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PFAS Research Reaches its Adolescence: What Have We Learned and Where Are We Going?

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In the past decade, concerns with potential health effects of perfluoroalkyl substances (PFAS) have grown from a minor issue to a prominent health concern for researchers, public health policy makers, and the general public. Following an episode of contamination in the mid-Ohio Valley in the US, the C8 Science Panel members conducted an array of studies that helped to advance both methods and substantive knowledge of potential health effects. Many studies have followed of varying character and quality, making it timely to take stock of the evolving methods to identify the critical concerns and promising avenues for making meaningful progress. By examining the evolution in thinking about this issue from the early phases to the present, we will take stock of progress and pinpoint gaps in the literature that need more focused attention. The most informative opportunities among candidate exposed populations, ranging from communities with typical levels to contaminated sites to occupational groups, bring varying methodologic strengths and limitations. Progress has been made to better define the challenges in assessing exposure, addressing the spectrum of health outcomes of concern, the daunting challenge of addressing the growing spectrum of specific chemicals of concern, how to better combine evidence from toxicology and epidemiology, and recognizing the role that different exposure pathways may contribute, not limited to drinking water. Major new studies are in progress and an assessment of their promise for answering some questions but not others will help to focus attention on additional work to undertake even before these are completed. Finally, even with the present incomplete level of understanding, policy decisions must be and are being implemented, with a need to make optimal use of the available evidence while recognizing its limitations.

This assessment fits well within the meeting title (relating directly to “Water”) as well as the subheading, “History and Future of Environmental Epidemiology.” While research on PFAS proliferates, there is value in a closer look at the evolution of this work in the past decade, promising (and less promising) directions, and key methodologic issues that need to be considered to accelerate progress towards advancing the science and improving our ability to guide policy.