

# NIH Disaster Research Response (DR2) Program

## Overview and Goals

Disasters and public health emergencies result in unique combinations of human exposures to toxic substances, hazards, and stressors; yet too often, basic questions about the health and safety of communities, responders, and workers affected by these events go unanswered.

The National Institutes of Health (NIH) **Disaster Research Response (DR2) Program** leads U.S. efforts and works with global partners to improve capacity for timely research related to disasters and public health emergencies.

The DR2 program is led and coordinated by the National Institute of Environmental Health Sciences (NIEHS), part of NIH. Begun in 2014 as an NIH pilot project, the program has grown considerably in response to the growing frequency and severity of disasters and the recognized need for timely research to improve preparedness, promote effective interventions, foster data integration and harmonization, and engage communities.

The DR2 program provides:

- Access to more than 500 tools and resources through a publicly available database.
- Guidance, training, and resources for Institutional Review Boards (IRB) concerning the ethical conduct of human studies in response to disasters.
- Access to training and educational materials to prepare research teams for deployment to disaster-impacted areas and conduct research studies.
- Information about funding opportunities available through NIEHS and other agencies.
- A Community of Practice that brings together NIEHS grantees and federal partners to collaborate, coordinate, and support research.

*"The knowledge that is generated through well-designed, effectively executed research in anticipation of, during, and after a disaster or emergency is critical to inform future capacity for preparedness, response, and recovery."*

**Disaster Research Response (DR2) Resources Portal**

A repository of data collection tools and related resources curated by the **DR2 Program** to empower human health research in response to disasters and public health emergencies.

**Search the Portal**

Enter a Search Term

Show Advanced Search +

Search Clear Form

**Timely**  
Take advantage of resources created by scientists like you to get in the field fast

**Curated**  
Focus your search results through more than 200 keyword filters and options

**Accessible**  
Explore hundreds of tools and resources to empower your research—all in one site

**Integrated**  
Discover tools from across disciplines that meet in disaster and environmental health research

**Adaptable**  
Use tools "off the shelf" or combine to fit the event, the community, and your research

**Submit a Resource**

Help us build the Portal by sharing your disaster research resources

**Questions and Collections**

**COVID-19 Related Resources**

In addition to the **COVID-19 Related Resources**, visit the **DR2 COVID-19 Collection** to search all the available COVID-19 resources, including surveys, questionnaires, protocols, and other related tools located in the DR2 Resources Portal.

Resources include those exploring MISC, Pediatric COVID, Long COVID/PASC and include elements from the NIH **ReCOVER** Protocol and NICHD COVID-19 Common Data Elements.

**Behavioral Assessments and Impacts**

**Disasters and Reproductive Health**

**Measuring Social Support and Resiliency**

The **DR2 Resources Portal** (<https://tools.niehs.nih.gov/dr2>) provides easy access to hundreds of tools for researchers and other stakeholders who are interested in disaster research. The DR2 program developed and curated the portal, which includes research protocols, data collection tools, and other resources. It is useful for researchers interested in natural disasters, geologic disasters, chemical and industrial events, and COVID-19.

## Protocols for Human Studies

The **Rapid Acquisition of Pre- and Post-Incident Disaster Data** (RAPIDD) is a first-of-its-kind protocol. Pre-reviewed by the Institutional Review Board, RAPIDD was created by DR2 to reduce researchers' time to begin collecting data and samples from people who may be exposed to environmental contaminants from disasters.

NIEHS-funded researchers have had notable success with RAPIDD. For example, one research team used RAPIDD to quickly launch a pilot study to address residential air quality and immediate health effects following an industrial fire in Deer Park, Texas.<sup>2</sup> Another research team employed RAPIDD in a study to assess the effects of flooding in Houston after Hurricane Harvey.<sup>3</sup> The study showed that flooding had lasting impacts on the health and livelihood of residents.

## Community of Practice

The DR2 program brings together NIEHS grantees, federal agencies, international partners, and other stakeholders to collaborate, coordinate, and support disaster research in the U.S. and globally. Through these relationships, a **community of practice**<sup>4</sup> continues to expand and provides opportunities for information sharing following disasters and public health emergencies.

NIEHS-funded disaster research scientists created the **DR2 Environmental Health Sciences Network** in 2020. Network priorities include identifying scientific knowledge gaps and proposing ways to apply findings from disaster research. The network hosted a virtual **symposia**<sup>5</sup> related to COVID-19 impacts and challenges in 2021.

The DR2 program coordinates federal interagency activities, such as the Intra-NIH Disaster Interest Group meetings, to bring staff and scientists together to discuss research gaps and interests. A partnership with the National Academies of Science, Engineering, and Medicine's Action Collaborative on Disaster Research also promotes integration of disaster research efforts. Additionally, the DR2 program has established two formal memorandums of understanding (MOUs): one in 2017 with Japan's National Institute for Environmental Studies and another in 2019 with Health Canada.

## Training and Education

The DR2 program hosts training **workshops**<sup>6</sup> to bring together researchers, emergency responders, government officials, and community members. Participants collectively explore disaster scenarios and the processes needed to develop and conduct research that answers crucial questions, from a variety of perspectives. These workshops are the groundwork for collaborations later needed in real-world disasters and in the coordination and sharing of disaster information. They also inform participants about why public health and emergency research matters.

## Program Accomplishments

In response to Hurricane Harvey, the program quickly coordinated with other federal agencies and NIEHS-funded researchers to discuss research gaps and needs. Researchers were then able to connect with communities, collect data, and address exposures of concern. Researchers leveraged partnerships formed during DR2 workshops and used program resources to assess potential health effects and inform the public. This effort is an outstanding model for how academic-practice **partnerships**<sup>7</sup> can improve disaster research.

In response to the COVID-19 pandemic, the DR2 program became a resource hub, providing researchers with access to hundreds of related data collection tools, including surveys, protocols, and questionnaires.

## For Contacts and More Information, Visit the DR2 Webpage

<https://niehs.nih.gov/research/programs/disaster>

For more information on the National Institute of Environmental Health Sciences, go to <https://niehs.nih.gov>.

<sup>1</sup> Lurie N, et al. 2013. Research as a part of public health emergency response. *N Engl J Med* 368(13):1251-5; doi: 10.1056/NEJMs1209510.

<sup>2</sup> An Han H, et al. 2020. The Intercontinental Terminals Chemical Fire Study: A rapid response to an industrial disaster to address resident concerns in Deer Park, Texas. *Int J Environ Res Public Health* 17(3):986; doi:10.3390/ijerph17030986.

<sup>3</sup> Oluyomi AO, et al. 2021. Houston Hurricane Harvey Health (Houston-3H) study: Assessment of allergic symptoms and stress after Hurricane Harvey flooding. *Environ Health* 20(1):9; doi: 10.1186/s12940-021-00694-2.

<sup>4</sup> Disaster Research Response (DR2) Program Community of Practice, <https://niehs.nih.gov/research/programs/disaster/community>

<sup>5</sup> Broadfoot M. 2021. The Environmental Factor: Disaster research response experts share insights for pandemic. NIEHS, April. [accessed Feb. 23, 2022]

<sup>6</sup> Disaster Research Response (DR2) Program Training & Education, <https://niehs.nih.gov/research/programs/disaster/training-education>

<sup>7</sup> Horney JA, et al. 2019. Improving Hurricane Harvey disaster research response through academic-practice partnerships. *Am J Public Health* 109(9):1198-1201; doi:10.2105/AJPH.2019.305166.