



National Institute of Environmental Health Sciences  
*Your Environment. Your Health.*



# Disaster Health Research Data Systems

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National Institutes of Health • U.S. Department of Health and Human Services



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## Overview

- Disaster epidemiology
- Types of human health data
- Data systems

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## Disaster Epidemiology

### Objectives

- prevent or reduce the number of deaths, illnesses, and injuries caused by disasters
- provide timely and accurate health information for decision-makers
- improve prevention and mitigation strategies for future disasters by collecting information for future response preparation



## Disaster Epidemiology

### Surveillance

- Mortality
  - Vital Records
  - CDC Disaster-related mortality surveillance form
- Morbidity
  - Laboratory
  - Sentinel sites
  - Syndromic surveillance
  - Absenteeism
  - Insurance
  - Pharmacy
  - Shelter
- Response
  - CASPER
  - OEMS Systems



## Disaster Epidemiology

### Research Data

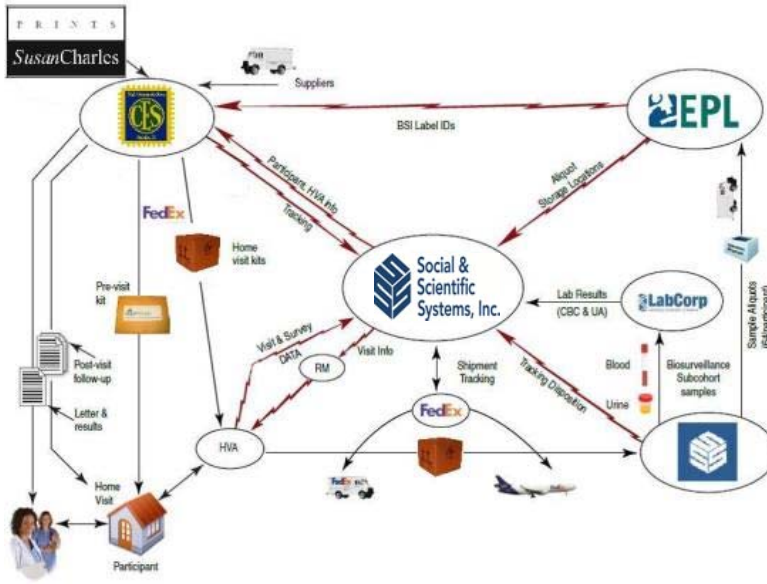
- Registry/Cohort
- Short and long-term data
  - Medical history, occupational, recreational, residential exposures, mental health, social and behavioral factors
- Anthropometric and physiological measures
  - HT / WT, HC/ WC, HR/ BP, pulse ox, lung function
- Biospecimens
  - Blood, urine, toenails, hair, saliva for DNA
- Environmental measurements
  - Household dust and GPS coordinates



## Cohort/Registry

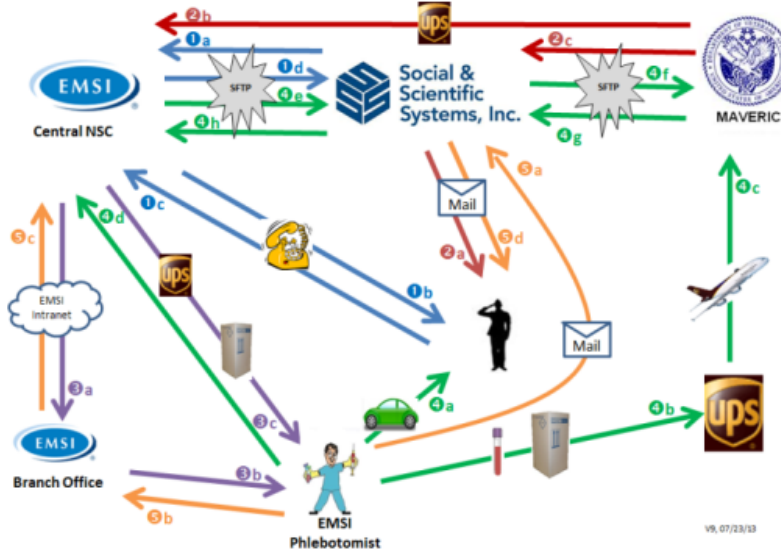
### Data Sources

- Training rosters
- Contractor lists
- Shelter manifests
- Evacuee manifests
- FEMA
- Social services
- Public datasets
- Local jurisdictions



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Gulf War Era Cohort and Biorepository Field Workflow



VR, 07/23/13

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## Data Collection Tools

**RAPIDD** Registry Risk Core Form

**Registry and Contact Information:** (Source: ATSDR Rapid Registry Form-06/04)

**Participant Contact Information:**  
The first set of questions will ask you for your contact information and the contact information of a close friend or family member who is designated to reach you in emergency situations. Please answer each question as completely as you are able to the best of your ability.

1. What is your full name?  
First Name: \_\_\_\_\_  
Last Name: \_\_\_\_\_  
Middle Initial: \_\_\_\_\_  
Suffix: \_\_\_\_\_  
Other Name: \_\_\_\_\_  
Other: \_\_\_\_\_

2. What is your sex? (ENTER NUMBER, ASK ONLY IF NECESSARY OR NOT APPLICABLE)  
 Male  
 Female  
 Don't Know  
 Other

3. What is your date of birth?  
MM/DD/YYYY: \_\_\_\_\_  
Other: \_\_\_\_\_  
Other: \_\_\_\_\_

4. How did we find you?  
 Direct  
 Don't Know  
 Other

5. What is your Social Security Number?  
 (Your SSN will only be used to match our data to other health registries and will be kept confidential to the extent allowed by the law.)  
 SSN: \_\_\_\_\_ (DO NOT CHECK THIS) (DO NOT CHECK THIS)  
 (If you do not know your SSN, skip to question 6.)  
 (ENTER NUMBER NOTE: IF PART OF AN IT SYSTEM OR IS UNABLE TO PRINT THE FULL SSN, MAKE THE FOLLOWING)

**PROBABLE NOTE: IF ANY "DON'T KNOW" SELECTED, SHOW QUESTION 6 IF "DON'T KNOW" SELECTED, ELSE SKIP FOLLOWING QUESTIONS 6-10 TO QUESTION 7.**

6. Would you be willing to provide the last 4 digits of your social security number named?  
 Yes - please list the digits of SSN: \_\_\_\_\_  
 No  
 Don't Know

7. What is your home address? (PLEASE TYPE)  
 Street: \_\_\_\_\_  
 City: \_\_\_\_\_ (Some state abbreviations)  
 State: \_\_\_\_\_  
 ZIP: \_\_\_\_\_  
 Don't Know  
 Other

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## Data Collection Tools

### Gulf War Era Veterans' Survey

1. What is today's date?  
 Month: \_\_\_\_\_ Day: \_\_\_\_\_ Year: \_\_\_\_\_

The following questions are about your military service.

2. In which branch of the service did you serve? (Mark any that apply)  
 Army  
 Navy  
 Air Force  
 Marine Corps  
 Coast Guard  
 National Guard  
 Merchant Marine  
 NOAA  
 Public Health Service  
 None -> Skip to question 15 on page 6

3. Please indicate whether your service was:  
 (Mark any that apply)  
 Active duty  
 Reserve  
 Not applicable (just in the military)

4. When did you serve? (Mark any that apply)  
 September 2001 or later  
 August 1990 to August 2001 (includes Gulf War)  
 May 1975 to July 1990  
 August 1968 to April 1975 (Vietnam era)  
 February 1955 to July 1964  
 July 1950 to January 1955 (Korean War)  
 January 1947 to June 1950  
 December 1941 to December 1946 (WWII)  
 November 1941 or earlier

5. Did you serve outside the United States?  
 Yes  
 No

6. Where were you stationed, whether on land or in water? (Mark any that apply)  
 USA / Canada  
 Africa  
 Asia / South Pacific  
 Caribbean  
 Eastern Europe  
 Mexico  
 Middle East / Southeast Asia  
 Northern Central Europe  
 Southern Europe / Mediterranean Basin  
 South Central America  
 Other

7. Did you deploy in support of the 1990-1991 Gulf War? (Mark any that apply)  
 Yes, deployed to the Gulf  
 Yes, deployed elsewhere  
 No -> Skip to question 12 on page 6

8. In what month and year did you first arrive in the Gulf region?  
 Month: \_\_\_\_\_ Year: \_\_\_\_\_

9. In what month and year did you last leave the Gulf region?  
 Month: \_\_\_\_\_ Year: \_\_\_\_\_

10. Please tell us if any of your BIOLOGICAL FAMILY MEMBERS have been diagnosed with the following conditions.

	Mother		Father		Any Sibling		Any Grandparent on Mother's Side		Any Grandparent on Father's Side	
	Diagnosed	No	Diagnosed	No	Diagnosed	No	Diagnosed	No	Diagnosed	No
1. Alzheimer's / Other dementia	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Schizophrenia	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Bipolar disorder	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Cancer, breast	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Cancer, colon	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Cancer, lung	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Cancer, prostate	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. Cancer, skin	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. Cancer, all others	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. Chronic lung disease (COPD, emphysema, or bronchitis)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. Coronary artery / Coronary heart disease	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. Depression	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13. Diabetes / Sugar diabetes	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14. High blood pressure	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15. High cholesterol	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16. Kidney disease	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17. Liver condition	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
18. Schizophrenia	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
19. Stroke / Transient Ischemic Attack	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

## Data Collection Tools

**NIEHS**  
National Institute of Environmental Health Sciences  
Registry and Contact Information

Participant Contact Information

The first set of questions will ask you for your contact information and the contact information of a close friend or family member. Please answer each question as completely as you can and to the best of your ability.

1. What is your full name?

First

Last

Middle Initial(s)

Suffixes (i.e. Jr., Sr., IV, if applicable)

Don't Know  Refused

2. What is your sex? [INTERVIEWER NOTE: ASK ONLY IF NECESSARY OR NOT APPARENT]

Male  Not Determined

Female  Refused

3. What is your date of birth?

Don't Know  Refused

4. How old are you?

Don't Know  Refused

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## Data Collection Tools

**Physiological Measures - Heart Rate & Blood Pressure**

TAKE EACH MEASUREMENT THREE TIMES AND RECORD BELOW

Vital Signs	Measurement 1	Measurement 2	Measurement 3	Average
Systolic Blood Pressure	99	99	99	
Diastolic Blood Pressure	99	99	99	
Heart Rate	99	99	99	

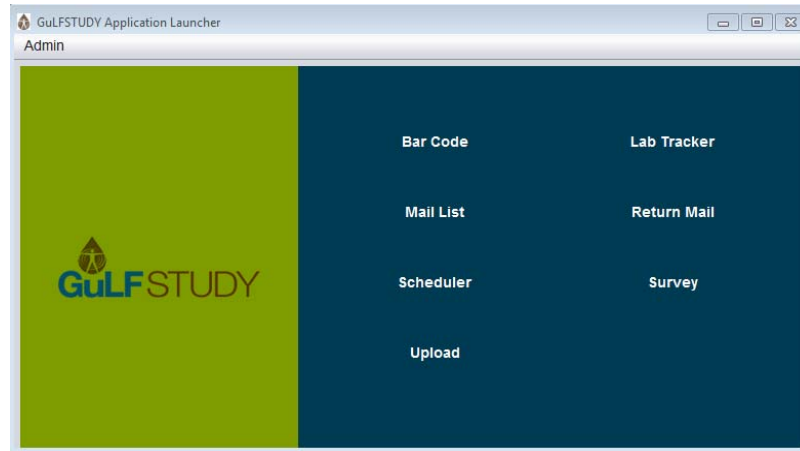
Anthropomorphic Measurements	Measurement 1	Measurement 2	Measurement 3	Average
Height (cm)	99.9	99.9	99.9	
Height (in)				
Weight (kg)	99.9	99.9	99.9	
Weight (lb)				
BMI				
Waist Circumference (cm)	99.9	99.9	99.9	
Hip Circumference (cm)	99.9	99.9	99.9	

All Notes

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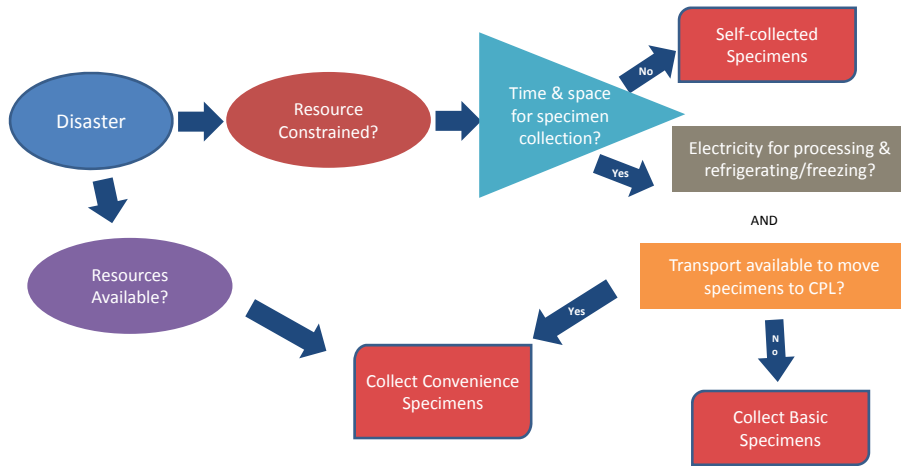
## Research Management Systems



## Basic Registry Information

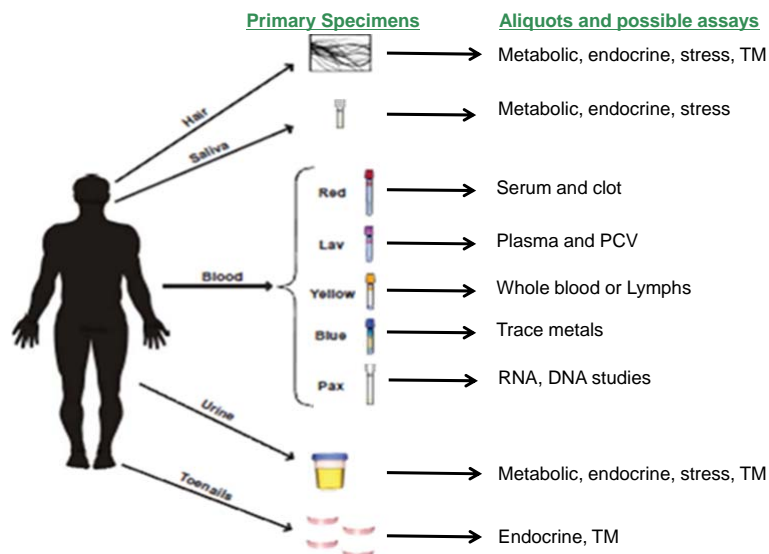
- Contact Information
- Demographic and Sociological Factors
- General Health
- Deployment Information
- Exposure Information
- Medical Records

## Biospecimen Collection Considerations



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## Possible Convenience Specimens







## Disaster Epidemiology

### Exposure Assessment

- Weather Data
- Monitors
- Sensors
- Models



Questions?

