

## NAPCRG 52nd Annual Meeting — Abstracts of Completed Research 2024.

**Submission Id:** 5889

### **Title**

*Drinking the Disease: Arsenic Exposure in Well Water from the Perspective of Patients and Providers*

### **Priority 1 (Research Category)**

Social determinants and vulnerable populations

### **Presenters**

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### **Abstract**

Context: Arsenic is a well-known toxin in potable water sources. In the United States testing is routinely done for communal water, though responsibility for testing and treatment of private wells falls on homeowners. Despite recommendations for routine screening, this is rarely done. Arsenic cannot be seen, tasted, or smelled. Chronic exposure has been associated with diabetes mellitus, hypertension, skin cancer, renal, bladder and lung cancers, polyneuropathy, and QT prolongation. Disease latency means that causation is extraordinarily difficult to prove. Objective: Data from patients and clinicians on the self-reported prevalence of well water use in the American Midwest and their knowledge regarding testing for arsenic and the risks of long-term exposure. This is the first study elucidating clinician knowledge on the risk and symptomatic presentation of patient arsenic exposure from well water. Study Design: A cross-sectional survey of patients and clinicians active at Mayo Clinic in the American Midwest (Minnesota, Wisconsin, and Iowa). Dataset: Questionnaires for clinicians and patients via emailed surveys. Population Studied: Midwestern clinicians within the specialties of Family Medicine, Internal Medicine, and Pediatrics (671 clinicians); and all Midwestern adult patients aged over 18 years (257 000 patients). Outcome measures: Use of well water and knowledge about the health risks of chronic arsenic exposure; knowledge about community testing availability. Results: 44% of patient respondents reported using well water, greater than the national rate of 13%, Iowa rate of 7%, Minnesota rate of 22%, and Wisconsin rate of 25%. Over a third of patients reported their well water had never been tested or were unsure. Both adults aged 18-30 and over 71 test their well water more frequently than

others. Having children in the home was not associated with worrying about water safety or testing. Nearly half of clinicians estimated less than 20% of their patients use well water. Physicians were more likely than APPs to ask about well water, with pediatricians were most likely to ask. 67% of clinicians reported being unaware of the risks of arsenic exposure in drinking water; 76% did not know physical exam findings. Conclusions: Patients are concerned about their water safety yet feel uninformed about testing. Clinicians do not know how prevalent well water use is, feel uninformed about the chronic risks and the physical examination associated with it.

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