



RESEARCH BRIEF SERIES

HEALTH AND EXTREME WEATHER

AWARD RECIPIENTS

VIRGINIA G SILVIS
Pennsylvania State University

HALIE KAMPMAN
Pennsylvania State University

BRIAN KING
Pennsylvania State University

AWARD AMOUNT:
\$8,590

This research brief is part of an award program designed to address gaps in knowledge related to extreme weather disasters—such as wildfires, floods, extreme heat, and severe storms—that pose significant health risks, particularly for populations already experiencing health challenges.

IMPACTS OF 2024 WESTERN PENNSYLVANIA FLOODS ON OPIOID USE TREATMENT CLINICS

OVERVIEW

In April 2024, southwestern Pennsylvania experienced two heavy precipitation events that caused significant flooding throughout Pittsburgh and surrounding areas, a region that is profoundly stricken by the opioid epidemic. In the substance abuse treatment community, there exists an understanding that people who use or are in recovery are more vulnerable to the negative effects of hazard events, such as floods. However, there is limited knowledge about who is most affected within this group, how negative impacts are geographically distributed, and what measures could be put in place to protect these populations

To address this research gap, this study investigated how opioid use disorder (OUD) treatment clinics in the region responded to severe flooding in April 2024. Through 13 qualitative interviews with clinic staff and service providers, we explored how flooding affected patients’ access to care and medication. We found that flooding was significant, but the disruption to OUD care was minimal. This resilience of OUD clinics was largely attributable to the rapid and widespread adoption of remote care modalities established during the COVID-19 pandemic.

Our study demonstrates that remote care modalities should be viewed not just as conveniences but as critical infrastructures that can buffer vulnerabilities and advance behavioral health resilience before, during, and after disasters.



Flooding in downtown Pittsburgh, PA on April 3, 2024.

Photo credit: Dave Prelosky / Shutterstock.com.

KEY FINDINGS

- Interviewees characterized the effects of floods on the operations of OUD recovery clinics as disruptive but not catastrophic. Flooding impacts were largely mitigated by the availability of remote services which became common during COVID-19, which helped to equalize patients’ access to care.
- While remote care increased access for some—such as mothers with small children—it also introduced new inequities. People lacking digital literacy, stable internet, or private space at home often struggled with virtual care.

- Another downside to remote care was the loss of face-to-face intimacy, which respondents said weighed heavily on people in recovery. Many people in this community rely on home visits where caregivers can physically see, hear, and smell how they were doing.
- Many respondents cited a strong culture of resourcefulness, flexibility, and a deep commitment to mutual aid among patients and providers alike as a key source of hazard resilience in the opioid use disorder recovery community.
- Respondents also emphasized that even though clients lacked some formal knowledge about how to protect themselves against unexpected hazards, they were adept at responding creatively to hard times.
- Targeted investments in technology like phones and computers, broadband internet, and technical support to marginalized populations could strengthen digital equity and health care delivery systems during disaster scenarios.
- Policymakers and public health practitioners should consider integrating or enhancing remote care capacities into emergency preparedness protocols for behavioral health services.
- Regulatory frameworks should remain flexible to allow the continued use of secure but accessible platforms while accounting for the practical needs of vulnerable clients.



Person receiving medical consultation through a video call on a smartphone, illustrating accessible telehealth services. Photo credit: Shutterstock.com

AUDIENCE

This research is relevant for policymakers and public health practitioners interested in strengthening emergency planning, public health policy, and the design of equitable care systems in hazard-prone settings.

RESEARCH IMPLICATIONS

- The ability of clinics to rapidly transition to remote service delivery mitigated severe disruptions in care. This suggests that remote care modalities can play a role in bolstering system resilience during extreme weather events. Maintaining and expanding remote care infrastructure—even outside of crisis periods—is not only a matter of convenience but a vital preparedness strategy.

Full Report: Silvis, V. G., Kampman, H., & King, B. (2026). *Impacts of 2024 Western Pennsylvania Floods on Opioid Use Treatment Clinics*. (Natural Hazards Center Health and Extreme Weather Report Series, Report 7). Natural Hazards Center, University of Colorado Boulder. hazards.colorado.edu/health-and-extreme-weather-research/impacts-of-2024-western-pennsylvania-floods-on-opioid-use-treatment-clinics



The Health and Extreme Weather Research Award Program is funded by the National Institutes of Health (NIH) through supplemental support to the National Science Foundation (NSF Award #1635593 and NSF Award #2536173). Opinions, findings, conclusions, or recommendations produced by this program are those of the author(s) and do not necessarily reflect the views of the NIH, NSF, or Natural Hazards Center.



University of Colorado Boulder

Natural Hazards Center
Institute of Behavioral Science | University of Colorado Boulder

1440 15th Street | Boulder, CO 80309-0483 USA
hazctr@colorado.edu | (303) 492-6818