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**“Impact of policy change to soil lead remediation guidelines
on childhood lead exposure in New Orleans parks”**

BACKGROUND: Legacy lead (Pb), from the historical use of leaded gasoline and paint, lead water pipes, and industrial and waste management activities, remains a major public health concern, as it is a non-degradable metal known for its neuro-developmental effects in children. Its ubiquity throughout New Orleans, LA (NOLA) makes NOLA a high-risk area for children, as they can ingest or inhale Pb from soil while playing at parks. Even low soil lead levels (SLLs) of 100 parts per million (ppm) are associated with elevations in child blood lead levels (BLLs) of 1-12 µg/dL. The US Centers for Disease Control and Prevention (CDC) has set a child BLL reference screening value of 3.5 µg/dL, although the CDC acknowledges that no level of Pb exposure is safe. In 2025, the US Environmental Protection Agency (EPA) increased its regional soil screening level (RSL) for Pb from 100 ppm for children in high-risk areas with multiple Pb sources to 200 ppm and increased its regional removal management level (RML) from 200 ppm to 600 ppm. This study evaluates the potential health impacts of the 2025 policy change.

METHODOLOGY: Soil samples (n=858) from parks (n=35) throughout NOLA were collected in a grid-based pattern and quantified for Pb using a SciApps X-550 X-ray fluorescence analyzer (XRF) (LOD-5 ppm). Parks that would not be remediated under the new policy were identified (parks with 95th percentile SLLs ≥100 ppm and <600 ppm). The 95th percentile SLL in each park was used to estimate the 95th percentile BLLs for children ages 0.5-7 years. The US EPA's Integrated Exposure Uptake Biokinetic (IEUBK) model was used to estimate BLLs, assuming recreational exposures, or 3 days per week at playgrounds, and no other Pb source exposures. Estimated BLLs were compared to the CA Office of Environmental Health Hazard Assessment and American Academy of Pediatrics Pb reference value of 1 µg/dL BLL, as no increase in BLL is safe.

RESULTS: Under the EPA's 2024 and 2025 guidelines, respectively, an estimated 28 parks (80% of 35 parks tested) and 9 parks (26%) would be remediated. Thus, 19 parks (54%) would remain unremediated under the current policy. The estimated 95th percentile childhood BLLs associated with the unremediated parks would increase BLLs of children playing at these parks by 1-4 µg/dL for children of this age group, and by 9-53 µg/dL for pica children (children who consume dirt). Of these 19 parks, 16 (84%) would have an increase in the 95th percentile BLL exceeding 1 µg/dL.

CONCLUSION: The change in EPA Pb soil remediation guidelines would increase children's BLLs at over half of the tested parks at levels ranging from 1-4 µg/dL for non-pica children. These levels are expected to have measurable impacts on children's health based on prior studies. These findings suggest that the current 2025 guidelines pose a greater risk to children.