

CHILDHOOD BLOOD LEAD SURVEILLANCE IN PUERTO RICO, 2021-2023

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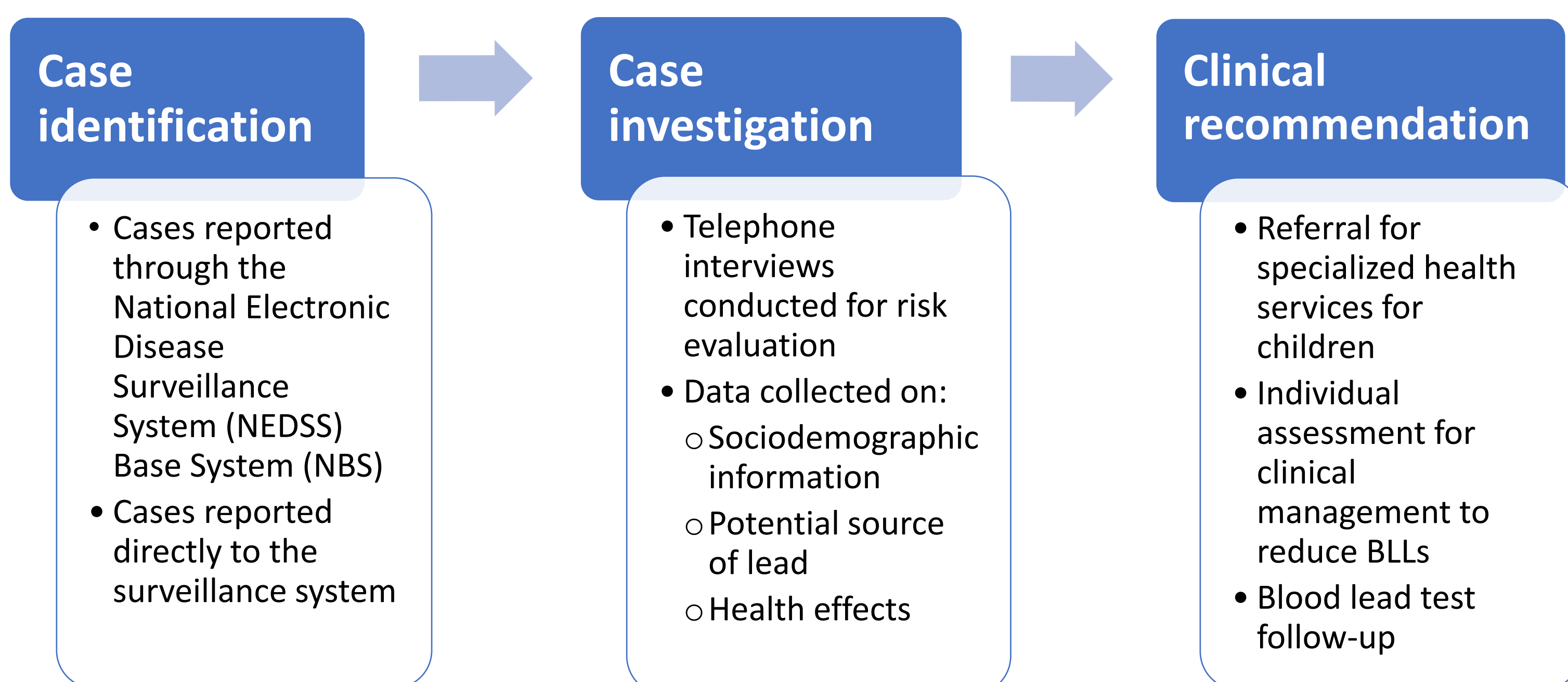
BACKGROUND

- Lead is a naturally occurring metal that can cause harmful health effects.
- Children from low-income households and those living in houses built before 1978 are at a higher risk for lead poisoning because lead was used in paint and in pipes and plumbing fixtures before it was banned in 1978.
- Adults with lead-related occupations and hobbies can bring the lead to their homes and consequently expose their children.
- Small blood lead level concentrations have been associated with damage to the brain and nervous system, learning and behavior problems, slowed growth and development, and hearing and speech problems.
- A surveillance for blood lead levels (BLLs) among children 16 years old and under was implemented in Puerto Rico in September 2021 to collect data on all blood lead tests, conduct case investigations for those with BLLs ≥ 3.5 $\mu\text{g}/\text{dL}$, and provide clinical recommendations.

METHODS

The surveillance system received BLL test reports and telephone interviews were conducted to collect sociodemographic information and to determine possible sources of lead exposure for children with BLLs ≥ 3.5 $\mu\text{g}/\text{dL}$ (Figure 1).

Figure 1
Childhood Blood Lead Surveillance methodology



RESULTS

- A total of 20,766 blood lead tests were reported between September 2021 through February 2023; 106 (0.51%) had BLLs ≥ 3.5 $\mu\text{g}/\text{dL}$ (Figure 2).
- Fifty-four percent of cases were male, and the median age was 3 years.
- Out of the 106 children, 60 (56.6%) had confirmed blood levels in the 3.5-4.9 $\mu\text{g}/\text{dL}$ range, 40 (37.7%) had levels in the 5-10 $\mu\text{g}/\text{dL}$ range, and 6 (5.7%) had levels in the >10 $\mu\text{g}/\text{dL}$ range.
- The Fajardo health region had the highest rate of childhood lead poisoning among children <5 years; 32 cases per 10,000 children (Figure 3).
- Occupations and hobbies related to lead (47.76%) and living in a building built before 1978 (25.37%) were the most reported sources of lead exposure (Figure 4).



Childhood blood lead surveillance is a convenient tool to identify and monitor children at higher risk and aid them in accessing lead poisoning prevention services.

RESULTS

Figure 2
Distribution of blood lead tests among children 16-year-old and under by month, September 2021 through February 2023

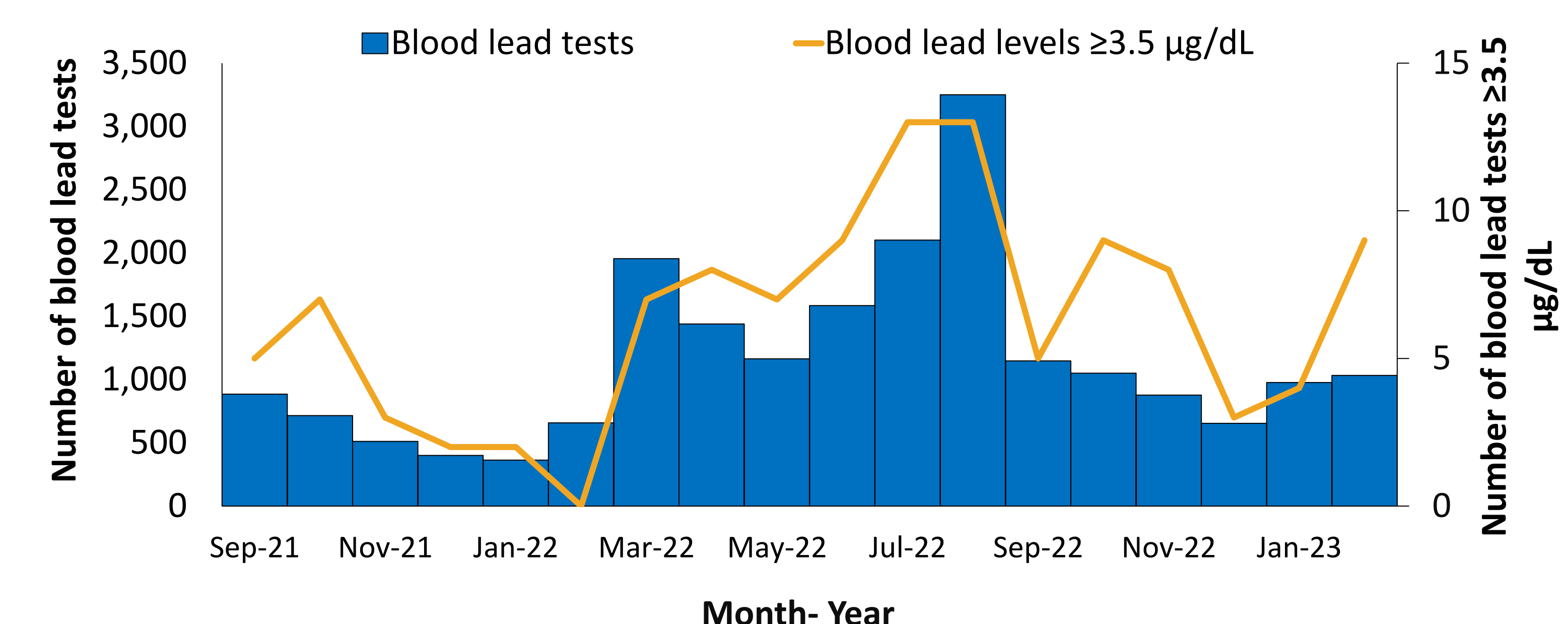


Figure 3
The incidence rate for children under five years old with lead poisoning by Puerto Rico health region, September 2021 through February 2023

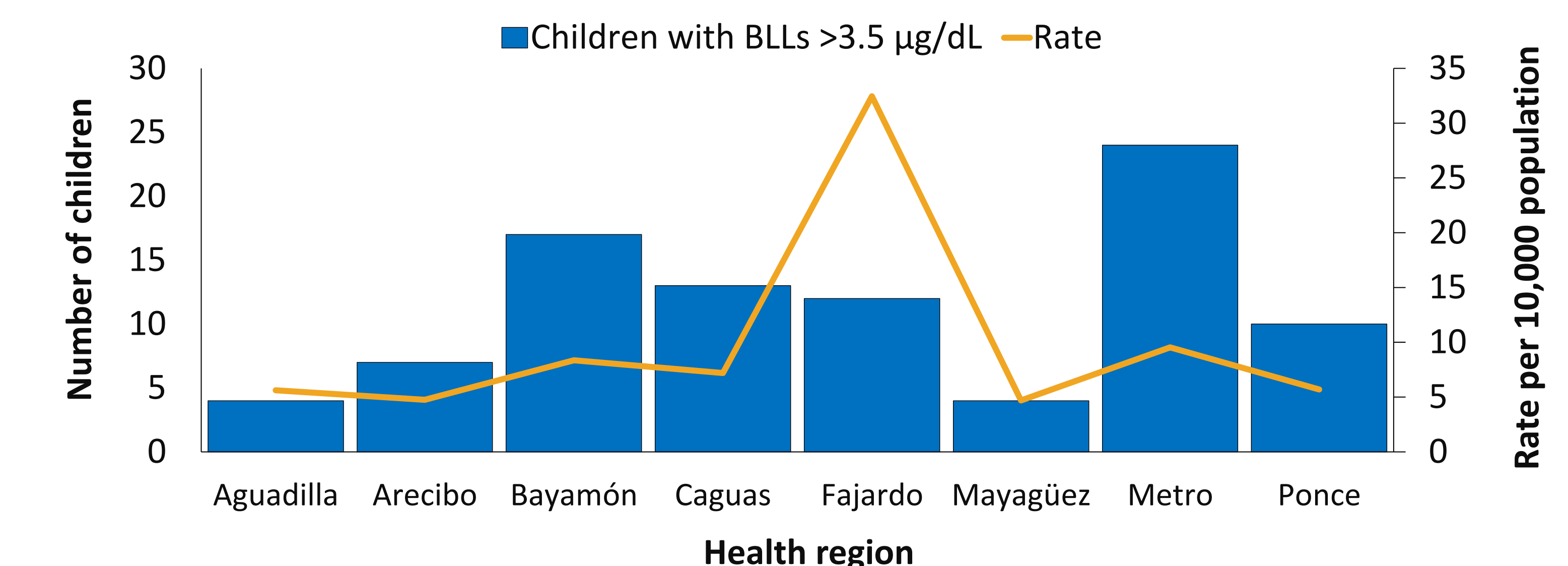
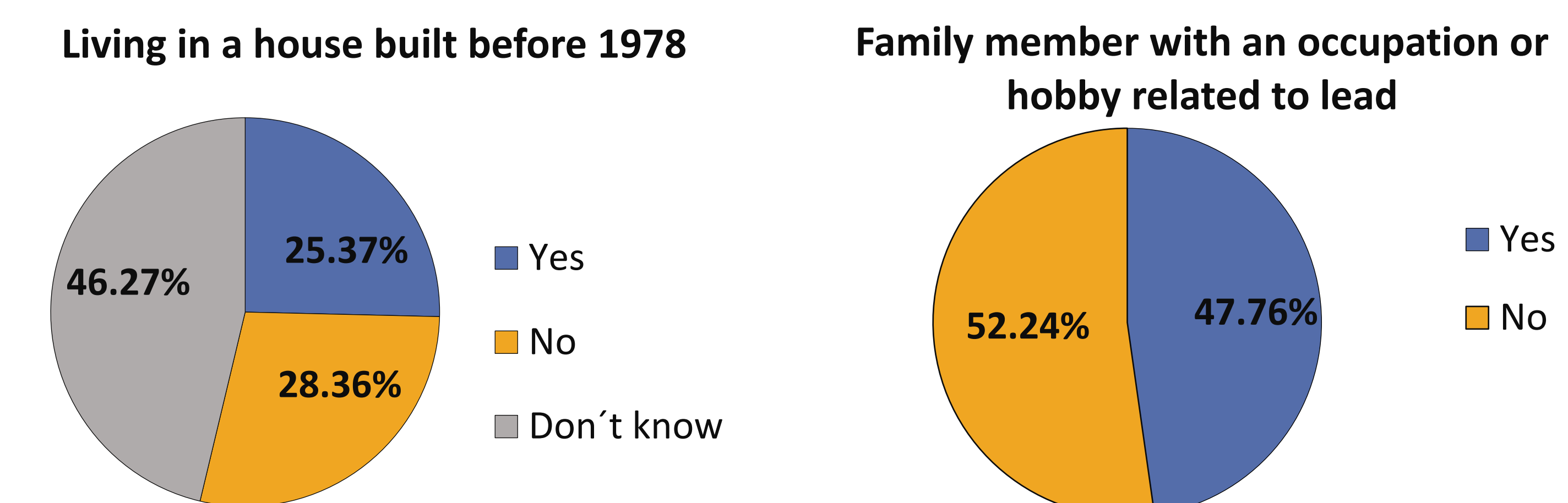


Figure 4
Most reported sources of lead exposure through case investigations, September 2021 through February 2023



DISCUSSION

- Targeted interventions should address high incidence rates among children in the Fajardo health region.
- Childhood lead poisoning prevention campaigns should be designed for families living in houses built before 1978 and for adults with occupations and hobbies related to lead.

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