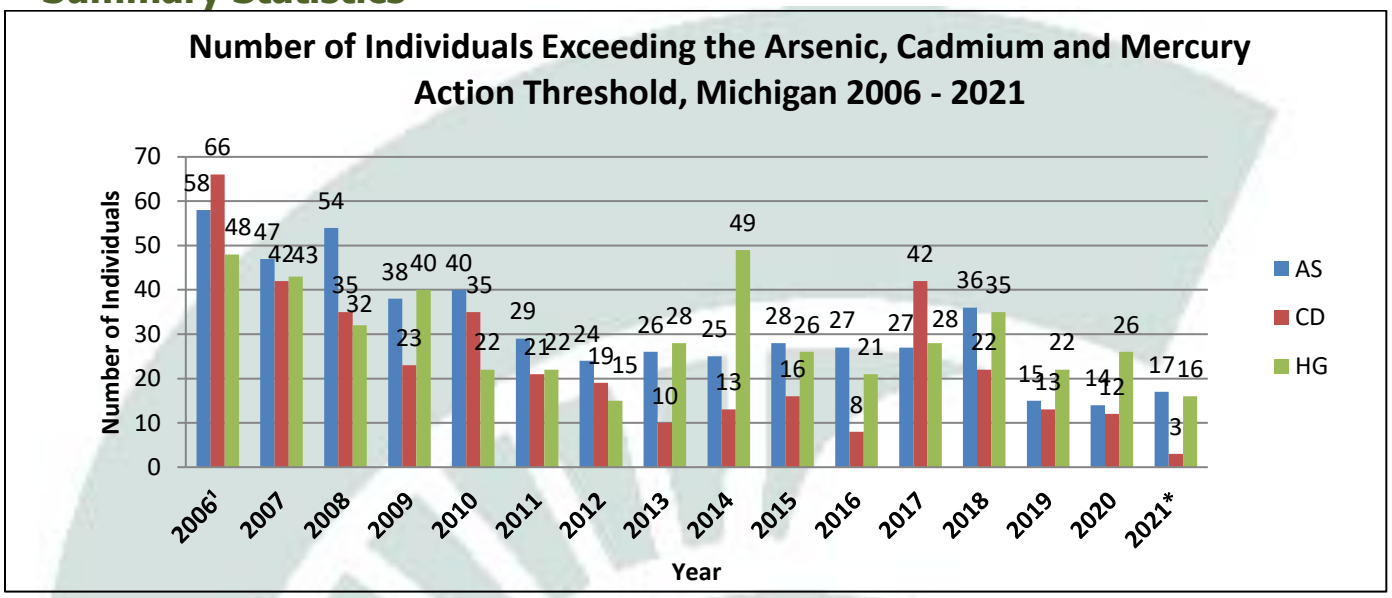
Heavy Metals Surveillance in Michigan

Additional Information and Data Available at: www.oem.msu.edu

Summary Statistics



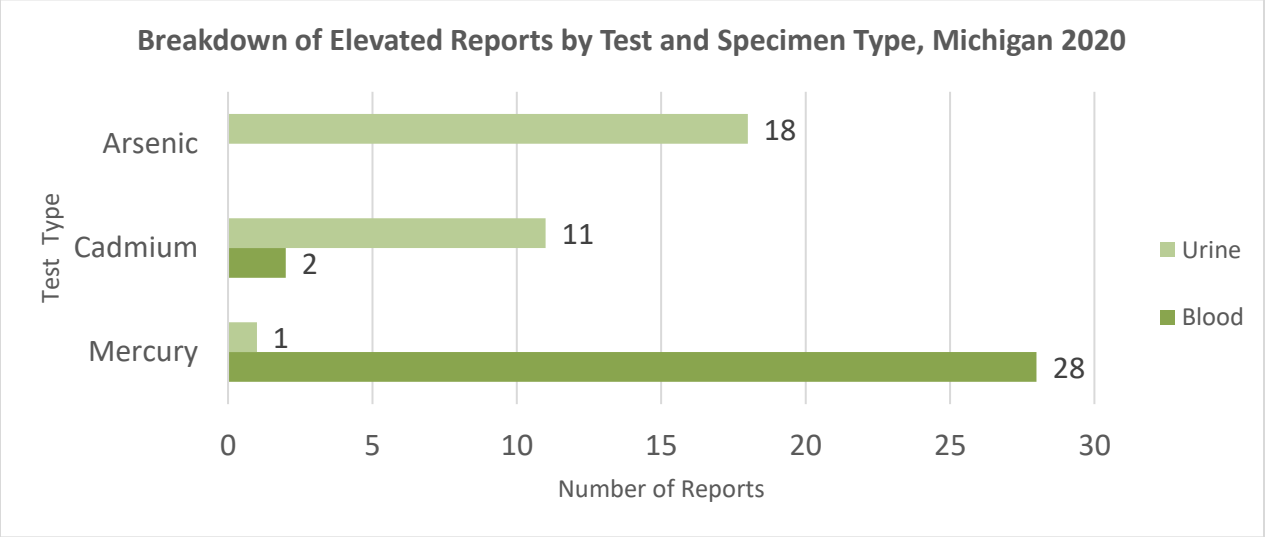
¹The reporting period for the year 2006 spans 10/25/2005 through 12/31/2006.
AS – Arsenic Blood Action Threshold Level (TL) is >70 µg/L. Urine TL in Adults is ≥100 and in Children ≥50 µg/L.
CD – Cadmium Blood TL is >5 µg/L. Urine TL is >2 µg/L or >3 µg/g creatinine.
HG – Mercury Blood TL in Adults is >15 µg/L and in Children >10 µg/L. Urine TL in Adults is >20 µg/L or >35 µg/g creatinine and in Children >10 µg/L.
*2021 preliminary data as of 1/10/2022

Surveillance Reporting Requirements and Rationale

In September 2005, the Michigan Department of Health and Human Services (MDHHS) promulgated rules requiring clinical laboratories to report all test results of arsenic, cadmium, and mercury in blood and urine. The reporting requirement allows for the identification and prevention of the impacts on human health of exposure to these heavy metals. Individuals with results exceeding action thresholds are interviewed to determine the source of exposure to the metal and assess if public health interventions are warranted. This surveillance system is administered by Michigan State University as a bona fide agent of the State.

2020 Highlights

- Sixty reports with levels above the action threshold were received from seven laboratories.
- Fifty-two individuals had a result that exceeded one of the established action thresholds.
- Sixty-three percent of the individuals were male. No children had elevated levels.
- When the source of exposure was determined, fish consumption was the likely cause of elevated mercury in 66.7% of tested individuals and work exposure was the source of elevated cadmium or mercury in 26.7% of the individuals.



Examples: Heavy Metals Poisoning Events

- 2007 - Five individuals employed by an electrical switch and relay manufacturer had elevated blood mercury.
- 2007 - One individual, who used a Chinese face cream with a very high mercury content had elevated blood and urine mercury.
- 2008 – A child, who mistakenly ingested a mercury-containing "pill" that had had been brought from India in some lentils to keep bugs away had elevated blood mercury.
- 2008 - Six individuals working in a cadmium plating department had elevated urine cadmium.
- 2009 - One individual working for a recyclable material wholesaler had an elevated blood mercury.
- 2010 - One individual eating tuna and salmon a few times a week had an elevated blood mercury.
- 2011 - One individual eating shark, swordfish and tuna once a week had an elevated blood mercury.
- 2012 - One individual eating tuna up to ten times a day as a part of his body building diet had an elevated blood mercury.
- 2013 - One individual working in a college lab unintentionally ingested mercury and had an elevated blood mercury.
- 2014 - One individual, who ate salmon and trout four times a week from Lake Michigan had an elevated blood mercury.
- 2015 - One individual, who has spent the last 15 winters in a fishing village off Trinidad and Tobago, ate ocean fish including king fish, wahoo, mahi mahi, blackfin tuna and grouper had an elevated blood mercury. He also consumed tuna and salmon a few times a week during the rest of the year.
- 2015 - One individual working for a recyclable material merchant wholesaler had an elevated urine mercury.
- 2016 - Two children, who used house well water had elevated urine arsenic.
- 2017 - One individual working at a nonferrous foundry had an elevated urine cadmium.
- 2018 - One individual, who ate salmon, swordfish and tuna a few times a week, had an elevated blood mercury.
- 2019 - One individual, who ate yellowtail, salmon, canned albacore tuna and sushi a few times a week had an elevated blood mercury.
- 2020 - One individual, who ate tuna and swordfish a few times a week had an elevated blood mercury.