Key messages:
- Environmental health response requires extensive research and multi-agency approach.
- If State implements adequate intervention it is possible to reduce blood lead (Pb) level.

Addressing lead exposure in children in Georgia: challenges and successes of a multi-agency response

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The national response for reducing lead (Pb) exposure in Georgia is coordinated by the National Centre for Disease Control and Public Health (NCDC&PH) and implemented as a multi-agency (CDC, UNICEF, WHO, University of Emory) response. Given concerns about the extent of Pb exposure, in 2018 Multiple Indicator Cluster Surveys (MICS) of representative samples of children have been conducted to study several demographic and health aspects, including a study of the prevalence of blood Pb levels among 2 to 7 years old children (n = 1578). This survey was conducted in collaboration with the Italian Instituto Superiore di Sanita' (ISS), UNICEF and NCDC.

The laboratory analyses were conducted at ISS in Italy. Initial results showed that in 41% of all children, blood Pb concentration was $\geq$ 5 μg/dl, a challenge which motivated public agencies to establish an initial public health action plan to assess environmental samples (paint, dust, water, soil, selected food items such as spices and imported sweets) in families where Pb concentrations were $\geq$ 10 μg/dL. A State intervention programme, monitoring Pb blood concentration among MICS children and their family members, provided relevant information on exposed households and led to a reduction of Pb blood concentration across the most exposed households.

In collaboration with Public Health England, NCDC has conducted a small Pb isotope ratio study aimed at identifying the most relevant sources of Pb exposure contributing to elevated blood Pb in MICS children. It is expected that these data will support the design of more detailed public health interventions to reduce exposure to key sources of Pb, thus leading to further reduction of Pb-induced health effects in Georgia.

In addition, this experience will clarify elements of an ongoing monitoring of environmental factors such as an Environmental Public Health Tracking system, to support national capacity to manage the risks to public health.