Survey123 for Epidemiological Disease Tracking and Outbreak Response Efficacy

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Objectives

• Overview of Dallas County Health and Human Services previous responses

• Discuss Dallas County’s Zika Exercise with Survey123

• Discuss results of exercise

• Identify lessons learned utilizing Survey123 for future response application
Dallas County Health and Human Services
Dallas County

- Dallas County 2.6 million people

- Dallas County Health and Human Services (DC HHS) Public Health Preparedness Division

- Past infectious disease incidents
Zika in Dallas (2016)

• Epidemiology/Lab:
  o 61 West Nile cases (3 deaths)
  o 1156 residents tested for Zika
  o 44 travel-associated Zika cases + 18 probable cases
  o 39 pregnant women have been reported to the CDC as possible Zika cases (5 were symptomatic)

• RedCAP: Data collection tool
  o US Zika pregnancy registry through CDC
  o DCHHS has its own server and 4 licenses for entering and saving data
  o Pregnant women and infants with laboratory evidence of Zika infection are entered
Zika Exercise
Why ArcGIS Survey123?

• Data entry
• GIS coordination/mapping-team tracking
• Data sharing
State Disease Investigation form
Integration into Survey123
Exercise Scenario

• DC HHS lab confirms receipt of a positive PCR result sample from a local clinic at 1600 on Thursday afternoon

• Results of testing passed to DC HHS leadership and the impacted jurisdiction

• DC HHS leadership determined neighborhood canvassing of the area surrounding the home is necessary and will be conducted on Sat, 6/24/17
Canvassing Locations
Training
Canvassing Teams

• 2 person teams:
  - **Person one** will complete the consent forms and fill out the survey and provide patient education as well as answer any questions that the resident may have.
  - **Person two** (preferably a nurse or DIS person), will be setting up for any approved specimen collection in the designated location provided by the resident.
Results
Survey123 Geo-location Results

• During the 1 hour exercise:
  o 39 entries were made using survey123
  o 17 Teams used either tablets or phones

• The Esri admin monitored progress from the EOC by observing the incoming data
Flagging Groups of Interest
Lessons Learned
Advantages of ArcGIS Survey123

- **Advantages:**
  - Progress of canvassing teams was visible to EOC in real time (situational awareness)
  - Lab will be able to determine number of samples in transit
  - Ability to quantify rate of response through field mapping
  - A more efficient way to collect disease data in field reducing manual data entry
Problems Encountered

• **Law: HIPPA Compliance**
  - HIPAA Encryption Requirements

• **Technological-equipment/software**
  - Connection to the internet in the field
  - Unfamiliar with equipment/software used
  - Type of equipment

• **Data extraction**
  - Survey123 CSV/Excel mislabel bug
Data Extraction Bug:
Drop down menu answers were mislabeled

<table>
<thead>
<tr>
<th>Creator</th>
<th>Editor</th>
<th>City</th>
<th>Zip Code</th>
<th>Resident willing to give interview?</th>
<th>Type of Sample Collected</th>
<th>Time of sample collection</th>
<th>Country of Birth</th>
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How did we overcome?

- **Law: HIPPA Compliance**
  - esri Enterprising Licenses Portal

- **Technological-equipment/software**
  - Connection to the internet in the field
  - Unfamiliar with equipment/software used
  - Type of equipment

- **Data extraction**
  - Ticket for bug was submitted and is being worked corrected
Conclusion

Survey123 is an efficient disease surveillance tool:

- Allows direct data entry in the field
- Quantifying rates of response based on real time mapping
- Data sharing and situational awareness (EOC)
- Flagging groups of interest for more efficient response
Thank You!

Special thanks to the Esri staff whom spent countless hours helping us with our Esri account, the Survey123 system and getting set-up for the Zika exercise.

• **Thomas Brown, Jr.** - Team Lead – Local Government
• **Pamela Kersh** - Esri Solution Engineer
• **Zena Pelletier** - Esri Solution Engineer
• **Sarah** - Esri Support Care
Thank you for your attention!

KEEP CALM AND WEAR INSECT REPELLENT

Protect yourself from mosquito bites that spread West Nile and chikungunya.

For more information:
www.cdc.gov/westnile/
www.cdc.gov/chikungunya/