4th Progress Report for SB85

Submitted by:

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Division of Public Health Services
&
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Introduction
This is the fourth report related to Senate Bill (SB) 85 (2019), which directs the New Hampshire (NH) Department of Environmental Services (DES) and the Department of Health and Human Services (DHHS) to improve coordination and collaboration as it relates to environmental health, with a specific focus on data sharing.

Background
Senate Bill (SB) 85 (2019), re-established a legislative commission to study environmentally-triggered chronic illness. The objectives of SB85 build on previous work related to House Bill (HB) 511 (2017) and HB 1356 (2018). The work of this Commission is focused on conducting environmental health surveillance and improving coordination and collaboration between DES and DHHS in order to allocate resources efficiently to reduce exposure to environmental contaminants and prevent disease.

The SB 85 Statement of Intent reads as follows: "The general court recognizes that nearly half of adults in the United States have at least one chronic health condition and chronic diseases are responsible for increased health care costs. Seventy percent of health care costs in the United States are for chronic diseases. Some chronic diseases are known or thought to be associated with environmental causes. According to the Centers for Disease Control, the state of New Hampshire has the highest rates of people with bladder, breast, esophageal, and pediatric cancer in the country. In addition, a double pediatric cancer cluster was identified in the seacoast of New Hampshire in 2014. Therefore, the general court hereby establishes the commission to study environmentally-triggered chronic illness."

HB 511 (2017) established a legislative commission to study environmentally-triggered chronic illness.

HB 1356 (2018), charged DES and DHHS to develop and implement a method by which the departments share certain health outcome and environmental data. The HB 1356 Preliminary Report submitted in August 2018 includes more information on the status of the activities listed below and is attached in the Appendix.

Specifically, the departments were tasked to:

- Update a memorandum of agreement related to data sharing;
- Sign a joint standard operating procedure on how data layers can be shared between the two departments to identify linkages between environmental contaminants and health outcomes;
- Hold a presentation on the departments' ongoing, joint efforts under the Centers for Disease Control and Prevention environmental public health tracking cooperative agreement; and
- Compile a report describing and estimating the cost to perform a 2-way pilot project between the departments on arsenic in drinking water, where both health effects and environmental data exist.

Updates from NH Department of Health and Human Services (NH DHHS)
Division of Public Health Services (DPHS)

Biomonitoring NH TrACE Project

The 2019 NH Tracking and Assessment of Chemical Exposures (TrACE) Study led by the NH Biomonitoring Program (BiomonitoringNH), within DPHS, was a statewide public health surveillance study that looked at many different metals, pesticides, per- and polyfluoroalkyl substances (PFAS), and other chemicals in NH residents. BiomonitoringNH tested 336 NH residents (6 years and older) as well as the water from their homes. BiomonitoringNH worked with the NH Department of Environmental Services (DES) and the NH Environmental Public Health Tracking Program (EPHT) to collect and test these samples. This type of statewide surveillance study ensures that comprehensive data are collected for: (1) residential history, (2) exposure history, (3) environmental data, and (4) clinical data that allows for more in-depth analysis of potential associations.

Fifty chemicals were tested in human blood and urine, 270 chemicals were tested in private well water, and 90 chemicals were tested in public water. This represents a vast amount of data. The Environmental Public Health Tracking (EPHT) Program, which also sits within DPHS, is responsible for the joint analysis of this data and routinely accesses shared project folders. A summary report will be shared with all TrACE Study participants. The summary report and supporting information will also be shared publicly through several channels including the NH Health WISDOM Data Portal, conference presentations, and public webinar.

Creation and dissemination of the Participant Summary Report was delayed due to COVID-19 response activities within the Public Health Labs. However, the Biomonitoring NH Team recently finalized a draft of the report and shared it with NHDES and NH DPHS leadership for feedback. Once their comments have been reviewed and updates have been completed, then the report will be published and shared broadly with TrACE Study participants, environmental and public health stakeholders, legislators, and the public.

NH Environmental Public Health Tracking Well Water Data Analysis Project

NH EPHT worked collaboratively with the NH Department of Environmental Services (NHDES) to combine existing data and visualize data pertaining to arsenic exceedance rates across New Hampshire. Over 40% of New Hampshire's population receives drinking water from private wells and state legislators are interested in resources that visualize arsenic exceedance rates in their districts due to NH's unique geology. NH EPHT combined well sample data collected by the NH Public health Laboratories as well as the NHDES for a five-year period (2014-2018). This project resulted in 24 regional maps and 1 state map that visualized arsenic exceedance rates at the town level for each senate district and the entire state. The final report will be used as a communication resource to educate the general public as well as policy makers about the potential risk of arsenic in drinking water among private well users.

Data sets were cleaned and combined. A total of 5,719 samples were used for the study. A summary table for each district included: Estimated Population Served by Residential Wells, Estimated District Population, Number of Well Water Samples, Number of Exceedances, Percent Exceedances > 5ppb, and Estimated Children Exposed < 6. Population estimates were based on current NH DHHS population estimates. Number of people served by residential wells were based on current USGS estimates. Summaries were completed for each senate district.

We will build on this project in the next year as we develop a Well Water Quality Dashboard for the Public Health Data Portal and build environmental health (EH) capacity broadly. The goals of this program are to: 1) use EH data for data-driven decision-making; 2) identify and address EH hazards; and 3) assess the effectiveness and impact of EH services and interventions. To address these goals, environmental data from across various DES and DPHS databases will be aggregated, deidentified, and undergo statistical analysis and visualization using programs such as GIS (StoryMaps) and Tableau (web-based dashboards). This data will be made publicly available through the DPHS WISDOM Data Portal, supported by the EPHT program with a public education and outreach component. The aggregated data will also be used by DES and DPHS to identify areas with environmental hazards which may adversely impact public health with a focus on underserved and/or disadvantaged populations. The ultimate goal of this work is to build and strengthen the core capacity to use environmental water quality data to inform decision making and to identify environmental health hazards identified in drinking water, particularly in water from private wells, which serve nearly half of NH residents.

Updates from NH Department of Environmental Services (NH DES)

Distribution of Filter Pitchers to Vulnerable Populations

NH DES, in cooperation with DHHS and the state's network of Women, Infant, and Children (WIC) clinics, has hired a contractor with funding from the NH Drinking Water and Groundwater Trust fund to implement a project which will provide filter pitchers to an estimated 524 low-income pregnant women using private wells with elevated arsenic, and to provide follow-up support to program participants. The project is currently in a pilot phase, which is limited to WIC locations in Rockingham and Hillsboro counties, and is expected to roll-out statewide in the fall of 2021. Following a pandemic related delay, project implementation began in September of 2020. It is important to note that all WIC services are currently being offered remotely. Pandemic operations coupled with all that people are balancing through the pandemic, are likely impacting the level of participation. The project team has continued to review data and make modifications to ensure improvement and success.

WIC nutritionists were provided training, and began screening pregnant WIC mothers for participation in the program, with eligibility being based on having a private well as the source of drinking water. Approximately 400 women have been screened to date, and approximately 11% have reported that they consume drinking water from a private well. This differs from statewide estimates relative to water source; a reflection of the fact that the WIC population screened so far is more densely populated in urban areas (specifically in Manchester and Nashua within the counties that are part of the pilot). Approximately 40 WIC moms have been provided with water quality test kits, and approximately 25% (10 kits) have been returned. It is expected that some of the outstanding test kits will still be returned; and the project team has modified the schedule and practice of sending reminders to promote follow-through. Also differing from expectations based on statewide data, elevated levels of arsenic have been present in about 50% of returned kits. It is important to note that these measures are based on small numbers and may not be generalizable to the larger WIC population. Those with arsenic above the MCL of 5 ppb have been provided with filter pitchers.

The program has gained local and national attention. The Association of Public Health Laboratories will be highlighting the program as an example of a promising Environmental Justice Practice in their association's journal this summer. A researcher from the Prevention Research Center at the Harvard T.H. Chan School of Public Health has interviewed the project team for a series of briefs and an article that they are writing about strategies to improve safe drinking water in the homes of low-income families with young children. In addition, a staff member at Dartmouth Hitchcock Medical Center interviewed the team to learn more about the program so that they can consider implementation of a similar program among their patient population.

ATSDR's Partnership to Promote Localized Efforts to Reduce Environmental Exposure (APPLETREE):

New Hampshire Department of Environmental Services (NHDES) has been awarded a three year cooperative agreement with the Agency for Toxic Substances and Disease Registry (ATSDR); re-establishing the APPLETREE program. APPLETREE stands for the Agency for Toxic Substances and Disease Registry's Partnership to Promote Local Efforts to Reduce Environmental Exposures; a formal partnership enabling us to be successful at our work is established between ATSDR, NHDES, and the Department of Health and Human Services, Division of Public Health Services (NH DHHS DPHS).
The team includes staff from both partnering NH agencies; we have expertise in health risk assessment, environmental health, toxicology, health education, community engagement, and project

management. APPLETREE's primary goal is to help reduce NH residents' exposure to hazardous chemicals, with a focus on National Priority List (e.g., Superfund) sites and other state and community identified sites. The goal is accomplished by identifying and assessing potential exposures, summarizing findings, developing health-based recommendations, and engaging community members to promote action to reduce exposure.

Lead in Drinking Water at NH Schools and Childcare Facilities

On February 8, 2018, Governor Sununu signed Senate Bill 247 Prevention of Childhood Lead Poisoning. This law requires, among other actions, that all public and private schools and licensed childcare facilities test for lead in their drinking water at all locations where water is available for consumption by children. Under the law, facilities must complete three rounds of testing. During the first round of testing, approximately 600 schools and 500 childcare facilities sampled their drinking water for lead, representing approximately 90% of schools and 60% of childcare facilities in New Hampshire. Any drinking water locations showing 15 parts per billion (ppb) or higher were required to be remediated, with a remediation plan submitted to and approved by the NHDES Drinking Water and Groundwater Bureau (DWGB). To support remediation efforts, the New Hampshire Department of Education (NHDOE) secured a grant totaling $1.6 million from the New Hampshire Drinking Water and Groundwater Trust Fund (DWGTF). This grant program reimburses public and private schools for 50% of the costs of remediation of drinking water locations with lead results at 5 ppb or higher. NHDES works with schools to provide support for remediation efforts and helps facilitate the grant application and approval process with NHDOE. NHDES has received two rounds of federal funding (FY2019 and FY2020) from the Water Infrastructure Improvement for the Nation (WIIN) Act, administered by the U.S. Environmental Protection Agency (USEPA), for a total of $1.274 million. A third round of WIIN funding in the amount of $0.87 million is anticipated in FY 2021. WIIN funding will be used to promote public understanding of the health risks associated with childhood exposure to lead in drinking water and to promote compliance with SB 247.

Specifically:

- A contractor will be hired to create a web portal / data dashboard to visualize and analyze lead in drinking water data. The dashboard will provide summary statistics (e.g., number of samples collected, number of schools sampled, number of samples above 5 and 15 ppb, etc.), as well as information on remediation completed at specific drinking water locations.
- Laboratory costs for lead analysis for the second round of testing required by SB 247 will be covered for public schools and licensed childcare facilities. Additional support will be provided to public schools and licensed childcare facilities in disadvantaged communities. NHDES is in discussions with NH DOE and NH DHHS regarding how to best assist these schools.
- A public health outreach contractor will be hired to create a multi-media education and outreach campaign.

NHDES is collaborating with programs at NH DHHS, including Childcare Licensing, Environmental Public Health Tracking (EPHT), Healthy Homes and Lead Poisoning Prevention program, and the Choose Safe Places program, as well as NH DOE, on ways to share data and coordinate messaging with schools and childcare facilities.

Statewide Private Well Sampling Initiative

The Statewide Private Well Sampling Initiative is a NHDES project funded by the New Hampshire Drinking Water & Groundwater Trust Fund to provide homeowners with information about the quality of their drinking water, and when necessary, steps that can be taken to improve water quality. The project involves sampling of nearly 500 randomly selected private drinking water wells and analysis of those samples for over 250 chemicals. It is the first statewide assessment of bacteria, nitrate, lead, fluoride, manganese, arsenic radionuclides, and salt to be conducted in the state. The battery of tests also includes several emerging contaminants, including perchlorate, 1,4-dioxane, PFAS, and pesticides and their breakdown products. Most of the sampling and analysis have been completed to date, but the COVID-19 pandemic delayed collection of some remaining samples. NHDES will complete data collection and analysis in the coming months and expects to issue a report in the Fall of 2021. More information is available about the study at the following link:
https://www4.des.state.nh.us/nh-dwg-trust/?page_id=998

NHDES and DHHS partnered to leverage the impact of this study by including nearly 100 homes that were also randomly selected to participate in DHHS's TrACE biomonitoring study. This collaboration will provide information about the relationship between chemicals measured in drinking water and in the bodies of the study participants. This collaborative project will be presented at the upcoming NHDES Drinking Water Source Protection Conference May 19-20, 2021.

Recommendations

We look forward to continuing to engage in this work as we further refine our data sharing practices and find innovative ways to use data in order to drive decision making, while also recognizing the limitations of the data and resources available to support this work. In collaboration with the Commission, we will explore further opportunities to improve data sharing and analysis of environmental exposure and health outcome data.

References Used in this Report

NH DES OneStop Data Portal: https://www.des.nh.gov/onestop/
NH Environmental Public Health Tracking Program: https://www.nh.gov/epht/
NH Health WISDOM Data Portal: https://wisdom.dhhs.nh.gov/wisdom/#main
BiomonitoringNH Program: https://tinyurl.com/BiomonitoringNH
2019 NH TrACE Study: https://tinyurl.com/2019TrACEStudy