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Statement of

Patrick N. Breysse, PhD, CIH

Director, NCEH/ATSDR

Director, National Center for Environmental Health and

Agency for Toxic Substances and Disease Registry

Centers for Disease Control and Prevention

Department of Health and Human Services

Chairwoman Napolitano, Ranking Member Rouzer, and Distinguished Members of the House Committee on Transportation and Infrastructure's Subcommittee on Water Resources and Environment, 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 (ATSDR). It is an honor to appear before you today to discuss how investments in ATSDR are protecting Americans' health, now and in the future.

Agency for Toxic Substances and Disease Registry (ATSDR)

In 1980, Congress created ATSDR to implement the health-related sections of laws that protect the public from hazardous wastes and spills of hazardous substances. Congress established ATSDR in the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA) and charged the agency with assessing the presence and nature of health hazards at specific Superfund sites, preventing and reducing further exposure and the illnesses that result from such exposures, and expanding the knowledge-base about health effects from exposure to hazardous substances. Amendments to the Resource Conservation and Recovery Act of 1976 (RCRA) and the Superfund Amendments and Reauthorization Act of 1986 (SARA) broadened ATSDR's responsibilities and authorities in the areas of public health assessments, establishment and maintenance of toxicological databases, information dissemination, and medical education.

ATSDR accomplishes its mission by supporting and building capacity at state, Tribal, territorial, and local health departments; monitoring and investigating environmental exposures in communities; preparing for and responding to emergencies; and developing critical science-based tools and resources. In Fiscal Year (FY) 2019, ATSDR responded to 715 state, community, and Federal requests to address the potential health risks to over 2 million people

around the country. During that period, ATSDR and our cooperative agreement partners conducted over 119 assessments to evaluate environmental exposures in communities. Much of this work takes place in the regional offices, where staff can respond quickly during emergencies. Many regional staff served and are serving as liaisons to states during the COVID-19 response, among other deployments.

Toxicological profiles are one way ATSDR provides state-of-the-art science to healthcare and public health professionals. These documents are unique compilations that provide comprehensive and extensive evaluation, summary, and interpretation of available toxicological and epidemiological information on a substance. ATSDR published 17 toxicological profiles in FY 2020 and currently maintains a database of 184 profiles.

The foundation of ATSDR's activities are environmental justice and health equity. Communities economically and socially marginalized continue to bear disproportionate impacts of environmental hazards. It is a top priority for ATSDR to continue to engage these communities to address their concerns and understand how exposures impact health. For example, ATSDR's Region 10 is currently working on five health consultations with American Indian and Alaska Native tribes to evaluate exposures from contaminated sites through drinking water or traditional and subsistence use of resources.

While ATSDR is uniquely positioned to examine the health impacts of environmental exposures, demand for ATSDR technical and scientific support exceeds the current capacity of the agency to respond. Funding in FY 2020 and FY 2021, along with COVID-19 supplemental funds, have allowed ATSDR to provide enhancements in its support to state and local health departments, expand its environmental health education, investigate the health impacts of exposures to emerging contaminants, and develop tools to address environmental risks and aid in

emergency response. The President's Budget looks to continue this progress by providing a \$3.75 million increase to support expanded geospatial public health analysis activities: improving technology, enhancing science in environmental modeling, and providing support to states.

Support to State and Local Health Departments

ATSDR's Partnership to Promote Localized Efforts to Reduce Environmental Exposure (APPLETREE) cooperative agreement program funds states to detect, respond to, and prevent harmful exposures in communities. In FY 2020, ATSDR awarded approximately \$35 million to 28 state health departments through APPLETREE. ATSDR also provided an additional \$1.4 million in COVID-19 supplemental funding to 16 state APPLETREE recipients for guidance and community engagement on safe practices for disinfection for homes, schools, and early learning education centers.

State health departments are on the front lines when it comes to responding to environmental exposures and ATSDR's cooperative agreement program builds capacity in states to assess potentially hazardous substances. This increased capacity extends ATSDR's reach and allows health departments to support clinicians, build bridges between health and environmental agencies, and rapidly respond to emergencies. ATSDR provides technical assistance and support for state experts to investigate community health concerns and implement practices to protect people from harmful exposures.

APPLETREE awardees use program funding to identify if and how people are exposed to hazardous substances at specific sites and in communities across the country. They review environmental and health data to identify potential health risks, make recommendations to

prevent exposures, and educate communities and local health professionals about site contaminations and potential health effects.

Within current resources, ATSDR has prioritized activities that focus on children as an important susceptible group and ensuring the assessment of potential exposure risks at early care and education facilities for young children. In Missouri, the state health department investigated lead exposures in children enrolled in a Head Start facility built on a lead mining waste pile. Their investigation included on-site blood lead testing to evaluate the children's exposure to lead. One of the 26 children tested had a blood lead level above the reference value and was referred to services for additional evaluation, and soil remediation actions were planned.

ATSDR's support has also enabled awardees to address the health effects of emerging contaminants, such as in North Carolina, where the state health department used APPLETREE funding to enhance their actions addressing per- and polyfluoroalkyl substances (PFAS) exposure. APPLETREE awardees have conducted or are in the process of conducting investigations of PFAS exposure at sites in at least five states. They have also provided technical assistance and health education related to PFAS exposure in over 20 communities across the U.S.

APPLETREE funding is also enabling states to take an innovative approach to address environmental exposures. With ATSDR's support, the California Department of Public Health collaborated with a community on a citizen science project to address concerns about air quality. The health department helped community volunteers install air monitoring sensors, which transmit air quality data to a real-time interactive map that all community members can use to help limit their exposures.

Environmental Health Education

Children are particularly sensitive and susceptible to exposures to chemical contaminants, as their organ systems can easily be disturbed by environmental contaminants during rapid stages of growth and development. ATSDR manages a national network of Pediatric Environmental Health Specialty Units (PEHSUs), located in each federal region across the United States, to advise parents and healthcare providers on protecting and caring for children potentially exposed to harmful chemicals. Regional PEHSU units respond to requests for information, offer advice on environmentally related health effects for pregnant women and children, and provide education to healthcare providers, other health professionals, and community members.

The PEHSU network has produced multiple tools to help clinicians, parents, and children understand environmental exposures. For example, they produced the Pediatric Environmental Health Toolkit, a web-based reference that provides examples of everyday environmental interactions for children and steps clinicians and parents can take to decrease harmful exposure.

Uniquely positioned around the U.S. and nationally known as an expert resource in children and women's environmental health, ATSDR's PEHSU and other partners engaged early in the COVID-19 response to deliver timely education and disseminate guidance on safely disinfecting homes, schools, and day care settings during the pandemic. COVID-19 supplemental funds are helping make this guidance more widely available to communities. During a six-month period of the COVID-19 response, the PEHSUs provided approximately 300 consultations to healthcare professionals and over 350 consultations to community members.

Investigating the Health Impacts of Per- and Polyfluoroalkyl Substances (PFAS)

ATSDR and state partners utilize biological (e.g., urine, blood) and environmental (e.g., drinking water, dust, air) sampling to better characterize the relationship between how people come into contact with hazardous substances and possible exposure-related health effects.

ATSDR and its funded state health grantees are investigating exposure to and possible health effects associated with per- and polyfluoroalkyl substances (PFAS) in multiple communities across the United States. PFAS are a class of thousands of human-made chemicals that have been used in industry and consumer products, such as grease-proof food packaging and water-repellant fabrics, worldwide since the 1950s. Exposure to these chemicals is widespread, with the CDC's National Health and Nutrition Examination Survey (NHANES) detecting PFAS in the blood of more than 95 percent of the U.S. population¹. More research is needed to determine the health effects in humans, but some studies² suggest exposure may affect cholesterol levels, affect the immune system, and increase the risk for some cancers. ATSDR has worked to address community concerns about PFAS since 2009, with the development of the first health assessment that looked at PFAS exposure in Decatur, Alabama. To date, ATSDR has worked to investigate exposure to and possible health effects associated with PFAS in more than 40 communities across the United States. Most of these communities have concerns about PFAS in their drinking water connected with PFAS production facilities or fire training areas where aqueous film forming foam (AFFF) was regularly used.

To learn more about the relationship between PFAS and health, the National Defense Authorization Act (NDAA) for Fiscal Year 2018 directed ATSDR to complete exposure assessments and a health study to look at PFAS exposure in communities. With funds provided through the Department of Defense Appropriations, ATSDR conducted exposure assessments in ten communities near current or former military bases across the U.S. that are known to have had PFAS in their drinking water. An exposure assessment provides information to communities about the levels of PFAS in their bodies. This information can be used to help reduce exposures.

¹ <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2072821/>

² <https://www.atsdr.cdc.gov/ToxProfiles/tp200.pdf>

ATSDR has completed sample collection, provided individual results to participants, and released initial community summaries in all exposure assessment sites. The exposure assessments looked at exposure in more than 2,300 individuals from over 1,400 households. In FY 2022, ATSDR will continue to develop individual site reports and an overall PFAS exposure assessment report covering all sites.

ATSDR is using funds provided through Defense Appropriations to conduct a national health study that will look at the relationship between PFAS exposures through drinking water and health outcomes. The Pease Study in New Hampshire serves as the first site in the multi-site health study. Recruitment and sample collection for the Pease Study reopened on October 15, 2020 after a pause to ensure safety of participants and staff from COVID-19. In September 2019, ATSDR awarded research cooperative agreements to seven recipients for the Multi-Site Study to conduct work in seven additional states. This groundbreaking health study will provide information about the health effects of PFAS exposure that can be used in all communities to protect health. Three awardees plan to begin study recruitment by mid-summer 2021, with the remaining four planning to begin in early fall 2021.

ATSDR is also taking steps to ensure that clinicians have the guidance they need to address patient concerns about PFAS exposure. ATSDR is working closely with the Pediatric Environmental Health Specialty Units to offer pediatricians and other healthcare professionals information about PFAS so they can best serve their patients in these communities. ATSDR is also working with the National Academies of Science, Engineering, and Medicine to develop clinician guidance on PFAS testing, how test results should inform clinical care, and how to advise patients on exposure reduction. As part of the ongoing review of scientific information on PFAS, ATSDR recently released the final version of the Toxicological Profile on Perfluoroalkyls

that provides a comprehensive and extensive evaluation, summary, and interpretation of available toxicological and epidemiological information. We continue to review the rapidly evolving science on PFAS and will update the toxicological profile as new information emerges.

Development of Tools to Address Environmental Risks and Aid in Emergency Response

To guide the work of the agency, ATSDR's Geospatial Research, Analysis, and Services Program (GRASP) conducts geospatial information system (GIS) research, analysis, support, training, and technology to better understand how place affects health. The geospatial tools developed by the program are the cornerstone of ATSDR's work to understand the health impact of hazardous exposures.

ATSDR has recently received COVID-19 supplemental funding to develop tools to provide critical support to CDC's COVID-19 response. GRASP has worked on over 70 projects responding to the COVID-19 pandemic, using geospatial analysis to investigate geographic variations and demographic, behavioral, socioeconomic, and infectious risk factors and using innovative visualization methods to communicate complex results. To address data needs for the COVID-19 response, the program developed the COVID Data Tracker (CDT) Dashboard³ using technology and data from multiple organizations to increase the understanding of the novel coronavirus, reduce the disproportionate burden of the pandemic on communities of color and other groups that have been marginalized, explore the impact and recovery of healthcare systems, and to provide timely information to the public. The amount and type of data in the CDT grows every week and has become the one-stop public facing source for almost all COVID-19 data, including vaccination data. The week of June 13, 2021, CDT had about two million views, with over 190 million views since it launched in April 2020.

³ <https://covid.cdc.gov/covid-data-tracker/#datatracker-home>

GRASP has also built upon existing tools to respond to COVID-19. In 2007, the program partnered with emergency response planners at ATSDR and CDC's National Center for Environmental Health (NCEH) to develop the Social Vulnerability Index (SVI)⁴. SVI uses U.S. Census tract data to characterize the social vulnerability of every U.S. community and ranks each community on 15 social factors, including poverty, lack of vehicle access, and crowded housing. Public health officials and local planners can use the SVI to better prepare for and respond to emergency events like hurricanes, disease outbreaks, or exposure to dangerous chemicals. In 2020, the SVI was used to create a Pandemic Vulnerability Index (PVI)⁵ to map populations that are more vulnerable to the spread of COVID-19, providing critical information to public health professionals to aid in decision-making and helping to focus vaccine efforts.

In addition to their work on the COVID-19 response, the geospatial unit continues to provide geospatial analysis support for 90 sites across the U.S. that experienced environmental concerns such as ethylene oxide and other exposures, helping CDC/ATSDR scientists understand relationships between health and environmental, sociodemographic, and behavioral factors and communicate these findings through clear visualizations.

Looking Ahead in FY 2022

ATSDR will prioritize the development of geospatial health tools and other resources to expand environmental health capacity. These tools will improve CDC/ATSDR's ability to respond effectively and in a timely manner to public health events and explore environmental factors that may influence the progression of infectious disease and other health outcomes.

ATSDR's geospatial team is currently working on an Environmental Justice Index project, which

⁴ https://www.atsdr.cdc.gov/placeandhealth/svi/data_documentation_download.html

⁵ <https://covid19pvi.niehs.nih.gov/>

will use information on demographic and socioeconomic factors and cumulative environmental exposures to identify communities that experience a disproportionately high environmental burden in the U.S.

Work on emerging environmental contaminants continues to be a priority for ATSDR. These substances fall into one of two categories. The first are new substances for which information about their impacts on human health are still evolving, such as PFAS. The second category of emerging contaminants are known contaminants of concern that have emerging information on their toxicity which needs to be evaluated to assess the potential impact on human health.

Microplastics fall into the first category. They are pervasive in the environment and are small enough to be internalized and transported within the human body. Exposure-dose and health effects have not been established, and studies are complicated due to a lack of standardized methods for identifying and measuring the particles. ATSDR, along with CDC's National Center for Environmental Health, is working on developing the science to define and prioritize potential health risks and develop initiatives to better characterize and understand whether microplastic exposures are harmful to human health.

ATSDR is also working to address concerns regarding ethylene oxide exposure, which falls into the second category. Recent reviews by EPA⁶ indicate that the cancer risks from ethylene oxide may occur at lower exposure levels than previously thought. Ethylene oxide is used in industrial settings and in the sterilization of medical equipment and some spices. Not all ethylene oxide sterilization facilities are required to report to the Toxics Release Inventory (TRI). For those that did report to TRI in 2019, 67 percent were located in census tracts scored as

⁶ https://cfpub.epa.gov/ncea/iris/iris_documents/documents/toxreviews/1025tr.pdf

“high” or “moderate to high” on CDC/ATSDR’s Social Vulnerability Index. ATSDR is supporting several states to address these ethylene oxide exposures, including working with five communities near ethylene oxide sterilization facilities. ATSDR is simultaneously exploring opportunities to study ethylene oxide exposures on a national scale.

FY 2022 Budget Request for ATSDR

Increases provided in FY 2021 enabled an expansion in the number of states funded through the APPLETREE program. In FY 2022, ATSDR’s budget request will bolster GIS capacity building within state and local health departments, an important priority to enhance health departments’ response to environmental and public health emergencies.

Conclusion

ATSDR has a unique mission and responsibility to advance health through studies, use of innovative data sources, support for health departments, development of guidance for clinicians and direct interaction with communities affected by exposure to hazardous substances. In FY 2022, we will continue working toward our goals of providing science-based evidence to inform actions to protect people from environmental exposures and improve health. Thank you again for the opportunity to be here today to discuss the important work of the agency.