ASPPH Presents Webinar Series

Community Assessment for Public Health Emergency Response (CASPER) and the Development of Collect SMART: Survey Management and Response Tools for Assessing the Health of Your Community

Tuesday, July 28, 2015
3:00-4:00 pm Eastern

ASPPH.ORG

1900 M Street NW, Suite 710
Washington, DC 20036
Tel: (202) 296-1099
Fax: (202) 296-1252

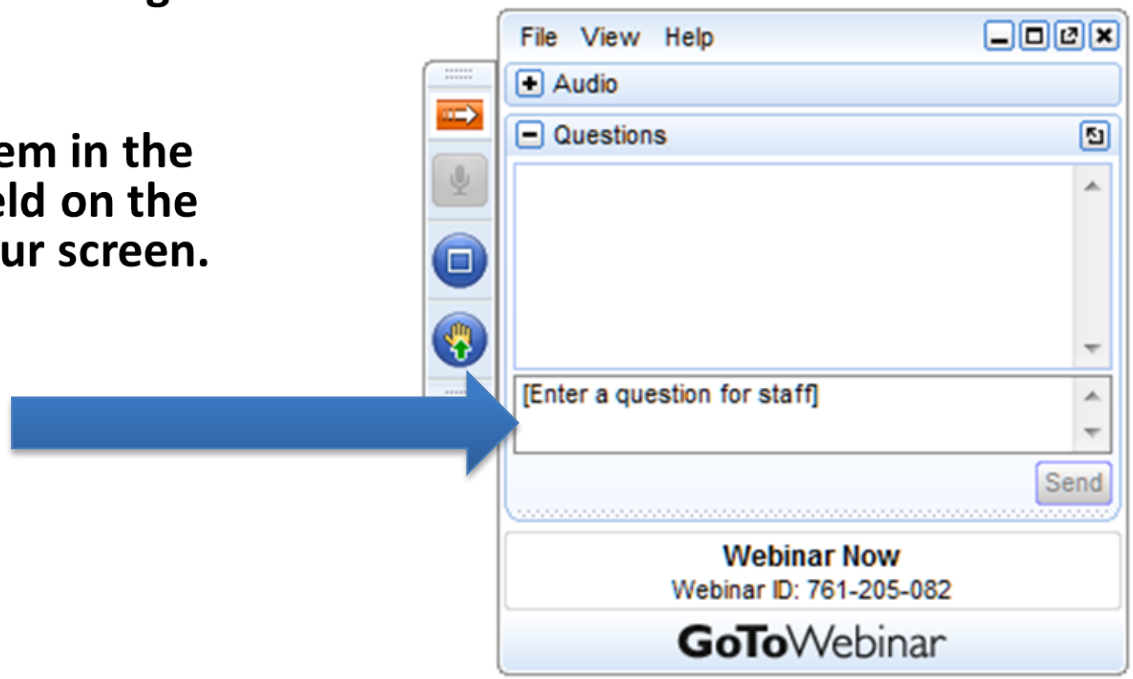
ASPPH Presents WEBINAR

ASPPH ASSOCIATION OF SCHOOLS & PROGRAMS OF PUBLIC HEALTH

Method for Submitting Questions

Join the Conversation…

- **You can ask questions in writing anytime during the webinar.**
- **Simply type them in the "Questions" field on the right side of your screen.**

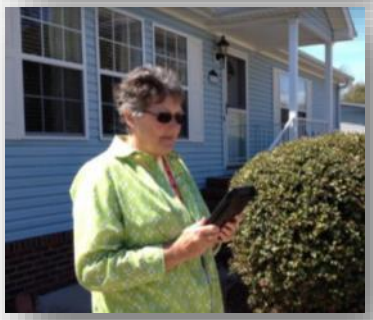


Today's Presenters

Matthew Simon, MA
University of North Carolina Gillings School of Global Public Health, Preparedness and Emergency Response Learning Center (UNC PERLC)

David Zane, MS
Health Emergency Preparedness and Response Section, Division for Regional & Local Health Services, Texas Department of State Health Services

Michael Zelek, MPH
Chatham County Public Health Department, North Carolina



Community Assessment for Public Health Emergency Response (CASPER) and the development of *Collect SMART*:

Survey Management and Response Tools for assessing the health of your community

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Matt Simon, MA, GISP
North Carolina Institute for Public Health

David Zane, MS
Texas Department of State Health Services

Michael Zelek, MPH
Chatham County, NC Health Department

July 28, 2015

North Carolina Institute for Public Health (NCIPH)

- Service arm of the Gillings School of Global Public Health at UNC-Chapel Hill
- Since 1999 has served as a bridge between academia and partners in community organizations and government agencies

Deliver training, conduct research and provide technical assistance to transform the practice of public health for all

Learning Objectives

- Describe the purpose of Community Assessment for Public Health Emergency Response (CASPER)
- Provide examples of how CASPER has been used for post-disaster assessments and routine community health needs assessments
- Discuss the Collect SMART mobile app and project management dashboard designed to expand local capacities to collect community health data

Statement of Need

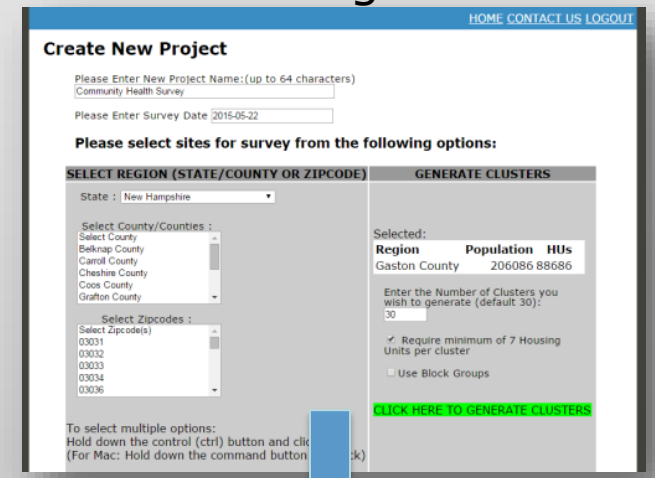
Validated community sampling methods are needed to collect accurate, high quality primary data that don't require extensive expertise in population sampling, geographic information systems and costly software and computer equipment for mapping, data collection and statistical analysis.

CollectSMART

Survey Management and Response Tools

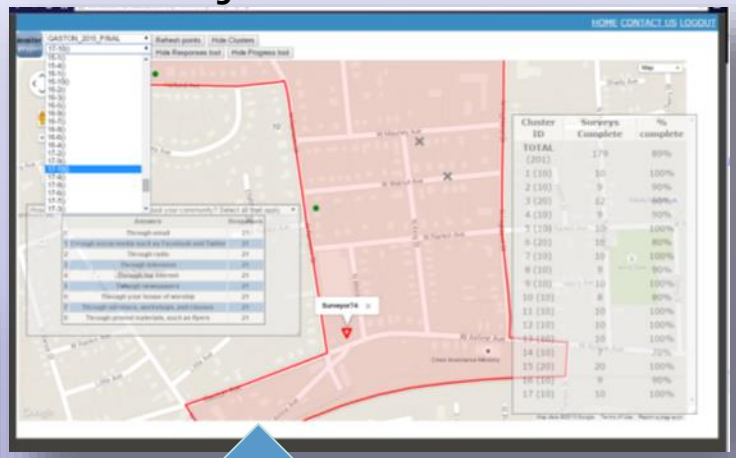
Survey Management System

Sample Selection and data management



Mobile App

Project Dashboard



Survey Collection and Coordination Tools

What is CASPER?

Community

ASsessment for

Public Health

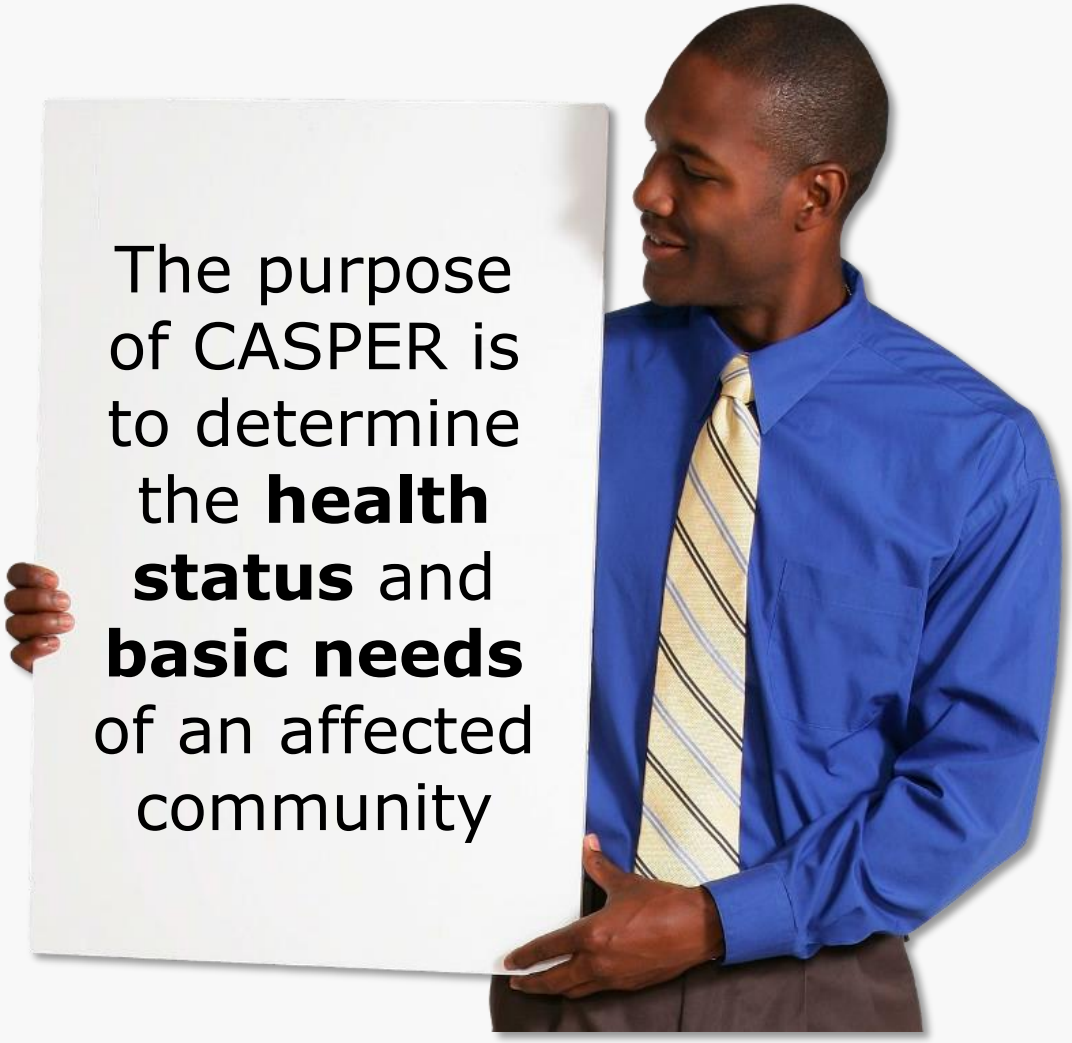
Emergency

Response

"A specific set of tools designed to provide quick, inexpensive, accurate, and reliable household-based public health information about communities affected by natural or man-made disasters."

CDC, 2012

Purpose of CASPER



Why Use CASPER Sampling Method?

- Validated for rapid assessments and estimation of population-level public health needs[1,2]
  - Produces valid and precise estimates (+/- 10%)[3]
- Alternative to simple random and convenience sampling
  - Reduces travel time and costs
  - Just the right number of surveys
    - SRS < Cluster < Convenience

1. Malilay J, Flanders WD, Brogan D. A modified cluster-sampling method for post-disaster rapid assessment of needs. *Bull World Health Organ*. 1996; 74(4): 399-405.
2. Frerichs RR, Shaheen MA. Small-community-based surveys. *Annual Rev Public Health* 22, 231-47, 2001.
3. Binkin N, Sullivan K, Staehling N, Nieburg P. (1992). Rapid nutrition surveys: how many clusters are enough? *Disasters*. 16(2) 97-103.

Why Door-to-Door?

Why not online, mail, telephone, convenience?

- More representative and generalizable
  - Accessible to everyone
- Data quality
  - Higher quality, more complete data
  - Higher response rates
  - Ability to provide clarification on questions or wording
- Visibility
  - "Boots on the ground"

How CASPER Has Been Used

- Disaster assessments
  - Health status and basic needs following a disaster
  - Community preparedness

- Routine data collection
  - Community health needs assessments
  - Other surveys that gauge community opinion on a variety of topics
    - Potassium iodide (KI) distribution
    - Teen pregnancy

Post-Disaster Assessments

- Determine the number of people affected
- Assess physical damage to homes
- Determine whether people have access to:
  - Electricity
  - Clean water
  - Food
  - Communication
  - Health services

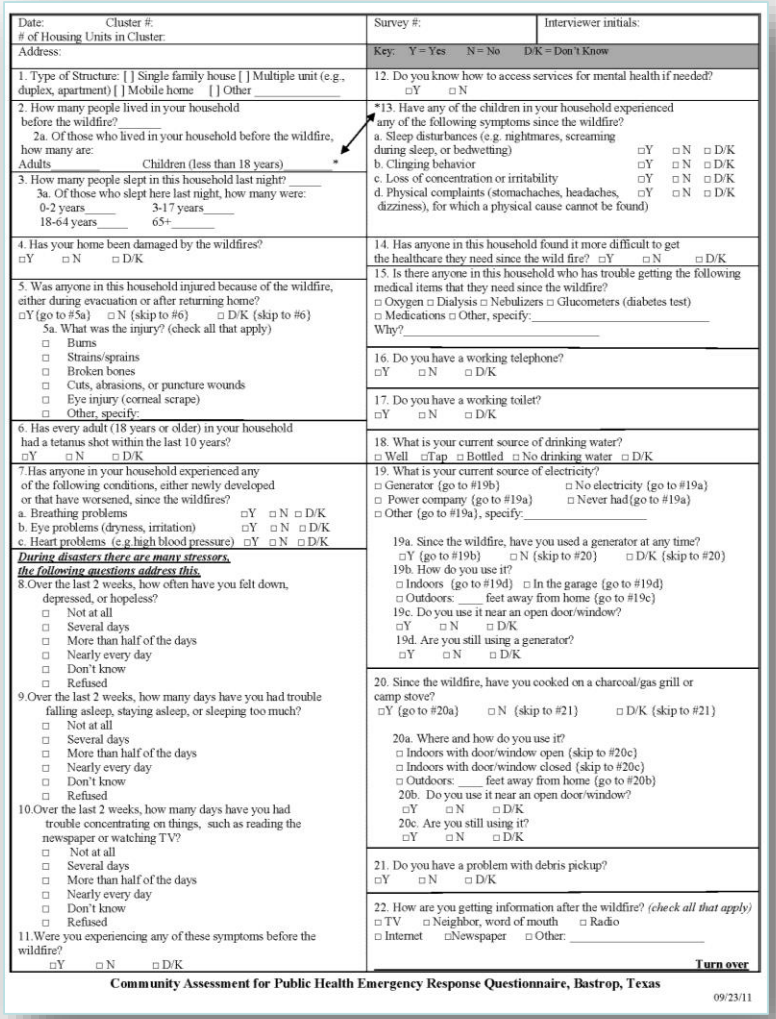
Bastrop County, TX Wildfires

- Texas in midst of extreme drought
- High winds pushed trees into power lines and started a fire (Sep 2011)
- Fire was in Bastrop County, ~30 miles east of Austin, TX
- Wildfire destroyed 1,660 homes and caused 2 deaths
- It was declared a federal disaster

Image Source: FEMA/Patsy Lynch, 2011

Household Survey

- Health Status
- Access to Utilities
- Access to Health Care
- Mental Health
- Evacuation Behaviors
- Messaging



Date: Cluster #:
# of Housing Units in Cluster:
Survey #: Interviewer initials:
Address:
Key: Y = Yes N = No D/K = Don't Know

1. Type of Structure: [ ] Single family house [ ] Multiple unit (e.g., duplex, apartment) [ ] Mobile home [ ] Other _____

2. How many people lived in your household before the wildfire?
2a. Of those who lived in your household before the wildfire, how many are:
Adults Children (less than 18 years) _____*

3. How many people slept in this household last night? _____
3a. Of those who slept here last night, how many were:
0-2 years_____ 3-17 years_____
18-64 years_____ 65+_____

4. Has your home been damaged by the wildfires?
□Y □N □D/K

5. Was anyone in this household injured because of the wildfire, either during evacuation or after returning home?
□Y {go to #5a} □N {skip to #6} □D/K {skip to #6}
5a. What was the injury? (check all that apply)
□ Burns
□ Strains/sprains
□ Broken bones
□ Cuts, abrasions, or puncture wounds
□ Eye injury (corneal scrape)
□ Other, specify:

6. Has every adult (18 years or older) in your household had a tetanus shot within the last 10 years?
□Y □N □D/K

7. Has anyone in your household experienced any of the following conditions, either newly developed or that have worsened, since the wildfires?
a. Breathing problems □Y □N □D/K
b. Eye problems (dryness, irritation) □Y □N □D/K
c. Heart problems (e.g high blood pressure) □Y □N □D/K

During disasters there are many stressors, the following questions address this.

8. Over the last 2 weeks, how often have you felt down, depressed, or hopeless?
□ Not at all
□ Several days
□ More than half of the days
□ Nearly every day
□ Don't know
□ Refused

9. Over the last 2 weeks, how many days have you had trouble falling asleep, staying asleep, or sleeping too much?
□ Not at all
□ Several days
□ More than half of the days
□ Nearly every day
□ Don't know
□ Refused

10. Over the last 2 weeks, how many days have you had trouble concentrating on things, such as reading the newspaper or watching TV?
□ Not at all
□ Several days
□ More than half of the days
□ Nearly every day
□ Don't know
□ Refused

11. Were you experiencing any of these symptoms before the wildfire?
□Y □N □D/K

12. Do you know how to access services for mental health if needed?
□Y □N

*13. Have any of the children in your household experienced any of the following symptoms since the wildfire?
a. Sleep disturbances (e.g. nightmares, screaming during sleep, or bedwetting) □Y □N □D/K
b. Clinging behavior □Y □N □D/K
c. Loss of concentration or irritability □Y □N □D/K
d. Physical complaints (stomachaches, headaches, dizziness), for which a physical cause cannot be found) □Y □N □D/K

14. Has anyone in this household found it more difficult to get the healthcare they need since the wild fire? □Y □N □D/K

15. Is there anyone in this household who has trouble getting the following medical items that they need since the wildfire?
□ Oxygen □ Dialysis □ Nebulizers □ Glucometers (diabetes test)
□ Medications □ Other, specify:_____
Why?_____

16. Do you have a working telephone?
□Y □N □D/K

17. Do you have a working toilet?
□Y □N □D/K

18. What is your current source of drinking water?
□ Well □Tap □ Bottled □ No drinking water □ D/K

19. What is your current source of electricity?
□ Generator {go to #19b} □ No electricity {go to #19a}
□ Power company {go to #19a} □ Never had{go to #19a}
□ Other {go to #19a}, specify:_____

19a. Since the wildfire, have you used a generator at any time?
□Y {go to #19b} □N {skip to #20} □D/K {skip to #20}
19b. How do you use it?
□ Indoors {go to #19d} □ In the garage {go to #19d}
□ Outdoors: ____ feet away from home {go to #19c}
19c. Do you use it near an open door/window?
□Y □N □D/K
19d. Are you still using a generator?
□Y □N □D/K

20. Since the wildfire, have you cooked on a charcoal/gas grill or camp stove?
□Y {go to #20a} □N {skip to #21} □D/K {skip to #21}
20a. Where and how do you use it?
□ Indoors with door/window open {skip to #20c}
□ Indoors with door/window closed {skip to #20c}
□ Outdoors: ____ feet away from home {go to #20b}
20b. Do you use it near an open door/window?
□Y □N □D/K
20c. Are you still using it?
□Y □N □D/K

21. Do you have a problem with debris pickup?
□Y □N □D/K

22. How are you getting information after the wildfire? *(check all that apply)*
□ TV □ Neighbor, word of mouth □ Radio
□ Internet □Newspaper □ Other: _____

Turn over

Community Assessment for Public Health Emergency Response Questionnaire, Bastrop, Texas
09/23/11

Results

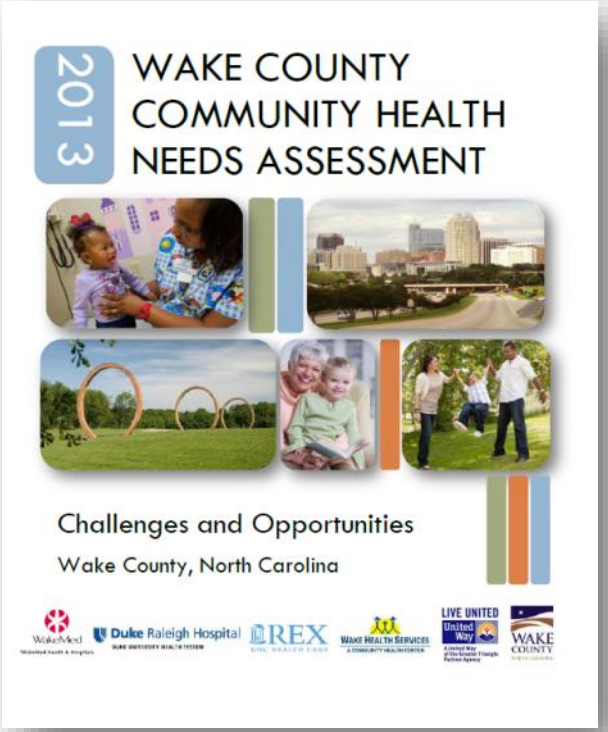
- Report shared with local officials
- Data used in grant applications for long term recovery (mental health and building roads)
- Results guided interventions on health communication and messaging

CASPER Team, Bastrop County, TX, 2011

Community Health Needs Assessments

CASPER can be used to:

- Determine community health priorities
- Estimate population health status and access to health care services
- Assess community emergency preparedness
- Identify services needing improvement



Chatham County CHNA

- Staff received training from NCIPH via webinar on:
  - Project management
  - Interview techniques and team safety
- Using NCIPH tablets and Collect SMART, completed 190 interviews with 25 teams over 6 days

Results

- This resource enabled us to:
  - Quickly train and field teams with mixed levels of community survey experience
  - Randomly select houses and easily find them
  - Coordinate data collection across county
  - Conduct and upload surveys electronically
  - Analyze data and generate results (after data cleaning)

Barriers to Implementing CASPER

- Sampling expertise and software
  - Automated cluster sampling online
- Statistical and mapping software
  - Epi Info™ + Collect SMART dashboard
- Data collection software and hardware
  - Free mobile app deployable to tablets and smartphones

Development and Pilots

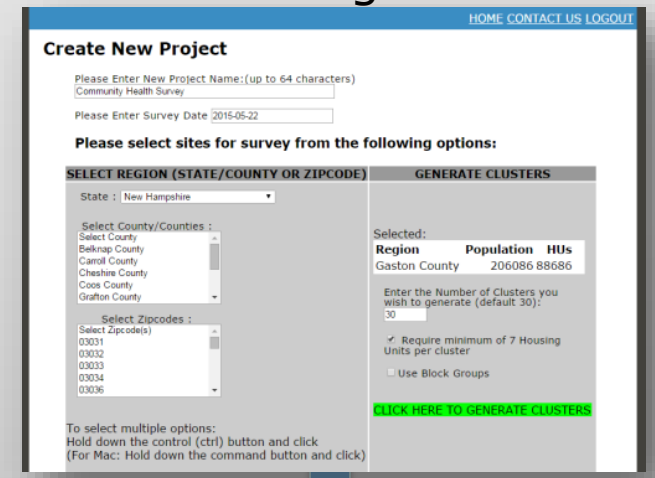
- Concept: Summer 2013
- Pilot testing: 2013-2015
  - 9 surveys, ~1700 interviews
  - Iterative process
- Project manager feedback (TX)
- Training Materials
  - User manual
  - Online modules
  - Still developing….

CollectSMART

Survey Management and Response Tools

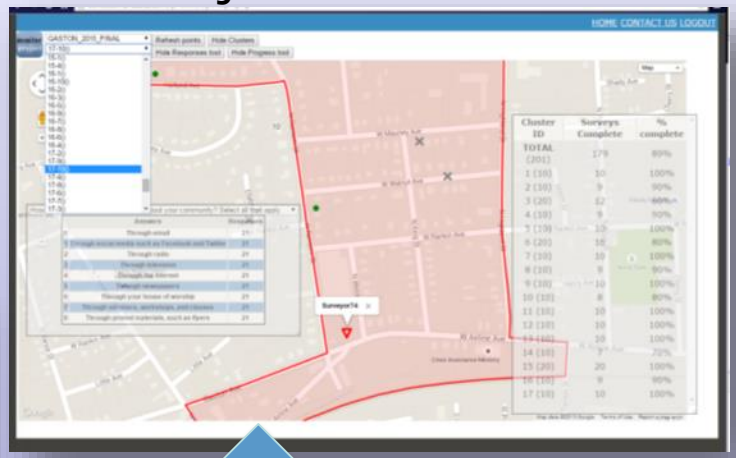
Survey Management System

Sample Selection and data management



Mobile App

Project Dashboard



Survey Collection and Coordination Tools

Mobile App

- Integrated with mobile Epi Info™
  - Create questionnaires and analyze results
- Compatible with most Android tablets and phones
- Navigation to preselected survey sites
- Offline mode
  - Functionality in the absence of cell coverage

Project Management Tools

- Web-based
- GIS-enabled site selection (U.S. Census data)
- Real-time frequency analysis of results
- Real-time mapping to track and locate survey teams
- Cloud-based database for survey responses for added data security

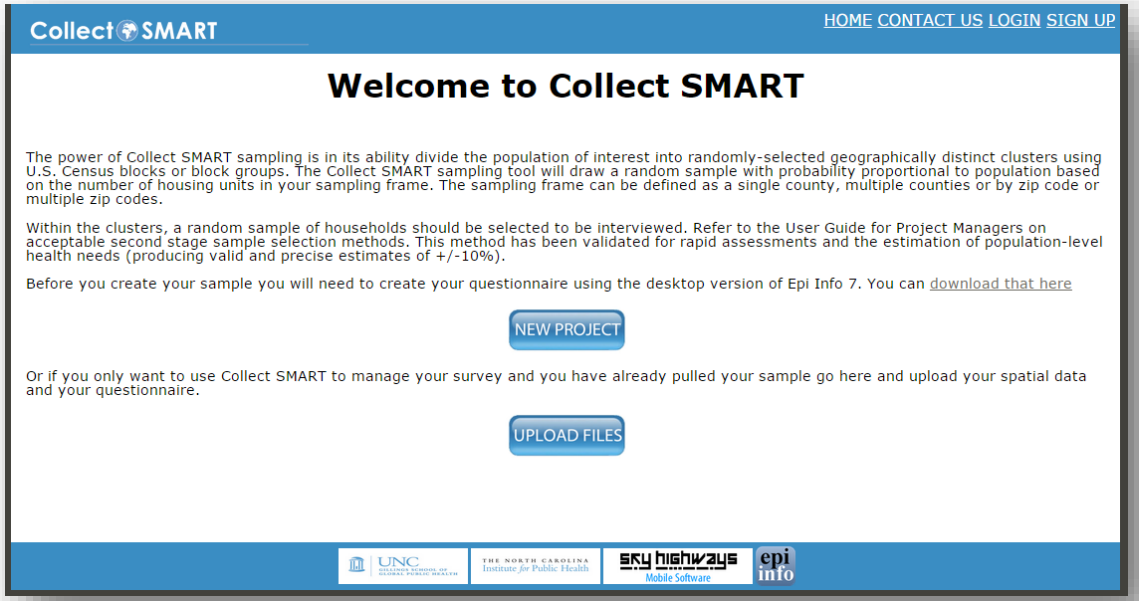
CollectSMART
Survey Management and Response Tools

Create a New Project

Automated cluster sampling nationwide*

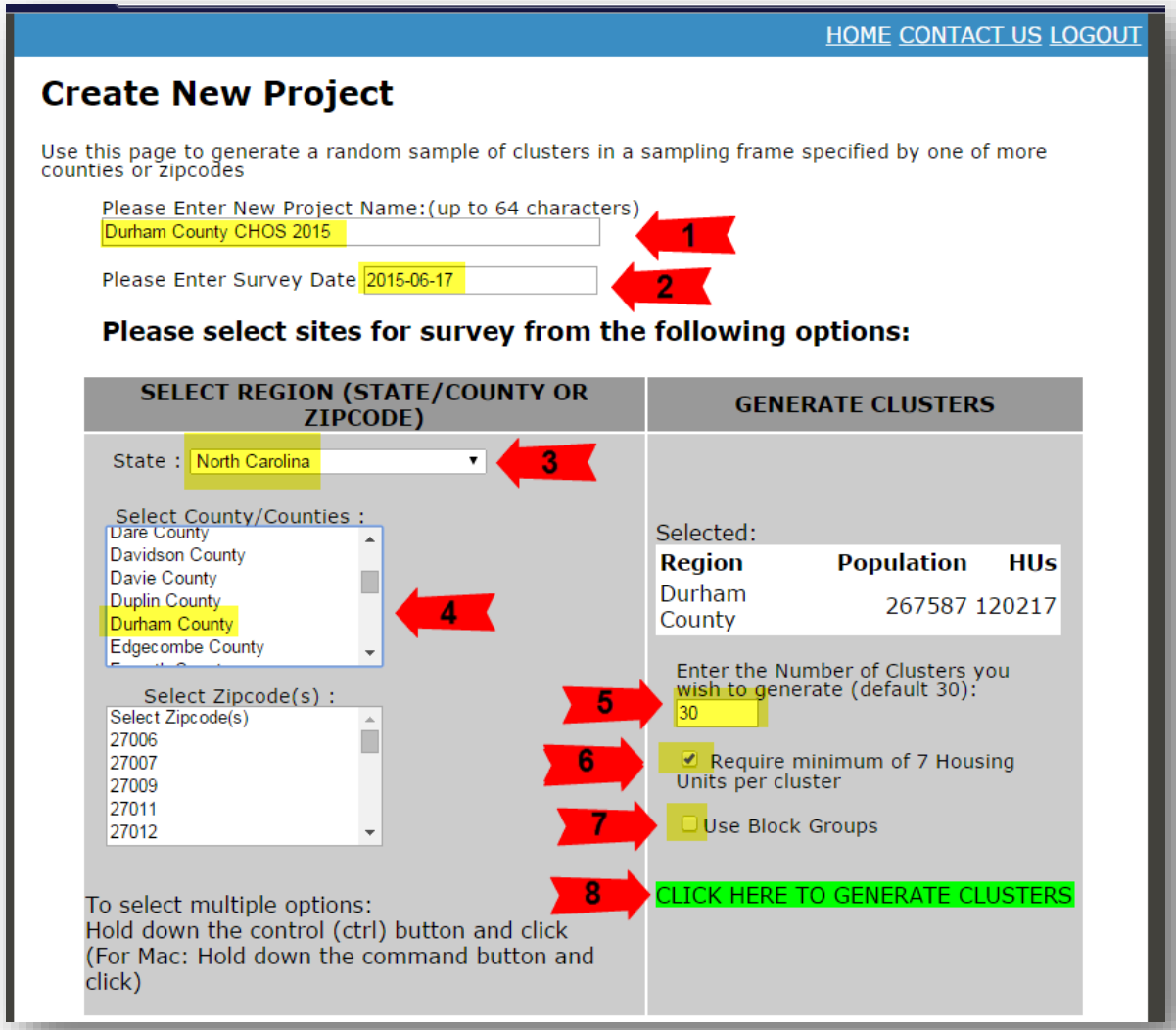
OR

Supply your own spatial data

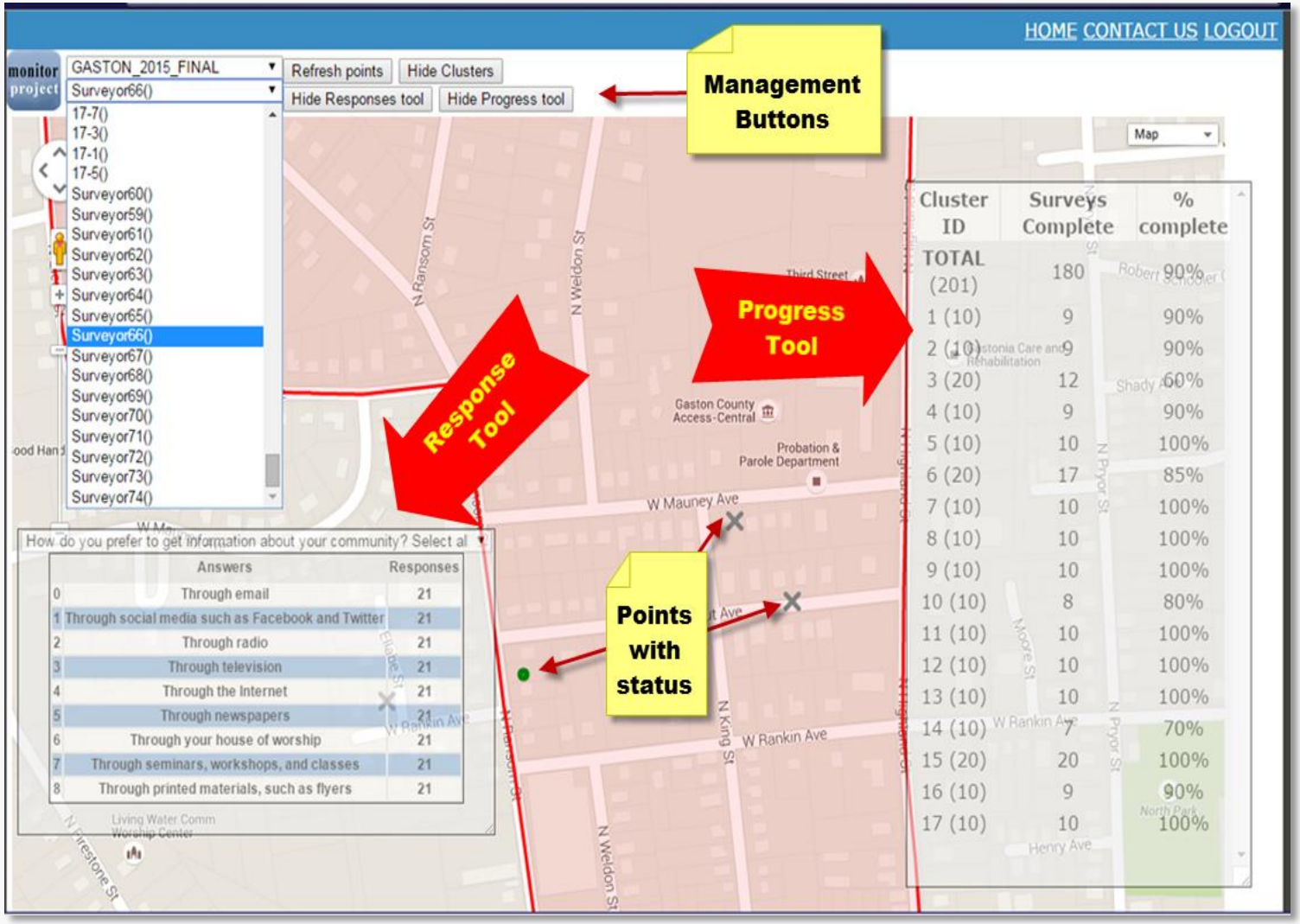


*block groups

Site Selection Tool



Project Dashboard



Collect SMART not limited to CASPER

- Any data collection opportunities – limitless possibilities!
  - Convenience sampling
  - Simple random samples
  - Well-inspections
  - Animal services
  - Outbreak investigation – contact tracing

Still Beta…Next Steps

Potential additional development ideas

- Turn-by-turn navigation
- Export image option for easier field maps
- Second-stage sample selection
- Block sampling nationwide (NC, TX only)
- Analysis reporting and summaries (reports)
- Push notifications for safety warnings
- Cross-platform compatibility (iOS)

How to Get Involved

- Limited public release
  - We need more feedback from project managers
  - Let us know what your project or need is:

    http://tinyurl.com/CollectSMARTinfo
  - What you need to use the tools
    - Epi Info desktop
    - Collect SMART app
    - A user account on the Collect SMART website

Learn more

- CDC Community Assessment for Public Health Emergency Response (CASPER) Toolkit

  http://tinyurl.com/CASPERToolkit

  - Details on CASPER methods
  - Sample forms and question bank

- Collect SMART page:
  http://sph.unc.edu/nciph/collectsmart

Thank You

For additional questions, contact Matt Simon at:

mattsimon@unc.edu

David Zane at:

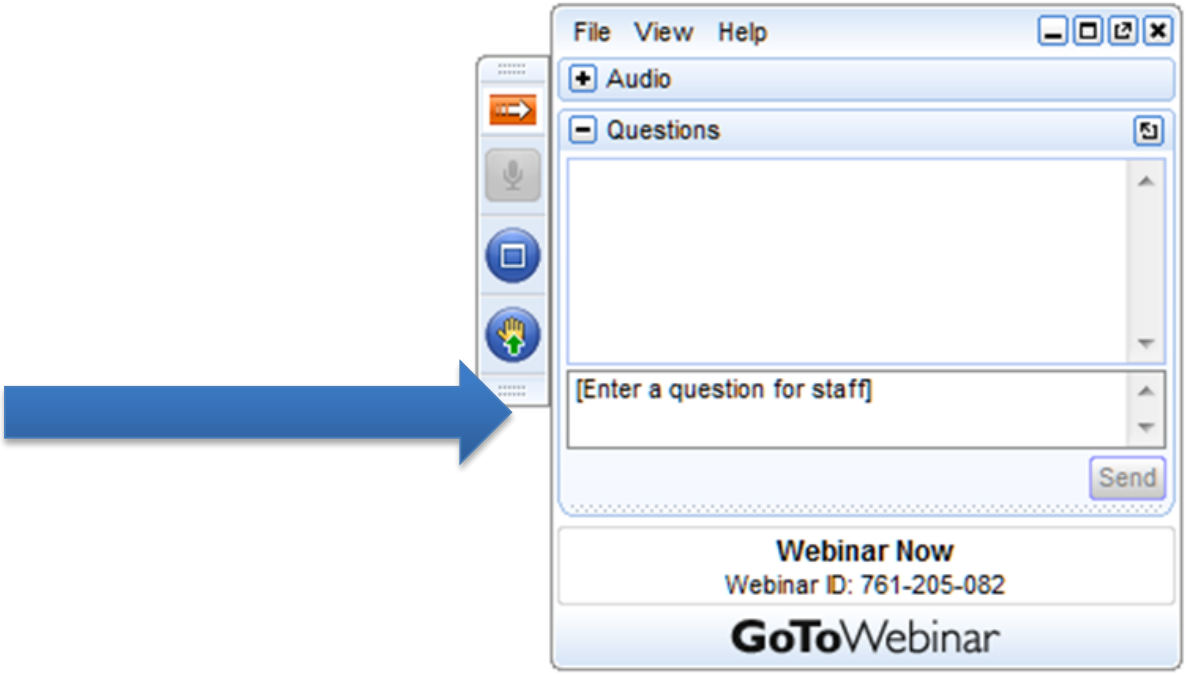
David.Zane@dshs.state.tx.us

Mike Zelek at:

Michael.Zelek@chathamnc.org

Questions and Comments?

Join the Conversation…



Thank you!

CPHCE Credits

See the webinar event page on the ASPPH website for a link to the **archived webinar**:

http://www.aspph.org/aspph-presents-webinar-series-community-assessment-for-public-health-emergency-response-casper-and-the-development-of-collect-smart-survey-management-and-response-tools-for-assessing-the-health-of/

Coming Attractions…

ASPPH Presents

WEBINAR

Using Exercises to Measure Preparedness

August 6, 2015

11:00 AM – 12:00 PM Eastern

For more information and registration link:

http://www.aspph.org/event/aspph-presents-using-exercises-to-measure-preparedness/

References

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FAQs

- When can I start using Collect SMART?
  - Go live planned for mid-August
- How many people does it take to do a survey?
  - Plan for 20 people per day for 3-4 days
  - Thursday, Friday and Saturday
- Have you found it's feasible for LHDs to have enough people to carry these out?
  - See notes

FAQs

- What devices can I use with the Collect SMART system? Can I use my iPhone?
  - Android only currently
  - Exploring possibility of iOS conversion
- Compatibility with other form designers?
  - Unknown currently. Must use EpiInfo for now, which is fairly easy to use and free!

FAQs

- What type of Census data is the tool using?
  - In NC and Texas, 2010 Block data
  - Nationwide, block group data is 2013 American Community Survey population and housing unit estimates
- How do I learn more?
  - http://sph.unc.edu/nciph/collectsmart/
  - Email mattsimon@unc.edu