

# Arsenic in Drinking Water and Infant Health\*

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## Abstract

Arsenic is a highly toxic chemical naturally occurring in drinking water from bedrock, and exposure has been linked to adverse health effects. On January 22, 2001, EPA adopted a new standard for arsenic in drinking water of  $10 \mu\text{g}/\text{L}$ , replacing the old standard of  $50 \mu\text{g}/\text{L}$ . We study how this new arsenic rule affects infant health. We use the probability of arsenic levels larger than  $10 \mu\text{g}/\text{L}$ , estimated by [Lombard et al. \(2021\)](#) using a machine learning approach and rich climatic, hydrological, and geological data, to measure arsenic risk across counties. We combine the cross-sectional variation in arsenic risk with the timing of the EPA's new rule to assess whether the rule mitigated the adverse effects of arsenic exposure. We find that the new arsenic rule significantly decreases the likelihood of detecting arsenic levels above  $10 \mu\text{g}/\text{L}$  in water systems. We also document a significant decline in the incidence of low birth weight among infants born after the new rule in counties with higher arsenic risk. This decline is primarily driven by counties with extremely high arsenic risk and those with lower pre-existing private well density.

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