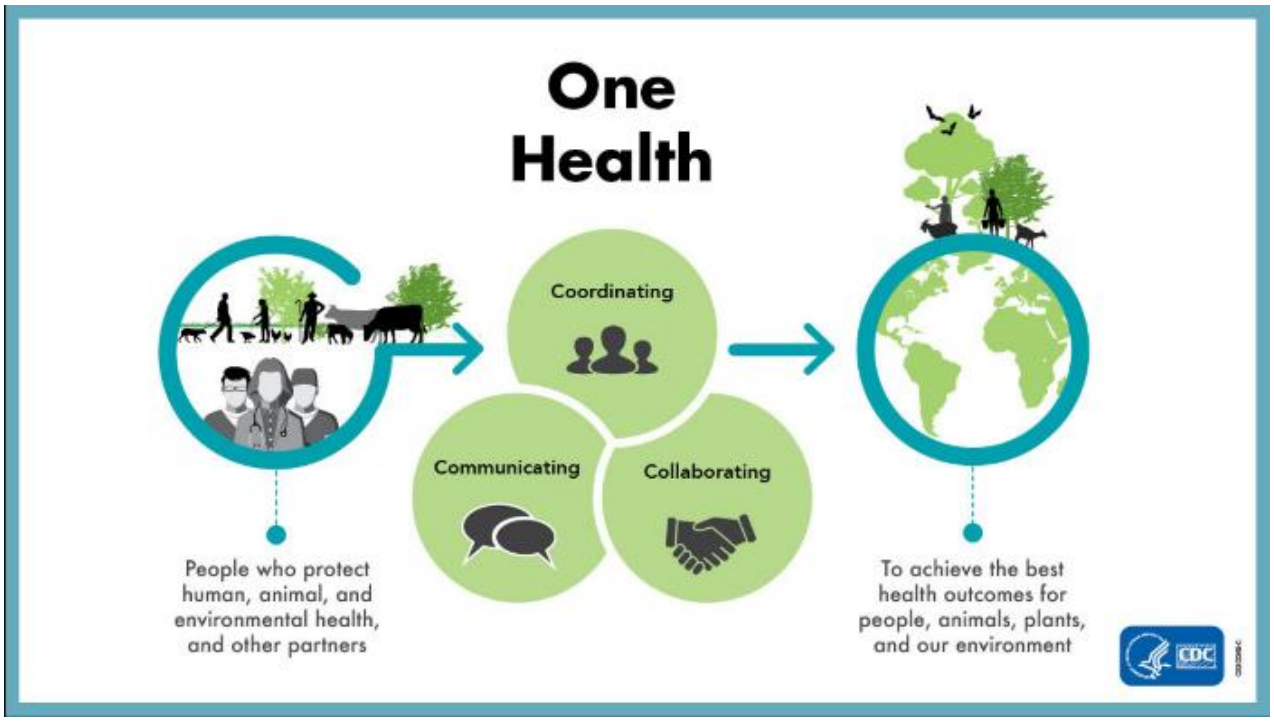
How Idaho Uses the One Health Approach to Combat Recreational Lead

What is One Health?

The One Health approach recognizes that human health is connected to animal health and the health of our shared environment. Our world's interconnectedness also comes with shared exposures. These can come in the form of ingesting contaminated food or water, consuming contaminated meat or fish, or being exposed to contaminants directly through air or other elements of the environment. Thus, it's crucial for multiple partners and professionals with many different areas of expertise to cooperate to successfully plan public health interventions.

To better understand how state agencies incorporate the One Health approach, ASTHO interviewed environmental health staff from the Idaho Department of Health and Welfare (DHW) on their work around recreational lead exposure and how it fits in with the One Health paradigm.



Source: *CDC*

Recreational Sources of Lead from Hunted Meat and Fish

People and animals can be exposed to lead through many channels. Anglers are potentially exposed to lead when handling fishing tackle or making weights, jigs, sinkers, or spinnerbaits from lead. Wild game meat harvested with lead ammunition can be contaminated with lead fragments or lead dust, creating health risks for people who eat the meat. Most lead particles in wild game meat are too small to see, feel, or sense when chewing. Lead is especially harmful to children and pregnant women and can damage the brain, nervous system, kidneys, and immune system.

Partnerships

Idaho's One Health Consortium started in 2015 to focus on animal, human, and environmental health. Various environmental health events occur annually with agencies collaborating before, during, and after the situation has been identified and addressed. Idaho's work to reduce recreational lead exposure is shared among multiple agencies in the state (see table below). The partners each represent different areas that address topics from various perspectives as they relate to land, animals, and human health.

The DHW Environmental Health Program works with the following partners covering the three areas of One Health.

Idaho's work to reduce recreational lead exposure is shared among multiple agencies in the state, notably when working on contaminated site cleanup.

DHW One Health Partnerships		
Human	**Environment**	**Animal**
• CDC • Choose Safe Places (Agency for Toxic Substances and Disease Registry (ATSDR)) • Consumer Product Safety Commission • FDA • Head Start • Idaho's Child Care State Training and Registry System (IdahoSTARS) • Idaho's Childhood Lead Prevention Program Media Campaign • Idaho public health districts • Idaho Tribal Councils (Kootenai, Coeur d'Alene, Nez Perce, Shoshoni, and Northern Paiute) • Medicaid Lead Screening Advisory Committee • Northwest Pediatric Environmental Specialty Unit • Women, Infant and Children Program (DHW, Division of Public Health, Bureau of Clinical and Preventive Services)	• Antique vendors, consignment shops • Bureau of Land Management • EPA • Idaho Department of Environmental Quality • U.S. Forest Service	• Idaho Fish and Game • Local hunting and fishing groups • USDA

Through a contractual agreement, DHW works with the University of Washington Pediatric Environmental Health Specialty Unit staff to host lead-focused training for physicians and public health district environmental health staff. Supporting provider understanding of environmental exposures helps to improve patient education and care and improve public health responses.

In addition, in approximately 2009, Idaho formed their Fish Consumption Advisory Project to protect the public from adverse health risks associated with consuming contaminated fish from Idaho and tribal waters. Members of this project include DHW, Idaho Department of Environmental Quality (IDEQ), Idaho Fish and Game, DHW's Bureau of Laboratories, the University of Idaho, the City of Boise, the U.S. Geological Survey, the Agency for Toxic Substances and Disease Registry (ATSDR), and EPA. They meet at least once a year to discuss mercury content and other contaminants of concern and appropriate fish consumption recommendations.

Source: CDC

Learning more about Lead Risks in Idaho

To allow for spatial mapping of priority areas, as determined by the lead soil levels and elevated blood lead level reporting rates, DHW staff are using GIS to develop a comprehensive lead map for the state. This map will include areas where children have been found with an elevated blood lead level greater than 5 ug/dL; homes built before 1978 more likely to contain lead-based paint; known contaminated environmental sites (e.g., past mining sites); and populations at higher risk of the effects of lead poisoning and in areas of higher risk (e.g., children less than six years of age and low socio-economic populations that are more likely to live in older housing). The map will inform and target educational and outreach efforts to specific Idaho populations in the future.

Challenges and Remedies

Challenges reaching populations considered high risk for lead exposure during recreation exist. To address some concerns, DHW developed fact sheets in both English and Spanish and short educational videos describing the risks of lead exposure associated with many recreational areas and activities. The agency shares the many safety materials on its website, at booths during in-person fairs and vendor shows, and other relevant events. The more events and outreach Idaho can do regarding recreational lead exposure, using a One Health approach, the more success the various agencies will have in educating the public about lead risks.

One specific challenge DHW faces with lead awareness outreach is exclusion from in-person events, such as antique shows. Antiques can contain lead, and in-person events are a great way to engage with collectors on the risk of lead and how to protect themselves. Vendors have not always felt comfortable with the presence of health department staff due to the perceived negative impacts their presence could have on their business. Idaho created a factsheet and video on antiques and the risk of lead poisoning.

Another challenge is a lack of sufficient staffing to cover all the in-person events DHW would like to attend. DHW would like to engage with people in different regions of the state but does not always have the capacity to do sufficient outreach; DHW is looking into interns to help with these efforts to increase geographic representation.

Northern Idaho is the site of a large lead-based Superfund site. With it comes long-term concerns about contaminated soil and public health risks for residents and visitors. DHW has hosted Soil Screening, Health, Outreach, and Partnership (soilSHOPs) workshops in collaboration with ATSDR, IDEQ, the Panhandle Health District (the location of the Superfund site), and other local jurisdictions. These workshops have been piloted in this area and two other high-risk locations around the state and include information on how contaminated soil can impact human health. An additional challenge lies with lead testing at soilSHOPs. In general, DHW lacks sufficient equipment capacity (i.e., analytical instruments like x-ray fluorescence or “XRF” machines) to analyze the samples at soilSHOPs or other events. DHW has increased its capacity to provide testing for soilSHOPs by leveraging equipment and resources through partnerships established with the ATSDR and IDEQ.

Future Opportunities for Lead-Associated One Health Response

DHW is exploring additional opportunities to share lead safety messages with those that teach others to hunt and fish, encouraging them to educate others about lead exposure from fish and hunted meat. DHW also launched a media campaign to promote lead awareness titled "Let’s Prevent LEAD Poisoning. Educate. Test. Prevent."

DHW is also updating its National Electronic Disease Surveillance System Base System, which is the platform they use track reports of elevated blood lead levels, to include interview questions that will enable them to understand the source of the lead exposure better. DHW hopes to incorporate questions from their newly created Idaho Lead Screening questionnaire into the surveillance platform. The questionnaire contains a series of specific questions to determine potential risk factors for lead exposure and identify children who should have a blood lead test. In addition, Idaho completed its first statewide Childhood Lead Risk Assessment and Blood Lead Testing Recommendations to help increase testing rates

and decrease blood lead levels in children. This includes recommendations for medical providers who care for Idaho children.

Additional One Health Areas of Collaboration

Other contaminants of concern that fit into the One Health framework in Idaho include wildfire smoke, per- and polyfluoroalkyl substances, harmful algal blooms (HABs), and private well water. HABs can cause illness in people and animals, and DHW and IDEQ meet bi-weekly to discuss how to combat HABs. IDEQ does the ecology and testing activities related to HABs and then sends that information to the local health districts, who issue advisories when needed. DHW provides education and outreach and can issue HAB advisories based on IDEQ's HAB results (if the public health districts do not issue the advisories).

DHW and IDEQ also have a memorandum of understanding that defines how the two agencies work together when evaluating risks to human health from environmental contaminants and create a mechanism to notify and engage each other in their respective agency activities. This includes work related to mine site mitigation in the state, fish advisories, water contamination health alerts, and more. DHW also works closely with tribal groups on many health issues, including meat and fish contamination and radon risk.

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