NH Physicians, Partners in Wellness

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After hours calls to UHNBC Switchboard

- 250-565-2000
- Press 7
- Ask for the MHO on-call

Lead in Drinking Water

As you may be aware, there has been recent National, Provincial, and local media coverage around lead in drinking water. As a result of increased awareness of this issue, you may see an increase in patients with concerns around lead exposure.

The overall exposure of children to lead from drinking water sources is likely to be low in Northern BC. However, coastal communities in particular tend to have corrosive water, and as such exposure may be occurring through people's home tap water if they have older pipes/pipe fixtures, due to leaching of lead from those fixtures. We hope that the following information might be useful to you in conversations with your patients.

Questions Clinicians may be asked by their Patients

1. Is the drinking water in northern BC causing lead poisoning?

No. Overall blood lead levels in children have gone down significantly and steadily over the past decades, owing to the removal of leaded indoor paint, and leaded gas in Canada. Canadian blood lead levels are among the lowest in the world. However, we know that there is no "safe" amount of lead, particularly for the high-risk groups of pregnant women and young children. As such, we always strive to reduce exposure to lead from all sources (including small amounts sometimes found in drinking water) to as low as reasonably achievable, wherever we can.

2. What are the health effects of lead?

Absorption of even very low levels of lead into the blood may have harmful health effects on the intellectual and behavioral development of infants and young children. This is why efforts are made to decrease all sources of lead exposure (including very low level exposures through drinking water), to as low as reasonably achievable.

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Children are at greater risk of ingesting lead due to their frequent hand-to-mouth activity, and normal tendency to mouth or chew objects they come into contact with (especially non-food products such as paint chips, furniture or toys). In B.C.. it is this type of exposure that tends to cause more significant elevations in blood lead levels in children (vs. drinking water). Blood lead levels in the range of 10 to 15 micrograms per deciliter in fetuses, infants, and children have been associated with adverse neurobehavioral and cognitive changes. At high levels (above 40 micrograms per deciliter), anemia can occur. See https://www.nlm.nih.gov/medlineplus/ency/article/002473.htm for further detail regarding symptoms of lead poisoning. In northern B.C., lead poisoning is NOT due to the consumption of drinking water.

3. What are other potential exposures to lead, besides drinking water?

Potential sources of lead other than drinking water include:

- Paint – including leaded paint in homes, as well as certain lead-containing painted toys, furniture and toy jewelry.
- Workers in smelters, refineries, and other industries that use lead may be exposed to high levels of lead. For example, the recycling of automotive batteries, which are crushed and melted down, can release lead into the work environment. Another example is equipment repair work (e.g., radiator repair)
- The families of people working in these industries may be exposed to high levels of lead from workers' clothing, shoes, and equipment that are covered with lead dust.
- Lead shot in game hunting, particularly in communities where game is regularly consumed, such as those in northern regions. People can be exposed to lead when they eat animals hunted with lead shot, breathe in lead fumes at shooting ranges, or when a lead shot is manufactured at home
- Pewter pitchers and dinnerware
- Some candles have wicks with a metallic core which may contain lead, that can vaporize during burning
- Hobbies which involve working with leaded glass or pottery glaze, brass, or bronze objects
- Food and liquids stored or served in lead crystal or lead-glazed pottery or porcelain can become contaminated (as lead can leach from these containers into the food or liquid).
- Horizontal PVC (plastic) mini-blinds made in Asia or Mexico
- Some folk remedies contain dangerous levels of lead, and can cause serious and irreversible illness e.g.
    - "greta" and “azarcon” to treat an upset stomach; and
    - "nzu", "poto" and "calabash chalk" to treat morning sickness.

4. Who should be tested for blood lead levels?

Anyone who shows up at your offices with symptoms of lead poisoning, or who is believed to be exposed to one or more of the exposures listed above should be tested. In BC, consumption of drinking water alone does not warrant blood lead testing.

5. How can you determine if a patient's home has lead paint?

If their home was built before 1978, there is a good chance it has lead-based paint (under the layers of applied paint). In 1978, the federal government banned consumer uses of lead-containing paint, but some provinces banned it even earlier. Lead from paint, including lead-contaminated dust, is one of the most common causes of lead poisoning in children. Because children tend to put things in their mouths, dusting, vacuuming and wet-mopping will all help reduce exposure to lead-contaminated dust.

6. What can people do about lead in tap water at home?

Please reinforce that the easiest solution to this exposure is simply to run the taps until cold before drinking the water (commonly referred to as 'flushing' their taps). Point of use filters are also an option. (More detail around longer-term mitigation options is included in the FAQ for patients).

We have also provided you with a separate FAQ, intended for distribution to patients. Please consider providing this FAQ to pregnant women and those caring for young children.

I hope this helps with your communication to your patients about this issue. Please contact me if you have any questions. I can be reached at 250-631-4261, or via email at raina.fumerton@northernhealth.ca.

Immunization Campaign Quality Improvement Debrief

Have you helped with a Mass Immunization Campaign that was focused on increasing immunity rates in the north? **This is your opportunity to inspire quality improvement for future campaigns!**

Purpose:

Collated learnings from the debrief will be used to inform:

- The Vaccine Status Reporting Regulation (VSRR) and the Childhood Immunization critical priority projects.
- Future immunization and NH system-wide integrated quality improvement endeavours.

By December 31th, please follow this link: Immunization Campaign Quality Improvement Debrief to share what worked really well with the campaigns you've been a part of, and what issues need to be addressed next time. Input is sought from all NH staff and physicians who have been involved in Immunization

Campaign governance, planning, coordination and/or delivery. Please fan out this invitation to those you feel might be interested.
In best health, Mass Immunization Campaign Quality Improvement Project Team Members: Megan Ellis, Andrew Steele, Ashley Craft

Additional Information:

Please connect with Ashley Craft at ashley.craft@northernhealth.ca or 250-645-6568.

Who is invited to participate?

NH staff and physicians in the north involved in the governance, planning, coordination and/or delivery of the following Mass Immunization Campaigns:

- Measles School Catch-Up Campaign (K-12)
- Vaccine Status Reporting Regulation
- School Age Immunizations (K, 6, 9)
- Immunizations for BC Infants & Children (2 months – 4 years)
- Annual Influenza Campaign

What will be asked?

Six buckets of work common to all immunization campaigns have been identified: governance, planning, service delivery, internal/external communications and information systems. For each theme, participants will be asked 'What worked really well?' and 'What issues need to be addressed next time?

Privacy?

A guiding principle for this debrief is for you to feel comfortable saying what you want or need to say. With this in mind, please be welcome to make up a name when prompted as you sign in to participate in the survey. Your identity is not needed.
The online tool that will be used is called Poll Everywhere. This online survey company is hosted by a web survey company located in the USA and as such is subject to U.S. laws, in particular, the US Patriot Act which allows authorities access to the records of internet service providers. If you choose to participate in the survey, you understand that your responses to the survey questions will be stored and accessed in the USA. The security and privacy policy for the web survey company can be found at the following link:https://www.polleverywhere.com/privacy-policy.

Who was involved in planning this debrief?

This work is being led by three members of NH's Population and Public Health team (Megan Ellis, Ashley Craft and Andrew Steele), as a quality improvement project. The debrief was planned by a working group consisting of members from Primary and Community Care Services, Communications, Quality and Innovation, and Population and Public Health.

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Lead Levels in Drinking Water

Questions and Answers for Patients

You may have been made aware of recent media attention surrounding lead in drinking water. Drinking water generally does not contain lead, and if lead is present in water, the concentrations are usually very low. When elevated lead levels are found in drinking water it is due to a combination of water chemistry, plumbing materials (containing lead or brass), and extended contact time between the water and plumbing materials. Coastal communities tend to have water properties that leach lead from older piping infrastructure.

What is lead?

Lead is a metal that is found naturally in the earth's crust. Everyone is exposed to low levels of lead through food, tap water, air, dust, soil, and some consumer products. Lead was once used in products like toys, paint and plumbing materials, but the Government of Canada now restricts its use in many products.

Why has lead been found in tap water in the north?

The combination of (favorable) water chemistry, presence of lead containing plumbing materials, and (extended) contact time determine the amount of lead that leaches into tap water. Exposure to lead through tap water is expected to be low. Water samples (including those referred to in the media coverage) are usually tested in the using the first flush aka "worst case scenario"method. Water that has been siting stagnant in pipes overnight is reflective of the highest concentrations of lead in the drinking water for a 24 hour period. As water is run (showering, flushing the toilet, running taps etc.) throughout the day the concentration of lead also goes down.

Should I be concerned about the levels of lead in the tap water in my home?

When elevated lead levels are found in drinking water it is due to a combination of water chemistry, plumbing materials (containing lead or brass), and extended contact time between the water and plumbing materials. Coastal communities tend to have water properties that leach lead from older piping infrastructure. The overall exposure of lead through drinking water is generally low, relative to other sources of lead. Overall blood lead levels in children have gone down significantly over the past decades owing to the removal of leaded indoor paint and leaded gas in Canada. The health impacts of lead exposure depend on many factors including the frequency, duration, and dose of the exposures to a variety of lead sources, as well as individual factors such as age, previous exposure history, nutrition and health.

However, as there is no "good" amount of lead and as long term exposure could impact growth and development in young children, the aim is to reduce the amount of exposure to lead from all sources (including drinking water) to as low as possible, wherever we can. This is especially true for young children and pregnant women. Lead exposure is most of a concern for young children and developing fetuses because they absorb lead more easily than adults and are more susceptible to its harmful effects.
For more information on the health effects of lead, visit Health Canada website below:
http://www.hc-sc.gc.ca/ewh-semt/pubs/water-eau/lead-plomb-eng.php

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How can I find out if I have high lead in my tap water at home?
Lead is less likely to be present in buildings constructed after 1989. If you decide to test your water, please contact an accredited lab (see Table 1) to arrange for water sample collection (bottles and forms), submission, and processing (testing for lead). Depending on the age of your home and plumbing materials, you may decide not to sample.
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What can I do to reduce my family's exposure to lead?
It is important to remember other sources of potential lead exposure for children that may be much more significant, such as lead paint.

- If your home was built before 1978 and has never been repainted, there is a good chance it has lead-based paint. Clean your house regularly to remove dust and particles that may contain lead. This is especially important for surfaces that young children might touch often.
- Do not keep food or drinks in lead crystal containers for any length of time. Do not serve pregnant women or children drinks in crystal glasses. Babies should never drink from lead crystal.
- If you own glazed glass or ceramic dishes bought outside of Canada, do not use them for serving food or drinks. They may contain higher levels of lead than are allowed in Canada.
- If you have children six years of age or under, remove any horizontal PVC (plastic) mini-blinds made in Asia or Mexico from your home.
- Discourage children from putting things into their mouths unless they are intended to be mouthed (like food and pacifiers).
- If you work in a smelter, refinery or any other industry where you are exposed to high levels of lead, shower and change your clothing before going home. Make sure you have your blood lead level checked regularly.
- Never burn waste oil, colored newsprint, battery casings or wood covered with lead paint in or near your home, because lead fumes may be released. Dispose of them through your city or town's hazardous waste program.
- If you use lead solder in a hobby (like making stained glass), use a good quality breathing mask, keep surfaces clean and keep children and pregnant women out of the area. Wash hands after handling lead solder.
- Avoid eating wild animals that have been shot with lead bullets. Use non-lead bullets and shots when hunting for food.

Lead exposure from tap water home settings vary. If lead contamination of drinking water is a concern based on the age of your plumbing (1989 or older) or water testing results there a number of actions that can be taken to mitigate risk. The options may include both short and long-term solutions. Long-term solutions include replacing old/lead containing plumbing components. Short-term solutions may include:

- **Flushing:** Flush their drinking water taps each morning until the water runs cold and you notice a temperature drop in the water. To conserve water jugs can be stored in the fridge. Use cold, flushed water for drinking and preparing food. Water from the hot water tap should not be consumed as it contain more (or higher level of) lead.
- **Bottled water**
- **Installing point-of-use lead filtration units**

What is Northern Health's role?

Northern Health is committed to ensuring that the water provided to northern BC residents is safe. If you have any questions, please call your local Environmental Health Officer (see Table 2).

Table 1 – List of Accredited Laboratories in British Columbia

NAME OF LABORATORY	PHONE	FAX
AGAT Laboratories (Burnaby)	778-452-4000	778-452-4074
ALS Environmental (Kamloops)	250-372-3588	250-372-3670
ALS Environmental (Fort St. John)	250-261-5517	250-261-5587
ALS Environmental (Vancouver)	604-253-4188	604-253-6700
CARO Analytical Services (Kelowna)	250-765-9646	250-765-3893
EXOVA Canada Inc. (Surrey)	604-514-3322	604-514-3323
MAXXAM Analytics (Burnaby)	604-734-7276	604-731-2386
MAXXAM Analytics (Victoria)	250-385-6112	250-382-6364
MB Laboratories Ltd. (Sidney)	250-656-1334	250-656-0443
Northern Laboratories (2010) Ltd (Prince Rupert)	250-627-1906	250-627-8214

Table 2 – Public Health Protection – Office Contact Numbers

OFFICE LOCATIONS	PHONE	FAX
Prince Rupert	250-622-6380	250-622-6391
Smithers	250-847-6400	250-847-5908
Terrace	250-631-4222	250-638-2209
Prince George	250-565-2150	250-565-2144
Quesnel	250-983-6810	250-983-6857
Vanderhoof	250-567-6900	250-567-6170
Dawson Creek	250-719-6500	250-719-6513
Ft. Nelson	250-774-7092	250-774-7096
Fort St. John	250-263-6000	250-263-6086