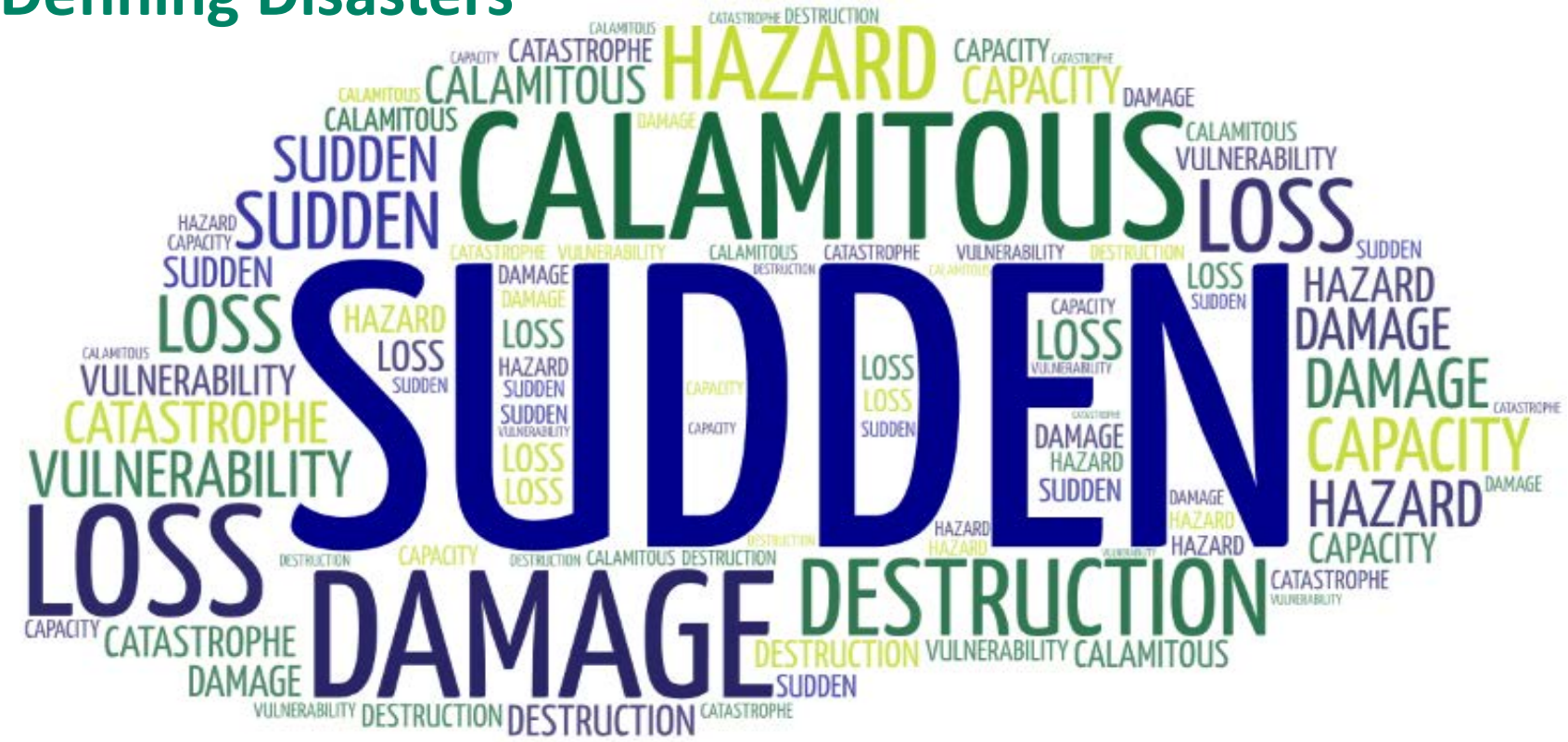
Community Assessment for Public Health Emergency Response (CASPER)

Defining Disasters



(VULNERABILTY + HAZARD) / CAPACITY

Disasters

- ***A serious disruption of the functioning of society, causing widespread human, material or environmental losses, that exceeds the local capacity to respond and calls for external assistance****

*CDC/WHO

The Public Health Perspective

Many disasters are responsible for negative health affects

Increased Morbidity & Mortality

Environmental Hazards

Displaced Populations

Disruption of public health infrastructure

…disasters are defined by **what they do to people**, otherwise they are simply interesting geological or meteorological phenomena…

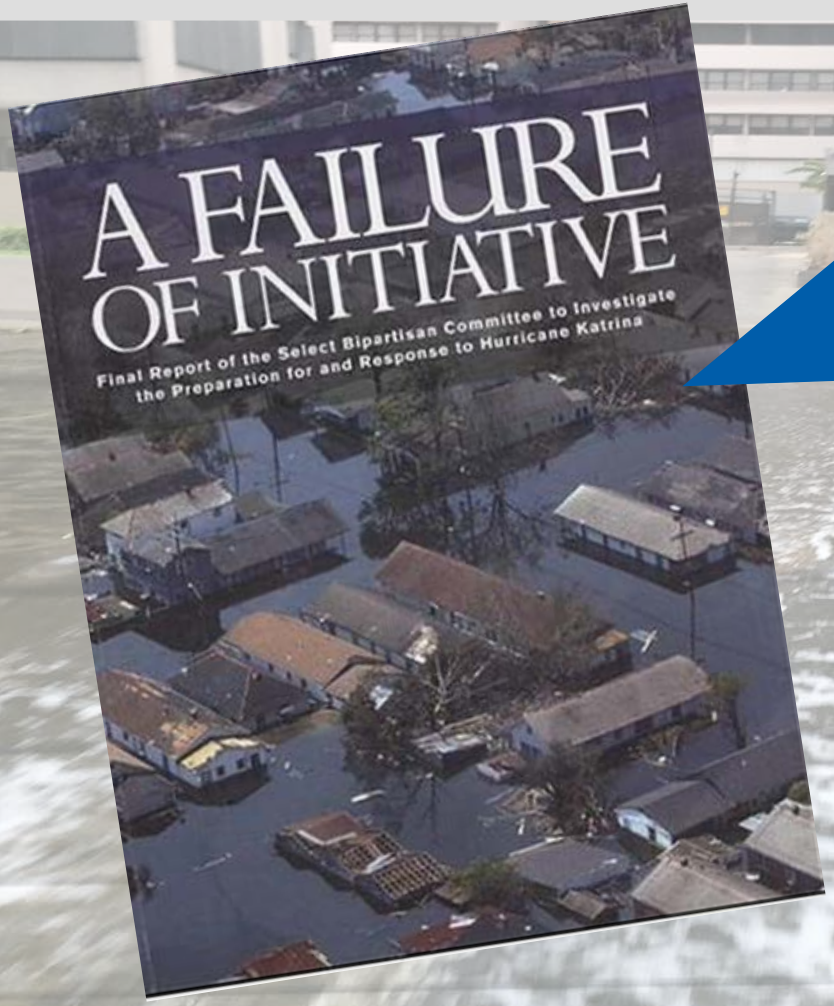
Direct vs Indirect Effects

Direct effects

- Caused by the actual environmental forces of the disaster or direct consequences of those forces
  - Structural collapse
  - Flying debris

Indirect effects

- Caused by the unsafe or unhealthy conditions that disasters create
  - Diminished sanitation
  - Reduced health services (primary care access, medicine, etc.)
  - Damaged infrastructure (electric, water, etc.)



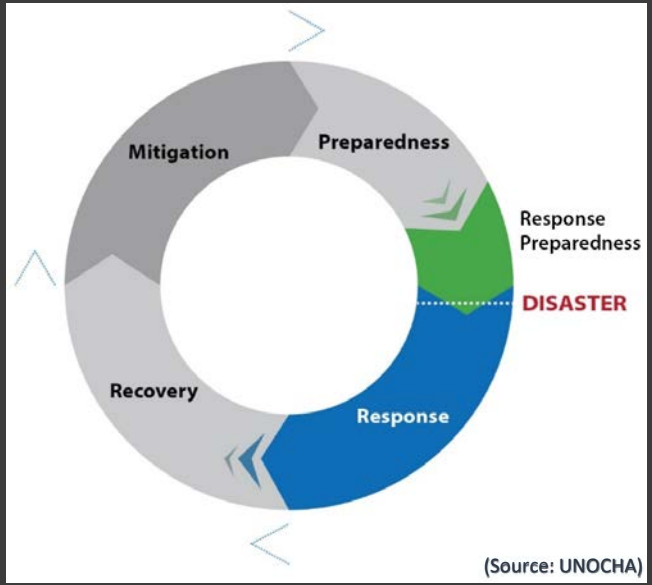
"…many of the problems we have identified can be categorized as 'information gaps'…Better information would have been an optimal weapon against Katrina. Information sent to the right people at the right place at the right time."

Disaster Epidemiology

Use of core public health capabilities to assist leaders and decision-makers by providing timely information to the right people

Tracking and surveillance	Assessments and investigations	Research

Characterize short and long-term health consequences



Importance of Disaster Epidemiology

- Identify key risk factors for mortality and morbidity
- Detect disease outbreaks
- Track disease trends
- Determine action items such as resource allocation
- Target interventions
- Facilitate future disaster planning

Challenges in Disasters

Data challenges

- Absence of baseline information
- Denominator data difficult to obtain

Infrastructure damage

- Widespread power outages
- Damaged phone and cell lines

Logistical constraints

- Environmental hazards
- Roads blocked
- Gasoline shortages

Competing priorities

- Working with many partners

Disaster Epidemiology Tools and Products

Surveillance

- Disaster Mortality Surveillance
- Disaster Morbidity Surveillance
- National Poison Data System (NPDS)

Assessments

- **Community Assessment for Public Health Emergency Response (CASPER)**
- Needs assessments

Research

- Epidemiologic studies
- Evaluation studies

Trainings

What is a Needs Assessment?

A systematic process of information collection and analysis regarding the type, depth, and scope of a problem

Can be *rapid* or *in-depth*

- Rapid (RNA): information collected and findings generated over 1 day to few weeks, ideally within 5 days
- In-depth: comprehensive look to identify recovery-oriented needs, capacities, and gaps taking several months

Rapid Needs Assessments (RNA)

- **Completed in shorter amount of time to develop preliminary understanding of a situation quickly**
  - Determines immediate needs of communities
- **Focuses on priority areas to get snapshot of the impact**
  - Identifies health problems
  - Establishes priorities for decision-makers
- **Provides evidence to inform and enhance response capabilities through quick and effective action**
  - Balance of timely response and sound methodology

Importance of RNAs

- Provides situational awareness
- Determines needs of affected population, especially with resource limitations
- Provides basis for interventions or follow-up

Types of RNAs

- **RNAs encompass a wide variety of topics such as housing needs, education needs, public health needs, resource needs, and more**
- **RNA methodologies also vary and can include, but are not limited to,**
  - *cluster* sampling,
  - *convenience* sampling,
  - or *purposive* sampling for primary data collection
- **Examples of other agencies with disaster-related RNA methodologies**
  - International Federation of Red Cross and Red Crescent Societies (IFRC)
  - Federal Emergency Management Association (FEMA)
  - United Nations Office for the Coordination of Humanitarian Affairs (UNOCHA)
  - Inter-Agency Standing Committee (IASC)
  - Centers for Disease Control and Prevention (CDC)

ONE type of RNA

Provides ***household-based*** information about a community, quickly and at low-cost

Used in **both disaster** and **non-disaster** settings

Quick, reliable public health and basic needs data to **inform decision-makers**

Is **generalizable, flexible**, and uses **simple** reporting format

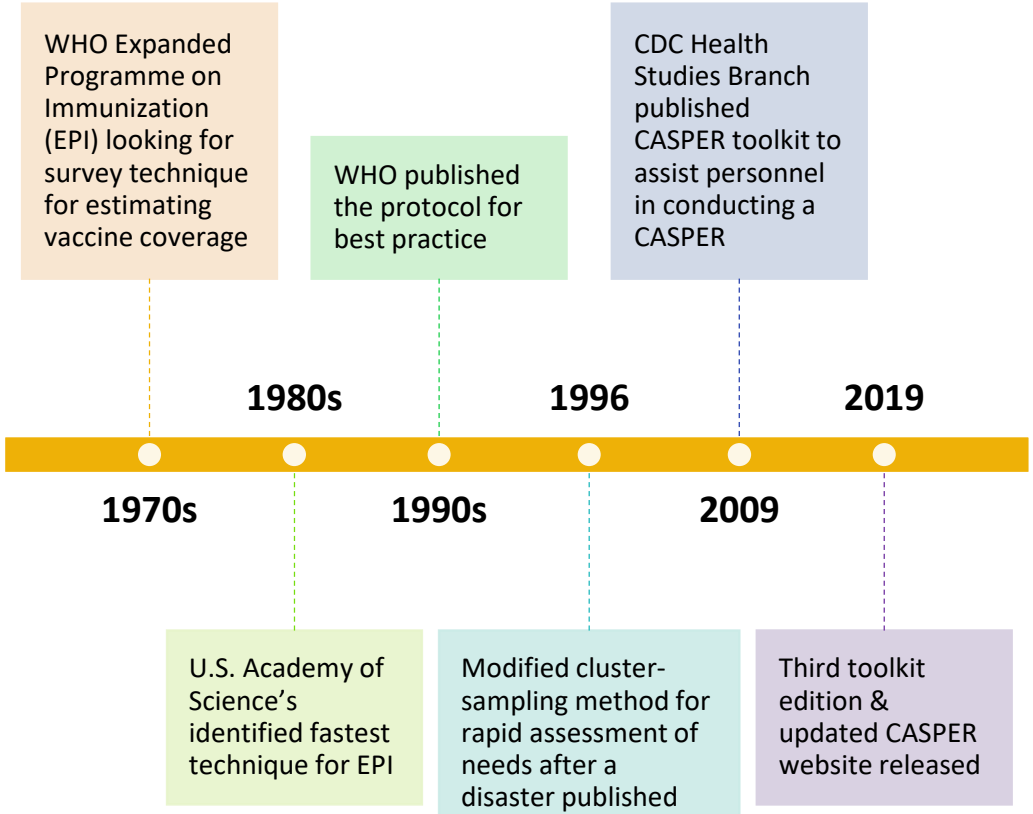
Cluster sample methodology – two stage (30x7) design

Results are descriptive of the **entire sampling area**

https://www.cdc.gov/nceh/hsb/disaster/casper/default.htm

Community Assessment for Public Health Emergency Response (CASPER)

History of CASPER

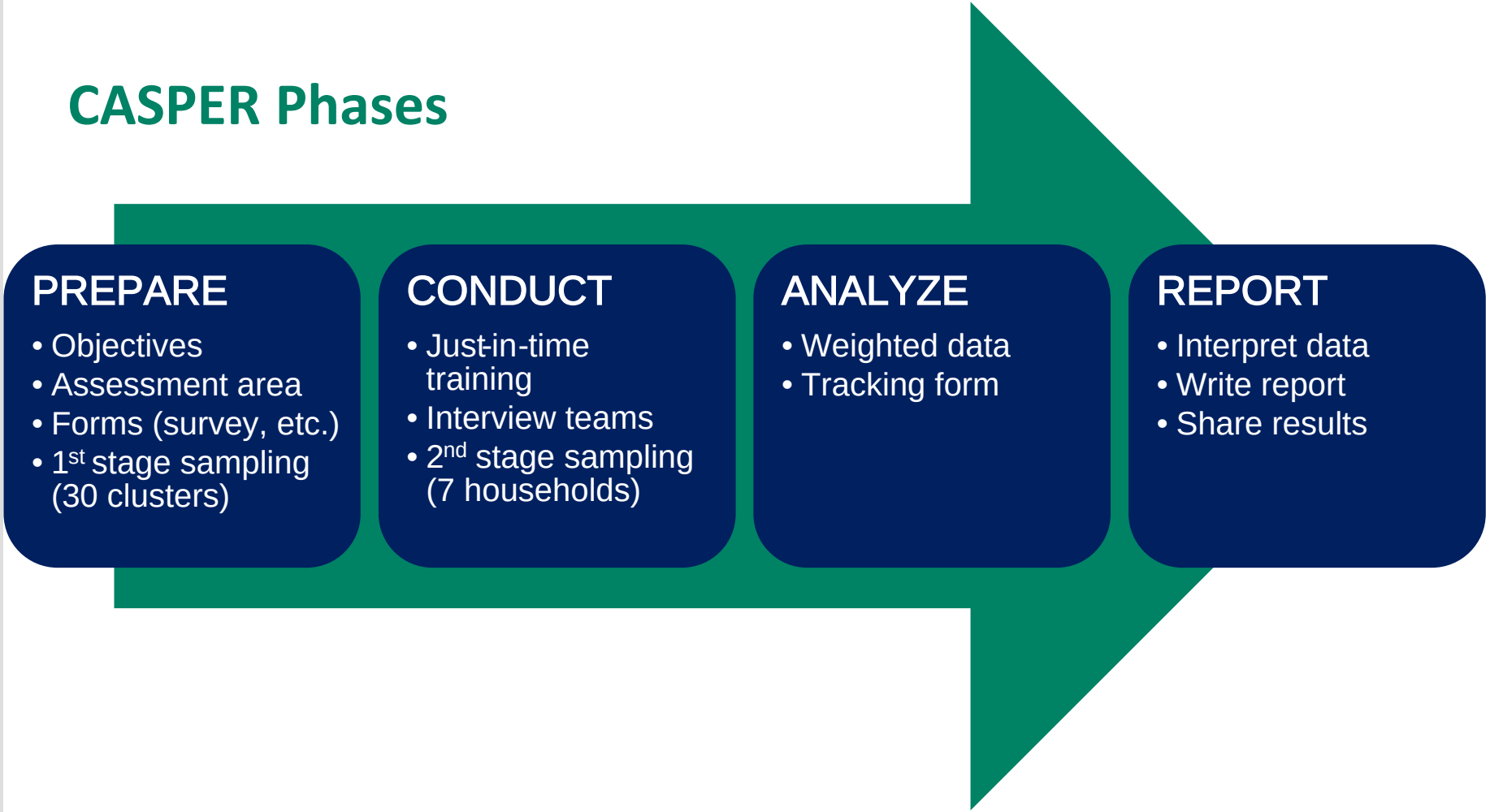


What CASPER is

- **Epidemiologic technique designed to provide quickly and at low cost, household-based information about a community's needs in a simple format to decision-makers.**

- **Advantages of CASPER**
  - Provides population estimates
  - Timely
  - Relatively low cost
  - Simple reporting format
  - Flexible

CASPER Phases

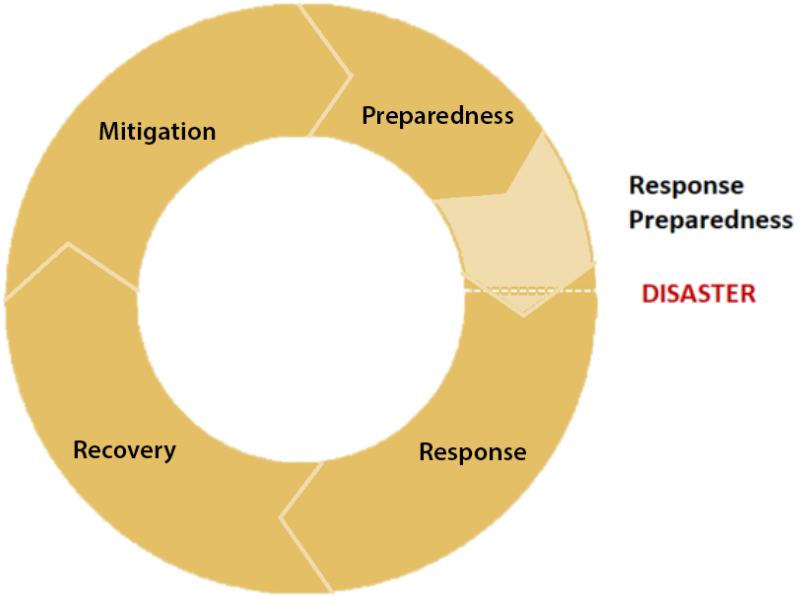


When to Conduct CASPER

- **When population-representative data are needed**
- **Determine if CASPERs 30x7 method is appropriate**
  - Size and feasibility considerations (e.g., minimum of 800 households)
  - Other sampling methods may be more appropriate
- **CASPER results will be descriptive of the entire area**
- **Useful throughout the disaster lifecycle**

CASPER Objectives

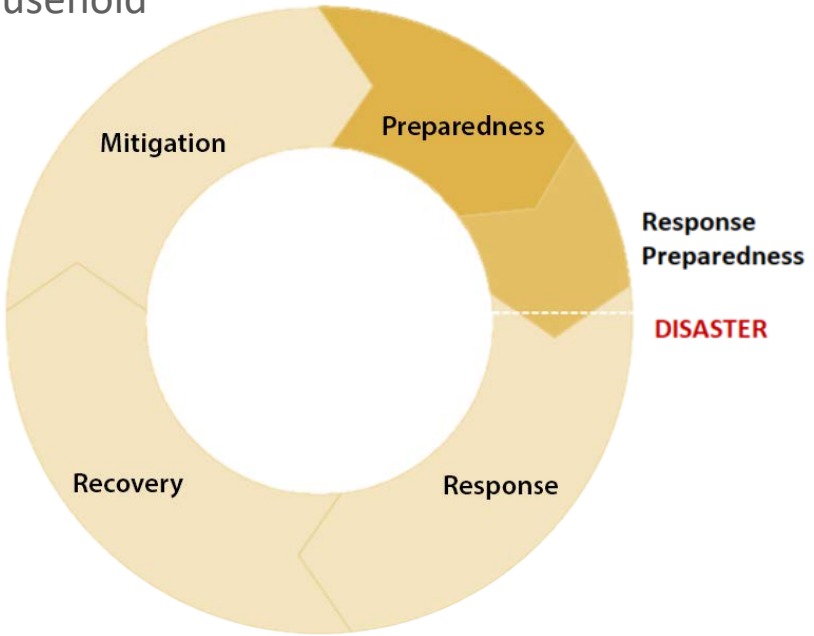
- Preparedness
- Response
- Recovery
- Mitigation
- Other



CASPER Objectives

- **Preparedness**
- Response
- Recovery
- Mitigation
- Other

Evacuation plans, household readiness plans, communications, vulnerability



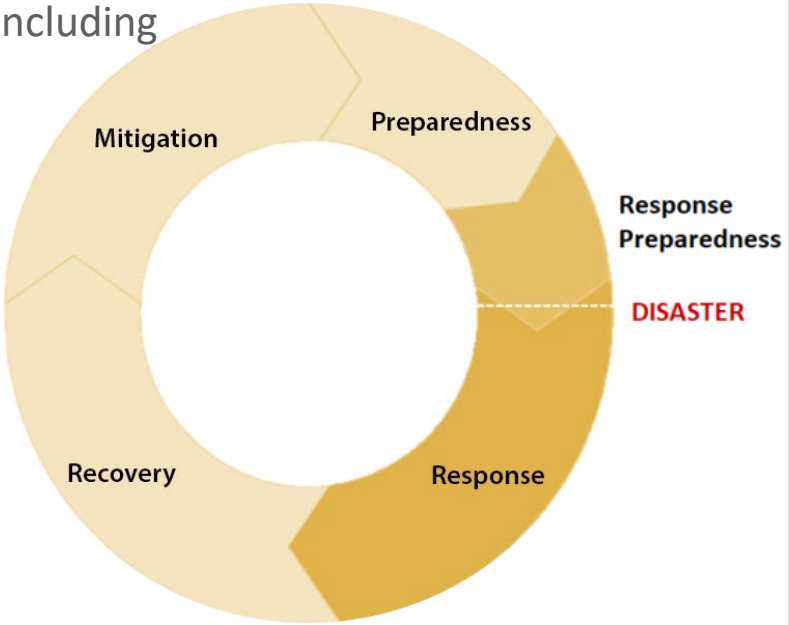
Public Health Emergency Preparedness (PHEP)

- **Capability 2: Community recovery**
  - Function 1 – Identify and monitor public health, medical, and mental/behavioral health system recovery needs
    - Priority 2 – Written plans should include how the health agency and other partners will conduct a community assessment and follow-up monitoring of public health, medical, and mental/behavioral health systems needs after an incident
- **Capability 7: Mass care**
  - Function 4 – Monitor mass care population health
    - Priority 2 – Written plans should include templates for disaster-surveillance forms, including Active Surveillance and Facility 24-hour Report forms

CASPER Objectives

- Preparedness
- **Response**
- Recovery
- Mitigation
- Other

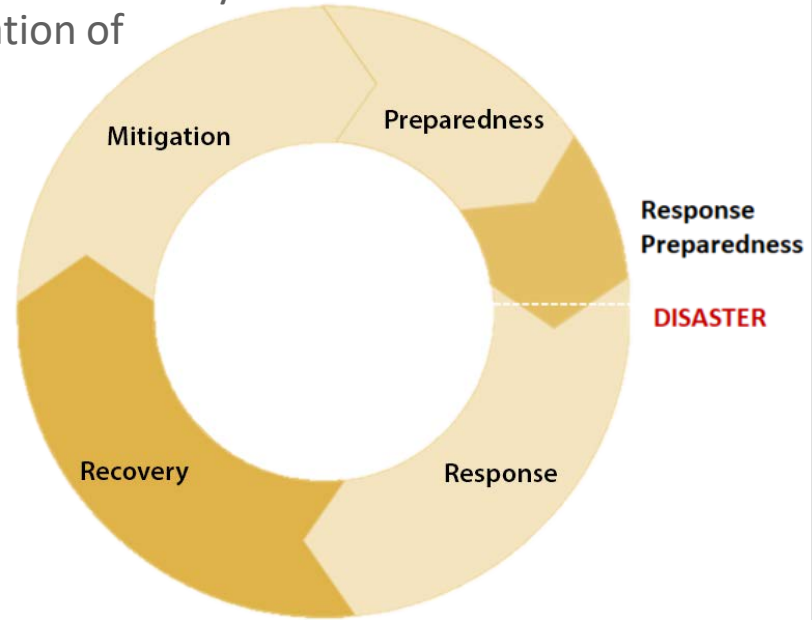
Current needs of the community, current health status including injuries or diseases, communications, messaging, etc.



CASPER Objectives

- Preparedness
- Response
- **Recovery**
- Mitigation
- Other

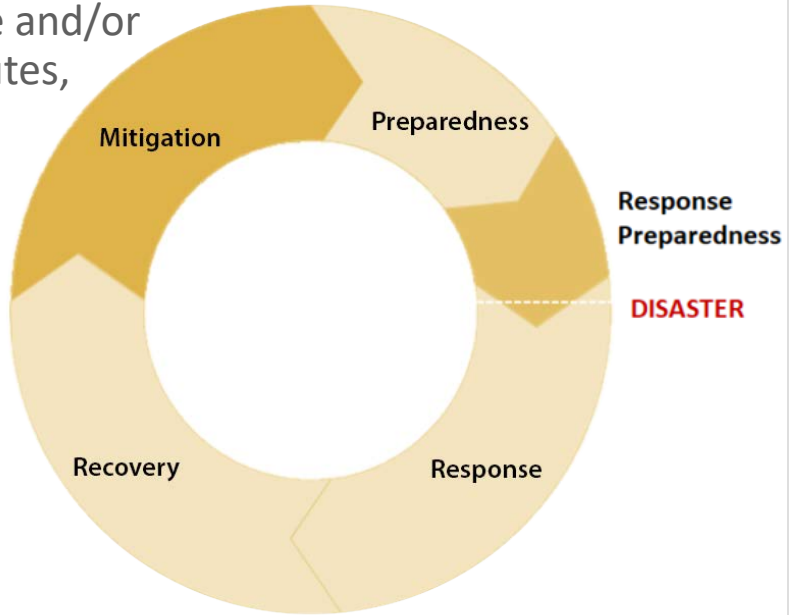
Ongoing needs of the community as it recovers, evaluation of response efforts



CASPER Objectives

- Preparedness
- Response
- Recovery
- **Mitigation**
- Other

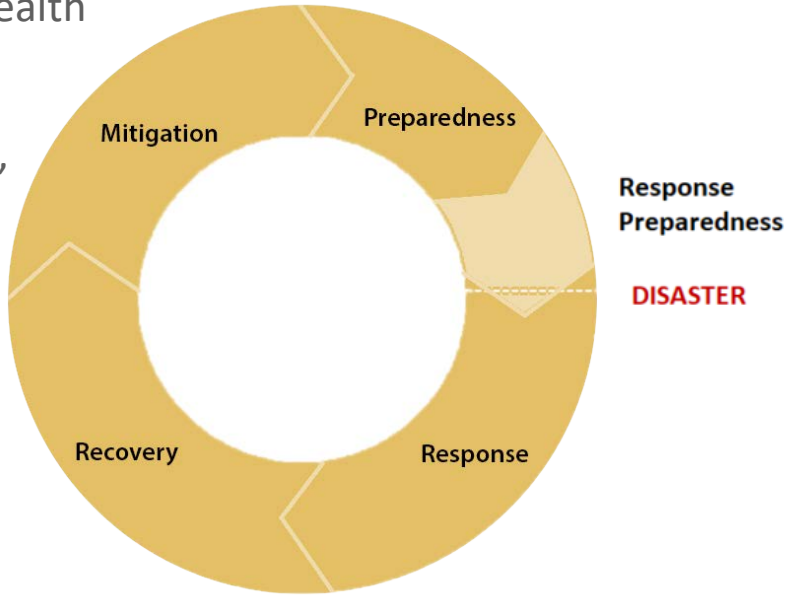
Evaluation of programs and responses, knowledge and/or opinions on new statutes, laws, proposals, etc.



CASPER Objectives

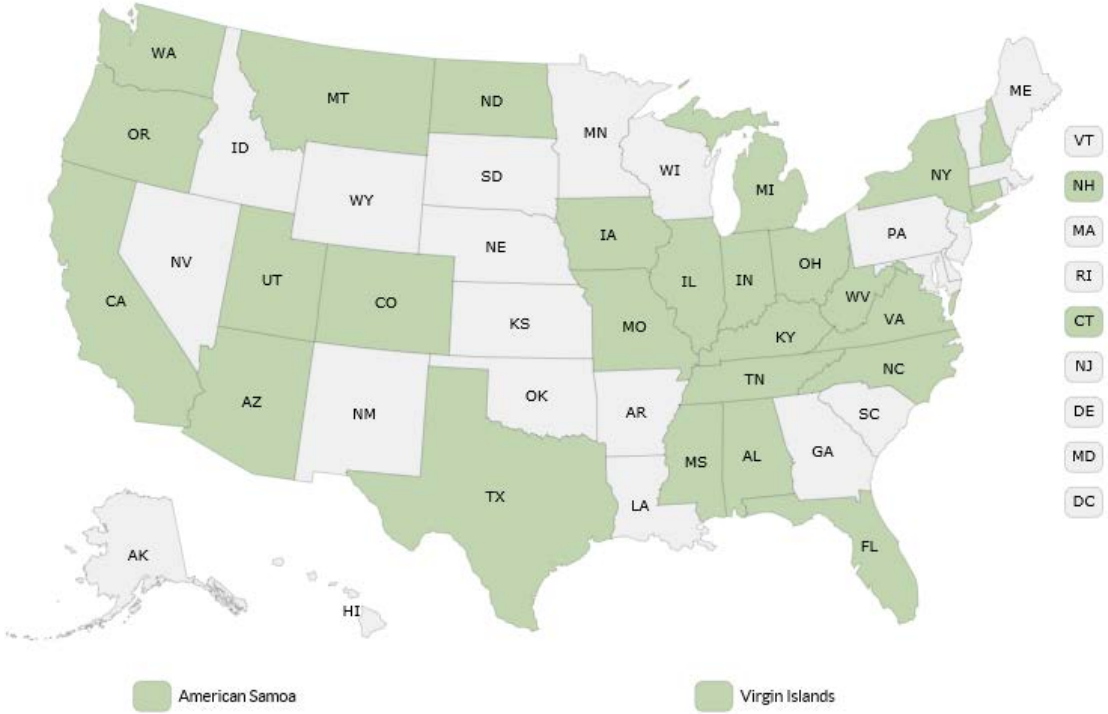
- Preparedness
- Response
- Recovery
- Mitigation
- Other

Current topics of interest (H1N1, opioids, Zika virus), health status of community, perceptions or knowledge of project, and more



Use of CASPER in the United States

http://www.cdc.gov/nceh/hsb/disaster/casper/casper_map.htm

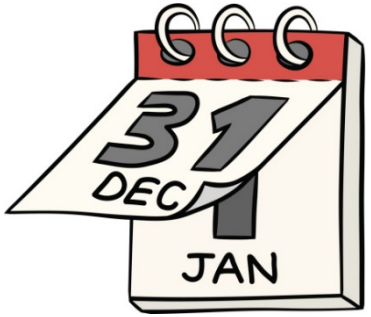


Impact of PAST CASPERs

Resources

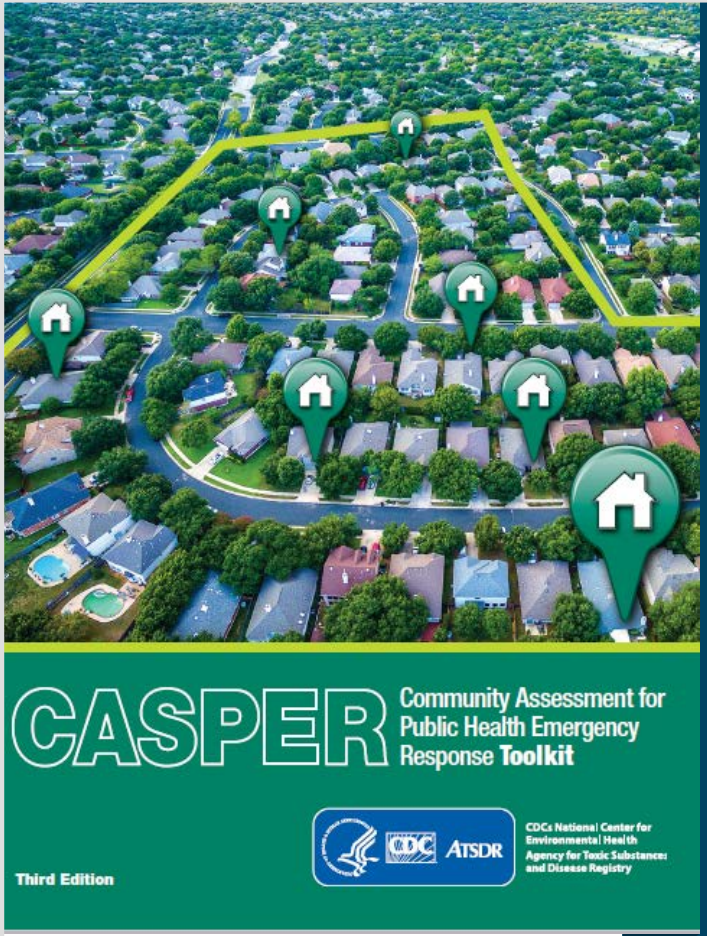
Support

Messaging



Future Planning

Provide valid, evidence-based data for decision-making

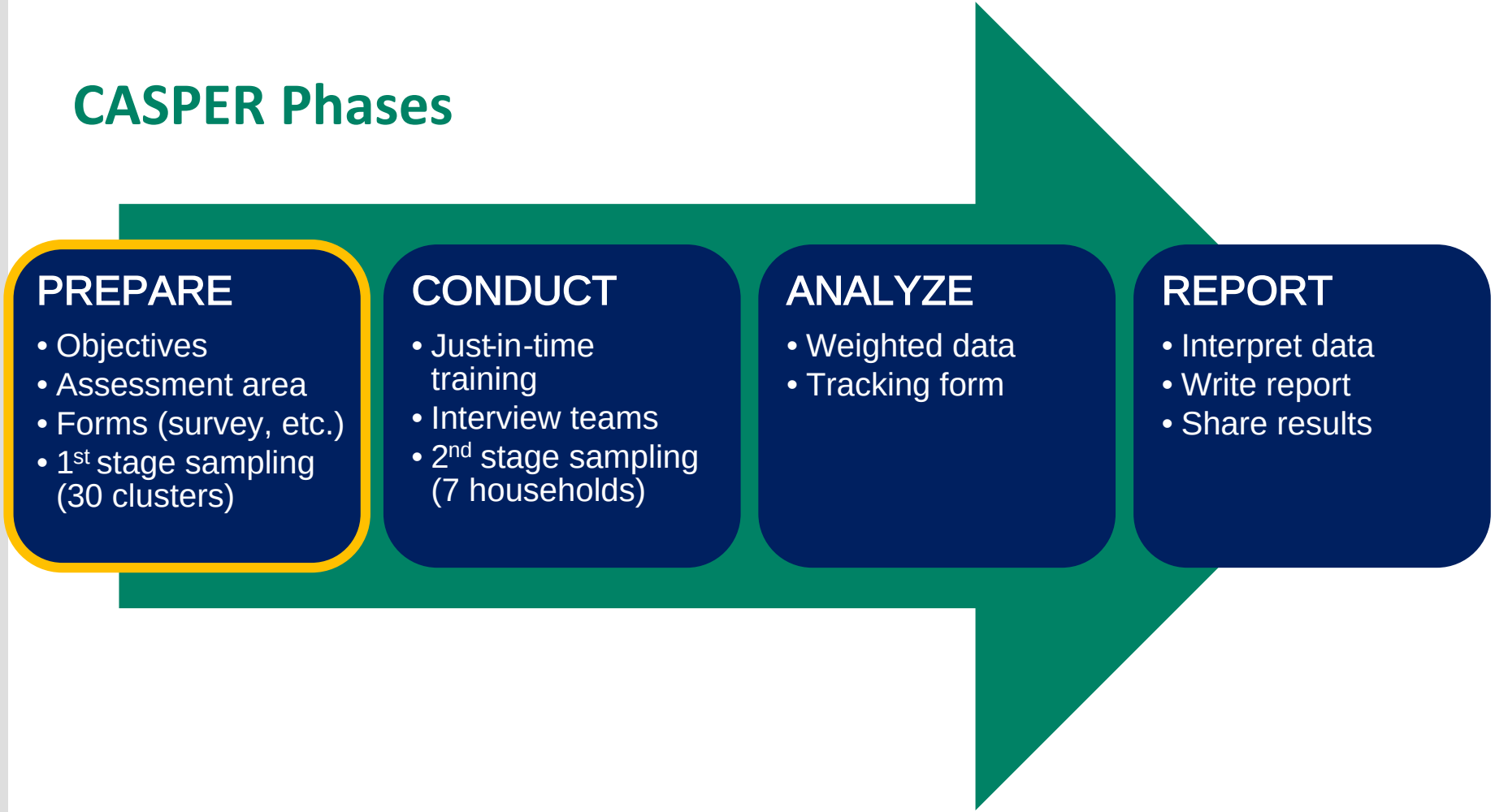


Requesting CASPER

- **Technical assistance from Atlanta**
  - Contact CDC Health Studies
  - Wide range of technical assistance provided (free!)
- **In-field assistance**
  - State epidemiologist, health officer, and/or tribal council leader must make official request to CDC Health Studies
  - Just ask!

Preparing for CASPER

CASPER Phases



Preparing for CASPER

Many questions need to be addressed prior to conducting a CASPER

Work with leadership and key stakeholders

Preparation

- Determine partners and stakeholders for questionnaire development and recommendation implementation
- Identify who will do first stage of sampling
- Receive approvals for assessment

Fieldwork

- Identify interview team members
- Find headquarter location and resources needed
- Secure funding

Analysis and reporting

- Identify who will analyze data and write the report
- Determine dissemination plan

CASPER Cost Considerations

Team members

Overtime

Volunteer incentives

Travel

Overnight hotel

Flight or mileage reimbursement

Transportation

Rental vehicles, government, or personal

Gas cards and/or mileage reimbursement

Logistics

Headquarters location

Materials

Printed materials

Public health materials

Go-kits

Community SWAG

What is your funding source?

Determine Objectives and Sampling Frame

- **Every CASPER will have different objectives**
  - Will help determine if CASPER is the appropriate methodology
  - Will help determine the sampling frame
  - Will focus the questionnaire

- **Sampling frame: All households within the selected geographic area**
  - Results descriptive of entire sampling frame
  - Determined by local official
  - May need to conduct more than one CASPER

Common Frames

Impact area

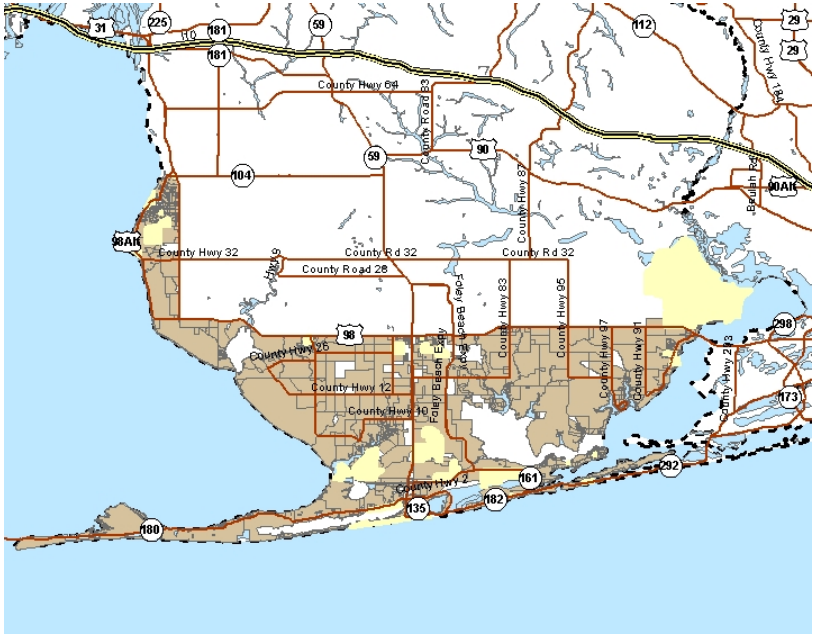
Most affected

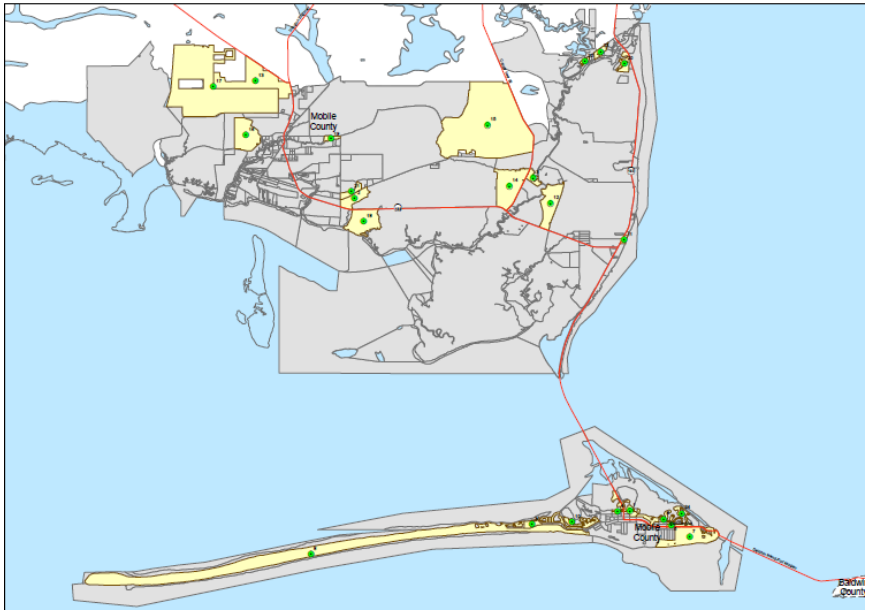
Least knowledge

High SVI

Political layout

Size



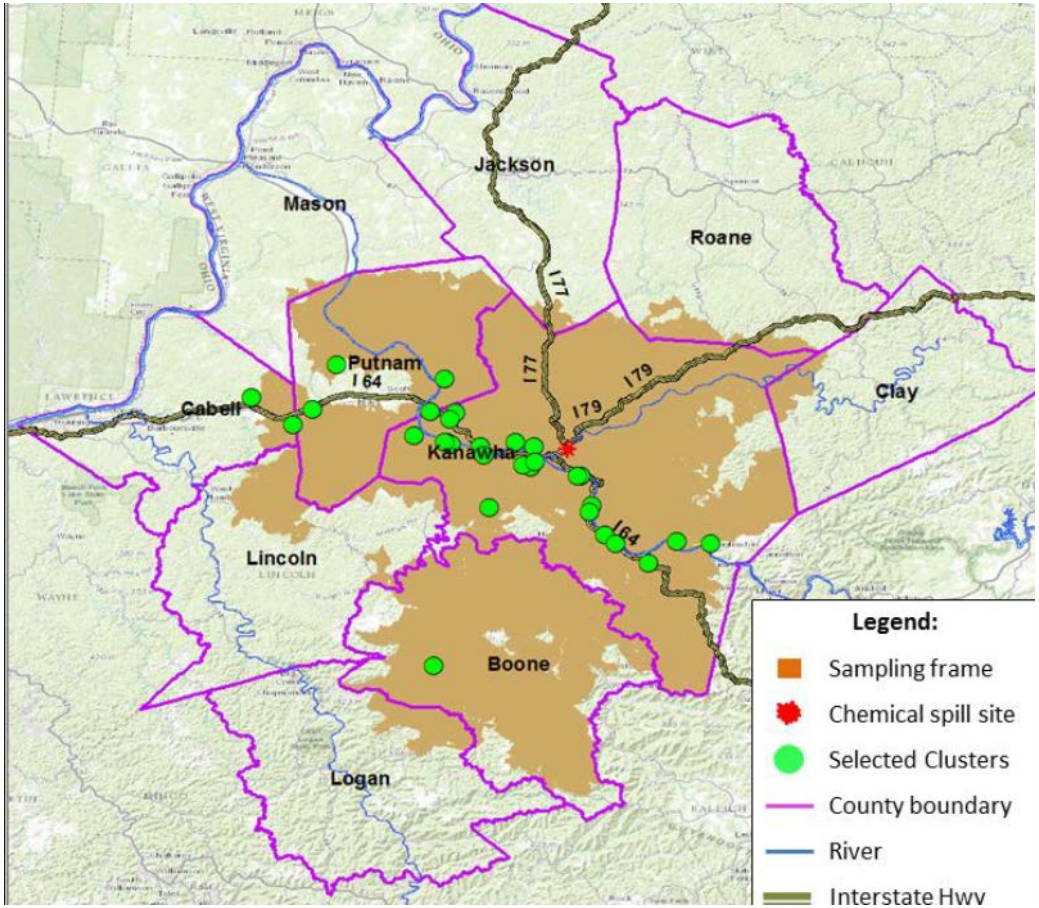


Sampling Frame Example: Alabama Oil Spill

Deepwater Horizon Oil Spill, Mobile and Baldwin Counties

Sampling Frame Example: Elk River Chemical Spill

- **“Do Not Use” order affected 10 counties in West Virginia**



Stage 1: Selecting Clusters

- **What is a cluster?**
  - Mutually exclusive
  - Known number of households
- **Census blocks are ideal clusters**
- **Select probability proportional to size**
  - This ensures that clusters with more households have a higher chance of being selected
  - Data are weighted to obtain estimates

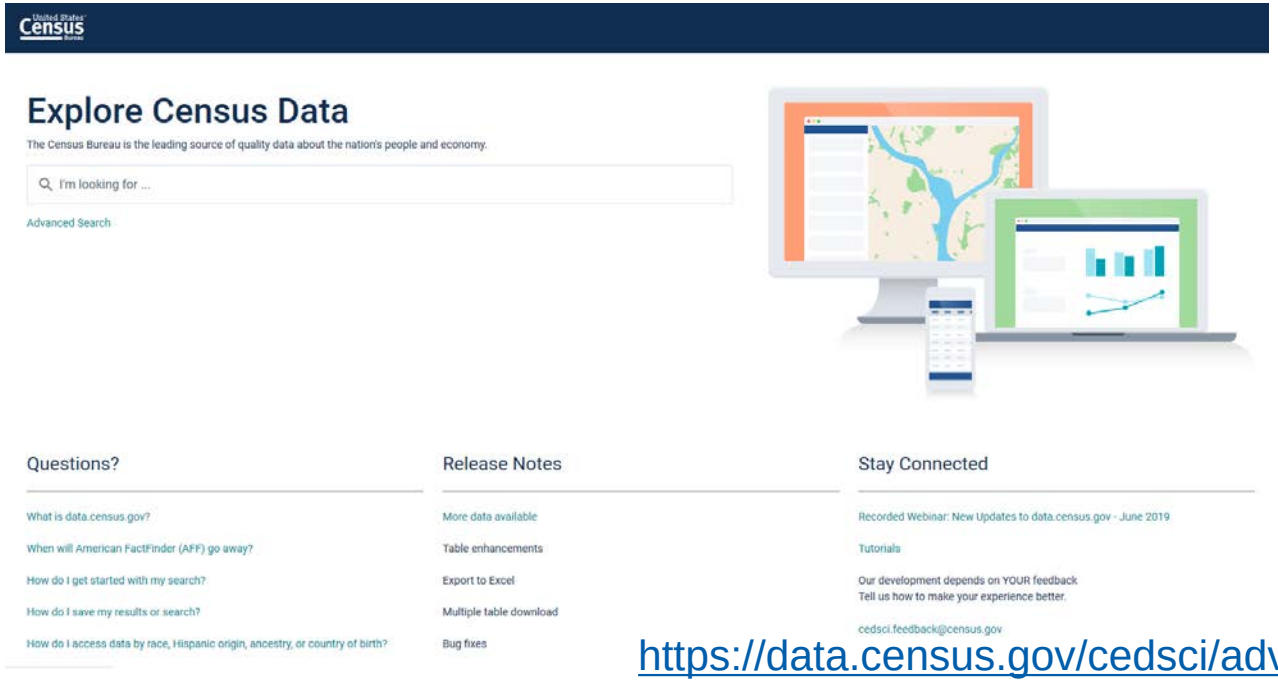
STEP-BY-STEP

1. List all blocks in the sampling frame with their corresponding number of households
2. "Number" each household
3. Randomly select 30 clusters using probability proportional to size *(number of households)*

   NOTE: some clusters may be chosen twice
4. Map the 30 clusters using mapping website or GIS software

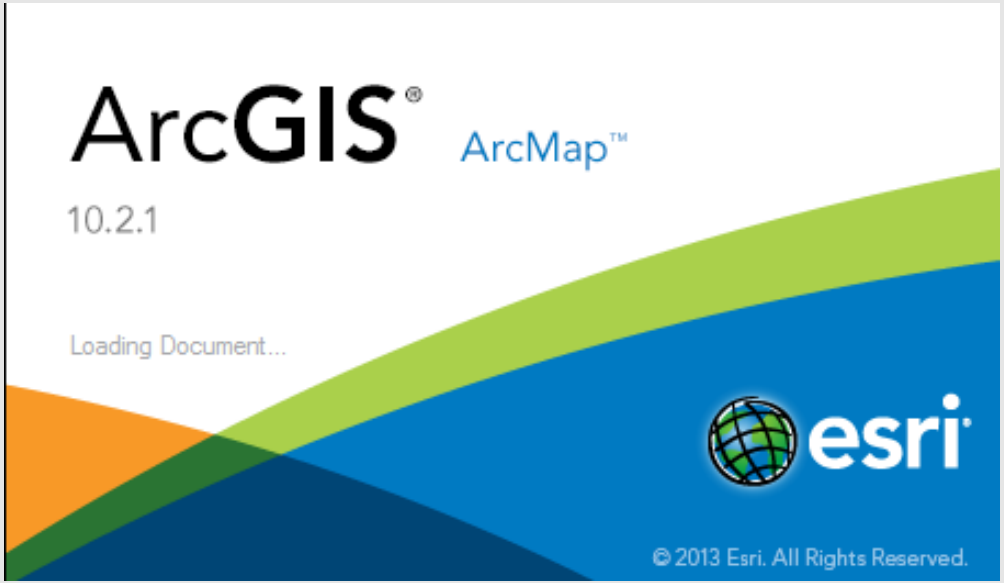
Census Data Website: Advanced Search

County Level Data



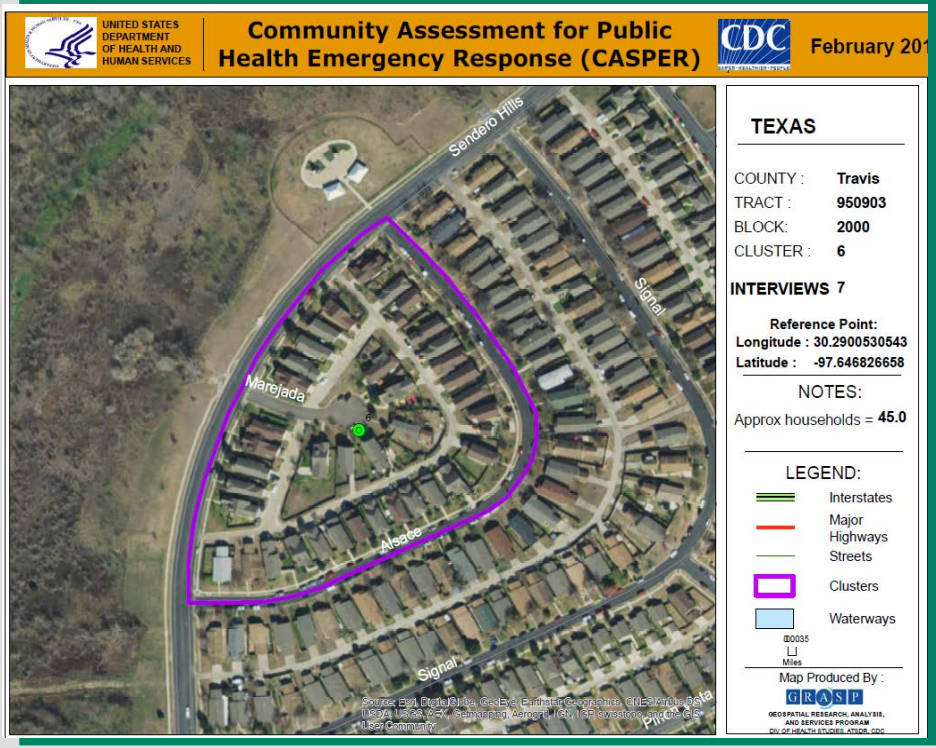
https://data.census.gov/cedsci/advanced?q=&g=

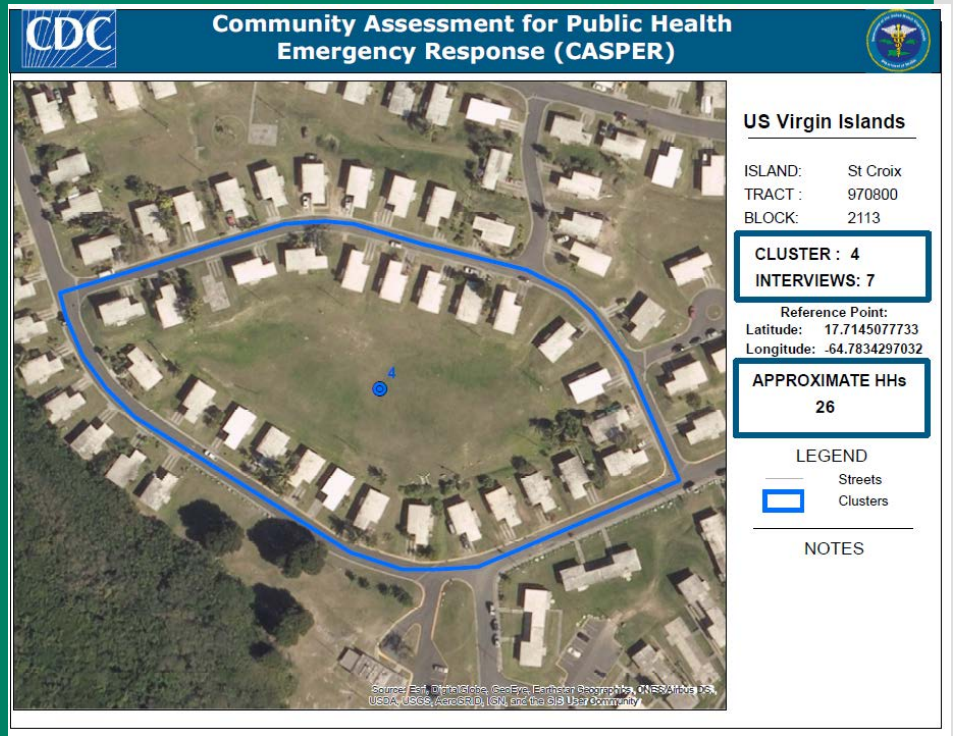
ArcGIS 10 CASPER Toolkit



- **Any sampling frame**
  - Not limited to county or groups of counties
  - Can use zip codes, landmarks, disaster track, shapefiles, etc.
  - Contact CASPER@cdc.gov for mapping assistance
- **Faster, less time-consuming**

Example CASPER Cluster Maps





CASPER Data Collection Forms

Consent

Questionnaire

Tracking

Referral

Public Health

CASPER Data Collection Forms

Consent

Questionnaire

Tracking

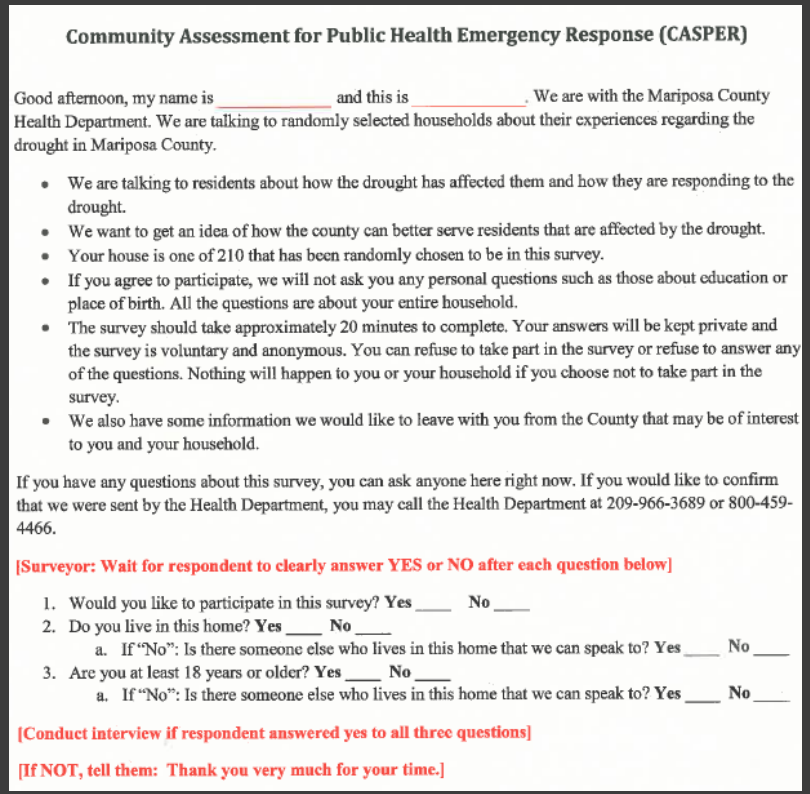
Referral

Public Health

Data Collection Options

Survey Opening: Consent Script

- **Introduction to the CASPER**
- **Verbal consent is sufficient**
  - No personal identifiers collected
- **Provide interviewee's with written letter**
- **Follow your local guidance (area IRB)**
  - Who you are
  - Why you are there
  - How long it will take
  - Explicit request for consent
  - Phone number for verification or questions



Community Assessment for Public Health Emergency Response (CASPER)

Good afternoon, my name is _____ and this is _____. We are with the Mariposa County Health Department. We are talking to randomly selected households about their experiences regarding the drought in Mariposa County.

- We are talking to residents about how the drought has affected them and how they are responding to the drought.
- We want to get an idea of how the county can better serve residents that are affected by the drought.
- Your house is one of 210 that has been randomly chosen to be in this survey.
- If you agree to participate, we will not ask you any personal questions such as those about education or place of birth. All the questions are about your entire household.
- The survey should take approximately 20 minutes to complete. Your answers will be kept private and the survey is voluntary and anonymous. You can refuse to take part in the survey or refuse to answer any of the questions. Nothing will happen to you or your household if you choose not to take part in the survey.
- We also have some information we would like to leave with you from the County that may be of interest to you and your household.

If you have any questions about this survey, you can ask anyone here right now. If you would like to confirm that we were sent by the Health Department, you may call the Health Department at 209-966-3689 or 800-459-4466.

[Surveyor: Wait for respondent to clearly answer YES or NO after each question below]

1. Would you like to participate in this survey? **Yes** ____ **No** ____
2. Do you live in this home? **Yes** ____ **No** ____
   a. If "No": Is there someone else who lives in this home that we can speak to? **Yes** ____ **No** ____
3. Are you at least 18 years or older? **Yes** ____ **No** ____
   a. If "No": Is there someone else who lives in this home that we can speak to? **Yes** ____ **No** ____

[Conduct interview if respondent answered yes to all three questions]

[If NOT, tell them: Thank you very much for your time.]

Developing the CASPER Questionnaire

- **Determine the scope and nature of the questions**
  - WHY ask? What ACTION can be taken?
  - What do you already know?
- **Identify the critical information needed**
  - Is the question necessary?
  - How will the data be used?
    - Outline basic analysis
- **Questionnaire design**
  - Keep questionnaires short
  - Closed-ended questions preferred
  - Sensitive information later

Pre-Existing Questions for CASPER

CASPER resources

- CASPER toolkit
- CDC CASPER Website - http://www.cdc.gov/nceh/hsb/disaster/casper/
- Previously used questionnaires (just ask!)
- CSTE Disaster Epidemiology Subcommittee
- Disaster Epidemiology Community of Practice (DECoP)
- NIH Disaster Research Response Project (DR2)

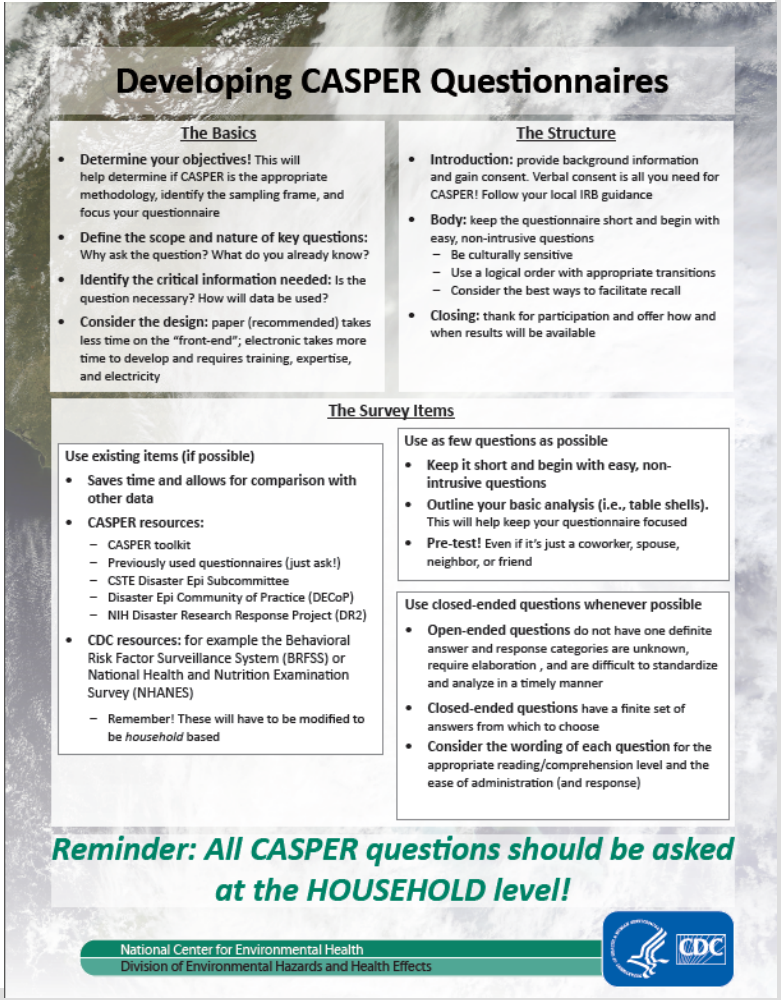
CDC resources*

- Behavioral Risk Factor Surveillance System (BRFSS)
- National Health and Nutrition Examination Survey (NHANES)

**Any individual questions should be changed to household*

Developing Questions

- Use as few questions as possible
- Consider the best ways to facilitate recall
- Determine who sees the questionnaire prior to field implementation
- Pilot test for acceptability, comprehension, and appropriate order
  - Develop interviewer instructions
  - Determine average completion time
  - Incorporate comments on wording, content, and format



Example: Questionnaires

Hurricane Ike Community Assessment for Public Health Emergency Response Questionnaire —Liberty, County, Texas, September 2008

Date:	County:	Cluster:	Survey No:	Blocks:

Address: | **Interviewer initials:**

1. Type of Structure: Single family house / Multiple units (e.g., duplex, apartment) / Mobile home

2. Do you feel your residence is safe to live in since the hurricane? Y N D/K
If no, why? _____

Do you feel secure in your area since the hurricane? Y N D/K

3. How many people lived in this residence before the event? _____

4. How many people slept here last night? _____
a). How many were less than 2 years younger? _____
b). How many were 65 years or older? _____

5. Was anyone **injured** in this residence due to or since the hurricane? Y N D/K
If yes, were there:
a). Cuts abrasion, puncture wounds requiring medical attention? Y N D/K
b). Strain/sprain Y N D/K
c). Animal bites: Y N D/K
d). Broken bones: Y N D/K
e). Head trauma: Y N D/K
f). Increase in insect bites/stings Y N D/K
g). Other: _____:
If "yes" Describe:

8. Is everyone in this residence getting the medication they need since the event? Y N D/K

9. Does anyone in the residence now require medical care? Y N D/K

10. Are the effects of the hurricane preventing anyone in the residence from obtaining medical care? Y N D/K
If yes, describe: _____

11. Do you have running water? Y N D/K

12. Do you have safe drinking water? Y N D/K
If yes, source: ___Well ___Public ___Bottled ___No drinking water

13. Do you have access to enough food for everyone in the residence for the next three days? Y N D/K

14. Do you have electricity/power? Y N D/K
If yes, source: ___Utility ___Generator
If GENERATOR, where is it located?
___*Indoor* ___*Garage/Shed* ___*Near door/window*
___*Outside* ___*Carport* ___*Other*

15. Are you cooking inside on a charcoal grill or camp stove?
If yes, where?
___*Indoor* ___*Garage/Shed* ___*Near door/window*
___*Outside* ___*Carport* ___*Other*

16. Do you have a working toilet? Y N D/K N/H

DRAFT

North Dakota Winter Weather Warning CASPER Questionnaire – April 2012

To be completed by team BEFORE the interview

Q1. Date (MM/DD/YY):	**Q4.** Team Member Initials:
Q2. Cluster Number:	**Q5.** Team Number:
Q3. Survey Number:	**Q6.** □ Urban □ Rural

The National Weather Service is responsible for issuing winter weather warnings. These warnings may be heard through various means, such as, television, radio, or internet. First, we would like to ask you some questions about winter weather warnings issued by the National Weather Service.

Q7a. Have you ever heard an "extreme cold warning" for your area? □ Yes □ No □ DK □ Refused
Q7b. If ***YES***, after hearing the "extreme cold warning", did you take ***ANY*** protective action? For example, wearing extra clothing or protecting pets or livestock? □ Yes □ No □ DK □ Refused

Q8a. Have you ever heard a "wind chill warning" for your area? □ Yes □ No □ DK □ Refused
Q8b. If ***YES***, after hearing the "wind chill warning", did you take ***ANY*** protective action? For example, wearing extra clothing or protecting pets or livestock? □ Yes □ No □ DK □ Refused

Now we are going to ask you about extreme cold events. An extreme cold event is an extended period of time of temperatures or wind chill of at least 30 degrees below zero over a large geographical area.

Q9. Did anyone in your household take any of the following actions immediately before or during an extreme cold event?
Wore extra clothing? □ Yes □ No □ DK
Stayed indoors? □ Yes □ No □ DK
Ensured alternative forms of home heating were available or in working order (in addition to primary heating)? □ Yes □ No □ DK
Canceled or adjusted scheduled activities? □ Yes □ No □ DK
Changed travel plans? □ Yes □ No □ DK
Ensured vehicles were in good working order for the extreme cold? □ Yes □ No □ DK
Protected livestock or pets? □ Yes □ No □ DK
Is there anything else you did to protect your household for an extreme cold event? □ Yes, specify: _____ □ No □ DK

Q10. What is your household's ***MAIN*** source of information for severe winter weather conditions? *(read responses, check only one)*
□ TV □ NOAA weather radio □ Text message □ Local newspaper □ Commercial radio station
□ Neighbor/friend/family/word of mouth □ Internet □ Other, _____ □ None □ DK □ Refused

Q11. If you heard an extreme cold warning, what would you be concerned about? Would you be concerned about…
Health issues (e.g., frostbite, hypothermia)? □ Yes □ No □ DK
Damage to exposed pipes? □ Yes □ No □ DK
Loss of power? □ Yes □ No □ DK
Threat to animals (pets, livestock)? □ Yes □ No □ DK
Automobile not starting? □ Yes □ No □ DK
School/Business closings? □ Yes □ No □ DK
Is there anything else that is particularly concerning to you about an extreme cold event? _____
□ None □ DK □ Refused

Q12. How much warning time would you like before an extreme cold event? *(do not read responses)*
□ Less than 6 hours □ 6 to <24 hours □ 1 to 2 days □ 3 or more days □ DK □ Refused

Q13. How satisfied are you with the National Weather Service's winter warnings and forecasts in terms of its:
Accuracy □ Very satisfied □ Satisfied □ Neither sat. nor dissat. □ Dissatisfied □ Very dissatisfied □ DK □ Refused
Timeliness □ Very satisfied □ Satisfied □ Neither sat. nor dissat. □ Dissatisfied □ Very dissatisfied □ DK □ Refused
Reliability □ Very satisfied □ Satisfied □ Neither sat. nor dissat. □ Dissatisfied □ Very dissatisfied □ DK □ Refused
Language used □ Very satisfied □ Satisfied □ Neither sat. nor dissat. □ Dissatisfied □ Very dissatisfied □ DK □ Refused

Now, we would like to ask you some questions about how your household might prepare for a disaster or emergency.

Q14. What is your household's ***MAIN*** source of information regarding disaster or emergency events? *(do not read, check only one)*
□ TV □ Radio □ Text message □ Automated call (e.g., reverse 911) □ Internet □ Local newspaper □ Poster/flyer
□ Neighbor/friend/family/word of mouth □ Church or other groups □ Other, _____ □ DK □ Refused

Q15. Does your household have any of the following emergency plans?
Emergency communication plan such as a list of numbers and designated out-of-town contact □ Yes □ No □ DK
Designated meeting place immediately outside your home or close by in your neighborhood □ Yes □ No □ DK
Designated meeting place outside of your neighborhood in case you cannot return home □ Yes □ No □ DK
Copies of important documents in a water proof container □ Yes □ No □ DK
Multiple routes away from your home in case evacuation is necessary □ Yes □ No □ DK

Q16. If public authorities announced a **mandatory** evacuation from your community due to a large-scale disaster or emergency, would your household evacuate? □ Yes □ No □ DK □ Refused

Q17. What would be a reason that might prevent you from evacuating if asked to do so? *(read responses, check one)*
□ Lack of transportation □ Lack of trust in public officials □ Concern about leaving property
□ Nowhere to go □ Concern about personal safety □ Concern about leaving livestock or pets
□ Concern about traffic jams □ Inconvenient/expensive □ Health problems (e.g., could not be moved)
□ Other_____ □ DK □ Refused

Continue on following page…

Question Wording: Example I

- Have you ever used drugs? ___Yes ___ No

Question Wording: Example I

- Have you ever used drugs? ___Yes ___ No

- Have you or a member of your household ever used any of the following *(check all that apply)*

___ Alcohol

___ Marijuana

___ Methamphetamine (speed, crystal meth)

___ None

___ Don't Know

___ Refused

Question Wording: Example II

- Does your household plan to move and buy a house within the next year? ___Yes ___ No

Question Wording: Example II

- Does your household plan to move and buy a house within the next year? ___Yes ___No

- Does your household plan to move within the next year?

___Yes ___No ___DK ___Ref

- Does your household plan to buy a house within the next year?

___Yes ___No ___DK ___Ref

Question Wording: Example III

- Does your household not have adequate drinking water for the next 3 days? ___Yes ___No

Question Wording: Example III

- Does your household not have adequate drinking water for the next 3 days? ___ Yes ___ No

- Does your household have adequate drinking water for the next 3 days (1 gallon/person/day)? ___ Yes ___ No ___ DK ___ Ref

Question Wording: Example IV

- Have you ever been diagnosed with herpes zoster? ___Yes ___No

Question Wording: Example IV

- Have you ever been diagnosed with herpes zoster? ___Yes ___ No

- Has a doctor or other healthcare provider ever told you or a member of your household that you had shingles? ___Yes ___ No ___ DK ___ Ref

Question Wording: Example V

- How many times have your or members of your household visited a doctor in your lifetime? _____

Question Wording: Example V

- How many times have your or members of your household visited a doctor in your lifetime? _____

- Have you or a member of your household visited a doctor or other healthcare provider in the last 6 months?

___ Yes ___ No ___ DK ___ Ref

Question Wording: Example VI

- Doesn't your household use TV as it's main source of information regarding a disaster or emergency event? ___Yes ___ No

Question Wording: Example VI

- Doesn't your household use TV as it's main source of information regarding a disaster or emergency event? ___ Yes ___ No

- What is your household's main source of information regarding a disaster or emergency event? *(select one)*

___ TV

___ Radio

___ Text message

___ Internet (not including social media

___ Social media

___ Word of mouth

___ Local newspaper

___ Other, _____

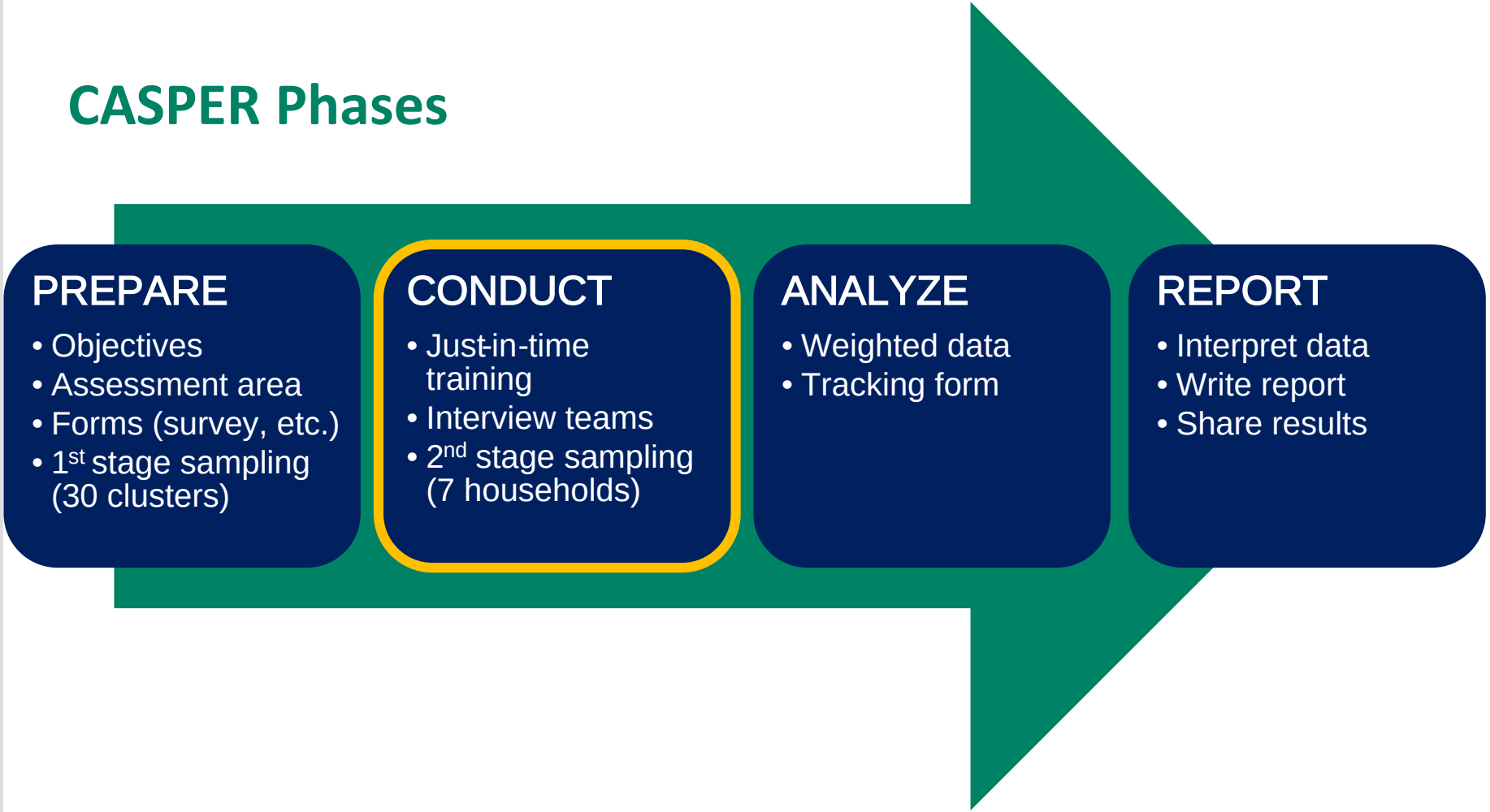
___ DK ___ Ref

Standardization Procedures

- **Standardization increases reliability of data**
- **Tips for standardization**
  - Ask the question in the *same order* with *exact wording*
  - Don't prefill questions or finish respondents sentences
  - Read the entire question
  - Record answer verbatim
- **Departures from standardization**
  - Changing wording = asking different questions
  - If respondents have difficulty….pause!
  - Document any departures

Conducting CASPER in the Field

CASPER Phases



CASPER Timing

Public Notice of CASPER

- Local police department
- Local media
  - Press release, official webpage, social media such as Facebook or twitter

CLASSIFIEDS: CARS JOBS HOMES APARTMENTS CLASSIFIEDS SHOPPING E-CIRCULARS DAILY DEALS ADVERTISE SUBSCRIBE

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A GANNETT COMPANY

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Survey will check to see whether Oakland County is prepared for a disaster

11:43 PM, Sep 8, 2012

Recommend 7 people recommend this. Sign Up to see what your friends recommend.

Recommend 7 Tweet 1 +1 0 Pin it

Written by
Bill Laitner
Detroit Free Press Staff Writer

FILED UNDER
Local News
Oakland County

Wearing orange vests and ID badges, workers for the Oakland County Health Division plan to go door to door with state and federal health workers Monday and Tuesday to see whether metro Detroiters could ride out a disaster.

The goal is to gauge levels of "emergency preparedness," Oakland County Health Officer Kathleen Forzley said.

Although other regions are at greater risk for major disasters -- Michigan is well out of hurricane range, for example -- state and Oakland County health officials said Michiganders shouldn't get complacent

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Lake County Public Health officials to conduct CASPER survey to assess emergency preparedness

MONDAY, 19 NOVEMBER 2012 02:10 | ELIZABETH LARSON

LAKE COUNTY, Calif. – Lake County Public Health officials are overseeing a first-of-its-kind survey in Lake County that will look at how prepared local residents are for potential disasters.

Later this month the Community Assessment for Public Health Emergency Response – or CASPER – survey will take place in neighborhoods around Lake County, according to Lake County Public Health Office Dr. Karen Tait.

To the best of Tait's knowledge, Lake County is the first area in California to use the CASPER survey.

"It's actually something that we're doing voluntarily," she said.

The Centers for Disease Control and Prevention's Division of Environmental Hazards and Health Effects, Health Studies Branch developed CASPER to enable government at all levels to rapidly assess a community's health needs after a disaster, as well as to measure household preparedness for disasters or emergencies.

In Lake County's case, Tait said it's meant to measure preparedness and help her staff know how to best respond in times of disaster to help meet the community's needs.

Tait, who is overseeing the local work, said that among its many benefits, the CASPER survey is "a rare opportunity for local, state and federal agencies to coordinate at the field level."

Such work often is challenging and messy in real disasters, she pointed out, so it's a good practice exercise.

Coming as it does following a summer of wildland fires that threatened Lake County communities, "It's really perfect timing," she said.

The survey will take place Monday, Nov. 26, through Wednesday, Nov. 28, in Nice, Lucerne, Clearlake Oaks, Clearlake, Clearlake Park, Middletown, Hidden Valley Lake, Cobb, Lakeport and Kelseyville, according to Tait.

Spring Valley, which Tait said the county had planned to survey before August's Wye Fire, will be the focus of a separate and specific CASPER survey.

Fifteen two-member survey teams will visit neighborhoods, going door to door, looking to locate seven respondent households within each census block. Tait said team members will have signage on their cars and will carry identification cards.

She said survey team members will include epidemiologists from neighboring counties, state public health personnel, public health students and some of the county's own public health nurses.

They will not be collecting any personal information and will only conduct the work during the daytime, Tait said.

Tait said that, at the same time, there will be teams working in some neighborhoods to conduct air quality measurements in order to find evidence of geothermal venting, a phenomenon that's been seen in parts of the county.

By Friday, Nov. 30, Tait anticipates having some initial analysis completed on the results. "It should be fairly fast."

How the process works

Tait and her staff began planning for the survey in June. "It's been a pretty intensive planing process for us," she said, adding that they're also getting a lot out of it in terms of experience and information.

Lake County Public Health is offering much more local support than CDC is accustomed to, said Tait. "We decided to make it a kind of logistical exercise for ourselves."

Tait said the CASPER process involves choosing 30 census tracts within Lake County that are weighted toward more populated areas. Seven houses within each tract are then selected at random.

In Spring Valley, where a separate CASPER is being undertaken, 14 households will be surveyed. Tait said

Just-In-Time (JIT) Training

~3 hours of training	Items to cover	Familiarize teams with data collection instruments
• One day in advance OR morning of first day of the CASPER • Supplement to CASPER preparedness training	• Background and objectives • Assessment methodology • Roles, responsibilities, logistics	• Questionnaire, tracking form, etc. • Any technology (tablets, GPS)

CASPER Teams

- **10+ teams of two interviewers**
  - 15 or more is ideal
- **Team composition**
  - Local person
  - Level of experience
  - Diverse (gender, age, race, etc.)
- **1-2 headquarters staff**
  - Coordinate field teams and safety
  - Answer field team questions
  - Begin data entry

Who will be your teams?

Department staff

- Epidemiologists
- Contractors
- Fellows

Other HD staff

- Mental health
- Surveillance nurses
- PHEP coordinators

Students

- Local colleges and universities
- Michigan

Volunteers*

- Medical Reserve Corps
- AmeriCorps
- Local organizations
- Community members
- Public Health Student Action Team (PHAST)

**Consider a small incentive such as a $20 gift card*

Safety Briefing

- **Watch out for domestic and wild animals**
- **No trespassing vs no solicitation**
- **Situation-specific hazards**
- **Personal safety**
  - Entering households
  - Knowing limitations
  - Drinking plenty of water

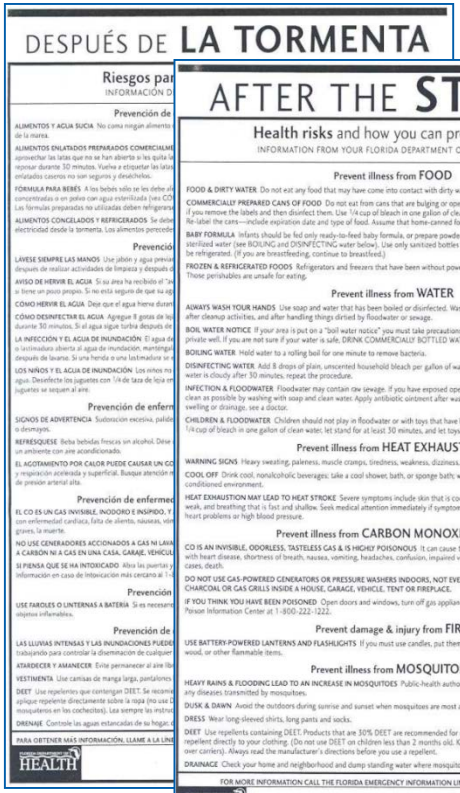
Supplies and Materials

Field Teams

- CASPER Go-Kits
- Sufficient quantity of all forms and office supplies
- T-shirts, ID/authorization
- Transportation
- Wireless communication devices
- Car chargers for all devices
- Snacks, water, first aid

Headquarters

- Laptops preloaded with EpiInfo, SAS, or other statistical package
- Team/equipment tracking forms
- Base communication
- Large map of the entire sampling area including clusters
- Internet access (helpful)


DESPUÉS DE LA TORMENTA

Riesgos par

INFORMACIÓN D

Prevención de

ALIMENTOS Y AGUA SUCIA No coma ningún alimento

ALIMENTOS ENLATADOS PREPARADOS COMERCIALME

reposar durante 30 minutos. Vuelva a etiquetar las latas

enlatados caseros no son seguros y desalchelos.

FÓRMULA PARA BEBÉS A los bebés sólo se les debe al

electricidad desde la tormenta. Los alimentos perecede

Prevenció

LÁVESE SIEMPRE LAS MANOS Use jabón y agua previa

AVISO DE HERVIR EL AGUA Si su área ha recibido el "A

CÓMO HERVIR EL AGUA Deje que el agua hierva duran

CÓMO DESINFECTAR EL AGUA Agregue 8 gotas de la

LA INFECCIÓN Y EL ACUA DE INUNDACIÓN El agua de

DESPUÉS DE LA TORMENTA

Riesgos para la salud y cómo puede protegerse

INFORMACIÓN DE LA AGENCIA DE SALUD PÚBLICA DE LA FLORIDA

Prevención de enfermedades

SIGNOS DE ADVERTENCIA Sudoración excesiva, palide

REFRESQUESE Beba bebidas frescas sin alcohol. Dése

EL AGOTAMIENTO POR CALOR PUEDE CAUSAR UN CO

Prevención de enfermedades

EL CO ES UN GAS INVISIBLE, INODORO E INSÍPIDO,

NO USE GENERADORES ACCIONADOS A GAS NI LAVA

SI PIENSA QUE SE HA INTOXICADO Abra las puertas y

Prevención

USE FAROLES O LINTERNAS A BATERÍA Si es necesario

Prevención de

ATARDECER Y AMANECER Evite permanecer al aire lib

VESTIMENTA Use camisas de manga larga, pantalones

DRENAJE Controle las aguas estancadas de su hogar.

PARA OBTENER MÁS INFORMACIÓN, LLAME A LA LÍN

HEALTH

AFTER THE ST

Health risks and how you can prev

INFORMATION FROM YOUR FLORIDA DEPARTMENT OF

Prevent illness from FOOD

FOOD & DIRTY WATER Do not eat any food that may have come into contact with dirty water

COMMERCIALLY PREPARED CANS OF FOOD Do not eat from cans that are bulging or opened

Re-label the cans—include expiration date and type of food. Assume that home-canned foods

BABY FORMULA Infants should be fed only ready-to-feed baby formula, or prepare powdered

sterilized water (see BOILING and DISINFECTING water below). Use only sanitized bottles and

be refrigerated. (If you are breastfeeding, continue to breastfeed.)

FROZEN & REFRIGERATED FOODS Refrigerators and freezers that have been without power s

Those perishables are unsafe for eating.

Prevent illness from WATER

ALWAYS WASH YOUR HANDS Use soap and water that has been boiled or disinfected. Wash y

after cleanup activities, and after handling things dirtied by floodwater or sewage.

BOIL WATER NOTICE If your area is put on a "boil water notice" you must take precautions ag

private well. If you are not sure if your water is safe, DRINK COMMERCIALLY BOTTLED WATER.

BOILING WATER Hold water to a rolling boil for one minute to remove bacteria.

DISINFECTING WATER Add 8 drops of plain, unscented household bleach per gallon of water.

water is cloudy after 30 minutes, repeat the procedure.

INFECTION & FLOODWATER Floodwater may contain raw sewage. If you have exposed open c

clean as possible by washing with soap and clean water. Apply antibiotic ointment after washing

swelling or drainage, see a doctor.

CHILDREN & FLOODWATER Children should not play in floodwater or with toys that have been

1/4-cup of bleach in one gallon of clean water, let stand for at least 30 minutes, and let toys air

Prevent illness from HEAT EXHAUSTI

WARNING SIGNS Heavy sweating, paleness, muscle cramps, tiredness, weakness, dizziness, hea

COOL OFF Drink cool, nonalcoholic beverages; take a cool shower, bath, or sponge bath; wear

conditioned environment.

HEAT EXHAUSTION MAY LEAD TO HEAT STROKE Severe symptoms include skin that is cool a

weak, and breathing that is fast and shallow. Seek medical attention immediately if symptoms le

heart problems or high blood pressure.

Prevent illness from CARBON MONOXID

CO IS AN INVISIBLE, ODORLESS, TASTELESS GAS & IS HIGHLY POISONOUS It can cause tired

with heart disease, shortness of breath, nausea, vomiting, headaches, confusion, impaired visio

cases, death.

DO NOT USE GAS-POWERED GENERATORS OR PRESSURE WASHERS INDOORS, NOT EVEN IN

CHARCOAL OR GAS GRILLS INSIDE A HOUSE, GARAGE, VEHICLE, TENT OR FIREPLACE.

IF YOU THINK YOU HAVE BEEN POISONED Open doors and windows, turn off gas appliances

Poison Information Center at 1-800-222-1222.

Prevent damage & injury from FIRE

USE BATTERY-POWERED LANTERNS AND FLASHLIGHTS If you must use candles, put them in safe holders away from curtains, paper,

wood, or other flammable items.

Prevent illness from MOSQUITOES

HEAVY RAINS & FLOODING LEAD TO AN INCREASE IN MOSQUITOES Public-health authorities are working to control the spread of

any diseases transmitted by mosquitoes.

DUSK & DAWN Avoid the outdoors during sunrise and sunset when mosquitoes are most active.

DRESS Wear long-sleeved shirts, long pants and socks.

DEET Use repellents containing DEET. Products that are 30% DEET are recommended for most situations. For more protection, apply

repellent directly to your clothing. (Do not use DEET on children less than 2 months old. Keep infants indoors and use mosquito netting

over carriers). Always read the manufacturer's directions before you use a repellent.

DRAINAGE Check your home and neighborhood and dump standing water where mosquitoes can lay their eggs.

FOR MORE INFORMATION CALL THE FLORIDA EMERGENCY INFORMATION LINE 1-800-342-3557

HEALTH

Crook County Public Health Emergency Preparedness

Weekly Steps for Emergency Preparedness

A budget friendly plan to build a disaster supply kit in 24 weeks.

Week 23

☐ 1 box facial tissues.
☐ Feminine hygiene products.

TO DO:
Find out about your workplace disaster plan.

Week 24

☐ Extra batteries for radio
☐ Flashlight.
☐ Dust masks
☐ Sawing kit

TO DO:
Mark your calendar to check your Emergency Supply Kit in 6 months!

Week 17

☐ 1 gallon juice.
☐ 1 can fruit.*
☐ Garbage bags.

TO DO:
Arrange for a friend or neighbor to help your children if you are not able to respond.

Week 18

☐ Paper cups.

Special Items Your Family May N

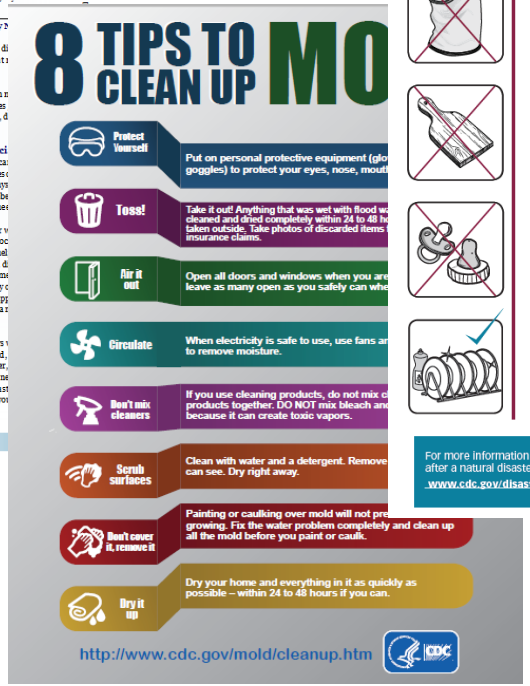
Infant/Toddler Items: Formula, di
tles, pacifiers; powdered milk, infant
tions, toys.

Adult/Senior Items: Prescription
tions, vision care items (extra glasses
lenses & supplies) diabetic supplies, d
needs, hearing aid batteries.

Persons with Disabilities / Speci
Communication board, specialized ca
(oxygen, catheters, etc.), a list of pres
medications (include dosage and phys
name) and the type and model numbe
quired medical devices, portable whe

Wear a medical alert ID and register
office of emergency services or the loc
partment for assistance so needed hel
provided. If you are dependent on a di
chine or other life-sustaining equipme
ment, know location and availability
than one facility. Make sure your supp
work knows your information and ca
any devices you need.

Pet Items: Your pets should always
lar and ID / rabies tags. Include food,
bowls, leash or harness, crate/carrier,
and vaccination records, sanitation ne
litter and litter box, newspapers, plast
and a photo of you and your pet in yo
edness kit.


8 TIPS TO CLEAN UP MO

Protect Yourself — Put on personal protective equipment (glo
goggles) to protect your eyes, nose, mout

Toss! — Take it out! Anything that was wet with flood w
cleaned and dried completely within 24 to 48 h
taken outside. Take photos of discarded items
insurance claims.

Air it out — Open all doors and windows when you are
leave as many open as you safely can whe

Circulate — When electricity is safe to use, use fans ar
to remove moisture.

Don't mix cleaners — If you use cleaning products, do not mix c
products together. DO NOT mix bleach an
because it can create toxic vapors.

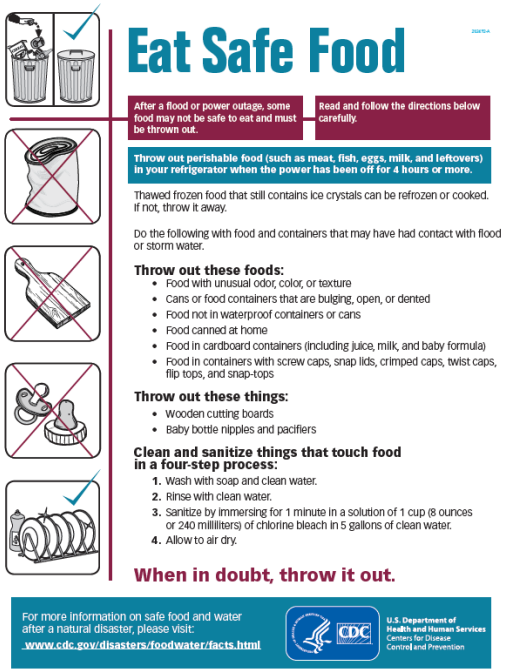
Scrub surfaces — Clean with water and a detergent. Remove
can see. Dry right away.

Don't cover it, remove it — Painting or caulking over mold will not pre
growing. Fix the water problem completely and clean up
all the mold before you paint or caulk.

Dry it up — Dry your home and everything in it as quickly as
possible – within 24 to 48 hours if you can.

http://www.cdc.gov/mold/cleanup.htm

CDC


Eat Safe Food

After a flood or power outage, some food may not be safe to eat and must be thrown out.

Read and follow the directions below carefully.

Throw out perishable food (such as meat, fish, eggs, milk, and leftovers) in your refrigerator when the power has been off for 4 hours or more.

Thawed frozen food that still contains ice crystals can be refrozen or cooked. If not, throw it away.

Do the following with food and containers that may have had contact with flood or storm water.

Throw out these foods:

- Food with unusual odor, color, or texture
- Cans or food containers that are bulging, open, or dented
- Food not in waterproof containers or cans
- Food canned at home
- Food in cardboard containers (including juice, milk, and baby formula)
- Food in containers with screw caps, snap lids, crimped caps, twist caps, flip tops, and snap-tops

Throw out these things:

- Wooden cutting boards
- Baby bottle nipples and pacifiers

Clean and sanitize things that touch food in a four-step process:

1. Wash with soap and clean water.
2. Rinse with clean water.
3. Sanitize by immersing for 1 minute in a solution of 1 cup (8 ounces or 240 milliliters) of chlorine bleach in 5 gallons of clean water.
4. Allow to air dry.

When in doubt, throw it out.

For more information on safe food and water after a natural disaster, please visit: www.cdc.gov/disasters/foodwater/facts.html

CDC

U.S. Department of Health and Human Services
Centers for Disease Control and Prevention

Providing Public Health Information

Stage 2 Sampling: Systematic Sampling of Households

- **Randomly choose a starting point (e.g., intersection, center) prior to heading into the field**
- **Select the nearest house, then every *n*th house after**
- **Choose *n* based on the size of the cluster**
  - Look at the approximate number of households found on the map
    - If 23 households, 23/7 = 3… select every 3rd household
    - If 10 or less households, go to every one!
    - Apartment complexes: each unit is a separate household
  - Once you pick a number, stick to that number!
- **The goal is to be sure interviews are spread out across the cluster**

Stage 2 Sampling: Systematic Sampling of Households

Choose

Randomly choose a starting point (e.g., intersection, center) prior to heading into the field

Select

Select the nearest house, then every *n*th house after

Calculate

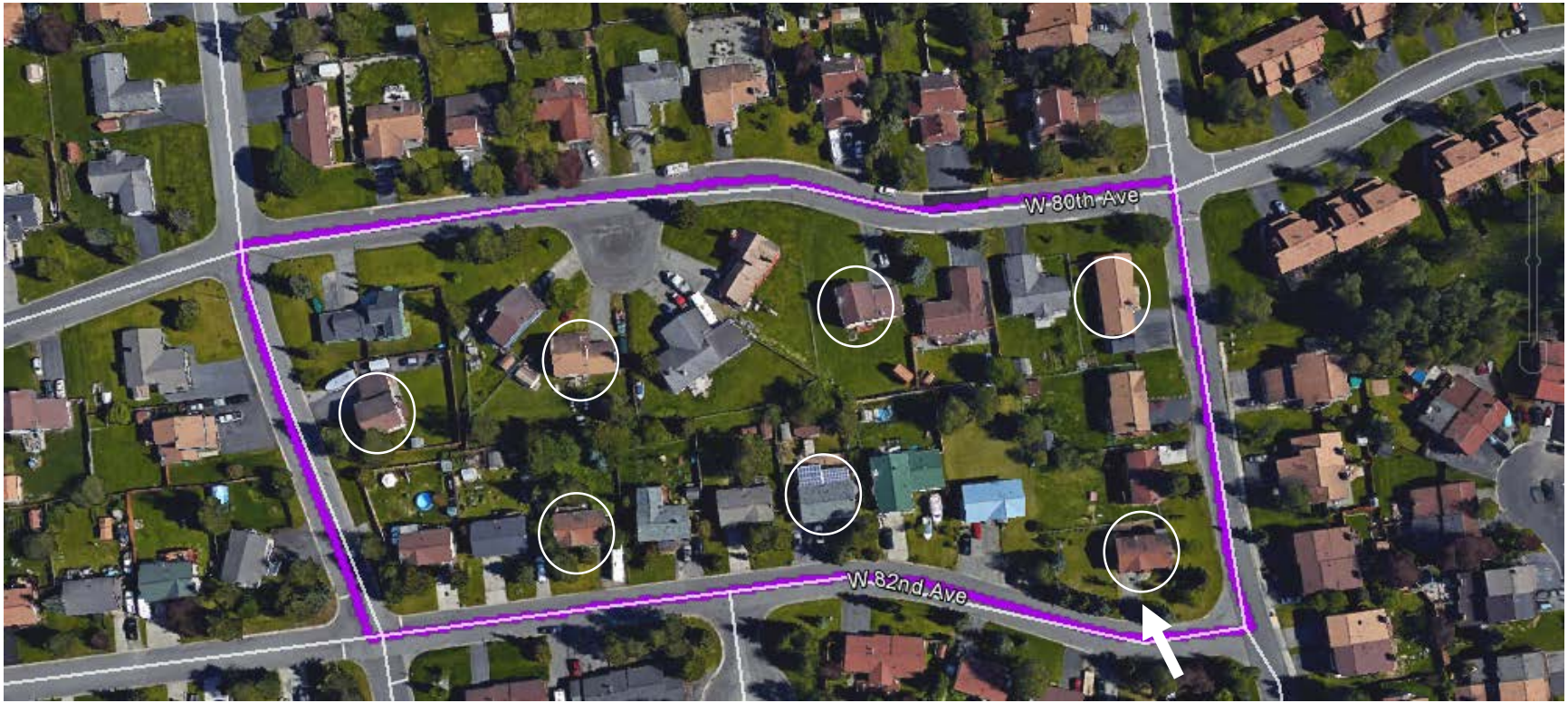
Choose *n* based on the size of the cluster

- If 23 households, 23/7 = 3… select every 3rd household
- If 10 or less households, go to every one!

Once you pick a number, stick to it!

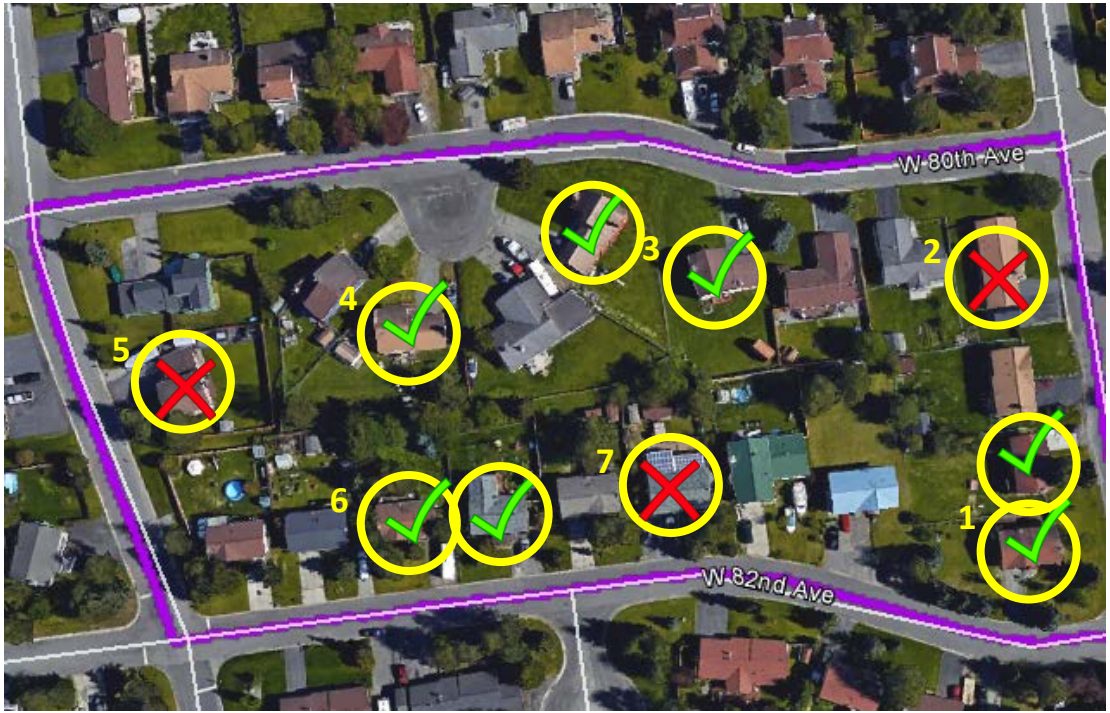
The goal is to be sure interviews are spread out across the cluster

Exercise: Selecting Households to Interview



Tips: Selecting Households to Interview

- **Apartment complexes**
  - "Mixed" clusters
- **ONLY replace HH if**
  - VACANT
  - REFUSES
  - no answer after THREE attempts
- **Always call HQ if there are any questions**



Exercise: Selecting Households to Interview

Stage 2 Sampling Tips

Systematic sampling of households is always recommended!

- Avoid convenience and target sampling

Some exceptions can be made

- Less than 10 households in the cluster
- Response urgency and cluster composition
  - Example, Bastrop fires

Only use sequential sampling when absolutely necessary

- Take every effort to not target starting point

REMEMBER: Always track ALL households visited!!!

Tracking Form

Fill out a row for **EVERY house visited** even those that were inaccessible, did not answer, or did not complete an interview

Each cluster has separate form

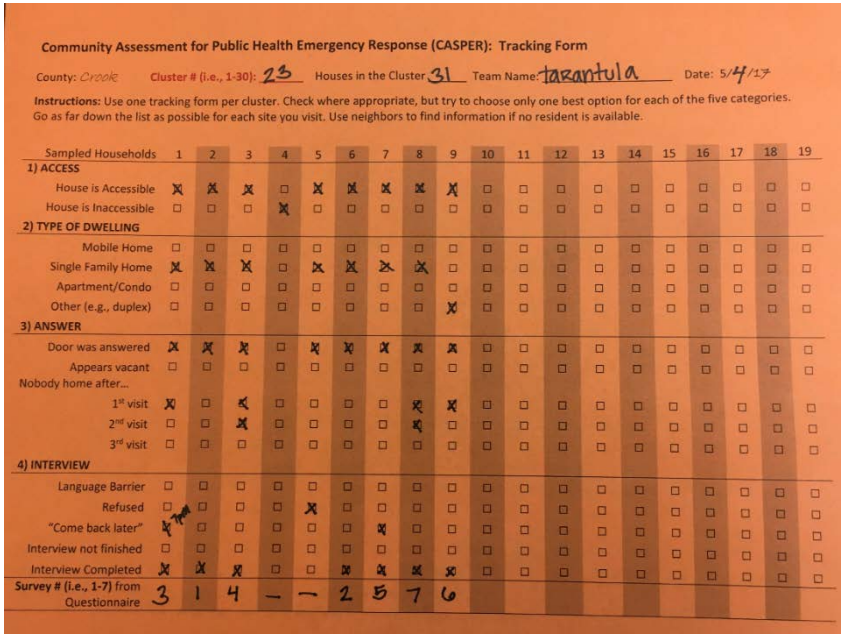
Allows for calculation of response rates

Community Assessment for Public Health Emergency Response (CASPER): Tracking Form

City: Crook Cluster # (i.e., 1-30): 13 # of Houses in the Cluster 53 Team: dinosaur Date of Interview: 5/2/17

Instructions: Use one tracking form per cluster. Check where appropriate, but try to choose only one best option for each of the five categories. Go as far down the list as possible for each site you visit. Use neighbors to find information if no resident is available.

Sampled Households	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
1) ACCESS																			
House is Accessible	X	☐	X	X	X	X	X	X	X	X	X	☐	☐	☐	☐	☐	☐	☐	☐
House is Inaccessible	☐	X	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
2) TYPE OF DWELLING																			
No housing structure	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Mobile Home	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Single Family Home	X	☐	X	X	X	X	X	X	X	X	X	☐	☐	☐	☐	☐	☐	☐	☐
Apartment or Condo	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Other	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
3) ANSWER																			
Door was answered	X	☐	X	X	☐	☐	X	X	X	X	X	☐	☐	☐	☐	☐	☐	☐	☐
Appears home, but no answer	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Appears vacant	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Nobody home after… 1st visit	X	☐	☐	☐	X	X	X	☐	X	☐	X	☐	☐	☐	☐	☐	☐	☐	☐
Nobody home after… 2nd visit	X	☐	☐	☐	X	X	☐	☐	X	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Nobody home after… 3rd visit	☐	☐	☐	☐	☐	X	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
4) INTERVIEW																			
Language Barrier	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Refused to Participate	☐	☐	☐	☐	X	☐	☐	X	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Interview begun, not finished	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
"Come back later"	X	☐	☐	X	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Interview Completed	X	☐	X	X	☐	☐	X	☐	X	X	X	☐	☐	☐	☐	☐	☐	☐	☐
Survey # (i.e., 1-7) from Completed Questionnaire:	6		1	4			3		7	2	5								

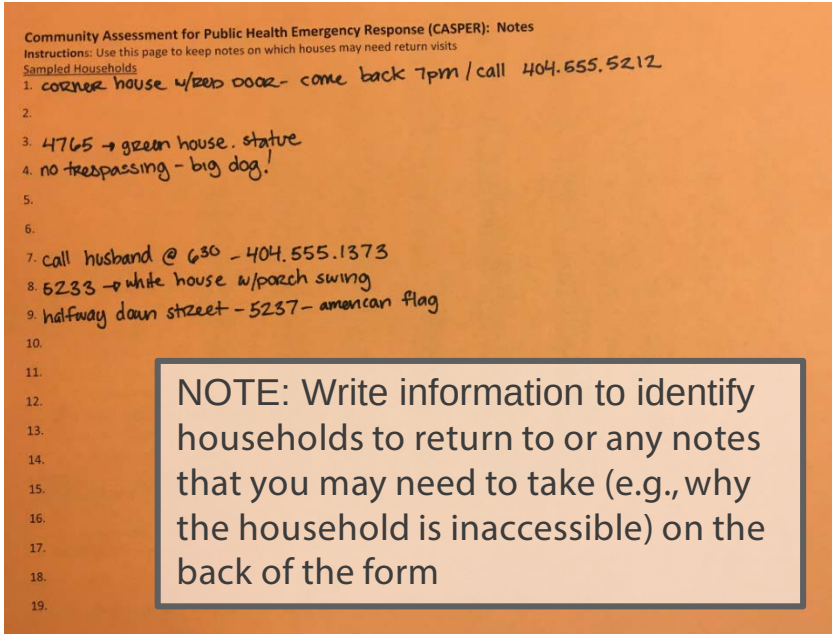


Community Assessment for Public Health Emergency Response (CASPER): Tracking Form

County: Creole Cluster # (i.e., 1-30): 23 Houses in the Cluster: 31 Team Name: tarantula Date: 5/4/17

Instructions: Use one tracking form per cluster. Check where appropriate, but try to choose only one best option for each of the five categories. Go as far down the list as possible for each site you visit. Use neighbors to find information if no resident is available.

Sampled Households	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
1) ACCESS																			
House is Accessible	X	X	X	☐	X	X	X	X	X	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
House is Inaccessible	☐	☐	☐	X	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
2) TYPE OF DWELLING																			
Mobile Home	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Single Family Home	X	X	X	☐	X	X	X	X	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Apartment/Condo	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Other (e.g., duplex)	☐	☐	☐	☐	☐	☐	☐	☐	X	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
3) ANSWER																			
Door was answered	X	X	X	☐	X	X	X	X	X	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Appears vacant	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Nobody home after…																			
1st visit	X	☐	X	☐	☐	☐	☐	X	X	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
2nd visit	☐	☐	X	☐	☐	☐	☐	X	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
3rd visit	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
4) INTERVIEW																			
Language Barrier	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Refused	☐	☐	☐	☐	X	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
"Come back later"	X	☐	☐	☐	☐	☐	X	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Interview not finished	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Interview Completed	X	X	X	☐	☐	X	X	X	X	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Survey # (i.e., 1-7) from Questionnaire	3	1	4	—	—	2	5	7	6										



Community Assessment for Public Health Emergency Response (CASPER): Notes

Instructions: Use this page to keep notes on which houses may need return visits

Sampled Households

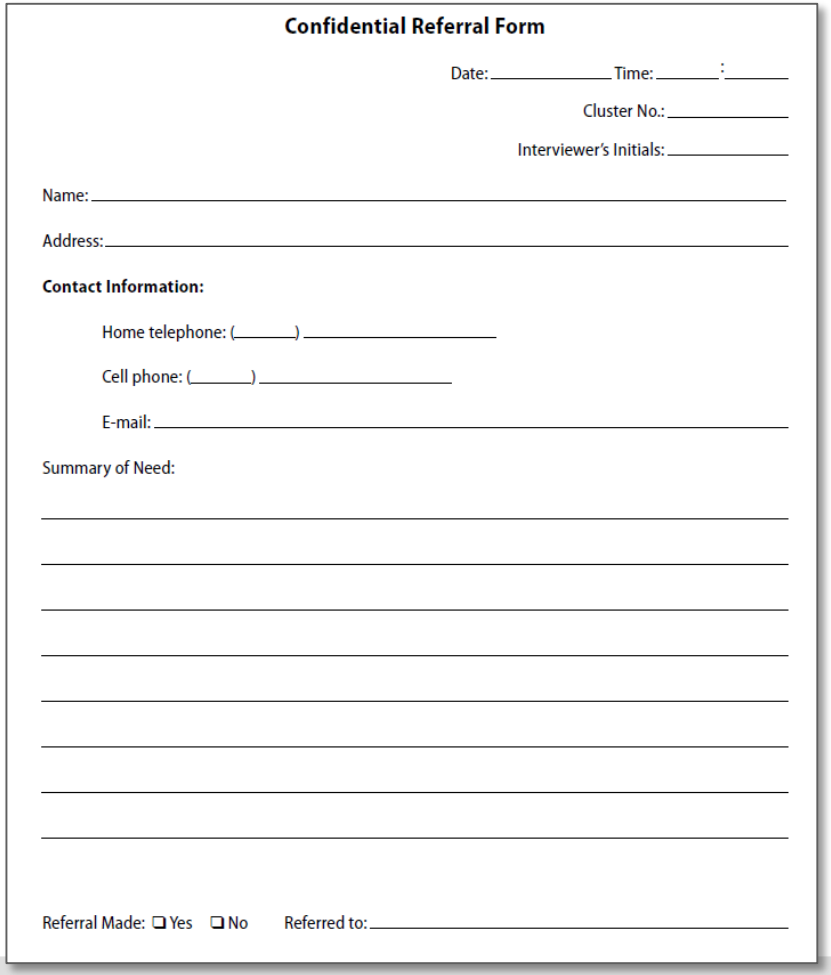
1. corner house w/red door - come back 7pm / call 404.555.5212
2.
3. 4765 → green house. statue
4. no trespassing - big dog!
5.
6.
7. call husband @ 630 - 404.555.1373
8. 5233 → white house w/porch swing
9. halfway down street - 5237 - american flag
10.
11.
12.
13.
14.
15.
16.
17.
18.
19.

NOTE: Write information to identify households to return to or any notes that you may need to take (e.g., why the household is inaccessible) on the back of the form

Sample Completed Tracking Form

Confidential Referral Form

- Report urgent household need(s)
- May need to pass personal identifying information to the health department or other agency
- Ensure field interview teams know the plan in the event they come across an urgent need
- Should illicit immediate follow up



Confidential Referral Form

Date: _____ Time: _____ : _____

Cluster No.: _____

Interviewer's Initials: _____

Name: _____

Address: _____

Contact Information:

Home telephone: (_____) _____

Cell phone: (_____) _____

E-mail: _____

Summary of Need:

_____

_____

_____

_____

_____

_____

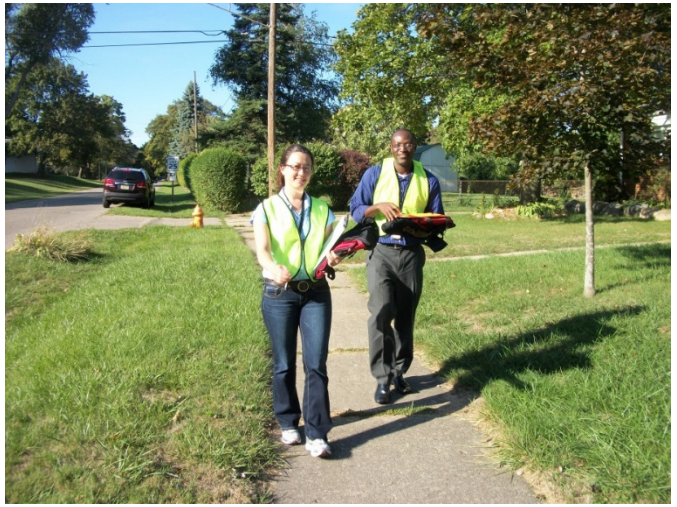
_____

_____

Referral Made: ❑ Yes ❑ No Referred to: _____

Ending the CASPER Interview

- Thank for participation!
- Offer how and when results will be available
- Check the entire questionnaire before leaving



Team Member Responsibilities

- **Remain flexible – 2 person team**
- **Think safety**
- **Understand the objectives**
- **Adhere to the methodology**
  - Map –sample validity
  - Interview – data quality
  - Tracking form – representativeness
  - Data entry - timeliness
- **Be respectful**
- **Understand personal limitations**

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  - Tracking form – representativeness
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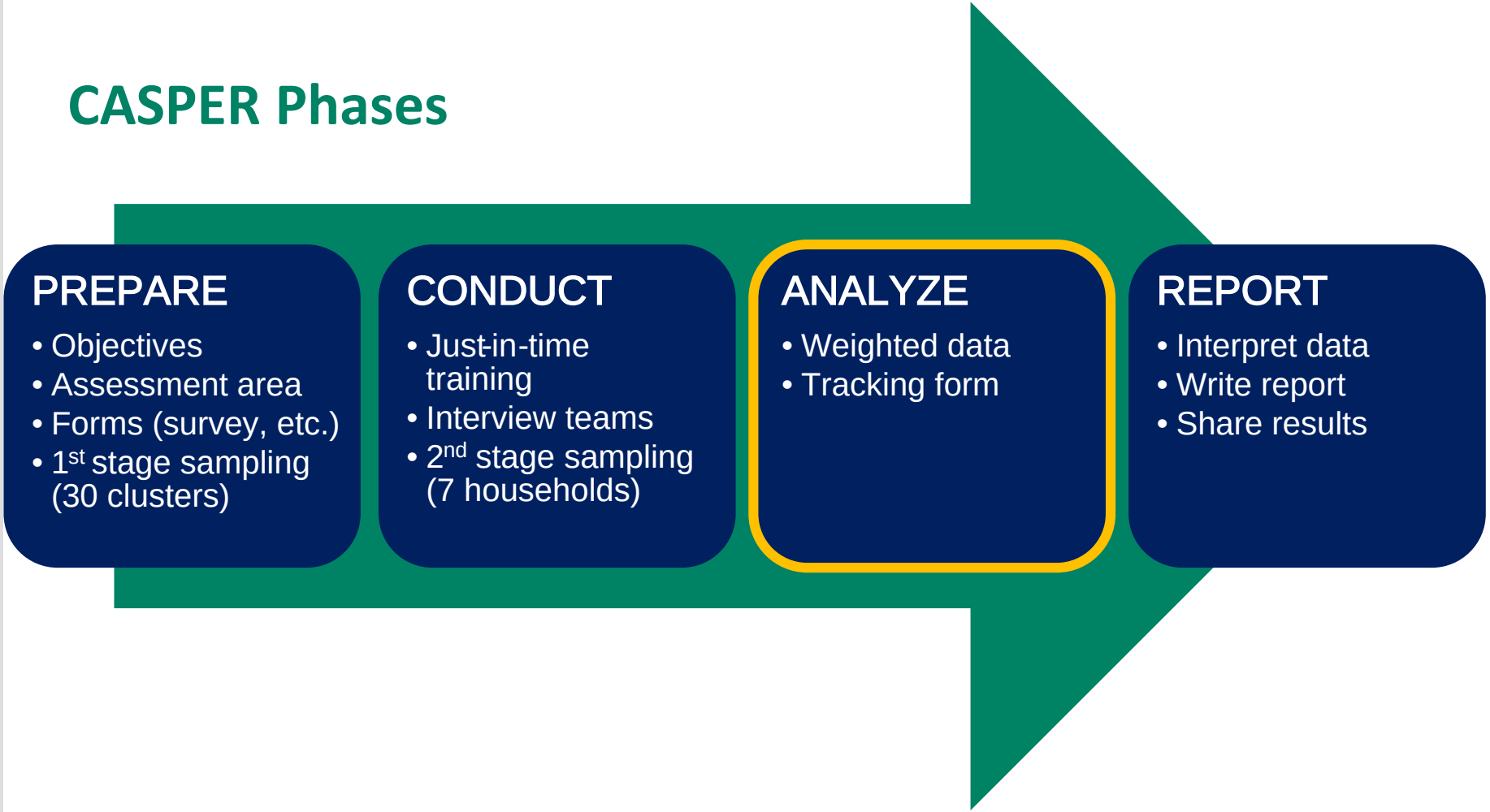
- **Understand personal limitations**

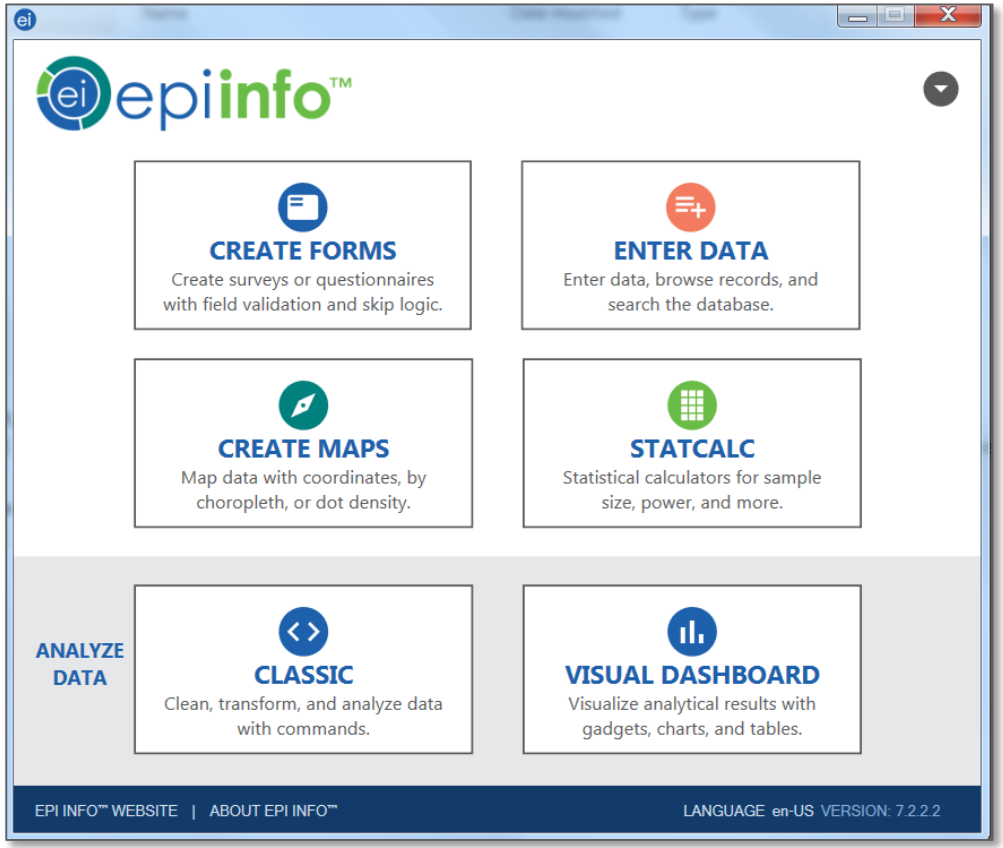
Analyzing CASPER Data & Interpreting Results

CASPER Phases



Analyzing Data Basics

- Data from the questionnaire can be entered into EpiInfo™
  - Any statistical software package that allows you to weight data is acceptable (SAS, SPSS)
- Develop the database for manual entry or tablet data collection as early as possible
  - Keep the electronic version of form as similar as possible to the paper form



Data Cleaning

- **After data entry, merge all data into a single database (if multiple)**
- **Export file into a spreadsheet for cleaning (and creation of weight)**
  - Always keep an original copy in case of any mistakes
- **Before analysis, clean the data**
  - Review quality checks
  - Ensure skip patterns correct
  - Categorize free text

Common CASPER Cleaning Steps

- Cluster number
- Blanks/Missing variables
- Age variable
- “Check one” vs “Check all”
- Skip patterns
- Categorization/standardization of any open-ended questions

$$= \frac{\text{(Total number of households in sampling frame)}}{\text{(number of households interviewed within cluster)}\ \text{(number of clusters surveyed)}}$$

Analyzing Data: Sampling Weight

- **Numerator will be the same for every household within the assessment area (sampling frame)**
- **Denominator will differ (potentially) between clusters**
  - Ideally 210 (i.e., 7 [households] x 30 [clusters])
  - Obtain information from tracking form

Sample Weight Value

E2 =354241/(D2*30)

	B	C	D	E	F	G	H						
1	Cluster	Survey	Completed	aWEIGHT	Q1_Structure	QYes_Peopl	Q2a_LT						
2	1	1	7	1686.86	Single family house	Yes							
3	1	2	7	1686.86	Single family house	Yes							
4	1	3	7	1686.86	Single family house	Yes							
5	1	4	7	1686.86	Single family house	Yes							
6	1	5	7	1686.86	Single family house	Yes							
7	1	6	7	1686.86	Single family house	Yes							
8	1	7	7	1686.86	Single family house	Yes							
9	2	1	4	2952.01	Single family house	Yes							
10	2	2	4	2952.01	Single family house	Yes				2		Yes	No	No
11	2	3	4	2952.01	Single family house	Yes				2		Yes	Yes	No
12	2	4	4	2952.01	Single family house	Yes				2		Yes	Yes	No
13	3	1	5	2361.61	Single family house	Yes				2		No	NA	No
14	3	2	5	2361.61	Single family house	Yes	1	1		2		No	NA	No
15	3	3	5	2361.61	Single family house	Yes		1		4		No	NA	No
16	3	4	5	2361.61	Single family house	Yes				2		No	NA	No
17	3	5	5	2361.61	Single family house	Yes				2		No	NA	No
18	4	1	4	2952.01	Single family house	Yes					1	No	NA	Yes
19	4	2	4	2952.01	Single family house	Yes				1		Yes	Yes	No
20	4	3	4	2952.01	multiple unit	Yes					1	No	NA	No
21	4	4	4	2952.01	multiple unit	Yes				1		Yes	Yes	Yes
22	5	1	6	1968.01	Single family house	Yes				1	1	Yes	Yes	No
23	5	2	6	1968.01	Single family house	Yes				1		Yes	Yes	No

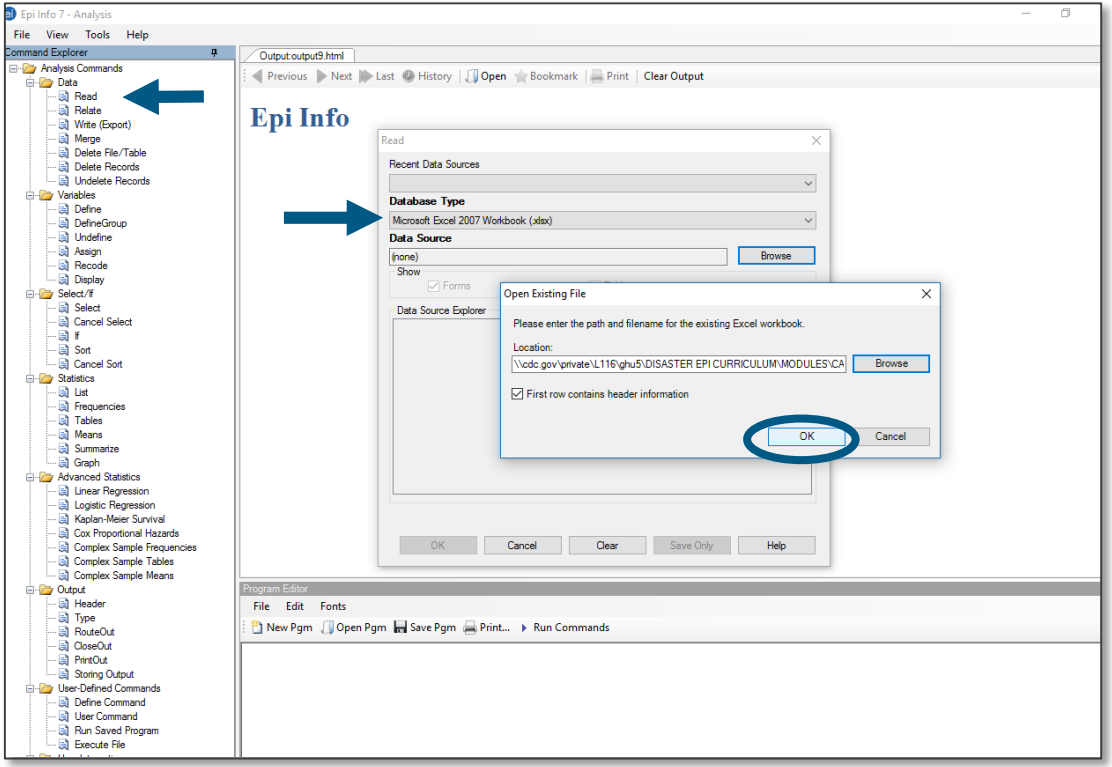
In this example, there were 354,241 total households in the sampling frame and 30 clusters surveyed (see the equation for cell E2 at the top of the page). NOTE: the weight value for clusters 2 and 4 is the same because the same number of interviews was completed in both clusters.

Analyzing Data: Classic Mode

- **Recommend classic mode**
  - Allows option to use code

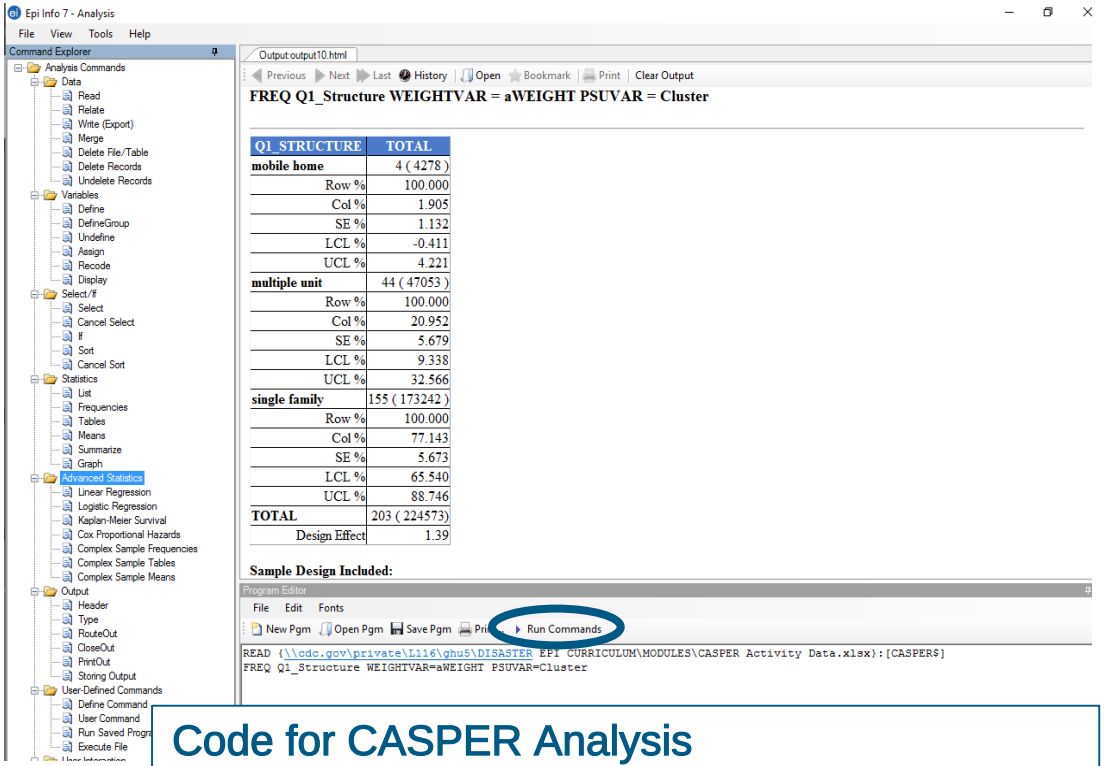
Classic Mode: Read Data

- **Import your excel file**
  - “Read” data option under first folder
  - Ensure “database type” is .XLSX



Classic Mode: Weighted Analysis

- **Complex sample frequencies under “Advanced Statistics”**
  - May select more than one variable at same time
- **Option write code**
  - Use program editor at bottom of screen
  - “Run Commands”



Code for CASPER Analysis

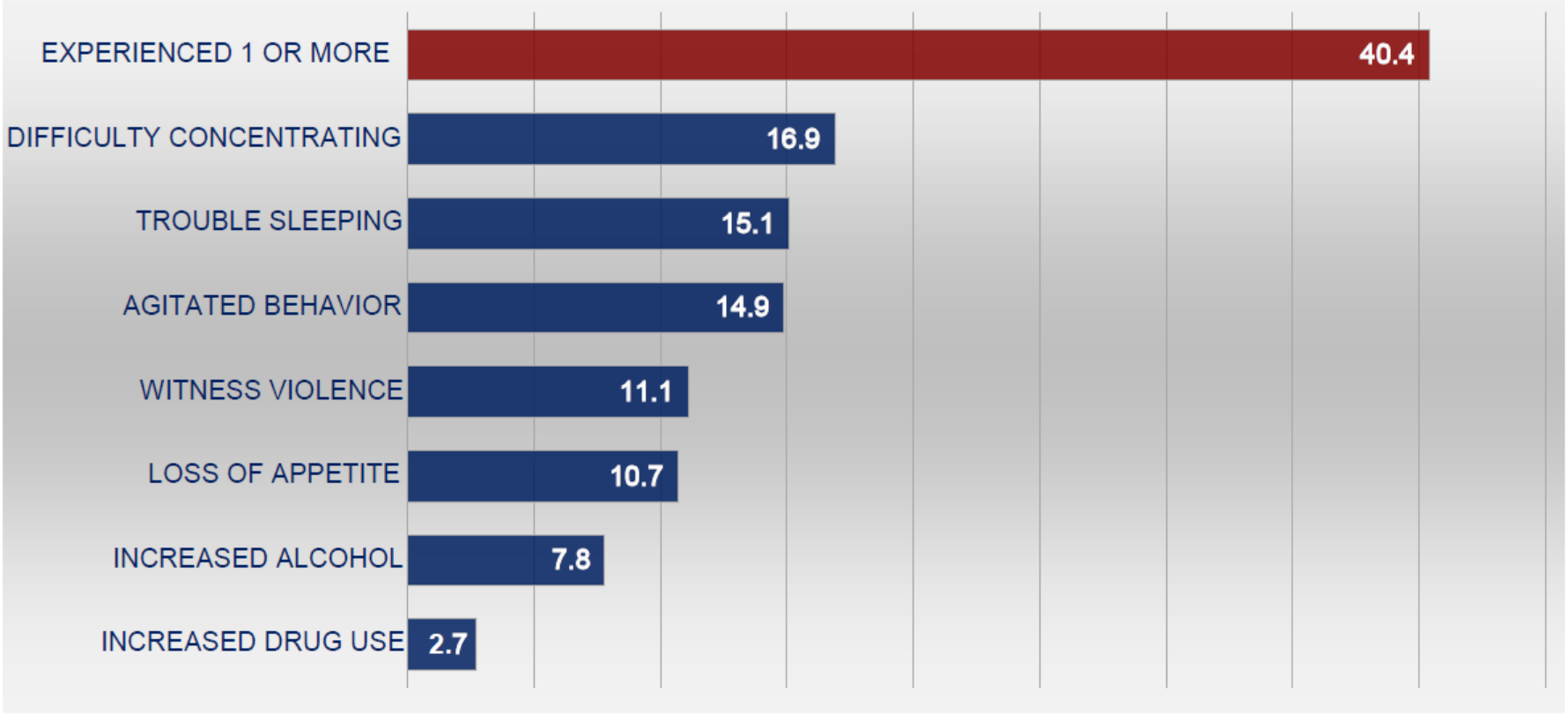
FREQ [Variable Name] WEIGHTVAR=aWEIGHT PSUVAR=Cluster

Example CASPER Presentation Table

	Frequency (n=200)	Estimate	Percent	95% CI
Current household needs				
Bed nets	43	29,421	21.8	15.2–28.4
Medication	19	4,253	9.8	5.8–13.9
Food	21	4,802	11.1	5.7–16.5
Tarps	11	2,504	5.8	3.1–8.5
Water	21	4,712	10.9	6.4–15.5
Other*	6	1,218	2.8	0.3–5.3
Top 3 Household Greatest Need				
Nothing/Don't Know	64	13,852	32.1	24.2–39.9
Repair/cleanup	77	16,799	38.8	30.2–47.5
Money	24	5,244	12.1	7.7–16.6

**Other includes clothes, mosquito spray, etc.*

Example CASPER Presentation Graph



Analyzing Data: Tracking Form

Calculation of ***response rates*** provides an indication of the representativeness of the sample to the population

Calculate ***totals*** for each row of every cluster tracking form

If discrepancies arise, use logic and judgment to rectify

Analyzing Data: Tracking Form

	A	B	U	V	W	X	Y	Z	AA	AB	AC	AD	AE	AF	AG
1		**Cluster**	**19**	**20**	**21**	**22**	**23**	**24**	**25**	**26**	**27**	**28**	**29**	**30**	**TOTAL**
2	**No Access**	House Accessible	20	13	22	17	14	9	16	22	12	18	17	18	486
3		House Inaccessible	0	0	2	0	0	1	0	0	0	0	0	0	4
4															
5		No Housing	0	0	0	0	0	0	0	0	0	0	0	0	0
6		Mobile Home	0	0	0	1	0	0	0	0	0	0	0	0	2
7	**Type of Dwelling**	Single Family Home	0	13	0	0	6	10	16	22	12	18	17	18	345
8		Apartment or Condo	20	0	24	16	8	0	0	0	0	0	0	0	143
9		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
10															
11															
12		Door was answered	14	11	19	9	9	8	11	11	8	13	12	11	342
13	**No Answer**	Home but no answer	0	0	0	0	0	0	0	2	0	0	1	0	5
14		Appears Vacant	0	0	0	1	0	0	3	0	0	2	0	0	21
15		Nobody Home	6	2	3	7	5	1	2	9	4	3	4	7	132
16															
17															
18		Language Barrier	0	1	0	0	0	0	0	0	0	1	0	2	10
19		Refused to Participate	4	3	12	2	1	2	4	6	1	4	5	2	109
20	**Interview**	Non-resident	1	0	0	0	0	0	0	0	0	1	0	0	8
21		No adult over 18 yrs old	0	0	0	0	0	0	0	0	0	0	0	0	4
22		Interview begun, not finis	2	0	0	0	1	0	0	0	0	0	0	0	12
23		Interview Completed	7	7	7	7	7	6	7	5	7	7	7	7	199

Contact Rate

The percentage of households that complete an interview after contact is attempted

$$= \frac{\text{Number of completed interviews}}{\text{All HUs where contact was } \textit{attempted}}$$

Cooperation Rate

The percentage of households that complete an interview after contact has been made

$$= \frac{\text{Number of completed interviews}}{\text{All HUs where contact was } \textit{made}}$$

Completion Rate

Number of completed interviews compared to the ideal number of completed interviews
(denominator usually 210)

$$= \frac{\text{Number of completed interviews}}{\text{Number of interviews intended to complete}}$$

Must reach 80% completion rate to conduct weighted analysis

Example Response Rates (Preparedness CASPER)

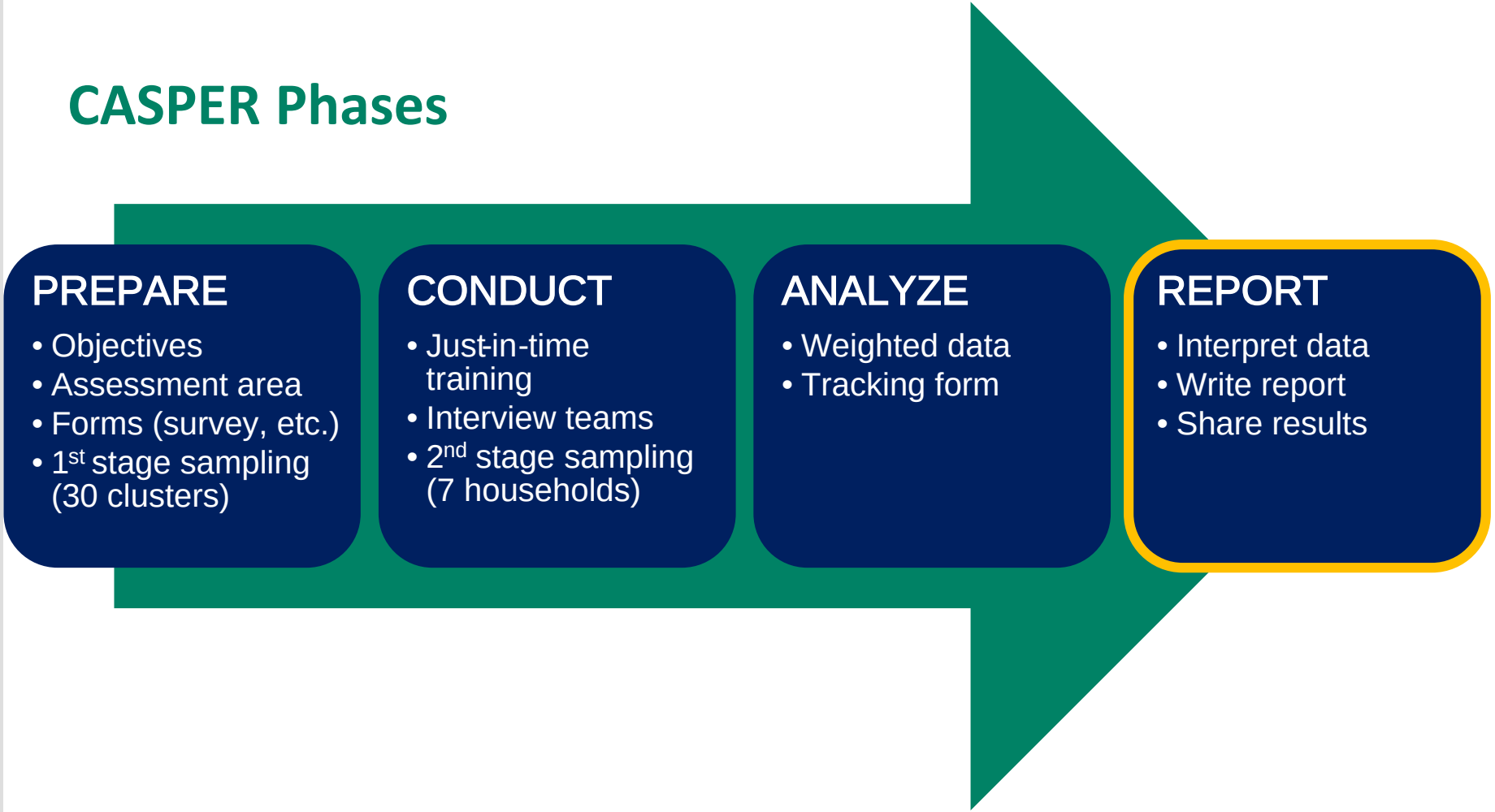
	Percent (%)	Rate	Description
Completion	91.0	191/210	$\frac{\text{Total completed}}{210}$
Cooperation	66.6	191/287	$\frac{\text{Total completed}}{\text{Total contact made}}$
Contact	41.9	191/456	$\frac{\text{Total completed}}{\text{Total selected}}$

Response Rates

- **REVIEW: What are the three CASPER response rates?**
  - How do they work together to determine the representativeness of the sample to the population?
- **EXAMPLE:**
  - 850 households approached (15 inaccessible, 835 accessible)
  - 470 answered doors
  - 207 interviews completed, 260 refused, 3 language barriers
  - What are the response rates? Is the sample representative?

    207/210 = 98.6% 207/470 = 44.0% 207/850 = 24.4%
- **QUESTION: Is it better to complete 210 surveys by approaching 800 households OR 200 surveys by approaching 500 households?**

CASPER Phases



Activity: What can you conclude from this table?

	Sample (n 200)	Estimated HH	Weighted %	95% CI
Damage to Household				
None/Minimal	67	14,302	33.1	24.6–41.6
Damaged	124	26,906	62.3	54.2–70.2
Destroyed	9	2,006	4.6	1.9–7.4
Feels home safe in which to live				
Yes	52	11,335	26.2	18.7–33.8
Noticed increase in rats/mice				
Yes	80	16,967	39.3	30.9–47.6
Concerned about mosquito borne disease				
Very concerned	78	16,764	38.8	30.3–47.3
Somewhat concerned	57	12,306	28.5	20.9–36.1
Not concerned at all	65	14,144	32.7	25.4–40.0
Injuries				
During storm	9	2,161	5.0	1.4–8.6
During cleanup	23	5,549	12.8	6.9–18.7
Worsening of 1+ chronic disease				
Yes	81	17,502	40.5	33.2–47.8
Experienced 1+ BH Indicator				
Yes	234	26,479	61.3	54.5–68.0

Example: Results

- **Almost 70% of households (~29,000) were damaged or destroyed**
  - Roughly a quarter say they do not feel safe to live in their homes
- **Approximately 40% (~17,000) noticed an increase in rats or mice**
- **38.8% (16,764) of households are very concerned about mosquito-borne diseases and an additional 28.5% (12,306) are somewhat concerned**
- **Approximately 18% of households had one or more persons injured**
  - 12.8% were injured during cleanup
- **40.5% (17,502) of households reported one or more persons with an worsening of their chronic health condition (e.g., asthma, COPD)**
- **More than half (61.3%) of households reported one or more persons experience at least 1 behavioral health indicator of a potential acute mental health issue**

ACTIVITY: What Recommendations can be made?

- **Deliver risk communication messages about safe home cleanup, vectors, safe cleanup behaviors and other relevant topics**
  - Employ early communication or prevention messages in the future
- **Develop strategies to address community chronic health needs such as access to continued care during response/recovery**
- **Communicate about available mental health resources**
- **Respond to the concern of increase of mosquitoes and diseases**
  - Potential bed net campaign for protection
- **Share findings with relevant recovery partners and stakeholders to promote data-driven recovery efforts**
- **Conduct a follow-up CASPER (determine if needs met and/or changed)**

Report Writing Considerations

- **Presenting the data is a key part of any CASPER**
  - Will help better understand the needs/health status of the community
- **Preliminary findings should be shared within 36 hours of data collection**
  - Can be though slide presentation
- **Questions to consider**
  - Who will draft the written report?
  - How will you report the data?
  - What are your deadlines?
  - Who is your audience?
  - What action will be taken? Who should implement?

Who will draft the written report?

- **Individual who drafts the report should be involved in all aspects of the CASPER**
  - Including preparation phase so understands key objectives
- **Can begin to draft the report early**
  - Background and methods are known prior to fieldwork
  - Table shells can be created to save time
    - During analysis only need to “plug in” numbers

How will you report the data? What are your deadlines?

Preliminary Presentation

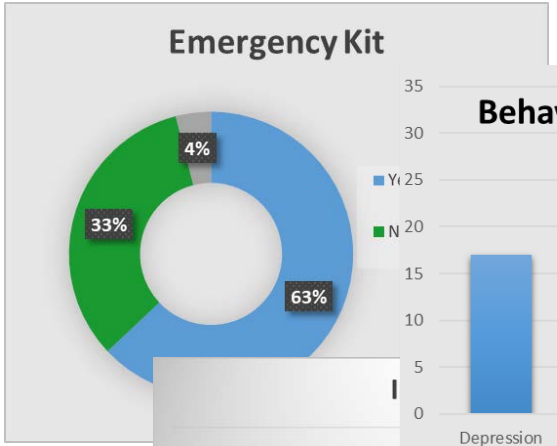
- Conducted within 36 hours of data collection
- Include select preliminary key data
- Presented to stakeholders for immediate action

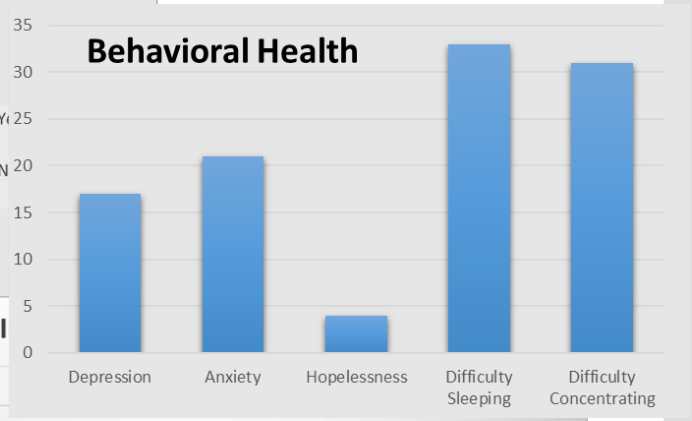
Final Report

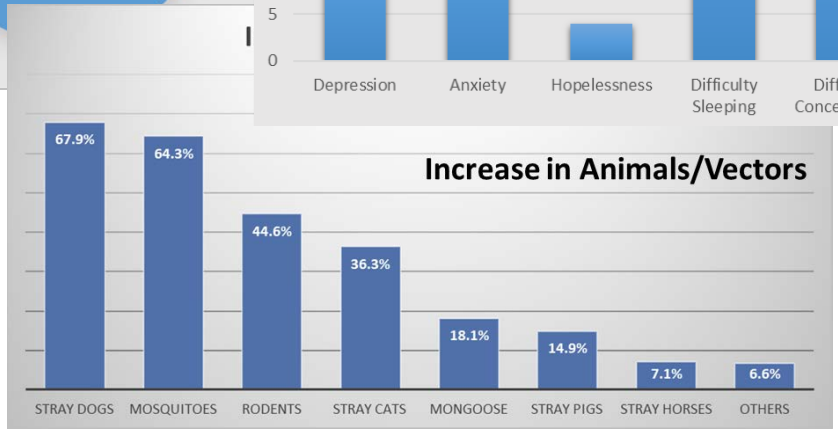
- Full report structure and include all data tables
- More accurate and detailed; time for data cleaning
- Widely distributed, potentially via publication

Who is your audience? How will you present your data?

- **Potential audiences**
  - Emergency managers
  - Epidemiologists
  - Politicians
  - Media
- **Data presentation**
  - Simple, easy-to-read format
  - Tables or graphically
- **Link to original objectives**





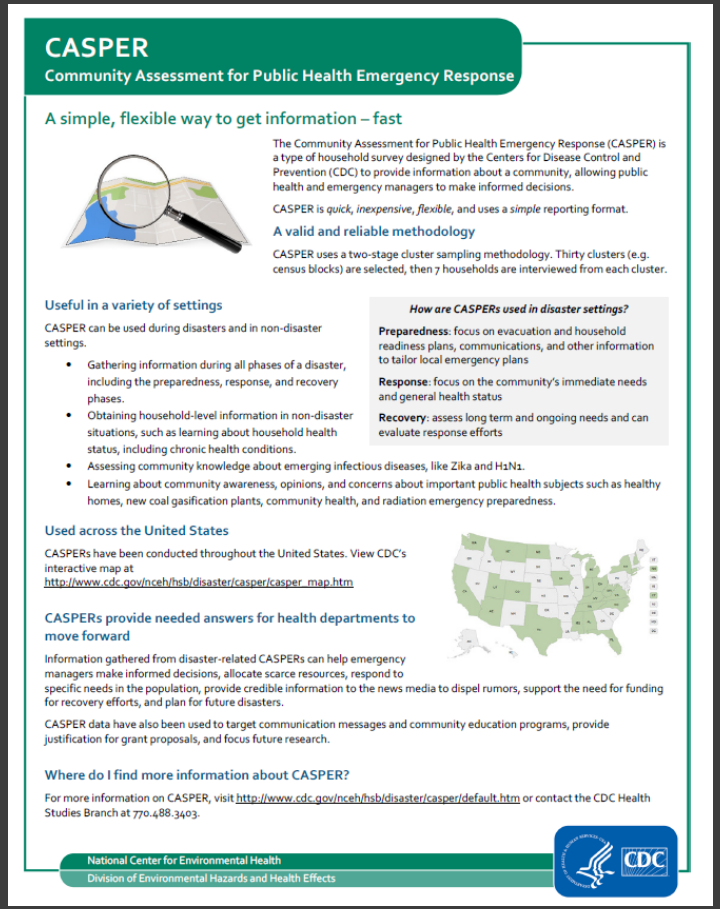


What action will be taken based up on the results? Who should implement them?

- **Stakeholders that will play a key role in implementing any recommendations based on CASPER data should be involved beginning in the preparedness phase**
- **During the preliminary report presentation, encourage conversation on how best to implement action**
  - Assign roles, when possible, for actionable items

CASPER Review

- **Quick, inexpensive, and flexible household assessment**
- **Valid and reliable methodology**
  - Designed to provide population estimates
- **May be used throughout disaster cycle or in non-emergent situations**



CASPER
Community Assessment for Public Health Emergency Response

A simple, flexible way to get information – fast

The Community Assessment for Public Health Emergency Response (CASPER) is a type of household survey designed by the Centers for Disease Control and Prevention (CDC) to provide information about a community, allowing public health and emergency managers to make informed decisions.

CASPER is *quick*, *inexpensive*, *flexible*, and uses a *simple* reporting format.

A valid and reliable methodology

CASPER uses a two-stage cluster sampling methodology. Thirty clusters (e.g. census blocks) are selected, then 7 households are interviewed from each cluster.

Useful in a variety of settings

CASPER can be used during disasters and in non-disaster settings.

- Gathering information during all phases of a disaster, including the preparedness, response, and recovery phases.
- Obtaining household-level information in non-disaster situations, such as learning about household health status, including chronic health conditions.
- Assessing community knowledge about emerging infectious diseases, like Zika and H1N1.
- Learning about community awareness, opinions, and concerns about important public health subjects such as healthy homes, new coal gasification plants, community health, and radiation emergency preparedness.

How are CASPERs used in disaster settings?

Preparedness: focus on evacuation and household readiness plans, communications, and other information to tailor local emergency plans

Response: focus on the community's immediate needs and general health status

Recovery: assess long term and ongoing needs and can evaluate response efforts

Used across the United States

CASPERs have been conducted throughout the United States. View CDC's interactive map at http://www.cdc.gov/nceh/hsb/disaster/casper/casper_map.htm

CASPERs provide needed answers for health departments to move forward

Information gathered from disaster-related CASPERs can help emergency managers make informed decisions, allocate scarce resources, respond to specific needs in the population, provide credible information to the news media to dispel rumors, support the need for funding for recovery efforts, and plan for future disasters.

CASPER data have also been used to target communication messages and community education programs, provide justification for grant proposals, and focus future research.

Where do I find more information about CASPER?

For more information on CASPER, visit http://www.cdc.gov/nceh/hsb/disaster/casper/default.htm or contact the CDC Health Studies Branch at 770.488.3403.

National Center for Environmental Health
Division of Environmental Hazards and Health Effects

Helpful Links & Resources

- **CASPER Website** https://www.cdc.gov/nceh/CASPER
- **CASPER Training Template** https://www.cdc.gov/nceh/casper/docs/CASPER_2018_template.pptx
- **CASPER YouTube video** https://youtu.be/bTc91V1Xexg
- **Overview fact sheet** https://www.cdc.gov/nceh/casper/pdf-html/casper_cap.html
- **Flint Michigan** https://www.cdc.gov/nceh/casper/pdf-html/flint_water_crisis_pdf.html
- **Preparedness questionnaire template** https://www.cdc.gov/nceh/casper/docs/preparedness-template-P.pdf

HURRICANES
NOT ALLOWED
Thank You