

Dealing with Disasters: Part 2

This document is a transcript of an audio podcast produced by the NIEHS Partnerships for Environmental Public Health program. For the podcast audio and additional information, please visit <http://www.niehs.nih.gov/research/supported/translational/peph/podcasts/disasters/#part2>

[music] Anne Johnson: Welcome to Environmental Health Chat, a podcast about how the environment affects our health, from the National Institute of Environmental Health Sciences Division of Extramural Research and Training. I'm your host Anne Johnson.

In part one of this two-part podcast series, we talked about how disaster research has helped to inform policies and practices that reduce health risks associated with disasters. In this follow-on episode, we're taking a look at what it takes to carry out research when disaster strikes.

Disaster research is different from other areas of science. You never quite know when or where disaster will strike, or what sort of information will be most useful. The early days can be chaotic and confusing as people respond and start looking toward recovery.

Our first guest is Dr. Sharon Croisant of the University of Texas Medical Branch. She directs Community-Based Research and Community Outreach and Engagement at the NIEHS-funded UTMB Center in Environmental Toxicology. The center, located in Galveston, Texas, is in an area all too familiar with disaster, from frequent hurricanes to environmental disasters like the Deepwater Horizon oil spill.

Sharon says the best way for academic institutions to help communities during disasters is to partner with them before a disaster happens.

Sharon Croisant: Building and sustaining those relationships is critical and on the Gulf Coast, and any area that is prone to a disaster, whether it's natural or manmade, opportunities for those linkages are frequent. We have relationships in place with community organizations that has span twenty years. The communities now tend to call us when something is happening. They want to know rapid information, reliable information about what the risks might be. And I think it's just important to be responsive and it's not always easy for an academic enterprise or the government to be nimble when it comes to reacting; but we are capable of being much more agile if we are already in the field and have those relationships established.

Anne Johnson: For example, when Hurricane Ike hit Galveston Island in 2008, 75 percent of the island was inundated by water from Galveston Bay. As people started returning to clean up their homes, a community group contacted Sharon's center to ask if they should be worried about pollution swept in with the bay water. The center quickly deployed researchers to analyze samples. They found lead, cadmium, chromium, and arsenic, although fortunately only at low levels. Thanks to a network that was already in place, the researchers were able to inform the use of protective equipment and help educate volunteer workers helping with the cleanup.

Dr. Aubrey Miller, Senior Medical Advisor at NIEHS, says Sharon's story is a good example of how communities, researchers, responders, governments, and others can work together to address key questions following a disaster.

Aubrey Miller: We really need to think about this as a broad network; and that each piece of this network enables us to be successful and the incredible importance of being able to work with the local communities because there is no way you can perform disaster research without having them at the table and being part of the solution and part of the capability of us trying to get information to help the local community for both recovery from the situation and for future preparedness.

Anne Johnson: Those partnerships can take many forms, from citizen science to disaster simulations to formal agreements and collaborative research projects. Aubrey says effective disaster research is all about integration: not only bringing together the people who have a stake in the outcome, but also bringing together all the available information. For example, you often need to combine public health data with environmental and exposure data to really understand what's going on.

Aubrey Miller: Typically, we've been kind of focused on the acute response and the acute surveillance, how many people are injured, or you know, how many people don't have access to healthcare, but the research we are talking about deeper, and it really entails being able to collect information. There are different types of tools in our arsenal that we have to be able to have the processes and the relationships, as Sharon talked about, in order to learn about the really important information that we are really concerned about. And those priorities may change and may have to be identified with each of the situations.

Anne Johnson: Another thing that helps researchers respond to changing situations and priorities is to have research infrastructure like logistics, test kits, and trained personnel lined up and ready to go.

Sharon Croisant: I think for us it's coming down to the fact that a disaster is a disaster is a disaster, regardless of it's natural or manmade or a pandemic, anything that threatens the public health really involves an integration. So we are in the process of putting together a five-state network of first responders. We're building the infrastructure as part of our Ebola training initiative that that's the training structure that can be in place for preparation for virtually any disaster. So that's where we are moving as to get out ahead of this, to where if we can't be in the field tomorrow, the people who are going to be in the field tomorrow will be trained and equipped to potentially take environmental samples for us, to potentially begin to capture some of the biospecimens. So we are being more proactive instead of reactive because where if we react we're always behind the eight ball.

Anne Johnson: To stay ahead of things, Sharon and her colleagues are also collecting baseline health information from 500 people in the local community. That makes it possible to have before and after health information, which can be crucial to uncovering unknown issues after a disaster.

As we hope this podcast series has demonstrated, disaster research is all about uncovering those unknown issues—and finding solutions. As our speakers have noted, there are similarities in all disasters, it is a matter of collecting enough data and learning from past experiences to help inform new

policies and practices that can protect us, especially the most vulnerable, and make our communities more resilient. And that is going to take all of us.

Thanks again to Dr. Sharon Croisant and Dr. Aubrey Miller. You've been listening to Environmental Health Chat. I'm your host Anne Johnson, and our podcast is brought to you by the Division of Extramural Research and Training at NIEHS, part of the National Institutes of Health, an agency of the U.S. Department of Health and Human Services. Find us online at niehs.nih.gov/podcasts. [music]