National Institute of Environmental Health Sciences

A Guide for Disaster Research Response

A Deployment Plan for Investigation Teams

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Table of Contents

Introduction: All Disasters are Local 3
How to Use 4

Section 1: Has there been a request from an authorized entity for your institution to conduct a specific research activity? 5
Authorized Request for Institutional Research Activities 5

Section 2: Are you ready to deploy? 7

Section 3: Have you received Institutional Review Board approval for the research protocol? 9

Section 4: Research Team Readiness 15
Understanding of the Mission 15
Training 17
Incident Command Structure 18
Physical and Psychological Preparedness 18
Competent Technical Skills (Credentialing) 19
Equipment and Supplies 20
Personal and Team Accountability 20

Section 5: Logistical, HR and Financial Planning: Have the logistical, human resources, and financial considerations been completed? 21
Logistical Considerations 21
Human Resources 24
Financial 25

SECTION 6: When The Impact Is Local 26



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Introduction

All Disasters are Local

Initiating a disaster research study is an undertaking of significant complexity and requires administrative and logistical support that goes beyond the scientific expertise needed for non-disaster research activities. Disaster research is complementary to the overall disaster response and recovery actions coordinated by emergency managers and conducted by first responders. The local municipality (city or county) usually assumes overall responsibility for the response. The state government is the next tier of support and coordination. Finally, the federal government can be requested to provide services and resources unavailable to the local and state governments. However, the local officials are still responsible for coordination, resource management, and establishing priorities of the local response. **What that means to researchers is that research teams must be invited by the federal, state, or municipal government agency, or by an invited local organization to engage in research activities.**

Self-deploying responders and researchers are generally unsuccessful and often interfere with the on-going response efforts. In this scenario, the odds of a successful research project are low and the necessary access to the disaster site or disaster victims is likely to be denied by the emergency managers, elected officials, or community leaders. Coordination with community, emergency managers, and responders increases the likelihood of success and even access to additional information that would enrich the results of a research project.

The bottom line is that access to a disaster site for the purposes of conducting research should be granted by the local authorities or through a formal partnership with an academic research institution that has been given permission to conduct research. Once on-site, researchers should integrate and coordinate their activities with local responders and emergency managers to maximize the use of limited local resources and to address local response and recovery priorities.

STOP

Just because a disaster happens and you have a team who does research does NOT mean it's right to deploy. There is a real possibility of a deployment, or deploying too soon, doing more harm than good. Do NOT deploy if any of the following are true:

- Immediate danger to life, safety, and health is ongoing.
- Research may interfere with lifesaving activities or require resources be moved from rescue, recovery, or victim support.
- Hazards remain that compromise the health and safety of researchers and responders.
- The team available for research is unable to support itself without relying on local aid or without consuming scarce resources.

How to Use

The Playbook is designed to guide researchers in deciding whether to conduct disaster-related studies. It outlines essential actions, best practices, and disaster-specific recommendations to ensure that all phases—preparation, deployment, and post-research—are conducted safely, ethically, and in alignment with the policies and regulations of their academic institutions, while also being respectful and supportive of affected communities.

This document also addresses how researchers can integrate and coordinate with local responders and emergency managers and other practical scenarios that are common to disaster research. The information provided serves as guidance in resolving these common issues before, during, and after a research deployment.

This document is not intended to replace a research organization's policy, guidance, or protocol and should not supersede any written regulations. Specific protocols, procedures, and practices of your individual institution should be followed and any guidance provided in this document should be modified to be consistent with your institution's policies, regulations, and rules. There are also state and local laws that should be adhered to during a deployment, many of which relate to professional licensure and certification.

Credit: Steve Zumwalt/FEMA

Section 1

Has there been a request from an authorized entity for your institution to conduct a specific research activity?

Authorized Request for Institutional Research Activities

Legitimate requests for research generally come from state and local public health departments and academic institutions, and have a specific topic to be investigated. These requests may come through a federal disaster management agency such as FEMA, EPA, or HHS. These are generally referred to as a Request For Assistance (RFA).

Funding of the project can come from the requesting entity or a supporting organization, so a budget from your institution will be requested and negotiated if necessary. This can be in the form of a grant, cooperative agreement, or contract.

Without an "invitation" to conduct research, it will be extremely difficult and unproductive to execute a research project. You risk interfering with the on-going life and property saving response activities, may encounter unsafe working conditions exposing your team to health hazards, and will likely consume limited resources that have been directed toward the victims and first responders. Self-deployment also jeopardizes the trust between impacted communities and response agencies as no official local agencies will have knowledge of your activities, making it difficult to explain why the research is being conducted.

The requesting entity should provide specific details of:

- Start date/end date
- Local Point of Contact for the project management
- Project deliverables

Summary

All Response is local. **Without a request for assistance, you should not deploy a research team.**

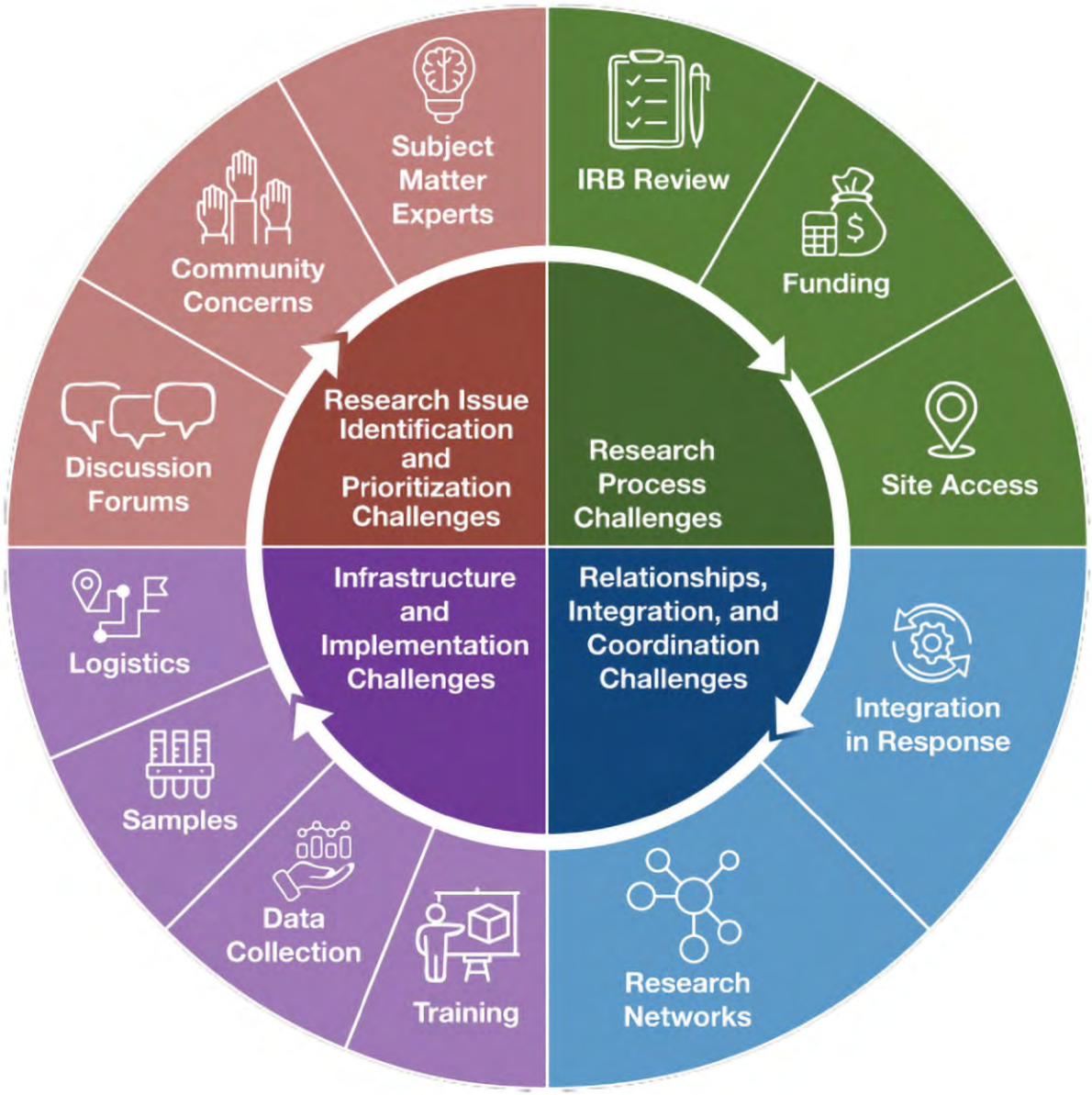
Checklist

- Invitation request from the federal, state, or municipal government agency,
  OR
- Invitation request from local communities to engage in research activities.

If you believe that you have a valuable research project that would be helpful to the impacted community, you should discuss the project with the necessary state and local health departments (DOH), emergency management agencies (EMA), and local academic institutions to determine how they might accept your offer and find funding for the project.

All state DOH and EMA have 24/7 call centers that can provide points of contact for you to discuss your project.

Challenges of Disaster Research



Credit: NOAA/Deepwater Oil Horizon Clean up

Section 2

Are you ready to deploy?

Decision to Deploy: Research is not always needed, or appropriate, after every disaster.

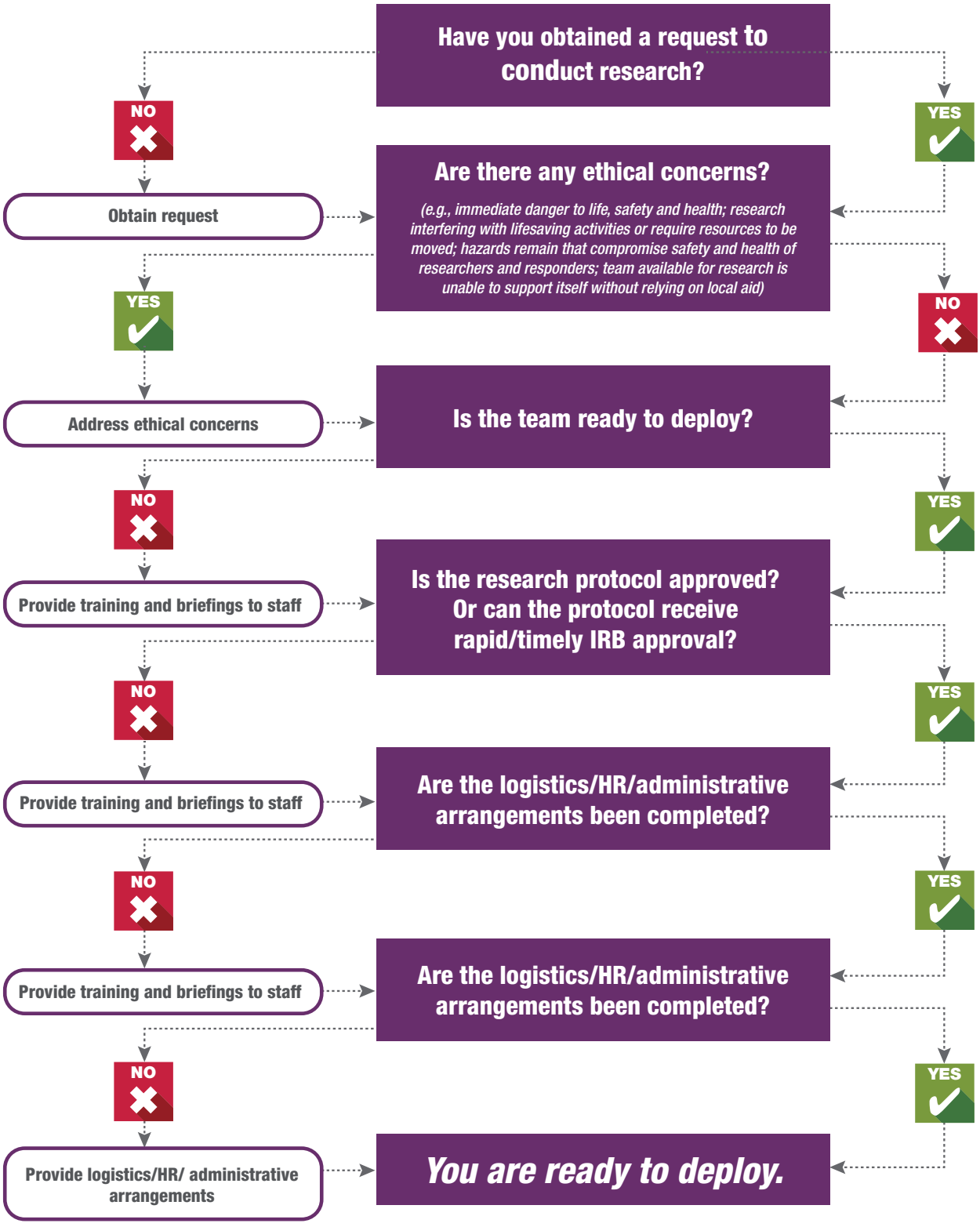
The field of disaster research is growing quickly, with researchers monitoring responses to human health threats, exploring novel tools and approaches, and conducting long-term investigations. Before diving into the creation of a disaster research plan in one of these areas, researchers should assess whether their goals and objectives of post-disaster research are practical and appropriate. Researchers must always consider their organization's policies when considering disaster research.

The decision tree at right helps break down the decision to deploy into easy to answer questions. Considerations for answering each question are in sections below:

- By understanding their organization's capacity and capability in preparation for deployment, researchers can devise a disaster research plan, which serves as a roadmap before, during, and after deployment. This type of plan is sometimes called a Concept of Operations, or CONOPS.
- The disaster research plan should begin by listing the research needs, which can be identified in collaboration with external stakeholders. These might include university health and safety officials, program officers, travel planners, legal departments, and Institutional Review Board (IRB) officials. Also consider involving professionals from other disciplines who can contribute valuable perspectives to the research project, such as social scientists, emergency management experts, engineers, and others. This plan can help researchers devise a protocol for research to make deployment safe, productive, and effective for the research team and stakeholders.

- A researcher or research organization's capacity and capability are important factors when considering deployment. Research capacity refers to the resources and ability to define the problem and objectives, carry out research, and identify solutions. Research capability is the ability to carry out research in a specific post-disaster environment. Internal and external factors can impact an organization's research capacity and capability. Internal factors may include the size and experience of a research team. External factors may include the availability of emergency services and the extent of physical destruction in the location affected by the disaster.

Deployment Decision Tree



Credit: National Oceanic and Atmospheric Administration

Section 3

Have you received Institutional Review Board approval for the research protocol?

Research Protocols and Institutional Review Board

Research protocols can be developed and tailored to meet both the time constraints and specific requirements outlined in the initial request, ensuring readiness for formal submission to the Institutional Review Board (IRB) for review and approval. Given that the IRB process can be lengthy, researchers are encouraged to consult their IRB early to determine whether options such as pre-approval or expedited review are available. Given the urgency and significance of research conducted in response to disasters, an expedited review process is often anticipated.

Research protocols need to address any data sharing requirements, procedures for the collection, storage, transport, and disposal of any human tissues or fluids, and the protection of personally identifiable information (PII), if collected. Additionally, the protocols should have provisions for informed consent and confidentiality agreements, as well as secure storage of all research-related documents. To ensure comprehensive oversight and community engagement, the research protocol should also be discussed with municipal and state health departments, community leaders, and other relevant stakeholders as necessary for further review and approval.

It is necessary to obtain an approved IRB approval prior to conducting disaster research.

Research Protocol Development

The *Rapid Acquisition of Pre- and Post-Incident Disaster Data (RAPIDD) study protocol*[1] can be used as a modifiable template adaptable to different disasters and public health emergencies, as suits the appropriate institution or community, and provides standardized methodology and instruments that have been approved and used in previous disasters. The RAPIDD Protocol Designer can help minimize the time needed to begin collecting health data and biological samples from those who may have been exposed to environmental contaminants.

Survey Tools and Research Protocols Considerations

General

- Is there a research protocol that you have created or used previously that could be adapted for use in a disaster setting?
  - Have you identified the staff members who could customize this protocol based on the type of disaster?
  - How long do you estimate adaptation and customization of the protocol would take?
- Do you have staff trained to use this protocol?
- If your protocol includes medication administration or medical referrals, do you have a plan to customize each for the specific community and disaster?
  - Do you have a plan to acquire and bring all medications to the disaster area, including proper storage and disposal containers?
  - Does the medication require sharps containers, chilling, or special handling?
  - Do you have instructions for medication recipients that include where to report adverse health outcomes?
    - Do you have staff available to translate these instructions for recipients?
  - Have you communicated the plan to both administer medications or provide referrals to local clinicians or clinical researchers? Do you have a process for randomization?
- Do you have a consent process and appropriate forms for any of the above processes?

Survey

- Have you created, used, and/or reviewed a survey tool that could be adapted and used in a disaster setting, such as the NIH RAPIDD tool?
  - Have you identified the staff members who could customize this tool based on a disaster?
  - Do you have staff members who can translate and validate the tool if required for the disaster?
- How long do you estimate adaptation and customization of the survey tool would take?
- Do you have readily available tools to conduct the survey?
  - Do you have equipment for collecting survey responses?
  - Does the equipment require power? Internet connection?
- Do you have staff trained to use the survey tool?
  - Do you have a data quality plan?

Specimen collection

- Do you have access to supplies needed for the collection of biological specimens (if applicable)?
  - Does the protocol for collection of these specimens require special equipment, power, ice etc.?

Related links:

- NIEHS Disaster Research Protocols: *https://www.niehs.nih.gov/research/programs/disaster/human-studies*

1 NIH Disaster Research Response (DR2) Research Protocols, NIEHS RAPIDD Study. https://dr2.nlm.nih.gov/protocols

IRB Approval Process

Researchers should balance data collection with appropriate protections for human subjects. The IRB process protects the rights, welfare, and well-being of human and animal research participants; ensures compliance with applicable laws and policies; upholds high ethical standards; and supports sound research design and scientific integrity. Additionally, institutions conducting human subjects research have specific procedures and policies for the collection, handling, storage, and regulation of biospecimens and must comply with applicable safety and federal regulations, including the U.S. Occupational Safety and Health Administration's Bloodborne Pathogens Standard (OSHA Standards, Booklet 3186-06R, 2003).

Notable Considerations Prior to Seeking IRB Approval	
Does the work qualify as research?	The U.S. Department of Health and Human Services defines research as, "A systematic investigation, including research development, testing and evaluation, designed to develop or contribute to generalizable knowledge."
Does the work involve human subjects?	Humans are subjects if the researcher interacts or intervenes directly or if the researcher collects identifiable, private information.
Is the work exempt from approval?	Disaster research that may be exempt involves the collection or study of existing data, documents, records, pathological specimens, or diagnostic specimens; or research projects conducted by or subject to the approval of department or agency heads. An IRB official must make the decision regarding exemption.

Related Links:

- NIEHS Human Research Protection Program: *https://www.niehs.nih.gov/research/atniehs/labs/crb/ohrce/hrpp*
- The Protection of Human Subjects: *https://ori.hhs.gov/content/chapter-3-The-Protection-of-Human-Subjects-Definitions*
- CDC Select Agent and Toxins List: *https://www.selectagents.gov/sat/list.htm*

Data Collection, Use, and Sharing

Preparedness and collection

Many of the major challenges for researchers deployed to disasters are related to data collection. Data preparedness, or information management preparedness, is how some organizations have termed the ability of an organization to responsibly and effectively deploy and manage data collection and analysis tools. Literature on the topic defines five components of data preparedness.

1. Standard setting and risk analysis: Consistent data handling practices through clear policies on formats, naming conventions, and quality standards should be established. Identifying and prioritizing risks to data confidentiality, integrity, and availability through threat analysis and vulnerability assessments should also be conducted.
2. Requirement planning and stress testing: Organizations should plan for data needs by identifying required systems, personnel, and resources to manage information effectively. Stress testing simulates high-pressure scenarios to evaluate system performance, data integrity, and recovery capabilities under extreme conditions.
3. Coordination and consultation: Effective data preparedness depends on structured communication between all involved parties to ensure consistent data sharing and resource allocation. It also involves assessing staff capabilities and capacities and reviewing existing data systems to align efforts and address gaps.
4. Capacity-building and training: Staff must be equipped with the skills and knowledge to manage and interpret data through targeted training and education. This supports long-term capacity development and informed decision-making across the organization.
5. Evaluation and improvement: Protocols and methods should be reviewed regularly to identify weaknesses and areas for enhancement. Lessons learned from the gaps should be incorporated into the updates to protocols, ensuring continuous improvement and adaptability to emerging risks.

Before deployment, organizations must establish clear guidelines for how collected data will be shared with other institutions and research collaborators. Typically, this is formalized through a Data Sharing Agreement, which outlines the terms and conditions for sharing data and other relevant information among research partners and external entities. NIEHS supports data sharing, as it accelerates new discoveries, stimulates collaborations, and increases scientific transparency and rigor.

The NIEHS Data Management and Sharing Plan

The *NIEHS Data Management and Sharing (DMS)* Plan serves as a framework for ensuring that scientific data and associated metadata are properly managed, preserved, and shared to promote transparency, reproducibility, and reuse. A well-structured DMS Plan should begin by describing the types of data to be generated, including the level of processing and aggregation, and specifying which data will be preserved and shared, along with the rationale. It should also identify any specialized tools, software, or code required to access or reuse the data, and explain how these resources can be obtained. The plan must outline the standards used for data and metadata, such as formats, vocabularies, or ontologies, referencing resources like FAIRsharing or the PhenX Toolkit when applicable. If no standards exist, this should be noted. Additionally, the plan should name the repositories where data will be archived, detail how the data will be made findable (e.g., through DOIs or ORCID IDs), and specify the timeline for data sharing. Considerations around access, distribution, and reuse must be addressed, including any privacy, legal, or ethical restrictions, and whether access will be controlled or open. Finally, the plan should identify who will oversee its implementation and compliance, and may include budgeting for data management activities. NIEHS encourages alignment with FAIR principles—Findable, Accessible, Interoperable, and Reusable—and recommends keeping the plan concise, ideally within two pages, without hyperlinks.

Considerations for Data Sharing	
What data will be shared?	Final research data, metadata, and descriptors should be shared and made usable to other researchers.
Who will have access to the data?	Data should be shared as broadly as possible to the extent consistent with applicable laws, regulations, rules, and policies.
Where will the data be shared and located?	Data repositories with common standards and an established infrastructure dedicated to the appropriate distribution of data is ideal.
When will the data be shared?	Data should be made available as soon as possible and for as long as possible.
How will researchers locate and access the data?	Researchers need to be able to easily identify locations of relevant data and be able to easily access the data.

Related Links:

- 11 Ways to Avert a Data-Storage Disaster: *https://www.nature.com/articles/d41586-019-01040-w*
- Frequently Asked Questions: Data Sharing: *https://grants.nih.gov/grants/policy/data_sharing/data_sharing_faqs.htm*

Lab results and reporting

As part of the protocol, organizations must establish a well-defined protocol for handling lab results, especially when clinical samples yield abnormal findings. This includes specifying how results will be communicated to clinicians, patients, and other relevant stakeholders. Just as important is ensuring that participants are informed in advance about how their results will be communicated and what potential follow-up actions may be required. Clear communication helps manage expectations and supports timely medical decision-making.

The reporting process typically involves multiple steps governed by federal and state regulations, which are designed to ensure that the appropriate authorities, healthcare providers, and patients are notified promptly and accurately. Please check with state laws prior to deployment as state laws governing electronic laboratory release to patients differ in how results are communicated to patients.

The communication flow must be clearly established in the research protocol to avoid any miscommunication. Understanding and adhering to these protocols is essential for maintaining compliance and ensuring timely response to critical health information.

Measuring success of data collection and sharing

To measure success of data collection and sharing, researchers should reflect on and evaluate their experiences, in terms of how their research has benefited the affected community. The study methods and results should satisfy community expectations. During the reflection and evaluation process, the researcher might consider how the affected population was impacted by the work and how the researcher might continue that work in the coming days, weeks, and years.

Reflections are personal to the researcher. Thinking about deployment can help researchers see how they have grown, both as a person and scientist, during deployment. Researchers should think about lessons learned during deployment, and what might be useful if they were to be deployed again under similar circumstances.

NIEHS places emphasis on evaluation, which is a formal review of how research was conducted and how it could be made better for the next event. Evaluation considers the impact of research, training, and translation activities. It is worth noting that evaluation plays a large role in the WTP, which uses lessons learned to develop safety and health resources for the field, such as online e-learning tools on topics like safety, personal protective equipment and training supplies, and printed training materials.

Credit: Wikimedia Commons

Section 4

Research Team Readiness

Is the research team ready to deploy and conduct the research project?

Disaster research readiness consists of several components:

- Understanding of the mission
- Training
- Competent technical skills (credentialing)
- Demonstrated personal and team accountability skills
- Equipment and supplies
- Data collection, use, and sharing

Understanding of the Mission

Understanding the mission of the disaster research project is essential. It provides clear purpose and direction, helping teams stay focused and aligned in high-pressure, unpredictable environments. A well-defined mission supports effective decision-making, keeps teams motivated, and ensures that all actions contribute to the project's overall goals—such as protecting public health, or advancing resilience. In disaster settings, where resources and time are often limited, a clear mission helps avoid confusion and ensures that efforts deliver meaningful impact and value.

All staff going into a disaster environment should receive a threat briefing and a safety briefing of what is to be expected at the site. These briefings should raise awareness of potential hazards, risks, and threats to prevent and minimize injury or harm to the individual. Safety briefings can include information focused on specific hazards that staff may encounter as they conduct their work, including hazards found at the disaster site (e.g., unstable ground, chemicals in water), or individual safety precautions (e.g., use the buddy system). It should also include ways they can protect themselves from the hazards.

Before deployment, personnel should receive a comprehensive briefing that covers the mission objectives, safety protocols, operational conditions, and administrative procedures. Upon arrival at the deployment site, an incident briefing should be provided by the state or local incident manager to share the most up-to-date information and facilitate coordination with local response teams. Topics can include:

- **Mission Overview:** Personnel should be informed of the duration of their deployment, lodging arrangements, and specific responsibilities.
- **Roles and Responsibilities:** Clearly define each team member's tasks and reporting structure to ensure accountability and efficiency. Staff should also be familiar with the guidelines of the research protocol.
- **Communication and Accountability:** Establish procedures for maintaining regular contact with the home agency throughout the deployment and among the research team.
- **Compensation and Expenses:** Provide details on pay, reimbursement policies, and insurance coverage.
- **Packing Guidance:** Advise personnel on what personal gear to bring and what will be supplied by the organization. A detailed packing list helps ensure staff have essential items such as hygiene products, medications, and appropriate clothing.
- **Health and Wellness Considerations:** Inform personnel about potential physical and mental health challenges they may face, and clarify the availability of medical support, which may be limited in the field.

Training

Training is essential for disaster researchers due to the complex and inherently hazardous nature of working in disaster zones. Having a well-trained team prior to deployment is critical to ensure safe, effective, and successful research while subject to the complex and inherently hazardous nature of working in disaster zones. Through training, the physical and mental impacts of being placed in an unfamiliar environment under less-than-ideal conditions can be minimized. Additionally, anticipated risks can be mitigated through safety training, PPE, and acute awareness of the potential hazards.

Before deployment, all personnel, including field researchers, support staff, and those working remotely, must be thoroughly trained on safety protocols, site-specific risks, and operational procedures. This preparation helps prevent injury and illness, ensures smooth collaboration with other organizations on-site, and minimizes disruptions throughout the duration of the project.

This graphic on the right displays some of the key skills staff should be trained in and have knowledge of before deployment.

Organizations should ensure they have robust systems in place to support staff training for disaster deployment. This includes maintaining up-to-date records of training completion dates and establishing clear policies on how recent specific trainings must be before a staff member or researcher is deployed. All training provided should reflect the latest science, techniques, and procedures relevant to the field, including onsite pre-deployment or site-specific training. Additionally, research teams should consult their university's Emergency Management team or Safety Office—resources available at all institutions—for training on topics such as the Incident Command System (ICS), Safety protocols, and Hazard Vulnerability Assessments (HVA). Wherever possible, teams should be referred back to their institution's internal resources, which may include departments like Travel Medicine, Occupational Health, Preventive Medicine, or Biomedical Engineering.

The following is a list of different trainings that researchers may find useful and should consider prior to deployment. This is by no means an exhaustive list.

Training Checklist

- Do available team members or personnel have training in any of the following? Please mark all that apply.
  - Basics of the Incident Command System (ICS)
  - Comprehensive safety and health practices, including use of personal protective equipment (PPE)
  - Clinical research protocols that will be used in the field
  - Human subjects' protection
  - Hazardous Waste Operations and Emergency Response (HAZWOPER)
  - Health Insurance Portability and Accountability Act (HIPAA)
  - Personal security
  - Community-based participatory research (CBPR) approaches
  - Specific research tools used for the project
  - Cultural awareness or communications trainings
  - Mental health resilience
  - University required deployment/hazardous environment site-specific trainings

Incident Command Structure

Emergency Managers are responsible for coordinating response activities during a crisis. These efforts typically follow the ICS—a standardized organizational structure that operates through an Operations Center, which serves as the hub for managing the response.

Although the research project may not formally fall under the ICS framework, it's important to understand how ICS functions and the potential benefits to the proposed research. The Incident Commander (IC) holds the authority to make all critical decisions related to the response, including resource allocation, setting priorities, and managing communications. The IC represents the elected officials and the community in all response-related matters.

When working at a disaster site, it is critical that research staff understand the coordinating structure on the ground. Adhering to the rules and policies established by the responsible authorities is essential for maintaining safety, order, and effective collaboration.

Physical and Psychological Preparedness

When planning the logistics of deployment, the research team needs to understand and assess their physical and mental capabilities of the team members. In the aftermath of a natural or manmade disaster, the affected areas will have sustained a varying degree of physical damages. Researchers may face austere environments with limited transportation, communications, and in some instances, utilities such as electricity and water. It's beneficial that researchers be familiar with the demands the impacted environment might have on carrying out research and data collection.

If the site has been deemed safe for the research team to be there, researchers should still be prepared, both physically and mentally. Physical preparedness refers to the researchers' ability to perform the tasks of a particular job, e.g. sitting, lifting, walking, etc. Psychological preparedness refers to the researchers' ability to recognize and confront disaster-related stress, such as exposure to traumatic sights or emotions.

More information about individual safety and well-being can be found in Section 5 of this document.

- A Practical Guide to Disaster Researchers' Health and Safety: https://tools.niehs.nih.gov/wetp/public/hasl_get_blob.cfm?ID=14201
- NIEHS Worker Training Program Disaster Preparedness and Response Training Tools: https://tools.niehs.nih.gov/wetp/index.cfm?id=556

Competent Technical Skills (Credentialing)

Effective disaster researchers require a combination of technical expertise and interpersonal skills. Technical capabilities might include knowledge of disaster response frameworks and specialized areas such as climate modeling. Equally important are non-technical skills like communication, leadership, collaboration, decision-making, and the ability to manage stress under pressure.

In addition to informal meetings and conversations, team members may also need to obtain credentials, or required certifications, prior to conducting research with human subjects. These trainings are usually mandated by state and federal agencies, or organizations. Receiving states may also require additional certification or credentialing. Specialized technical staff (e.g., nurses, medical doctors, phlebotomist, medical technician, drone pilot, etc.) must obtain the most up-to-date licensing, certification, or credentialing in both a hard copy and electronic version before starting any work.

Legal authorities

There are also laws and policies that the researchers need to be aware of before conducting research. For example, the Federal Policy for the Protection of Human Subjects, or the Common Rule, and the HIPAA Privacy Rule must be followed by researchers. The Common Rule is described in *Federal Regulations 46 CFR 45*,[2] and defines the processes for IRB review and approval of research with human subjects.

The HIPAA Privacy Rule *protects a person's medical records and personal health information*.[3] In addition to protecting data, HIPAA sets limits for how data may be used. For example, the creation of databases for research purposes is permitted, as long as the researchers have documentation of IRB or Privacy Board approval. Data can also be permitted to be used in future studies. Lastly, HIPAA allows IRB to use *expedited review procedures*[4] as permitted by the Common Rule to review and approve requests for waiver authorizations. Consider the following security policies when collecting data:

- Secure all sensitive information via approved encryption solution or through adequate physical security and operational controls.
- Only use encrypted computers and computer drives.
- Protect all computers with strong passwords.
- Do not share passwords between users.
- When necessary, encrypt all PIIs during transmission.

If necessary, consult your organization's legal team to ensure that you understand all the laws and policies that may affect your project.

2 Electronic Code of Federal Regulations. https://www.ecfr.gov/cgi-bin/retrieveECFR?gp=&SID=83cd09e1c0f5c6937cd9d7513160fc3f&pitd=20180719&n=pt45.1.46&r=PART&ty=HTML

3 U.S. Department of Health & Human Services, Health Information Privacy, The HIPAA Privacy Rule. https://www.hhs.gov/hipaa/for-professionals/privacy/index.html

4 U.S. Department of Health & Human Services, Health Information Privacy, The HIPAA Privacy Rule, For Professionals, FAQs. https://www.hhs.gov/hipaa/for-professionals/faq/307/how-does-the-rule-help-institutional-review-boards-handle-additional-responsibilities/index.html

Equipment and Supplies

It is important to make sure the organization has all the necessary equipment and supplies for the project. Before heading into the field, all equipment should be inspected and tested to confirm it is working properly and ready for use. Personnel should be equipped with PPE appropriate for the environment. When necessary, gears should also be fit-tested to the individual to ensure proper fit. In addition to PPE, staff should have access to essential research equipment, such as refrigeration or freezer units for specimen storage, IT systems for data management, and other required research supplies. Make sure that all the components required for the equipment to function—such as batteries, filters, and other accessories—are also included. This preparation helps avoid delays and ensures smooth operations once on site. Individuals should also bring personal gear suited to local conditions and bring available and necessary resources, ensuring comfort, safety, and preparedness throughout the duration of their work.

Equipment (monitoring or sampling)

- Do you have access to all the equipment needed to conduct research in the field?
  - Are there any pieces of equipment or devices that are loaned to other users, which may not be available for deployment to the field?
  - Are there any perishable materials or supplies that need to be sent with the equipment?
    - Certain perishable materials, such as ice and water, may not be available during a disaster. Do you have a plan to provide perishable materials to the deployed team?
- Can the necessary equipment be easily transported to/from the field?
  - Are there special transportation and delivery needs?
  - Is specific packaging required?
    - Is that readily available for use?
  - Are any forms, certifications, or declarations needed for transportation?
- Does the equipment need special care once on site?
  - Does the equipment require special products or cleaners for maintenance in the field?
  - Is it electricity dependent?
    - Do you have battery backup, charging devices, generators, etc.?
  - Are there any considerations for a maximum/minimum temperature, or other environmental factors, for use or storage of the equipment?
- For how long can the equipment be used before required maintenance or down time?
- Is all equipment clearly labeled as property of your institution?

Do you have a chain of custody plan for equipment that is sent to the field for a disaster research project?
Do you have appropriate forms such as monitor logs, data collection or other report forms?

Personal and Team Accountability

A well-defined team structure is crucial for ensuring project accountability, as it outlines how roles, responsibilities, and tasks are assigned and coordinated among team members. It should include a clear reporting hierarchy—both for field staff and those at the home base—that establishes a transparent flow of authority and communication, clearly indicating who reports to whom. This reporting chain serves as the foundation for delivering accountability. Additionally, an effective accountability system must be in place to hold individuals and teams responsible for their actions, decisions, and outcomes. Together, these elements help clarify responsibilities, facilitate smooth communication, and keep the team aligned toward achieving its objectives.

Credit: U.S. Army Corps of Engineers

Section 5

Logistical, HR and Financial Planning: Have the logistical, human resources, and financial considerations been completed?

Logistical Considerations

Individual safety and wellness

While in most cases disaster research will be conducted after the infrastructure is recovered and hazards have been mitigated, there may be situations where utilities may be limited and hazards remain present. EMS and healthcare may also be limited. Common sense approaches to safety apply in these settings and individual accountability is paramount. Should the research activity require you to deploy(?) the larger team, you should provide your destination(s) and return time. It is advised that once on location (and any additional locations) you conduct a communications check with your team. No one should ever travel alone for research or non-research related reasons. During travel, you should be aware of your surroundings and observant of possible hazards including feral animals, unsafe structures, and electrical, chemical, or biological hazards.

Weather may impact your safety as well. Extreme heat, cold, and wet weather should be anticipated and packed for. Protective eyewear, hearing protection, and footwear may be necessary. If any possible exposures to human clinical samples or close physical contact is required, the appropriate barrier PPE is necessary. Immunization may be required for some clinical research, and since immunization may take several weeks or multiple vaccinations, vaccines should be administered accordingly.

Insect repellent and sunscreen should be packed if outdoor work is necessary. Prescribed medications should be packed to last several days past the planned duration of deployment in case travel is delayed. Over-the-counter medication may not be available locally and should be packed as well.

Wellness is also an important component of a deployment. Deployments can be physically and mentally stressful for a variety of reasons, so stress management is important to maintain individual resiliency, team productivity, and prevention of longer-term mental health issues. Down time, socializing with team members, adequate sleep, and exercise will build resilience. Looking after team members for symptoms of stress and anxiety (withdrawal, insomnia, anger, substance use, difficulty concentrating) should be noted with the research team leader for further assessment.

Related Links:

- NIEHS Emergency Support Activation Plan and Researcher Deployment Guide: *https://tools.niehs.nih.gov/wetp/public/hasl_get_blob.cfm?ID=11006*

Logistics

- Do you have a deployment plan which defines the following:
  - Team leader
  - Required communications with the team and to your institution
  - Standards of conduct
  - Safety policies and procedures
  - Team security and protection
- Do you have a plan for finding and arranging transportation to, during, and from the field for the deployed staff?
- Do you have a plan for identifying and arranging lodging for the deployed staff?
- Do staff have access to institutional resources from a distant or remote location (e.g., VPN/network connectivity, email, etc.)?
- Who will provide information on security considerations for your team while deployed?

Lodging

Lodging arrangements will vary depending on the nature and location of the disaster site. It is essential that personnel confirm accommodations prior to deployment. Hotel availability may be limited or unavailable; therefore, shelter-type lodging may be required. Flexibility is important, as relocation might become necessary following an initial assessment of the site.

When hotel accommodations are available, extended-stay options are recommended. These facilities often provide useful amenities such as breakfast services, kitchenettes, and laundry areas, which can support longer-term stays and improve daily living conditions.

Personnel must remain aware of potential hazards present at disaster sites. These may include working in or near structurally compromised buildings, operating or navigating around vehicles and heavy equipment, and exposure to unsanitary living or eating conditions. All hazardous conditions or safety concerns should be reported immediately to a supervisor and, if available, to the designated safety officer.

Nutrition

Personnel will typically be responsible for managing their own meals during deployment. It is recommended to carry a minimum of three days' worth of non-perishable food and at least one day's supply of bottled water to ensure sustenance until formal eating arrangements can be established. Suitable food options include Meals Ready to Eat (MREs), packaged snacks, crackers, and other shelf-stable items.

When dining options become available, a sit-down meal is preferable to fast food. Sit-down meals provide an opportunity to decompress, organize thoughts, and engage in meaningful social interaction. Such interpersonal contact can play a vital role in maintaining psychological well-being during extended field operations.

Transportation

Transportation may be limited or disrupted in disaster-affected areas. Unless otherwise specified, personnel are responsible for managing their own transportation throughout the duration of deployment. Do not assume that rental cars will be available upon arrival. Roadways may be severely damaged, requiring caution and adaptability when traveling.

Those operating vehicles should adhere strictly to traffic signals and posted directions. It is essential to ensure that vehicles are adequately fueled and equipped with a spare tire, as fuel stations and repair services may be inaccessible in the disaster zone. Sufficient travel time should be allocated for commuting between lodging and the designated work site to account for potential delays or detours.

Human Resources

Human resource considerations should be addressed prior to staff deployment. It is essential that research team contracts include clauses related to deployment, with clear provisions for overtime. Discussions should also cover financial requirements, workers' compensation, and employee health to ensure all team members are informed and protected. Where applicable, special pay arrangements should be clarified in advance. Additionally, liability coverage should be reviewed and established as needed, particularly for health and medical personnel participating in onsite disaster research.

Staff should be informed of all financial compliance requirements prior to field deployment. This includes guidance on saving receipts for expenditures and the process for approving unexpected costs.

Additionally, human resources should schedule a post-deployment debriefing meeting with staff to review experiences, address any concerns, and ensure proper documentation and follow-up.

Financial

Funding considerations should be initiated by the requesting entity, allowing for budget requests and negotiations with relevant institutions. Funding may come in the form of a grant, cooperative agreement, or contract at the local, state, or federal level. Organizations should get clarity on travel vouchers and allowed expenses and limits during the negotiation of the financial agreement. When necessary, local procurement rules should also be discussed to ensure compliance.

Because federal funding mechanisms often involve lengthy award processes, securing timely support for disaster-related research can be challenging. Therefore, it is essential for researchers to proactively understand and discuss funding limitations, available mechanisms, and potential opportunities before a disaster occurs.

Funding nuances must be understood, and preparations for longer term, sustainable funding need to begin in earnest while data is still being collected.

Potential Sources of Funding Include:

Time-Sensitive Research (R21) grants from the NIEHS, the National Science Foundation's grants for Rapid Response Research (RAPID), and other supplemental funding from existing awards are all options for post-disaster research funding. The NIEHS Time-Sensitive Research program supports environmental health research following unpredictable events, where there is a short time frame to collect human biological samples or environmental exposure data.

RAPID proposals are accepted when there is an urgency regarding availability of, or access to, data, facilities, or specialized equipment following unanticipated events. The award often enables program managers to initiate funding within days of a disaster event.

Funding Preparation

- Do you have a well-defined process for writing a proposal for immediate submission?
  - If so, do you have individuals that have been identified who could quickly write a proposal?
  - Do you keep an up-to-date list of all individuals who would be required to sign/approve a proposal at all levels of your institution?
- Do you have a process that enables quick processing and distribution of funds to support team members upon award?
- Do you keep all grant application and proposal information (biosketches, eRA Commons accounts, etc.) for NIH and other agencies up to date?
- Do you monitor funding sources for announcements, modifications, or disaster information regularly?

Funding Limitations

- Is disaster research part of the statement of work for any of your currently funded, active grants?
- Are you currently adding disaster research to upcoming applications?
- Is it possible for you to reprogram any existing funds to support disaster-specific research in the absence of new funds?
  - If so, for how many days will that work be covered?
- Are there limitations on any of your funding sources that may prevent or limit travel to a disaster/hazardous area, or that may restrict your ability to conduct research in a specific geographic region or amount of time?

Related Links:

- Time-Sensitive Research Opportunities in Environmental Health (R21): *https://tools.niehs.nih.gov/srp/programs/r21current.cfm*
- National Science Foundation Guidance for Researchers Impacted by Natural Disasters: *https://www.nsf.gov/naturaldisasters/*

Credit: FEMA

SECTION 6

When The Impact Is Local

Is the disaster in your community?

While much of this document is written for teams leaving their homes to travel to a disaster site, sometimes disasters are local. In this instance, the same concepts of research preparation apply. When planning for disaster research, think locally and consider planning how research would be carried out in your own town in the event of a disaster.

The steps outlined in this document should be applied to local disaster research: determine if research is needed, feasible, and safe. Devise a plan with clear communication and goals, seek partnerships to ensure you are answering needed questions, and protect your team.

Consider the following questions when deciding whether or not to conduct local disaster research:

- Are there any capabilities identified in this form that you would be able to provide if your own institution was impacted, but not destroyed, by a disaster?
- Do you have agreements or relationships with other institutions that may be able to provide research support in the event your team is unable to, due to a local disaster?
- Do you have relationships with community organizations or local government(s) that may turn to you for scientific information or advice during a disaster?
    - Do you have a plan to provide information to your community even if you are unable to conduct research?

- Has your team held a refresher on your institution's disaster response procedures, policies, etc.?
  - Would any of those policies limit your ability to support disaster research, such as restricting access to buildings?
- Do you have existing relationships with community organizations or partners with whom you could work in the event your community is struck by a disaster?
  - Are these relationships formalized through Memorandums of Understanding, letters of agreements, or mutual aid agreements?
  - How long have you worked with these partners?
- Have you communicated with these partners your intent to or interest in conducting disaster research?
  - Have you discussed the community's or organization's role in your disaster research?
- What role might the organization have in your disaster research?
  - Support or conduct citizen science
  - Provide community input into research questions/study design
  - Provide trusted introductions to community members who may be involved in a study
  - Continue to participate in studies as part of an existing cohort
  - Resources/supplies/shelter
  - Other
- Have you discussed disaster preparedness and specific disaster risks with these community organizations?

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