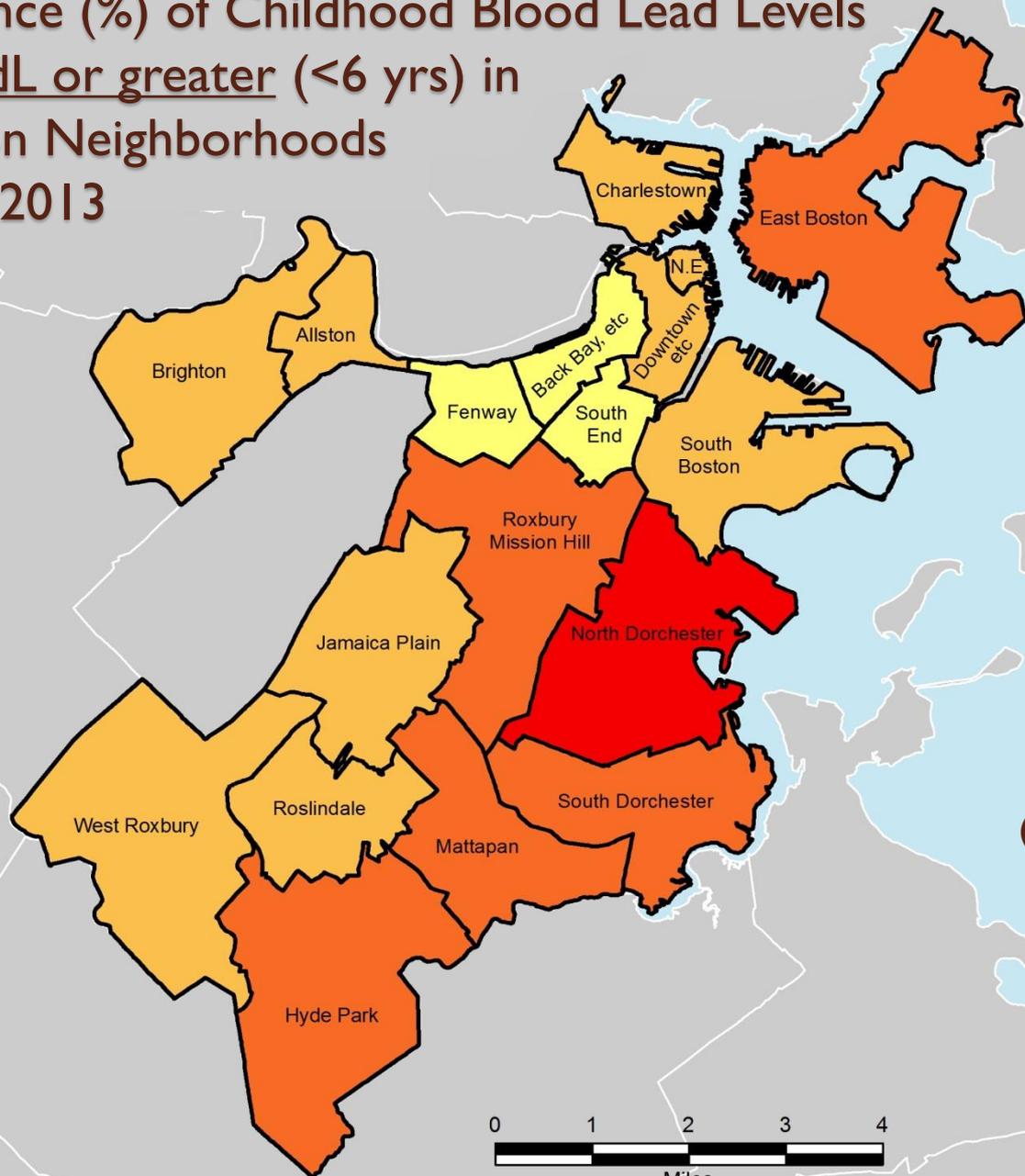


Prevalence of Elevated BLL (%) by Region of Origin: 1998-2010

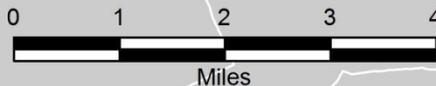
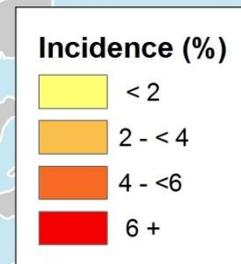


Source: Division of Global Populations, Bureau of Infectious Disease, MA DPH

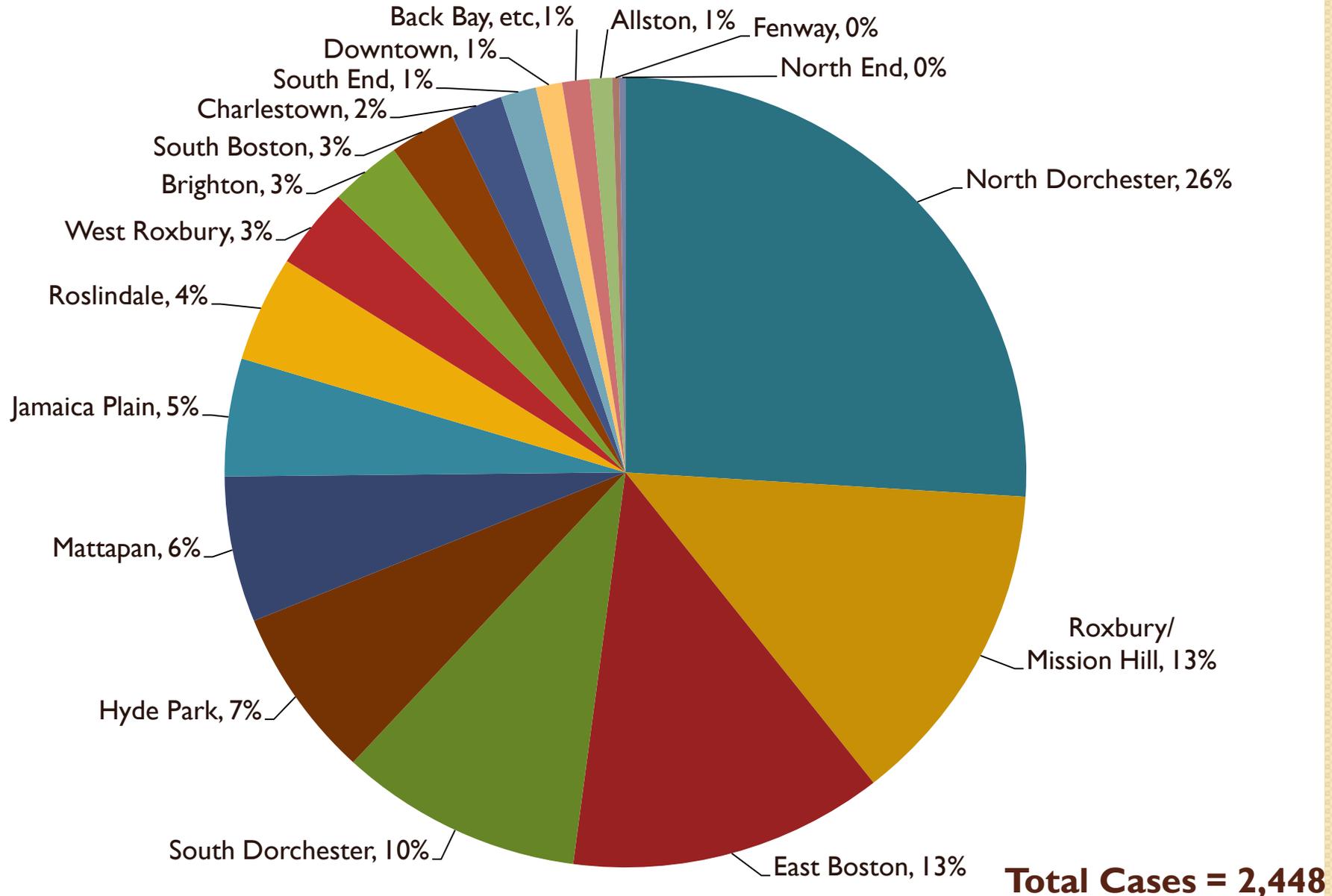
Incidence (%) of Childhood Blood Lead Levels 5 $\mu\text{g}/\text{dL}$ or greater (<6 yrs) in Boston Neighborhoods 2009-2013



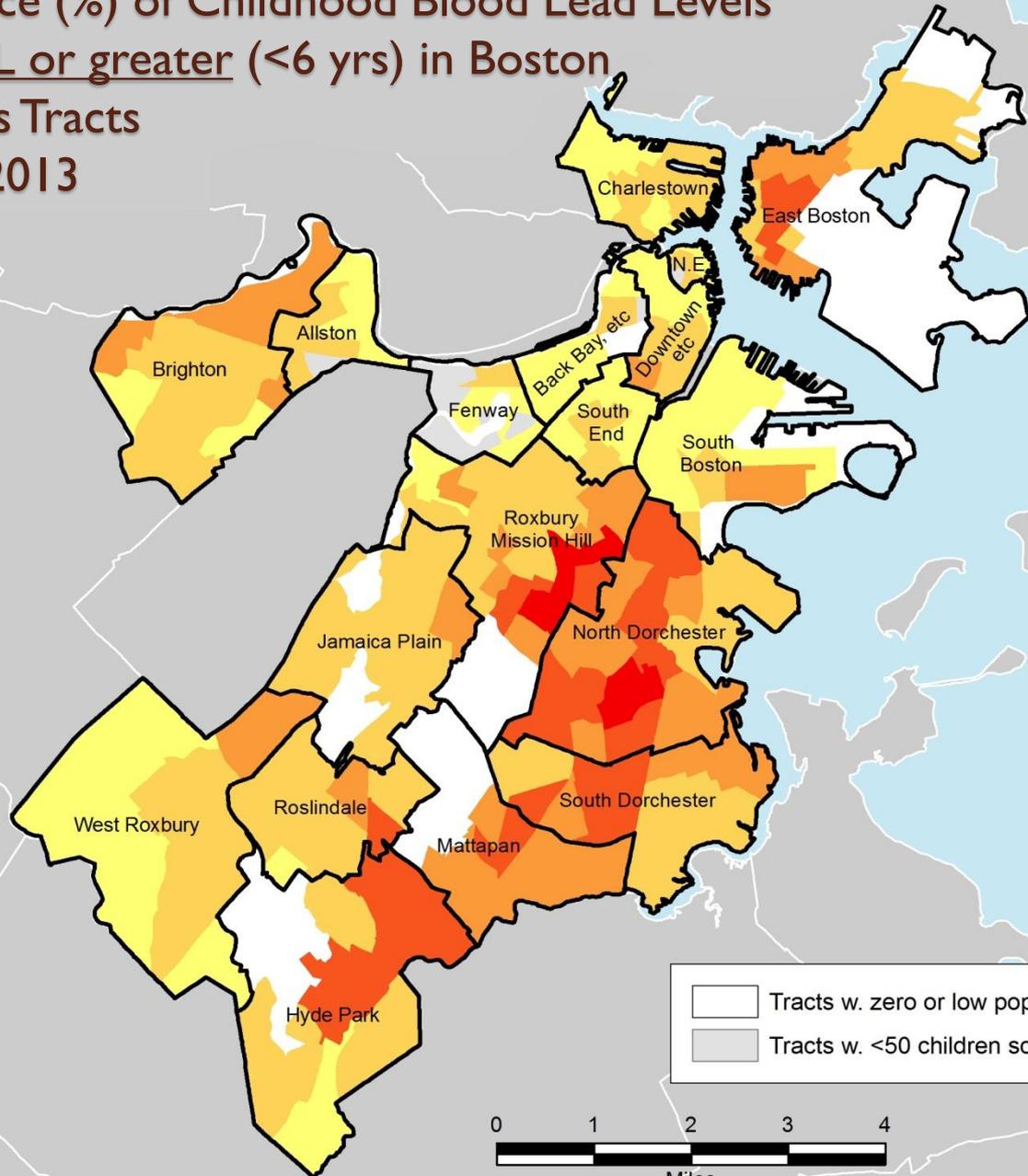
(Total Cases = 2,448)



Three Neighborhoods Make up >50% of all Incident Cases of BLLs $\geq 5 \mu\text{g/dL}$ (<6 yrs) from 2009-2013

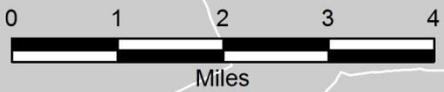
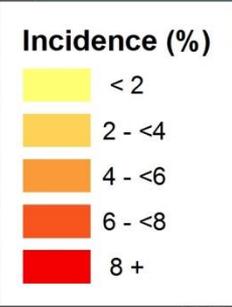


Incidence (%) of Childhood Blood Lead Levels 5 $\mu\text{g}/\text{dL}$ or greater (<6 yrs) in Boston Census Tracts 2009-2013

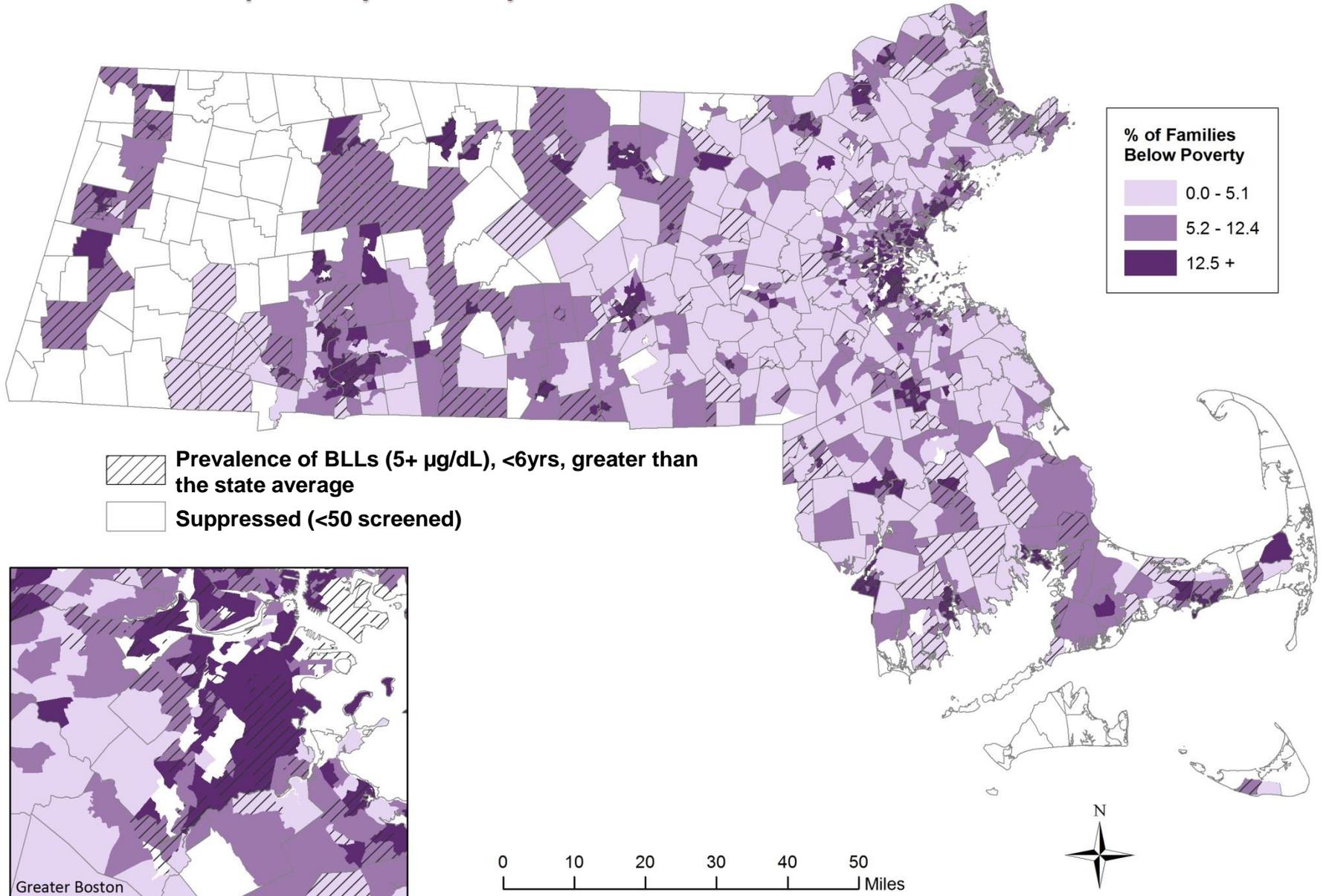


(Total Cases = 2,448)

Tracts w. zero or low population
 Tracts w. <50 children screened

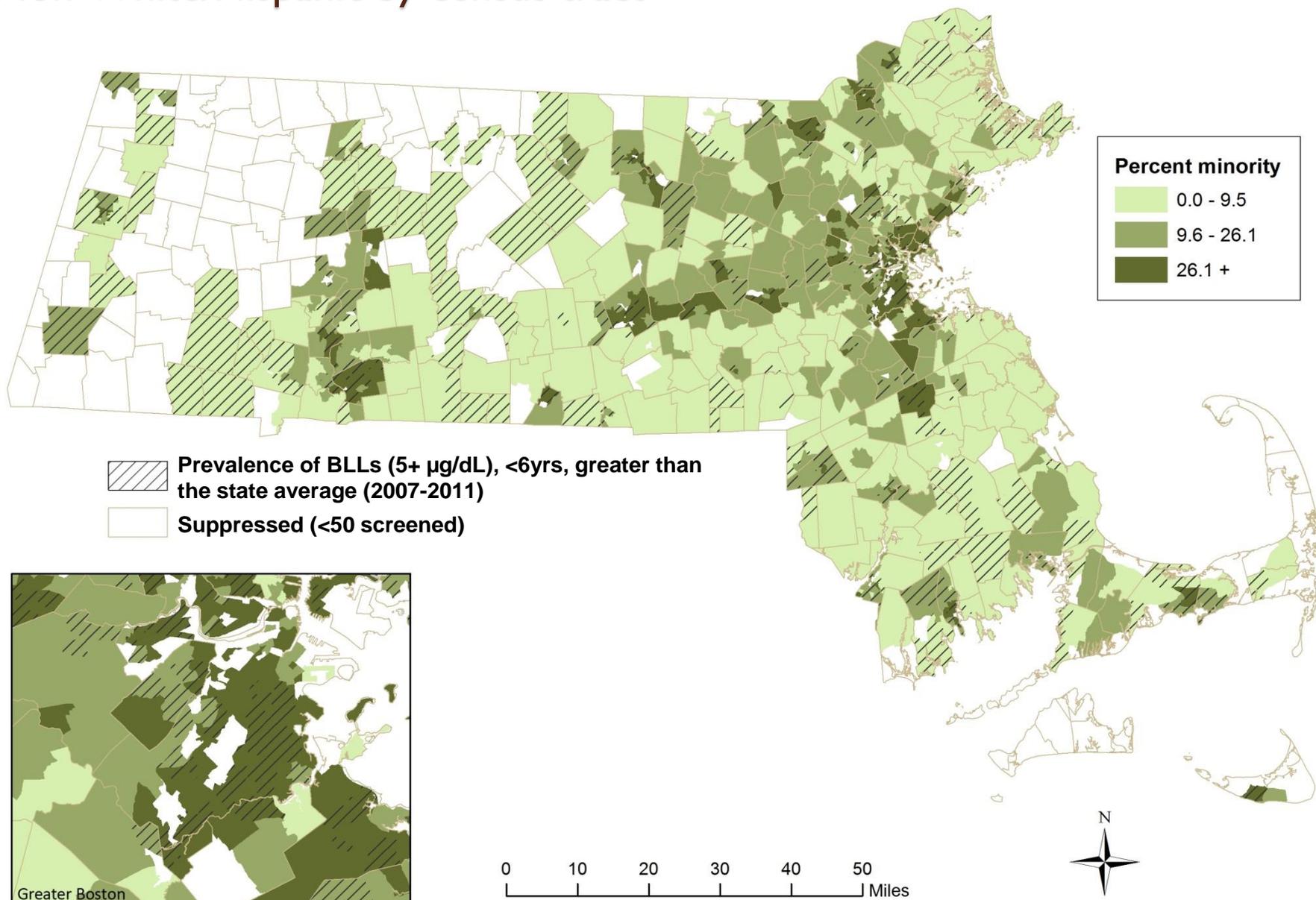


Association of blood lead levels $\geq 5 \mu\text{g/dL}$ (<6 yrs) and percent families below poverty level by census tract, 2007-2011



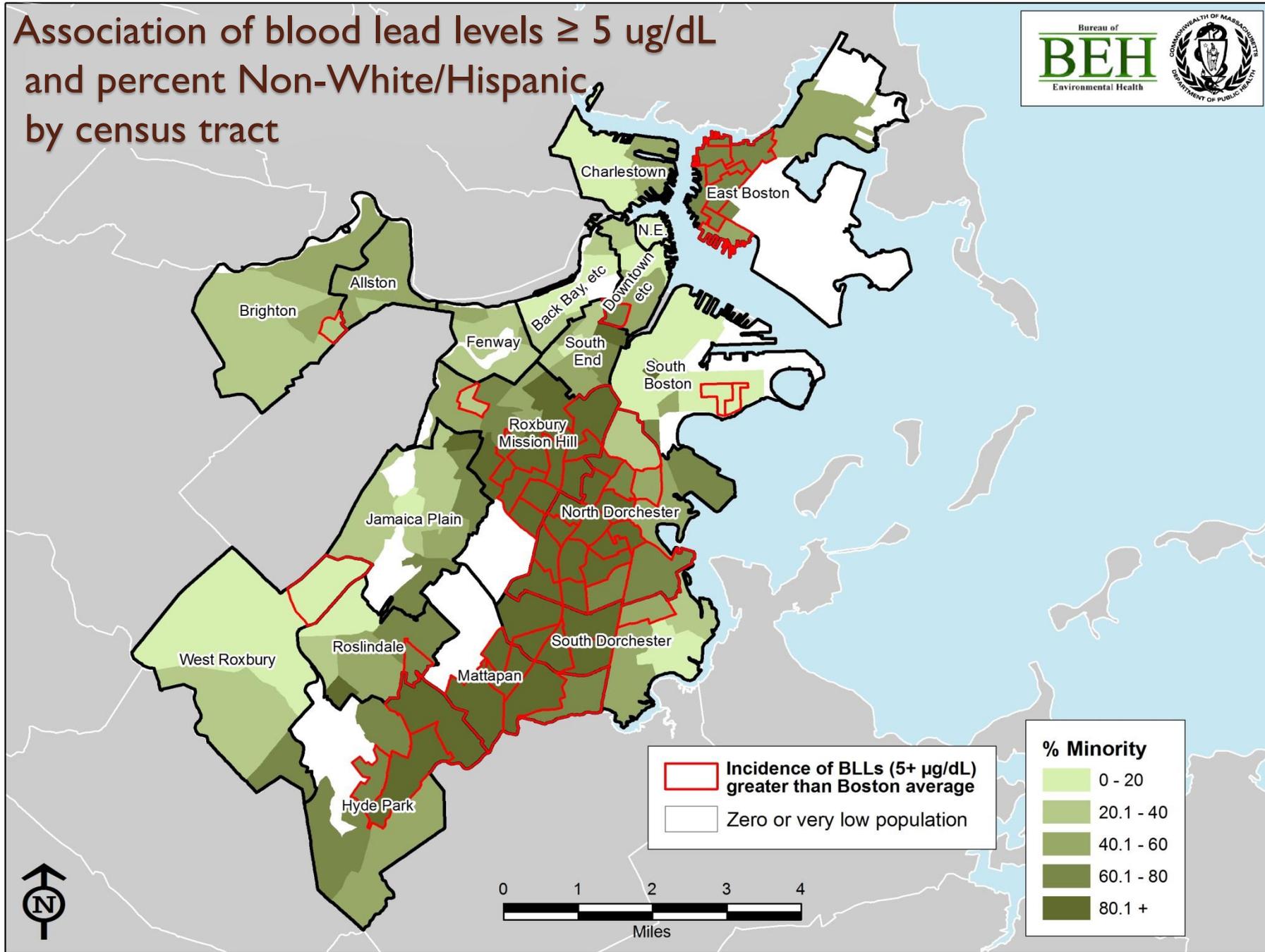
Metro Boston

Association of blood lead levels $\geq 5 \mu\text{g/dL}$ and percent Non-White/Hispanic by census tract

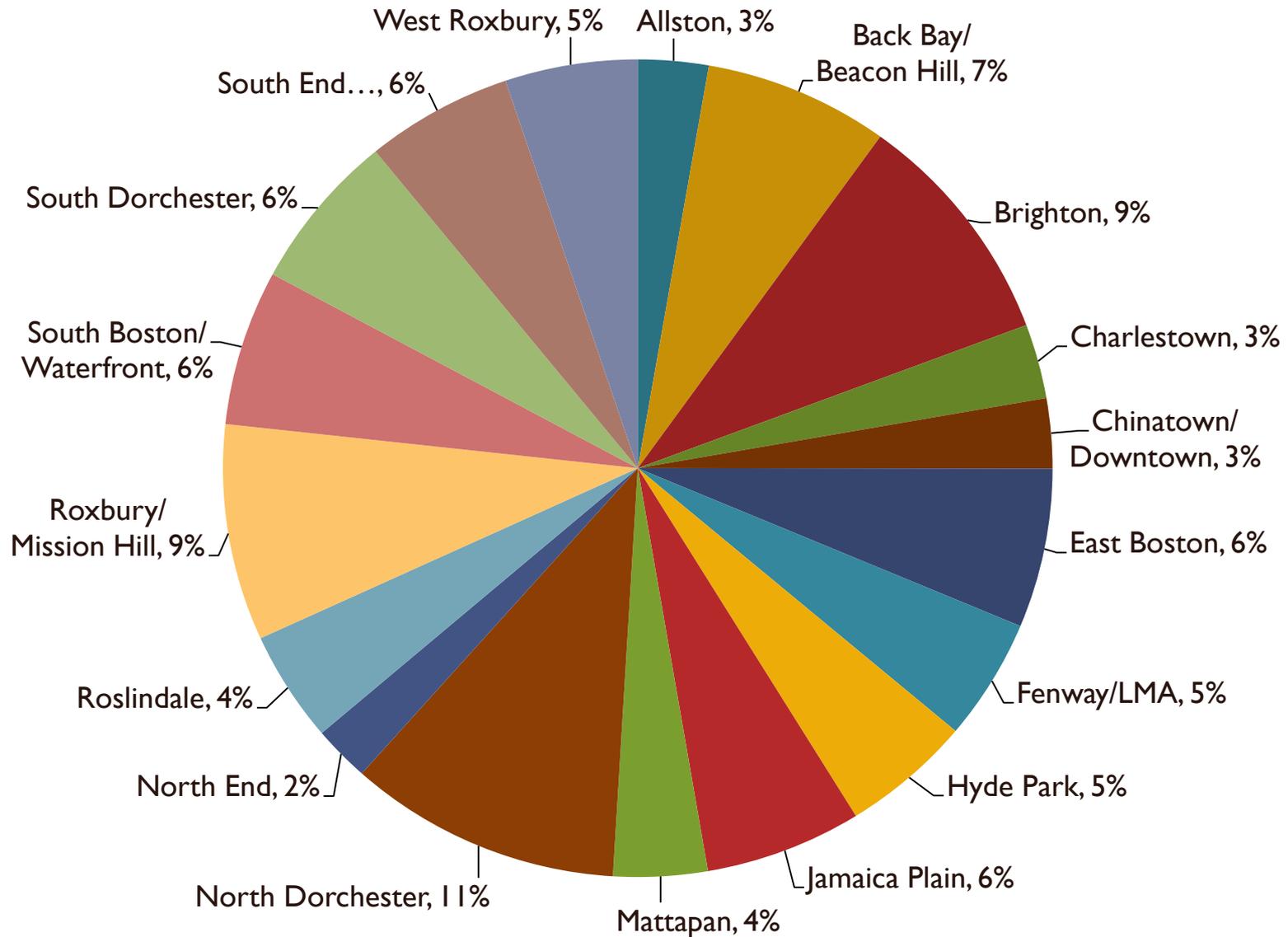


Metro Boston

Association of blood lead levels ≥ 5 $\mu\text{g}/\text{dL}$ and percent Non-White/Hispanic by census tract

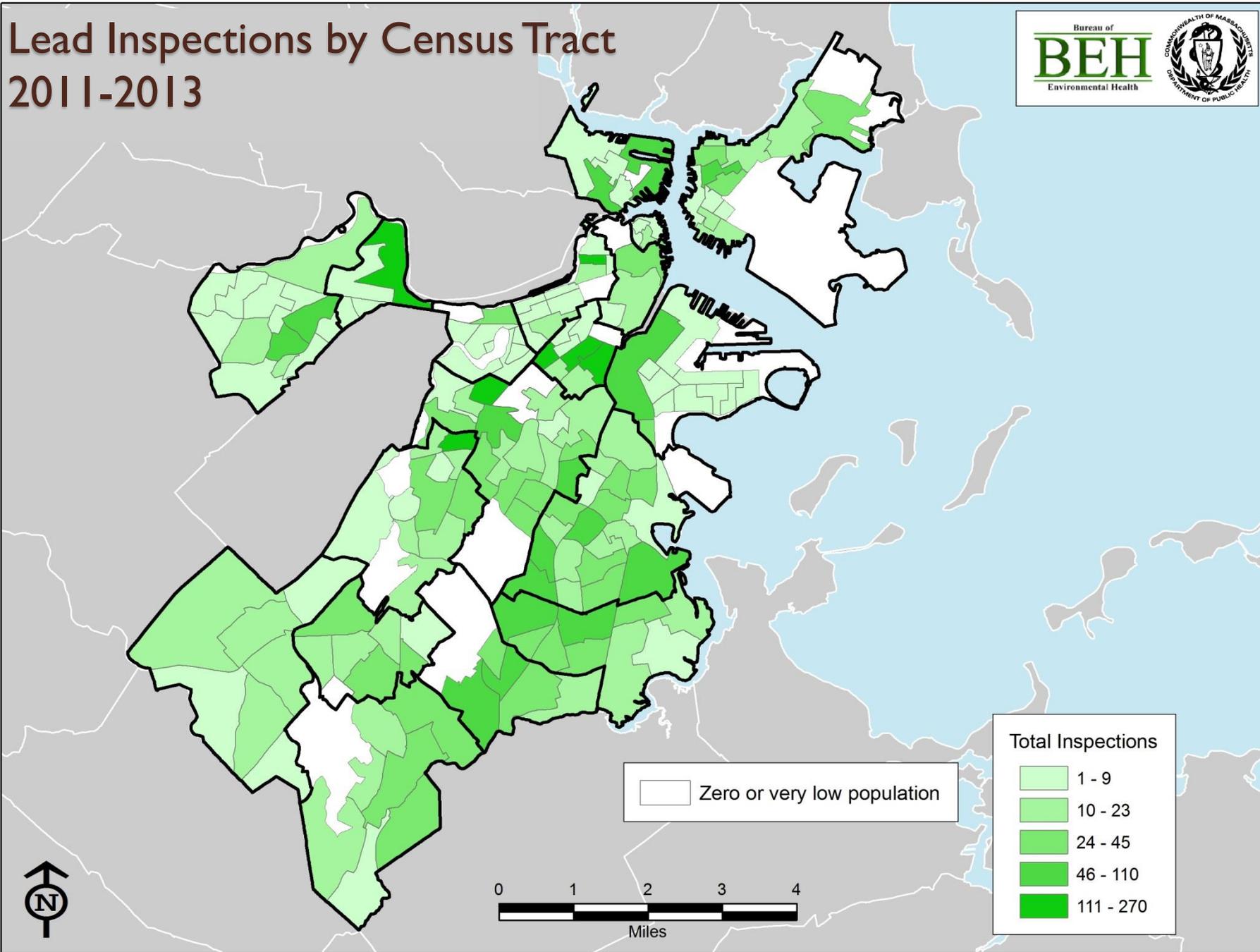


Mostly Even Distribution of Pre-1978 Housing Units across Boston Neighborhoods (n=225,654)

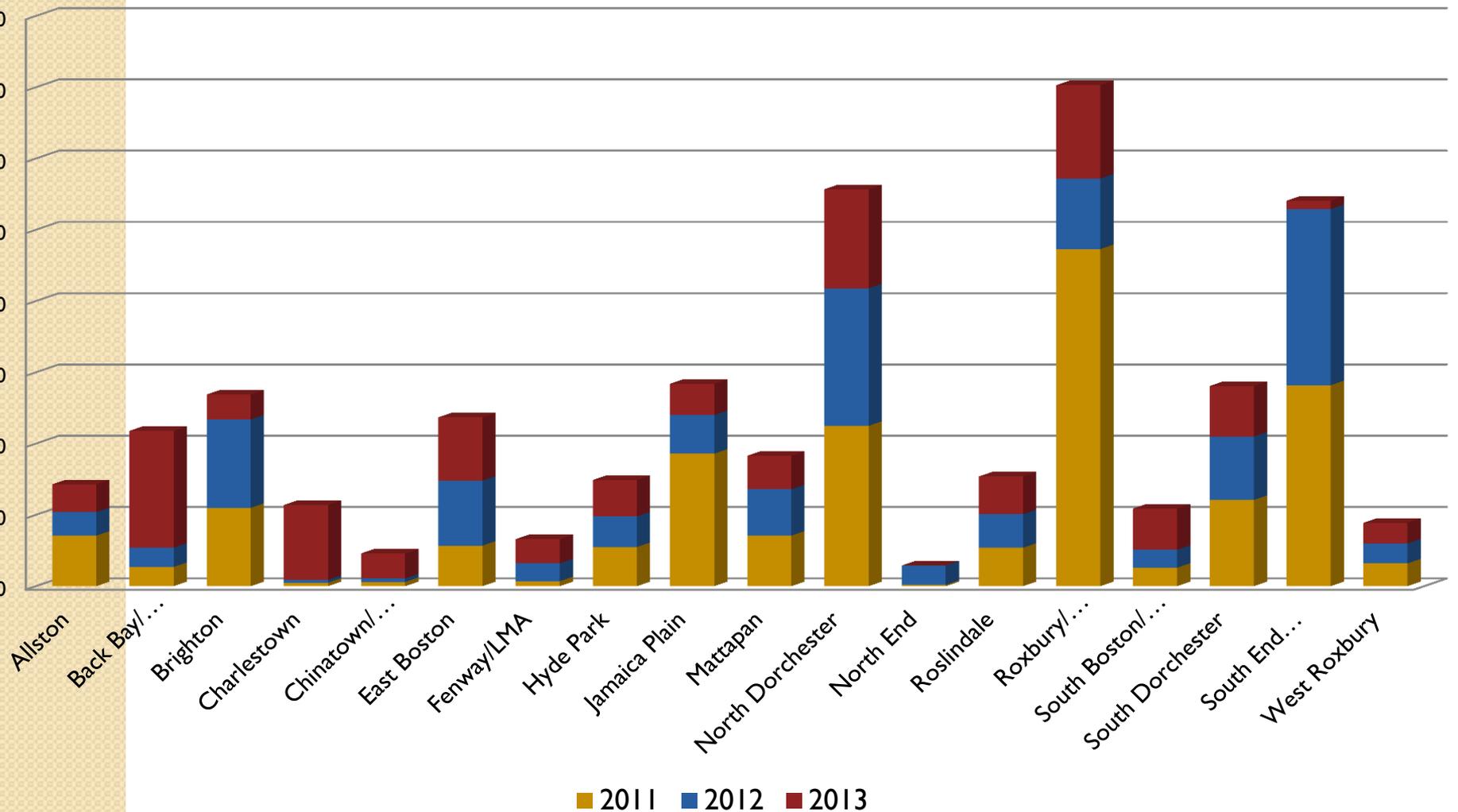


Lead Inspections by Census Tract 2011-2013

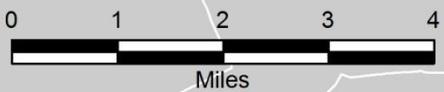
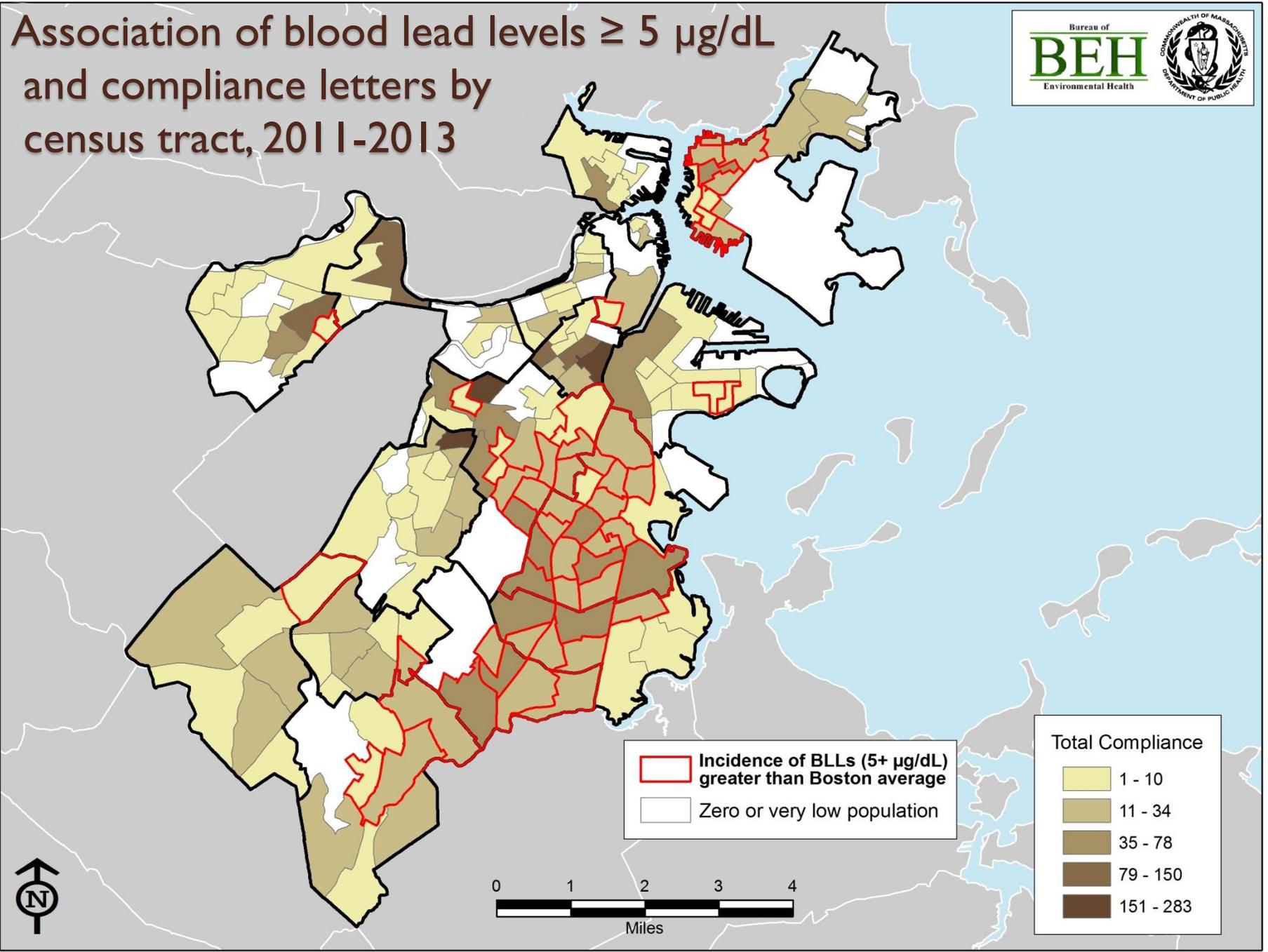
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Boston Housing Inspections for Lead, 2011-2013



Association of blood lead levels $\geq 5 \mu\text{g/dL}$ and compliance letters by census tract, 2011-2013



Data Observations

- North Dorchester, Roxbury/Mission Hill, and E. Boston contributed >50% of incident cases during last 5 years
- BLLs appeared correlated with poverty status but not highly correlated
- BLLs appeared highly correlated with minority status
- The neighborhoods with the higher numbers of homes inspected and in compliance occasionally but not consistently corresponded to the neighborhoods with the greater number of incident cases

Summary

- There remain important socio-demographic differences in incidence rates: neighborhoods and areas within neighborhoods with higher rates of poverty and/or minority populations make up a disproportionate number of children with elevated BLLs
- And as the data show, there a number of high-risk communities like Boston across the state. Increased resources focused across the state would be necessary to further reduce lead exposure
- Being poor and being a minority not only increases the risk of blood lead poisoning but makes it difficult to find a safe home

Next Steps

- To further protect children, DPH is considering stronger standards to detect and respond to lead exposure
- DPH Plans to meet with the Governor's Advisory Committee on Childhood Lead Poisoning Prevention
 - Through the Committee, DPH will review possible amendments to its regulations, including stronger standards for mandated code enforcement, and determine the resources necessary to do so.

Thank you

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