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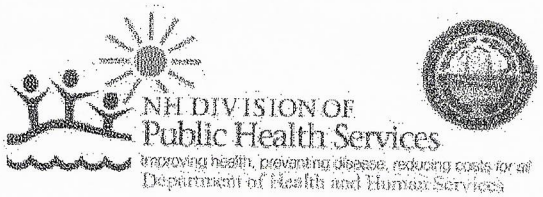

Per- and Polyfluoroalkyl Substances (PFAS) New Hampshire Update

Key Points and Recommendations:

1. The New Hampshire Department of Environmental Services (NHDES) has proposed new PFAS drinking water standards, called Maximum Contaminant Levels (MCLs), for four commonly identified PFAS compounds. Please review the attached Frequently Asked Questions (FAQ) document for more information.

2. The long-term risk to human health from PFAS exposure is unclear, but the Centers for Disease Control and Prevention's Agency for Toxic Substances and Disease Registry (CDC/ATSDR) is conducting a national PFAS health study to learn more about the potential human health impact from exposure to these chemicals.

3. New Hampshire has multiple communities with PFAS drinking water contamination. Healthcare providers may receive questions from patients about how to monitor the health of a person who has exposure to these chemicals in drinking water. Healthcare providers are urged to review the following available resources:
   - CDC/ATSDR clinician PFAS guidance: https://www.atsdr.cdc.gov/pfas/docs/pfas_clinician_fact_sheet_508.pdf.
   - CDC/ATSDR clinician continuing education webinar/training: https://www.atsdr.cdc.gov/emes/pfas_clinicians_training.html.
   - NH DHHS healthcare provider letter about PFAS blood testing: https://www.dhhs.nh.gov/dphs/pfcs/documents/pfas-provider-report.pdf.

4. Northern New England Poison Center (NNEPC) toxicologists remain available to assist clinicians with questions or concerns about toxic/chemical exposures, including PFAS:
   - For non-urgent questions related to PFAS exposure, call: 1-800-562-8236
   - For urgent questions related to other toxic exposures, call: 1-800-222-1222

5. The public can contact NHDES at 603-271-3710 for additional information.

Background/Situation:

Per- and Polyfluoroalkyl Substances (PFAS), formerly called perfluorochemicals (PFCs), are a group of synthetic chemicals that have been used for decades to manufacture household and commercial products that resist heat, oil, stains, grease, and water. PFAS have been used in many consumer products, including non-stick cookware, stain-resistant furniture and carpets, waterproof clothing, microwave popcorn bags, fast food wrappers, pizza boxes, shampoo and dental floss. Exposure to these chemicals occurs primarily through oral ingestion and some of the PFAS compounds can bioaccumulate. Because PFAS are/were ubiquitous in our natural, work, and home environments, most people in the United States have been exposed to PFAS

and have detectable levels of these chemicals in their bodies. Based on biomonitoring studies (testing a person's blood for PFAS levels), communities that have identified PFAS drinking water contamination typically have higher blood levels compared to national averages. PFAS blood tests, however, are difficult to interpret and do not tell a patient or provider about whether there may be an increased risk of adverse health effects from exposure. We are still learning about the human health impacts of PFAS, and the CDC/ATSDR is in the early stages of conducting a national PFAS health study to help provide more information about potential health risks from PFAS exposure. CDC/ATSDR is conducting an initial pilot PFAS health study on the Pease Tradeport in New Hampshire.

Addressing Patient Health Concerns:

Patients may present to clinicians and ask how to monitor a person's health who has consumed PFAS contaminated drinking water. Healthcare providers should review the available resources from the New Hampshire Department of Health and Human Services (NH DHHS) and the CDC/ATSDR linked above, as well as review the attached NH DES/DHHS FAQ document.

We recommend maintaining regular healthcare visits, conducting routine health screenings, and monitoring for symptoms of illness. Given the uncertainty around what PFAS exposure means for a person's health, some patients may request certain blood testing, and healthcare providers should discuss with their patients the risks and benefits of testing. Any further testing should be based on a thorough history, physical exam, and assessment of a patient's presenting issue or concern.

For additional information:

CDC/ATSDR website on PFAS: https://www.atsdr.cdc.gov/pfas/

NH DHHS PFAS website: https://www.dhhs.nh.gov/dphs/pfcs/index.htm

NHDES PFAS website: https://www4.des.state.nh.us/nh-pfas-investigation/

Prior New Hampshire HAN messaging about PFAS:

- NH PFAS HAN #1 (May 22, 2014)
- NH PFAS HAN #2 (April 3, 2015)
- NH PFAS HAN #3 (June 15, 2015)
- NH PFAS HAN #4 (August 17, 2015)
- NH PFAS HAN #5 (December 23, 2015)
- NH PFAS HAN #6 (April 6, 2016)

- For any questions regarding this notification, please call the NH DHHS, DPHS, Bureau of Infectious Disease Control at (603) 271-4496 during business hours (8:00 a.m. – 4:30 p.m.).
- If you are calling after hours or on the weekend, please call the New Hampshire Hospital switchboard at (603) 271-5300 and request the Public Health Professional on-call.
- To change your contact information in the NH Health Alert Network, contact Adnela Alic at (603) 271-7499 or email Adnela.Alic@dhhs.nh.gov.

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From:	Benjamin P. Chan, MD, MPH, State Epidemiologist
Originating Agency:	NH Department of Health and Human Services, Division of Public Health Services

Attachments:

1) "Answers to Frequently Asked Questions (FAQs): Per- and Polyfluoroalkyl Substances (PFAS) Drinking Water Maximum Contaminant Levels (MCLs)"

State of New Hampshire
Department of Environmental Services
Department of Health and Human Services

Answers to Frequently Asked Questions (FAQs): Per- and Polyfluoroalkyl Substances (PFAS) Drinking Water Maximum Contaminant Levels (MCLs)
Updated June 28, 2019

What are PFAS and where are they found?
Per- and Polyfluoroalkyl Substances (PFAS) are a group of synthetic chemicals that have been used for decades to manufacture household and commercial products that resist heat, oil, stains, grease, and water. PFAS have been used in many consumer products, including non-stick cookware, stain-resistant furniture and carpets, waterproof clothing, microwave popcorn bags, fast food wrappers, pizza boxes, shampoo and dental floss. They have also been used in certain firefighting foams and various industrial processes. Because of their widespread use, many PFAS, including perfluorooctanoic acid (PFOA), perfluorooctane sulfonic acid (PFOS), perfluorohexane sulfonic acid (PFHxS), and perfluorononanoic acid (PFNA), have been found in our environment.

What is a drinking water MCL and how are MCLs developed?
A maximum contaminant level (MCL) is a drinking water standard that public drinking water systems must comply with under the Federal and State Safe Drinking Water Acts. These standards are set to limit the level of contaminants in drinking water, including contaminants like arsenic and lead, and apply to public drinking water systems that serve a population of 25 or more people for at least 60 days per year. These include municipal water systems, large apartment complexes, or large workplaces or institutions.

State law enacted in 2018 directed the New Hampshire Department of Environmental Services (NHDES), in consultation with the NH Department of Health and Human Services (DHHS), to set drinking water standards/MCLs that are protective of human health for PFOA, PFOS, PFHxS and PFNA. These four compounds were selected because they have been the most studied. The law also specified that in addition to developing a protective health-based standard, these MCLs must be developed with "consideration of the extent to which the contaminant is found in New Hampshire, the ability to detect the contaminant in public water systems, the ability to remove the contaminant from drinking water, and the costs and benefits to affected parties that will result from establishing the standard." Now that NHDES has developed these four proposed drinking water standards/MCLs, the agency will complete the formal rulemaking process.

What are the proposed PFOA, PFOS, PFHxS and PFNA drinking water standards/MCLs for New Hampshire?

Per- and Polyfluoroalkyl Substance (PFAS)	Proposed Maximum Contaminant Level nanograms/liter (part per trillion, or ppt)
Perfluorooctanoic acid (PFOA)	12
Perfluorooctane sulfonic acid (PFOS)	15
Perfluorohexane sulfonic acid (PFHxS)	18
Perfluorononanoic acid (PFNA)	11

Why are the new proposed drinking water standard/MCL levels lower than those initially proposed in January 2019?

Since the drinking water standards/MCLs were initially proposed, new studies and models have become available that indicate that they should be lowered to further reduce exposure in order to be protective of health over a lifetime. Specifically, a peer-reviewed exposure model was developed and published by the Minnesota Department of Health that predicts PFAS blood levels across a lifetime (the Minnesota model). In addition to the scientific studies and considerations of health effects in animals that were used in the initial analysis, NHDES also used the Minnesota model and additional scientific studies to develop the new proposed levels. A complete description of the development of the proposed drinking water standards/MCL is available at:
https://www.des.nh.gov/organization/commissioner/legal/rulemaking/index.htm#pdrinking

Why are these levels different from what other states and the U.S. Environmental Protection Agency (EPA) have developed?

While the EPA has developed non-enforceable health advisories, it has not adopted drinking water standards/MCLs. In the absence of national standards, some states are working to develop PFAS drinking water standards using the best science available, the professional judgment of toxicologists and health risk assessors, and long-established risk assessment methods. As new studies and information are developed and used, PFAS drinking water standards may change.

Are the proposed drinking water standards/MCLs protective of health?

Yes. Using the best available peer-reviewed data, studies, and methods, these newly proposed levels are considered to be protective of public health for all age groups. These proposed drinking water standards/MCLs also protect a person drinking water at these levels every day across their lifetime. PFAS exposure in humans continues to be studied in order to more precisely understand the possible health impacts.

What health effects have been associated with exposure to PFAS?

Studies have examined possible relationships between levels of PFAS in blood and health effects in people. However, most of these studies analyzed only a small number of PFAS compounds, and findings are not always consistent between health studies. Some, but not all, studies of PFAS exposure in humans suggest that PFAS may:

- Increase cholesterol levels
- Increase liver enzyme levels
- Affect growth, learning, and behavior
- Interfere with the body's natural hormones, including thyroid hormone levels and sex hormone levels that could affect reproductive development and a woman's fertility
- Affect the immune system (e.g., decrease how well the body responds to vaccines)
- Increase the risk of certain types of cancers

Studies do not clearly show whether PFAS cause cancer in people. People exposed to high levels may have increased risk of kidney cancer or testicular cancer. However, further research is necessary as these studies are not consistent and may not have considered other cancer-causing factors such as tobacco use, alcohol use, and diet.

What should I do if I'm concerned about my health?

Anyone that has health concerns related to PFAS exposure should discuss these concerns with their healthcare provider, who can follow their health over time through regular check-ups. Additionally, there are important steps we should all take to protect our health and prevent disease. Tobacco use, alcohol, obesity and being overweight are all risk factors for chronic diseases, including many types of cancer. Having a healthy diet, exercising, reducing alcohol consumption, and avoiding tobacco use can help prevent illness. In addition, it is recommended that people with private wells periodically test their water for arsenic and other contaminants (https://www.des.nh.gov/organization/divisions/water/dwgb/well_testing/documents/well-testing.pdf); and homes should be tested for radon gas in the air. Both radon and arsenic are known cancer causing agents that are naturally occurring and commonly found in New Hampshire.

I am a breastfeeding mother drinking water above the new proposed PFAS drinking water standards/MCLs, should I breastfeed my child?

Yes. Children can be exposed to PFAS through breast milk. However, breastfeeding has many known health benefits including helping to decrease obesity, building a strong immune system, and enhancing brain development. Given the many benefits of breastfeeding for mother and child, breastfeeding continues to be recommended, even if a breastfeeding mother drank water with PFAS above the new drinking water standards/MCLs.

What should I do if I'm drinking water above the new proposed PFAS drinking water standard/MCL levels?

Anyone drinking water with PFAS contamination above these new proposed drinking water standards/MCLs can choose to use an alternative water source for drinking or cooking. This includes pregnant women and nursing mothers in order to reduce PFAS exposure to fetuses and infants. Similarly, parents or guardians who prepare their infant's formula using drinking water that contains PFAS at levels above the proposed drinking water standards/MCLs can consider switching to a non-contaminated source of water or use a formula that does not

require adding water. Water with PFAS levels above the drinking water standards/MCLs can be used for bathing, showering or washing clothes and cleaning.

Does bottled water have PFAS?
Bottled water is regulated by the U.S. Food and Drug Administration and by the New Hampshire Department of Health and Human Services (DHHS). There are no requirements for testing for PFAS in bottled water at this time and state MCLs do not apply to bottled water. However, to help answer this question, NHDES tested over twenty bottled water products for the presence of PFAS. The results from the testing can be found here: (https://www4.des.state.nh.us/nh-pfas-investigation/wp-content/uploads/Bottled-Water-Summary-003.pdf).

My water is supplied to me by a public water system, is it safe to drink?
Public water systems are required to provide you and your community safe drinking water. When the rules go into effect, public water supply systems that serve communities, large work places and institutions must begin sampling their water for these PFAS. In most cases, the determination of having exceeded the drinking water standard/MCL requires sampling for four quarters. Once an exceedance of any drinking water standard/MCL has been confirmed, a public water system must promptly notify their customers. Some water systems may be able to stop using a source of water or be able to blend sources to lower the amount of PFAS immediately. Others will need time to design and install treatment. While the standard is set for water consumed daily over a lifetime, you can choose to drink alternate water while your water system works to meet the standard. Your water system or NHDES can be contacted to help you understand the status and schedule related to your particular system.

My water is from a private well, what do these drinking water standards/MCLs mean to me?
Adopting the four PFAS drinking water standards requires certain public water systems to test for and comply with the standards under the State and Federal Safe Drinking Water Acts. These acts do not apply to private well owners. NHDES recommends that anyone with a private well should periodically have their drinking water tested for a number of different contaminants that can affect water quality and health, including common contaminants like arsenic, lead and radon. The NHDES list of recommended tests for private well water is available at https://www.des.nh.gov/organization/divisions/water/dwgb/well_testing/index.htm. If a private well owner decides to test for PFAS and finds levels above the drinking water standards/MCLs, they can consider installing a treatment system. NHDES has posted in-home water filtration information at https://www4.des.state.nh.us/nh-pfas-investigation/?page_id=171.

When do these proposed drinking water standards/MCLs go into effect?
The rulemaking proposal was filed on June 28, 2019, with the New Hampshire Joint Legislative Committee on Administrative Rules (JLCAR) for consideration at their July 18, 2019 meeting. If approved by JLCAR, the new rules are scheduled to become effective on October 1, 2019, which means Public Water Systems would be required to sample for PFOA, PFOS, PFNA and PFHxS prior to December 31, 2019.

What are the next steps for the State on PFAS?

NHDES will assist drinking water and wastewater systems to achieve compliance with these new standards. Additionally, all hazardous waste/landfill sites and groundwater discharge sites will need to comply with the new rules, which may require additional sampling and monitoring activities. NHDES will also continue to investigate potentially impacted areas, and develop a plan to establish surface water quality standards for the State, as directed by the NH Legislature. NHDES and DHHS will continue to review the latest science and work to educate and inform citizens, healthcare providers, municipalities and other stakeholders about PFAS.

Where do I go for more information?

For information and updates on state-wide PFAS efforts and investigations, please visit the NHDES PFAS website at https://www4.des.state.nh.us/nh-pfas-investigation/.

The NH DHHS has health-based information about PFAS on their website at https://www.dhhs.nh.gov/dphs/pfcs/index.htm.

Several other good sources of PFAS information include the U.S. Environmental Protection Agency (https://www.epa.gov/pfas) and the Center for Disease Control and Prevention's Agency for Toxic Substance and Disease Registry (https://www.atsdr.cdc.gov/pfas/).

If you have questions, please call the NHDES Public Information Office at (603) 271-3710.