Written Testimony
Homeland Security and Government Affairs Committee, Federal Spending and Oversight Subcommittee

The Local, State, and Federal Response to the PFAS Crisis in Michigan

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Statement of
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Chairman Paul, Ranking Member Peters, Distinguished Members of the Senate Committee on Homeland Security and Governmental Affairs, Subcommittee on Federal Spending Oversight and Emergency Management. I am Patrick Breysse, the Director of the National Center for Environmental Health at the Centers for Disease Control and Prevention, and the Director of the Agency for Toxic Substances and Disease Registry. I appreciate the opportunity to be here today to discuss CDC and ATSDR's (CDC/ATSDR) role in investigating exposure to and possible health effects associated with per and polyfluoroalkyl substances (PFAS).

Agency for Toxic Substances and Disease Registry (ATSDR)

In 1980, Congress created the Agency for Toxic Substances and Disease Registry (ATSDR) to implement the health-related sections of laws that protect the public from hazardous wastes and spills of hazardous substances. The Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), commonly known as the "Superfund" Act, provided the Congressional mandate to remove or clean up abandoned and inactive hazardous waste sites and to provide Federal assistance in toxic emergencies. As the lead Agency within the Public Health Service for implementing the health-related provisions of CERCLA, ATSDR is charged under the Superfund Act to assess the presence and nature of health hazards at specific Superfund sites, to help prevent or reduce further exposure and the illnesses that result from such exposures, and to expand the knowledge-base about health effects from exposure to hazardous substances.

In 1984, amendments to the Resource Conservation and Recovery Act of 1976 (RCRA) which provides for the management of legitimate hazardous waste storage or disposal facilities, authorized ATSDR to conduct public health assessments at these sites, when requested by the Environmental Protection Agency (EPA), states, or individuals. ATSDR was also authorized to assist EPA in determining which substances may pose a threat to human health.

With the passage of the Superfund Amendments and Reauthorization Act of 1986 (SARA), ATSDR received additional responsibilities in environmental public health. This act broadened ATSDR's responsibilities in the areas of public health assessments, establishment and maintenance of toxicological databases, information dissemination, and medical education.

In addition to the ATSDR headquarters office, ATSDR staffs a Regional Office within each of Department of Health and Human Services' 10 Regional Offices. ATSDR's regional representatives provide unique expertise, and special technical and field expertise within their assigned regions. Regional representatives serve as liaisons with all NCEH/ATSDR divisions and offices, and facilitate implementation of specific programs in each region

Per- and polyfluoroalkyl substances (PFAS) and Human Health

Per- and polyfluoroalkyl substances (PFAS) are a family of approximately 5,000 man-made chemicals, that have been used in industry and consumer products worldwide since the 1950s. They have been used in non-stick cookware, water-repellent clothing, stain resistant fabrics and carpets, some cosmetics, some firefighting foams, and products that resist grease, water, and oil. PFAS can be found near areas where they are manufactured or where products containing PFAS are often used. PFAS can travel long distances, move through soil, seep into groundwater, or be carried through air. PFAS do not breakdown and are very persistent, so they remain in the environment. Because of their widespread use and their persistence in the environment, certain PFAS are found in the blood of people and animals all over the world and are present at low levels in a variety of food products and in the environment. Some PFAS can build up in people and animals with repeated exposure over time.

ATSDR's Role in Addressing PFAS Contamination

Exposure to PFAS is an important public health concern. CDC/ATSDR is helping our local, territorial, tribal, state, and Federal partners to address increasing concerns. Since 1999, CDC has measured several types of PFAS in the U.S. population as part of the National Health and Nutrition Examination Survey (NHANES). NHANES is a survey that measures the health and nutritional status of adults and children in the United States. In particular, the survey has measured Perfluorooctane sulfonic acid(PFOS) and Perfluorooctanoic acid (PFOA).

ATSDR first became engaged with PFAS in 2009 during an investigation of PFAS contamination in Decatur, Alabama. ATSDR found that people drinking water from one municipal water system and some private wells in the area had higher than average PFAS serum levels. ATSDR supported EPA's actions to provide the owners of contaminated private wells with access to uncontaminated municipal water and recommended that the contaminated municipal water system take action to reduce levels of PFAS in water. The impacted water supply system, servicing more than 100,000 residents, voluntarily began immediate monitoring for PFAS and has implemented water filtration to reduce levels of PFOA and PFOS below the EPA Lifetime Health Advisory.

Over the last decade, interest in PFAS has been growing. ATSDR and our state health partners are investigating exposure to and possible health effects associated with PFAS in more than 30 communities across the United States. Many sites are related to drinking water contamination connected with PFAS production facilities or fire training areas where aqueous film forming foam (AFFF) was regularly used.

ATSDR's overarching approach focuses on assessing and reducing/eliminating community PFAS exposures including: (1) addressing community health concerns related to existing or previous PFAS exposures, (2) supporting action on the basis of scientific information, and (3) conducting health studies on exposure and health endpoints to provide actionable information to communities and health care providers. ATSDR's activities include site assessments, health education, technical assists to health departments, and exposure investigations. Our site assessments originate when we receive Federal and/or state requests for assistance, or when we receive a petition from the public.

ATSDR's site work involves extensive community engagement and support. ATSDR staff provide community members, health educators, health care providers, and other health professionals with community environmental health education products to increase environmental health literacy.

We provide products to include: information about specific types of exposures to hazardous substances, exposure routes and pathways; health effects; and how to prevent or minimize exposures to hazardous substances in the environment. To specifically address community, state and local health department needs and the needs of health care providers, ATSDR developed a variety of PFAS related education materials, guidance such as the PFAS Exposure Assessment Technical (PEATT) Toolkit, and risk communication materials, along with scientific materials and protocols.

ATSDR's Support to Communities and Related PFAS Activities

ATSDR Tox Profile

ATSDR published a draft PFAS Toxicological Profile (Tox Profile) for public comment in June 2018, and is in the process of reviewing the comments. Tox Profiles are reference guides that provide information about a toxic substance, such as its chemical and physical properties, sources of exposure, routes of exposure, health effects, and how the substance may interact with the environment. Congress mandates that ATSDR produce Tox Profiles that include an examination, summary, and interpretation of available studies of the health effects of a hazardous substance. The primary users of these documents are expected to be researchers and health professionals, including health assessors at the regional and state level. Tox Profiles are peer reviewed before they are released for public comment, and will be peer reviewed again if significant revisions are made as a result of the public comments.

In addition to summarizing information on PFAS toxicity, the Tox Profile included oral minimal risk levels (MRLs) for four PFAS, perfluorooctanoic acid (PFOA), perfluorooctane sulfonic acid (PFOS), perfluorohexane sulfonic acid (PFHxS), and perfluorononanoic acid (PFNA). A MRL is an estimate of the amount of chemical a person can eat, drink, or breathe each day without a detectable risk to health. MRLs are intended to serve as a tool to help public health professionals determine areas and populations potentially at risk for health effects from exposure to a particular chemical. It is important to note that MRLs are a screening tool that help identify exposures that could be *potentially* hazardous to human health. MRLs do not define regulatory or action levels for ATSDR, nor for other agencies. Exposures above the MRL do not mean that health problems will occur, but rather serve as a signal to health assessors to look more closely at a particular site or exposure pathway.

PFAS Guidelines for Clinicians

With widespread exposure to PFAS, it is necessary that clinicians are well-informed to handle concerns of communities where contamination has occurred. ATSDR developed guidelines and continuing education to assist clinicians with how to deal with patient management and treatment after PFAS exposure. It highlights what PFAS are, which chemicals fall into this category of substances, routes of exposure, exposure limits, identifies health effects associated with exposure to various PFAS, and suggests answers to specific patient questions about potential PFAS exposure.

Pediatric Environmental Specialty Units (PEHSUs) and Clinician Guidance

Pediatric Environmental Health Specialty Units (PEHSUs) are a source of medical information and advice on environmental conditions that influence reproductive and children's health. PEHSUs are academically based and are located in each federal region across the U.S. PEHSUs fill clinical care gaps by ensuring that healthcare providers have access to specialized environmental medical knowledge and resources to care for children and women of reproductive age. Healthcare providers rely on PEHSUs for guidance on prevention, diagnosis, management, and treatment of health effects from environmental exposures. In fiscal year (FY) 2017, ATSDR and funded partners, such as state and local health departments, educated over 34,000 health professionals on ways to diagnose and treat conditions related to hazardous environmental exposures.

For example, ATSDR is currently working with the State of Michigan around community PFAS issues and we were able to facilitate the connection of regional PEHSU clinician expertise to help educate and answer questions about PFAS and health effects for the community.

PFAS Exposure Assessment Technical Tools (PEATT)

ATSDR developed the PFAS Exposure Assessment Technical Tools (PEATT) to help State, local, tribal, and territorial health departments conduct PFAS biomonitoring activities, with the assumption that drinking water is the primary source of PFAS exposure. The PEATT includes a protocol for statistically-based representative sampling, risk communication materials, questionnaires, and EPA's water sampling protocol to help characterize PFAS exposure in communities. Upon request, CDC/ATSDR will also provide technical assistance to health departments in developing and carrying out PFAS exposure assessments.

Through a cooperative agreement between CDC/ATSDR and the Association of State and Territorial Health Officials, the Pennsylvania Department of Health and the New York State Department of Health were provided funding to implement and evaluate CDC/ATSDR's PEATT with the goal of improving the PEATT as a tool for states and territories to use when measuring and evaluating community exposures to PFAS in drinking water. The PEATT implementation and evaluation will ultimately contribute to the overall body of knowledge and refine what is needed to describe exposure in a community.

Michigan Site Work

ATSDR is currently working on a number of sites in Michigan that have potential PFAS concerns.

ATSDR is working with the Michigan Department of Health and Human Services (MDHHS) and the Kent County Health Department on the Wolverine Worldwide, Inc. site. Wolverine disposed of some of their PFAS-containing industrial waste in a gravel pit located near Rockford, Michigan in the past. Residences located near the disposal area, in rural Plainfield and Rockford Townships, are primarily served by private water wells and many are contaminated with PFAS. CDC/ATSDR have provided technical assistance and are participating in workgroups involved in the study protocol preparation, data management, communications, and overall project coordination.

In June 2018 there was a discharge of AFFF fire suppression chemicals through the storm drains at the Selfridge Air National Guard Base in Macomb County. ATSDR was contacted to provide emergency

support to the U.S. Coast Guard along with USEPA, Michigan Department of Environmental Quality, MDHHS, and Macomb County Health Department.

As a result of the state-wide testing of municipal water systems for PFAS, in July 2018 the City of Parchment (Kalamazoo County) found that their drinking water system had significant contamination with PFAS. CDC/ATSDR provided assistance to the Kalamazoo County Health Department (KCHD) regarding clinician guidance and communication with healthcare providers.

In August 2018, ATSDR received a petition requesting that the agency evaluate the public health implications of PFAS drinking water contamination associated with the former Wurtsmith Air Force Base. ATSDR is currently evaluating the petition request.

ATSDR's Region 5 office continues to provide technical assistance and support to MDHHS and the Michigan PFAS Action Response Team regarding PFAS issues.

Current Activities Authorized through the National Defense Authorization Acts and Consolidated Appropriations Acts

The National Defense Authorization Acts and Consolidated Appropriations Acts for 2018 and 2019 (NDAA) authorized a transfer of funds from the Department of Defense to CDC/ATSDR to study PFAS exposure and related health outcomes. CDC/ATSDR received $20 million in FY 2018, which will fund three projects: exposure assessments, community engagement, and a health study at Pease International Tradeport in New Hampshire. Additional funding appropriated in FY 2019 will go to support a national multi-site health study. The information gathered through the studies will allow governmental agencies and communities to make better decisions to protect the public's health. Additionally, CDC/ATSDR is consulting with our colleagues at the National Institute of Health, National Institute of Environmental Health Sciences on the health studies authorized by NDAA.

Exposure Assessments/Community Engagement

CDC/ATSDR will conduct exposure assessments in no less than eight current or former domestic military installations known to have past or current PFAS contamination in drinking water. The exposure assessments focus on routes of exposure and will measure the blood and urine PFAS concentrations of community members, while taking into account environmental factors that may contribute to PFAS exposure. This will generate information about the impact of drinking water and non-drinking water PFAS exposure pathways on the PFAS body burden in each community. While contributing to the general science base of PFAS exposure, the exposure assessments will also provide a public health service to the community by providing information about both aggregate community exposures and individual exposures. The study is designed to give generalizable results that provide a valid overview of exposure and will allow the estimation of serum PFAS concentrations for community members that are not tested. Depending on the results of the investigation, ATSDR will make recommendations to further reduce exposure or conduct additional activities to better understand the impact of PFAS exposure on human health.

ATSDR is currently reviewing the comments received from the publishing of the exposure assessment protocol in the July, 2018, *Federal Register* for a 60-day public comment period. Additionally, ATSDR

has awarded the contract for the exposure assessments and is in the process of evaluating sites for potential inclusion in the project.

CDC/ATSDR has also awarded a second contract for community engagement during the exposure assessments. The community engagement aspect of the project will effectively communicate information to each community, using strategies tailored to meet the individual needs of each location. The community engagement activities will identify local concerns, connect with a variety of local audiences, garner buy-in from the community, encourage participation in the exposure assessments, and build trust between CDC, ATSDR and the communities. CDC/ATSDR will start the community engagement activities early and continue them throughout the exposure assessments so that communities have the support and information they need, enhancing the relationships between CDC, ATSDR and the communities by promoting transparency and community understanding.

Pease Proof-of-Concept Study

The Pease Study will serve as a proof-of-concept model site for the national multi-site study, allowing CDC/ATSDR to evaluate the study procedures and methods before embarking on the national multi-site study.

In 2017 ATSDR conducted a feasibility assessment and literature review to identify candidate designs and health outcomes for a study at Pease International Tradeport (Pease Study) and the national multi-site health study. The proof-of-concept study will utilize the large amount of existing state and local data, so that CDC/ATSDR may model the relationship between the health effects shown in animal studies and measured and historically reconstructed serum levels of PFAS. CDC/ATSDR will test and validate the approach, collection methods, questionnaires, tools, procedures, and analyses required to conduct a PFAS health study. In addition to allowing for the fine-tuning of the future national multi-site study, and contributing to the science base of information about PFAS and health outcomes, the Pease Study will also provide a public health service to the community by giving community members information that they can use as they follow-up with their health care providers.

ATSDR published the study protocol for a 60-day public comment period in August 2018 and is currently reviewing the comments.

ATSDR's Future Activities: Multi-Site Health Study

ATSDR is preparing a national multi-site health study to learn about the potential relationship between PFAS and human health outcomes in multiple communities with contaminated drinking water. It will take into account information and lessons learned from the exposure assessments, community engagement activities and the Pease Study, as well any other available information in order to design a study that maximizes the impact and provides information to communities across the nation. CDC/ATSDR are moving ahead with planning for the national multi-site study. A concrete timeline for finalizing plans has not yet been determined, and will depend on a variety of factors, including scientific clearances, implementation of the exposure assessments, and study design.

Conclusion

In closing, I would like to leave you with a few key points. First, PFAS exposure is widespread due to the pervasiveness of these chemicals in society, persistence in the environment, and the multiple human exposure pathways. Second, CDC/ATSDR is working across the United States to learn more about PFAS exposure and its health effects. Third, there are extensive community concerns and it is critical for ATSDR, local, state, Federal, and academia partners to work together to provide clear communication to the public about the risk and address their concerns. Thank you again for the opportunity to discuss CDC/ATSDR's role in investigating exposure to and possible health effects associated with PFAS, as well as our current and future planned activities. I welcome your questions.