



Emissions of Heavy Metals in SE and N Portland
Oregon Health Authority, Public Health Division Response
April 1, 2016

Initial environmental monitoring data found high levels of heavy metals (e.g., cadmium and arsenic) in areas around glass manufacturing plants in inner Southeast and North Portland. In response, the Oregon Health Authority (OHA) is working with the Oregon Department of Environmental Quality (DEQ) and Multnomah County Health Department (MCHD), to identify potential impacts to human health, and to prevent ongoing exposures from occurring.

Background

The Oregon Public Health Division is committed to protecting the health of Oregonians. The Public Health Division responds to concerns about diseases and the environment by analyzing human health and exposure data. A primary source of human health data is legally-mandated reporting of diseases, conditions and laboratory results by clinicians and laboratories to public health agencies. This reporting system follows national standards, and is the same as that used to track more than 60 other reportable diseases in Oregon, including: communicable diseases (e.g. meningococcal disease; Ebola; and *E. coli* O157), lead toxicity and pesticide poisoning. In addition, invasive cancers are reportable by law to the Oregon State Cancer Registry. The Public Health Division relies on medical care providers, clinical laboratories, and health systems to report these data to us. We do not provide direct patient care, nor do we specify the medical care providers or laboratories from whom the public should seek care.

Health data are analyzed to identify sources of illness and target interventions to prevent additional cases from occurring. Intervention efforts include collaborating with regulatory agencies to stop exposures (e.g. recalling a contaminated product from the market); ensuring specific preventive measures when indicated (e.g. vaccination); and providing health-related information to health care providers and the public.

The health effects of environmental contaminants depend on the amount and duration of exposure. For this investigation, we reviewed materials from the Centers for Disease Control and Prevention and the medical literature on what is known about the metals of concern and their associated health effects. Depending on amount and duration of exposure, cadmium may increase the risk of lung cancer and kidney damage, and arsenic can increase the risk of lung, bladder, and skin cancers. While the OHA has a statewide cancer registry, no such registry or reporting system exists for kidney damage.

In addition to potential environmental exposures, there are other common sources for arsenic and cadmium. These include occupational exposures, well water for arsenic, and tobacco smoke for arsenic and cadmium.

Oregon Public Health Division Response

Heavy Metal Exposure

Laboratory tests results. Urine cadmium is the test of choice to assess lifetime exposure to this metal. Both arsenic and chromium are quickly eliminated from the body; therefore, urine testing for these is not likely to be helpful in the assessment of chronic exposure.

Upon learning about possible exposures in SE and N Portland, on February 18, 2016 the Oregon Health Authority (OHA) amended the Oregon Administrative Rules on an emergency basis to require detectable urine cadmium to be reportable to OHA by laboratories, and established a mechanism for electronic reporting of these results. Guidelines for clinicians about obtaining samples and testing have been published and updated.

Currently, some people in the communities near Bullseye Glass in SE Portland, and Uroboros Glass in North Portland have self-identified to their health care providers for testing. Results of the laboratory tests are analyzed and reported out weekly. The Oregon Health Plan (OHP) covers urine cadmium testing for members who live in the highest-risk areas, as do most private insurance plans. In addition, OHA has contracted with a health system to provide for urine sample collection and laboratory testing for people who live, work, or attend school or day care within a ½ mile radius of either glass manufacturing plant.

As of March 25, 2016, more than 400 people in Multnomah County have had urine testing for cadmium done through their private health care providers. Of these, 3.6% had any detectable cadmium, and 4 (1.0%) had levels elevated enough to be of clinical concern.

Clinician Reports:

OHA and Multnomah County Health Department work to ensure health care providers are informed about appropriate screening testing procedures and follow-up. Through the mandated reporting system, OHA and Multnomah County Health Departments accept reports from clinicians whose patients have elevated laboratory testing results for heavy metals (e.g cadmium).

On March 21, we sent the fifth in a series of updates to clinicians about testing for heavy metals (e.g. cadmium and arsenic). These Clinician Updates include information on experts to contact if an elevated urine cadmium result is found. In addition, we are contacting health care providers for each individual with cadmium levels above the threshold of clinical concern to ensure appropriate follow-up.

Neighborhood Cancer Rate Analyses

Based on available environmental data indicating affected geographic areas, the Oregon State Cancer Registry¹ (OSCaR) evaluated cancer rates for the Census tracts near Bullseye Glass and Uroboros Glass factories with the highest reported environmental levels of cadmium and arsenic. These evaluations

¹ OSCaR is a statewide, population-based registry that collects and analyzes information about cancer cases occurring in Oregon. OSCaR analyses allow for tracking of cancer rates over time at the state and county level.

focused on lung and bladder cancers, the two cancers most strongly associated with these types of exposures to cadmium and arsenic.

Analyses of cancer rates for the 15-year period from 1999 through 2013 showed that rates of lung and bladder cancer were generally consistent with expected rates in the identified Census tracts in SE and North Portland for each 5-year period from 1999–2013. One exception was an elevated rate of bladder cancer for the 5-year period from 1999 through 2003 in one area of N Portland that included two Census tracts near Uroboros Glass; bladder cancer rates were not elevated in this area in subsequent years.

Kidney Disease

While the medical literature reports that elevated levels of cadmium may increase the risk of kidney damage, currently there is no reporting system for kidney disease in Oregon.

Environmental Health Assessment Future Plans

As of February 15, 2016, both glass factories voluntarily suspended using the heavy metals of concern in their manufacturing processes, decreasing the risk of human exposure from these sources. Nonetheless, OHA Public Health Division is committed to responding to community concerns about how past exposures might affect their health. In order to address this and other related health concerns, OHA's Environmental Health Assessment Program will be conducting a comprehensive Environmental Public Health Assessment for the persons living, working, or going to school or day care within ½ mile of each of the facilities. These assessments will use the Center for Disease Control's (CDC) Agency for Toxic Substances and Disease Registry (ATSDR) standard process for evaluating the health risks of environmental contamination.

OHA is in discussions with national experts from the CDC ATSDR about whether additional systematic biological testing of community members is appropriate. We will also identify a community advisory group to: 1) assure that the strengths and limitations of any such potential study are shared; and 2) understand community needs for the more detailed information that such a study would provide.