

National Disaster Epidemiology Workshop
May 8th-9th, 2013, Atlanta, GA
Summary of Presentations and Discussions

Wednesday, May 8, 2013

Keynote Presentation

RADM Scott Deitchman, MD, MPH, Office of Environmental Health Emergencies,
CDC/National Center for Environmental Health (NCEH)

- Collaboration means cross-silo linkages. Collaboration in preparedness involves the whole community: government (at all levels), non-governmental organizations (NGOs), and the business community.
- Emergency management cycle includes recovery and mitigation, which are segments of preparedness that have been overlooked by some, but PH has useful contributions to make here –as well as during an incident response.
- Focus on what information is useful at each phase of the cycle. This is achieved through our assessment and communication with emergency management.
- Data timeliness is important for PH relevance; situational awareness is a major contribution from Epidemiology, from range of sources (e.g. Biosense, syndromic surveillance, state data, etc.).
- Community vulnerability reduction is linked to improved resilience.

Session 1: Collaboration among state PH preparedness, epidemiologists, emergency managers, federal partners and NGOs—What works and how it works.

Charlie English, State Director of Georgia Emergency Management Association (GEMA)

- Emergency management does not provide direct service to those affected by a disaster, but is the focal point for decision-making and application of resources.
- Information flow needs to go both ways (between PH and emergency management).
- Of key importance are relationships among partners prior to any incident.
- Cultivating relationships is done across agencies as well as up and down the levels of jurisdiction.
- PH is among the partners that provide unique and critical information to incident command.

Matthew Kallmyer, Director of Emergency Management for Atlanta, Fulton County, Georgia

- The role of the emergency manager is one of coordination and integration.
- Incident management is done by objectives – 1. Life/safety, 2. Incident stabilization, 3. Property/environmental preservation, etc.
- Threat and hazard assessment and identifying vulnerable populations are specific areas that PH health offers. PH information can help the incident commander make informed decisions using PH surveillance systems.

- It is important to be trained in the incident command system and to learn the terminology used, so we can all speak the same language.

John Davies-Cole, State Epidemiologist for Washington, D.C.

- Multi-agency collaborations were assembled for the planning for the last two presidential inaugurations. PH provided specific health and medical surveillance skills, including syndromic surveillance (ESSENCE), laboratory capabilities, planning for aid stations, and coordinating multiple hospitals.
- Data sources for PH surveillance included partners from a range of federal agencies (e.g., Departments of Health and Human Services, Homeland Security, Defense, and Food and Drug), local agencies (e.g., fusion center, fire departments and EMS), and NGOs (e.g., American Red Cross).
- A common data system was used, which facilitated coordination.
- Surveillance baseline began two weeks prior to the event and tracking continued for two weeks after.
- Planning efforts/coordination resulted in all aspects of the PH effort working well throughout the event.

Dick Bartlett, Emergency Preparedness/Trauma Coordinator for the Kentucky Hospital Association.

- Experiences in 2007-08 involved stockpiling N-95 masks during the H1N1 Flu response were an example of hospital and PH coordination (including glitches).
- Collaborations with community partners are important for hospitals in preparing to meet the needs of the communities they serve, including epidemiologists as primary partners in support of PH preparedness.
- Kentucky created BECKy, Building Epi Capacity in Kentucky.

Session 1 Discussion:

1. Please expand on the issue that epidemiologists don't always make their relevance known

- Epidemiologists need to clearly state to partners what they do and identify their added value to a response.
- Note not everyone who is in epidemiology is trained as an epidemiologist. There are some people who are doing epidemiology and might not have the tools or the know-how to assert their skills so others.
- The economic impact blossomed so to have facts to dispute any sensationalized information is helpful. Therefore a strong communication structure among partners is important.

2. Data sharing/transparency with the public – During Deepwater Horizon, EPA took all of their monitoring data and put it on a public access website. With increasing use of databases, is this something that we should be considering?

- We need to be careful about providing access to raw data that requires interpretation and make sure that individual identifiers are protected. There may also be concerns if we are asked to release datasets that are received from partner sources. For all these reasons, aggregated data sets may be the best route.

3. Have you used/could/will you use epis to help with data interpretation for conducting an emergency response, and how equipped are you in GA to have this real time situational awareness in the middle of an emergency?
 - From GEMA's perspective, there isn't any doubt that in a health matter, public health will be the lead. In a non-health obvious disaster, GEMA would still receive info and guidance from PH.
 - Coordinating with consequence management (e.g., EMS, fire) can be an issue for the second part of the question; sometimes emergency management has the same issues with its partners as PH.
 - Again, collaborative planning is the thing that we all need to think about.
4. Use of social media during a disaster – is anyone looking at any of these resources or formal processes to incorporate these data into your surveillance?
 - During Hurricane Sandy, the CDC utilized Google resources and American Red Cross (ARC) data. For mortality data, they are doing an evaluation on the media reports versus what they receive from ARC. Eighty percent match is considered “good enough” in disasters. They are interested in social media information, but it would take a lot of data mining and synthesizing to incorporate this.
 - Social media can be a real problem because you have to assign resources to manage social media and resources to feed it. The other issue is that many agencies block different social media outlets because of security concerns.
 - It would be important to first collect more information or do a study on this issue because it is hard to utilize something if the output isn't really clear.
 - Need to define first what we would be using it for (e.g., sentinel surveillance).
5. Regarding making data more accessible, I think the hesitation is that I am worried about pushing our data out there without an epidemiologist “attached” to it. Many times, we need this “body” attached to the data to appropriately explain it.
 - It's possible the EPA went through similar concerns (interpretation versus meeting the public's demand for data) so this lets us know that a way forward is possible.
 - Understanding the national response framework as well as the joint information system is important.
 - However, to get the public back on the “right path” after someone has inappropriately tweaked data is cumbersome. Thus, we have to frame/package our data in a way that the public will be able to get the same message.
 - At a recent congressional roundtable on data sharing and vital statistics, the biggest issue was the federal government being able to share this information and the legal issues.
 - It would be helpful if ASPR (Assistant Secretary for Preparedness and Response) could prepare simple guidelines for what can we share with whom and in what circumstances and when to turn it on and off. Knowing the parameters of when/how/and what to share would be helpful.
6. Epidemiologists for resource planning – can we pursue this so that epis in PH can get involved formally at local and federal level?
 - Public health needs to type your resources (e.g. Tier I & Tier II Epi Strike Teams) so emergency managers know clearly what they get when they make a request (see General Recommendations).

Session 2, Legal Preparedness to Share Information During Disasters

Meredith Allen, Director of Preparedness and Strategic Partnerships, ASTHO

- ASTHO's Navigating Legal Barriers Project developed eight toolkits (six currently available online) to address key information needs for PH officials in responding to emergencies (<http://astho.org/Programs/Preparedness/Public-Health-Emergency-Law/Public-Health-Emergency-Law/>): (1) Emergency Authority & Immunity, (2) Emergency Use Authorization, (3) Emergency Volunteers, (4) Public Health & Information Sharing, (5) Public Health & Schools, and (6) Scope of Practice.

Denise Chrysler, Director for the Mid-States Region of the Network for Public Health Law

- Approaches to legal preparedness: When planning for emergencies, ask an attorney, "This is what we need to do to protect the public's health. How can you help us accomplish this?"
- Sharing data and privacy issues: Laws differ in each state.
 - With HIPAA and data de-identification, there is a risk of re-identification
 - The media pose a risk for data disclosure both with reporting and Freedom of Information Requests (FOIA) – there are exemptions from FOIA
- PH needs to clearly articulate how the data fit into their mission, especially with regard to non-infectious diseases, and integrate these issues into the Tier I and II typing for epidemiology at state, local and national levels.

Session 2 Discussion:

1. Data flow can involve all of the following: patient, provider, laboratory, family, PH (state, local, & CDC), law enforcement, schools, business, other states.

- PH collection and uses of data/information are generally for surveillance and for action.
- Laws regarding collection and uses of data and information are both specific and general.
 - HIPAA permits data sharing: Have a letter from your Attorney General to share with potential data providers.
 - FERPA can be more of a barrier, though there is a narrow exemption for health and safety.
 - PH & law enforcement often run into conflicting authorities. Look to "forensic epidemiology" along with joint planning, training and investigation.

2. Application of PH law to quarantine and isolation – how do we get past lawyers commitment to PH versus their commitment to legislature and legal community?

- ASTHO provides a course for lawyers/judges on PH. There is a bench book developed for most states that can be a resource (online resource on CDC's legal website).
- Analyzing your law for social distancing is a good way for your attorney to think through some of these situations. There is older case law available on the importance of legal provisions in these PH situations and case law that focuses on authority that the government has to protect people.

3. Any guidance when it comes to posting case numbers? What geographic level should shared data be drilled down to? Is there general guidance?

- This is a big issue. Unfortunately, there are no cut and dry answers and the community has identified it as a problem.

4. There is resistance from hospitals on HIPAA application of data on injuries (in addition to infectious diseases) in emergencies. Cannot collect information on injuries unless it is made notifiable in AL. Still having issues with this.

- For these issues, PH needs to clearly communicate how accessing the data is connected to their mission and be clear on how these data requests are tied directly to your mission.
- There is a similar issue in radiation emergencies to the one described above. Defining what is legal authority and how do these cases differ from infectious diseases. The issue remains with regard to dealing with data sharing when not related to ID.

5. Duty to warn – where do we in PH fall within this?

- Chrysler: this is very developed in the mental health field. Often, there are safety valves for PH to report these issues and as long as there is no abuse of this power.

Session 3: Incorporating climate change and epidemiology into PH disaster planning and response guidance

George Luber, CDC/NCEH, Climate and Health Program

- PH dimensions of climate change are becoming clearer as severe weather-related disasters become more severe, more frequent and widespread. The increased risk in hazards is critical to human health and to the capacity of communities to respond. Climate change is a driver for both acute events (e.g. tornados) as well as more long-term events (e.g. drought).
- Intergovernmental Panel on Climate Change (IPCC) special reports I & II identify direct and indirect effects related to the health of people, animals and the environment. (See: <http://www.ipcc-wg2.gov/>).
- Climate and Health Program (CHP) at CDC developed the Climate Ready States & Cities Initiative, with three goals: (1) Analyze and translate climate science to PH partners; (2) Develop decision support tools; and (3) Provide leadership where climate change is discussed
- CDC created a framework that supports health departments' efforts to incorporate climate science into urban planning and implementation efforts.

Bryon Backenson, New York State Department of Health

- Under CHP funding, New York has incorporated climate change into their emergency response planning for PH and has created the Extreme Weather Planning and Response Guide as an appendix under the Incident Management System Response Planning.
- The guide helps PH plan for anticipated (yet not specifically known) hazards over the long-term and is updated every four years, or as needed based on experience.
- Changes in patterns of zoonotic/vector borne/food borne as well as chronic diseases are expected. NY has been tracking changes in Lyme Disease in NY.

Theresa Watts, Oregon Public Health Division

- As a CHP funded program, Oregon has focused on building PH climate change capacity at all levels; five local health departments (LHDs) have developed

climate adaptation plans. State and LHDs collaborate with PHEP and academic partners.

- Multnomah County created a stakeholder advisory committee and conducted a climate change risk assessment which focuses on extreme heat events, poor air quality, and changes in vector borne diseases. They have developed a “Spare the Air Days” campaign to reduce impacts from elevated air pollution levels.
- Benton County has a Climate Change Health Risk Tool that addresses extreme heat events, extreme precipitation and flooding incidents, and wildfires. Special adaptation interventions have been developed for extreme precipitation.
- SStatewide efforts include:
 - A hazard vulnerability assessment, which identified a high probability for wildfire risk and for a longer fire season.
 - Statewide review of climate science—specific to Oregon.
 - Multi-agency coordination
 - Increased surveillance for climate-related hazards and events.
 - Collaboration with academic partners includes downscaling modeling data for Oregon communities and tool development.
- Currently conducting a gap analysis and evaluation, and plan more coordination with university, business and state agency partners.

Session 3 Discussion:

1. Does it really make sense for various sub disciplines across PH to do their own population vulnerability assessments or should we collaborate?
 - We should collaborate, but what is important is what you do with it.
2. Have you looked at insidious incidents and established thresholds at which points actions should be taken?
 - For many of these incidents, you may not know whether long term tracking is warranted versus a sentinel or singular event.
3. How do you plan for what is foreseeable versus an “act of God” – is there a way that PH determines the extent?
 - In Oregon, they are reaching out to nursing homes and daycares as part of community resilience work.
 - When planning for these events, you are estimating their probability of occurring across time. We are not planning for what will happen in say 2020 currently, so there is some accountability. We tend to look at disasters as discrete events but we have to look at them as periodic. We need to build not for the current state but future probability.

Session 4: Mental health and disasters: Findings from the CSTE needs assessment survey results

Deborah Gould, Division of Behavioral Surveillance, Public Health Surveillance and Informatics Program Office, CDC

- CSTE needs assessment results re: Mental Health Assessment is the first step in a CDC effort to improve MH response, which has not been part of core Public Health epidemiology efforts.

- Needed - baseline information about those within the community who have pre-existing MH-Behavioral conditions and those who develop them during/after a disaster. Also needed to look at what and how MH data are/should be collected.

Session 4: Discussion

1. Are there well documented situations where there has been a need to surge mental health services and if so, how?

- After Deepwater Horizon and Hurricane Katrina, there was a need. SAMHSA (Substance Abuse and Mental Health Service Administration) provides mental health services; states can apply for crisis counseling funding through FEMA if declared a federal disaster. SAMHSA also has other funding even if not a federally declared emergency.
- CDC has always worked with mental health, but after the oil spill we realized how separate our agencies were. There is a surge in MHMH needs outside of disasters. We are already underserved for these services, so when you add a disaster, then it is amplified. AL has a program called Project Rebound that provides services. The range of services is different based on the need.

2. What is the role of PH in collecting MH data?

- We have discussed the need for collaboration. If collecting surveillance data, think about reaching out to MH partners to identify whether you can ask something useful and actionable. In this way, there should be standardized questions developed if PH does decide to incorporate. States need this data in order to apply for federal funds, so there seems to be an incentive for MH services to reach across the table to PH to provide this for them. This is an area that PH can step in to help MH.

3. There is also a disconnect between state & local levels, as opposed to state to state PH and

MH. Many local healthcare coalitions and organizations provide MH services.

- This is a remaining gap. The gap may be more related to service delivery as opposed to data gathering, but a gap nonetheless.

4. On what level are we looking at? There seems to be a difference in our understanding on how we collect data on long term needs as opposed to acute only mental health needs.

- Not a great answer, it really depends. Both are impacted during disaster.

5. Are you looking at the community or providers? What is the providers' level of preparedness for surge during disasters?

- This effort is focused mostly on providers and the systems in place to conduct surveillance and deliver services. Levels of preparedness among providers were not directly measured in this survey, but it is likely that there is a wide range in the levels of preparedness among MH providers.

Session 5: Improving mortality and morbidity surveillance during disasters, especially extreme weather events

David Sugerman, National Center for Injury Prevention and Control, CDC

- Injury is the most common cause of mortality and morbidity during disasters.
- Most of current surveillance systems for PH emergencies (e.g., death certificates, hospital discharge, Trauma Registries, etc.) are not timely in comparison to sources such as emergency department-based surveillance (e.g. BioSense,

Essence, etc.), Poison Center reporting, etc. -- however, the latter are often not robust enough to cover all possible information of interest, so this session focused on legal issues with reporting on non-infectious disease data.

Jon Roesler, Director Injury & Violence Prevention Program, Minnesota Department of Health

- Surveillance data are needed before, during and after an emergency.
- Most examples are of assessments and studies conducted after an incident.
- Can data be used prior to an incident to predict and prevent injuries and death from disasters? Arima modeling suggests that summer months and Saturdays are the most common times for injuries in general

Keith Stellman, National Weather Service, Atlanta Regional Office

- National Storm Data Program (NSDP) (www.ofcm.gov) is the official site for collecting and posting information about severe and unusual weather events, and includes injury and death information.
 - 122 local weather service officers across US: www.water.weather.gov
- National Weather Service (NWS) would like to partner with PH at all levels to better coordinate data about human health and outcomes.

John Plisich, Atlanta Regional Office of Federal Emergency Management Agency, Mitigation Assessment Team

- Mitigation Assessment Team (MAT) has the primary role to use building sciences to improve the ability to keep people safe and identify damages
 - Bring in specialists from different disciplines to investigate and assess damage trends
 - Generate proposals for engineering changes in building practices
 - Describe “mode of failure” of buildings to influence construction code changes and standards
 - Reports typically take a year
 - Current focus on coastal zones and look at structural loads, impact resistance, etc. for homes, schools, commercial buildings, and include shelters and safe rooms
- FEMA MAT wants to collaborate with PH at all levels.
- Post-Katrina MAT findings led to changes in building codes
- Use of MMWR tornado fatalities information (7/20/12) for location of injuries.

Jeanne Spears, American Red Cross

- Ongoing joint surveillance committee between American Red Cross (ARC) and CDC provides morbidity and mortality surveillance. Wide range of data gathered on services, needs, deaths, health impacts, etc.
 - Update forms and processes to capture and report data. Some collaboration with CDC on data forms.
 - Increase knowledge base of volunteers
 - Increase capacity of volunteers to capture data
- Identify potential threats to clients regarding immediate PH actions/situational awareness, and plan for future disasters (prepare nurses to respond, improve mass care across US, and disseminate information).

- Issues with Hurricane Sandy – high rise residential buildings presented “vertical” disasters (no power and no water).
- ARC provides shelter assistance as well as outreach visits in the community (homes, hotels, apartments) to provide relief supplies, equipment, and medications.
 - Assess care needs and link to services for physical and mental health.
 - Condolence visits by ARC teams to families in all fatalities (to provide care and verify death data).
- Levels of ARC Response
 - Level I – Chapter level (for single home or building)
 - Level II – Chapter level, multi-family or buildings impacted)
 - Level III – Multi-Chapter involvement
 - Level IV – National level response

Lauren Lewis, Health Studies Branch, National Center for Environmental Health, CDC

- Health Studies Branch (HSB) provides epidemiologic support for PH for natural disasters, technological and complex emergencies. Resources and tools available on web: www.bt.cdc.gov/disasters/surveillance
- Epidemiologic data used in all phases of disaster management cycle for situational awareness, allocation
- HSB focus on capacity building, technical assistance to improve surveillance efforts.
 - Target PH messaging, help with surge capacity
 - Provide training (regional and state levels) before and during disasters.

Session 5: Discussion

1. NSDP documents impact from a wide range of weather events for historical records and trend analysis – since 1850s

- In 2007 integrated with Google Maps for better tracking and display via the web.
- Services include tracking, predicting and issuing of warnings
- Collects/verifies information of what is happening (including death and injury reports and estimates about damage costs)
- “Real-time” reports are considered preliminary
- Post storm surveys are used to validate information and to rate storm severity: <https://verification.nws.noaa.gov>

2. Challenges facing disaster epidemiology: 1) Competing priorities; 2) Data collection varies among states and events; 3) Little incentive to share data with CDC -- & no electronic data transfer system 4) No baseline information and lack of denominators due to damaged infrastructure

3. How do you access protected patient information? Have you compared your data to other PH data?

- The local NWS utilizes existing relationships among emergency management within the county for data. The NWS primarily tries to identify vulnerability trends at the population level, so there isn’t much of a need for personal level data. On the national level, comparisons with PH data are done and inconsistencies are found; there are several reasons for this – e.g., the local level not having all of the information as other organizations.

4. Where does the NWS information come from and is it certified in the way that PH thinks of certified data (i.e., checking vital records)?

- This is something that the NWS would like to work together with PH on.

5. How are we working on getting data more rapidly?

- The CDC is looking at other ongoing efforts like EPHT and BIOSENSE 2.0 to obtain lessons learned
- The ARC is in the process of utilizing smart phones to take pictures of their work sites and data forms and email them to operation headquarters and then this information is sent to CDC and national headquarters.
- There are many different types of people involved in hazard vulnerability assessments, but more so in a reactionary mode and there are many people doing them, so where does what Mr. Plisich does fit in emergency spectrum? Their work is done after the event, with the intent to prevent similar harm in future incidents.
- It's also important to know what the assessment cannot predict as well as what it can. Thus collaboration is important.

Session 6: Public Health Response to Super Storm Sandy – hearing from those who were involved

Thomas Matte, New York City Department of Health and Mental Hygiene

- There were many challenges (e.g. food shortages) to sheltering in place among those in high-rise housing along the coast. Caution about gas siphoning and CO injuries were used for messaging as well as identification of access to care. An online portal provided information about cleanup safety, mental health, and repair issues.

Bryon Backenson, New York State Department of Health

- In NY, challenges included 6000 patients and residents evacuated from healthcare facilities and the ability of HD staff to get to work.

Tina Tan, New Jersey Department of Health and Mental Hygiene

- Human infrastructure was disrupted; convened partners to respond (local/state/federal PH, academia and voluntary groups) to assess needs/impacts; conduct surveys; and connect people with services.
- Recovery phase = 1) Indoor environmental issues (mainly mold) and provided safe cleanup training; 2) provide guidance to get business back up and functioning; and 3) respond to environmental health threats with surveillance for vector borne diseases, and mobile pharmacies to offer access to medicines.

Amy Wolkin, Health Studies Branch, National Center for Environmental Health, CDC

- Federal response to Sandy:
 - Deployed Epi-Aide team to New Jersey to assist ARC in conducting shelter surveillance
 - Helped NYC modify CASPER for urban mental health assessment
 - Provided ongoing reports to partners

Session 6 Discussion:

1. Surveillance in NYC identified cold stress, carbon monoxide exposure, lack of food/water, and stranding of those with mobility impairment. Shelter surveillance

identified respiratory hazards, stress and other mental health impacts. Seasonal analysis of syndromic surveillance as a baseline would have been helpful.

2. Mortality surveillance at NYC DOHMH used electronic death registry and tracked direct causes (external injuries and drowning) and indirect causes (increase in heart respiratory disease deaths).

3. Need to provide local health departments with usable templates.

4. Challenges: daily reports should go back to the shelters for their situational awareness; referral options for mental health and medical needs; need a fusion center for all data used for surveillance and situational awareness.

5. How did you get the CO data?

- Chief complaint data from hospitals as well as data from poison control centers. Other states include this in their syndromic surveillance systems and can get data from emergency departments and hyperbaric chamber data.

General recommendations from sessions

Emergency management coordination

- PH needs to be clear about what it brings to the table—educate your partners about who you are and what you offer and value.
- Be involved in planning, training and participating in exercises with other partners.
- Clearly type your resources. For example, define Tier I and Tier II Epi Strike Teams. This will involve defining capabilities and listing credentials/qualifications of teams that are brought to the response.
- List anticipated actions likely to be needed prior to any incident, and integrate them with emergency management.
- Work with people from both the national response framework and joint information system in your collaboration, and encourage leaders to let the experts speak so that the correct information can be shared.

Improving mortality and morbidity

- We need to address issues around how to define population controls; those exposed but not injured. Some ideas for sampling options include community cluster sampling, shelter lists, FEMA assistance lists, random digit dialing, and referral from respondents to friends/associates/relatives.
- Real-time syndromic surveillance that includes injuries would be best for timely information during an incident.
- Potential strategies to improve disaster surveillance:
 - Develop surveillance guidance
 - Increase utilization of existing surveillance during disasters
 - Explore use of non-traditional sources of data to improve active mortality surveillance
 - Explore use of social media

Working lunch – Report back from group discussions: Recommendations and next steps

Group 1 – Improving Collaborations across Agencies and Government Entities

- Preparedness types/personalities vs. Public Health types/personalities

- Consider:
 - Learn how to talk their language and always explain WHY.
 - What types of products (data) do we both need? Data needs are different for emergency response.
 - Educating externally and internally in all roles. Educating internally includes epidemiologists across existing silos (e.g. communicable disease, injury, occupational, chronic, etc.).
- Participate actively in exercises and drills. This is a way to demonstrate what you do, the value of your contribution, and the contact builds relationships.
 - How to overcome silos?
 - Homeland Security Exercise and Evaluation Program (HSEEP)
 - HSEEP calendar – preparedness and EM folks use a lot but PH doesn't.
 - Education (see above)
 - Opportunities for collaboration in real, but non-emergency settings and events (KY foodborne outbreak/NASCAR examples)
 - Develop a multi-disciplinary team representing multiple agencies
 - AL example of biannual meetings (external EM partners), monthly meetings (with internal preparedness team); work to share exercise schedule between silos.
 - Include mental health partners in planning and exercises.
- How to bring groups together?
 - Liaison internally first with public health preparedness people since they may already be involved with EMs and may be more appropriate for contact (then follow-up with epidemiologists from across disciplines).
 - CEFOs' job is to bring preparedness and epi together (with feds).
 - Include other partners
 - Local or regional office of the National Weather Service
 - Regional chapters of the American Red Cross
 - Pharmaceutical association – have a formal agreement with pharmacy association re: stockpile
 - Poison control center
 - Forensic epis with law enforcement (local, state and FBI)
 - State and/or Federal Occupational Safety and Health Administration
 - State mental health agency
 - Trainings that bring groups together:
 - FEMA – Healthcare Leadership Course in Anniston
 - FBI – Crime/Epi Trainings (Forensic Epidemiology)
 - Meta Leadership Institute (Harvard)
- Include yourself in the planning process (as an epi) with public health preparedness people and emergency managers
 - Preparedness as logistics for outbreak investigations – use real world situations as “exercises”
- Establish a “disaster data team” – preparedness and epi and risk communications
 - Pre-clearance on documents
 - Library of relevant documents/template reports (to share – DECoP)
 - Setup emergency (24hr) clearance
- Learning from experience

- Participate in After-Action Reports & hot washes to make sure your lessons learned are collected.

Potential CSTE Deliverables:

- Provide a list of trainings and funding sources that would be relevant to epi/preparedness (specifically for team building). Include those listed above plus others.
- List of federal agencies and what they can offer to a state during a disaster (what states need to ask for from whom – funding and technical assistance); request for a guidebook/checklist
- Continue to use DECoP as a mechanism for sharing documents (encourage resource sharing)

Group 2 – Improving Surveillance

- Surveillance goals: Map out different goals of surveillance and how they fit on the crisis/recovery timeline (e.g. situational awareness for public and decision-makers is a goal for early on in the crisis, but understanding causal factors for diseases and injuries related to the disaster is a goal for the recovery end of the disaster.).
- Mortality surveillance:
 - Need to work with coroners and medical examiners (MEs) to promote collaborations with public health for surveillance, both locally within states and also with the national professional association (Called the International Association of Coroners and Medical Examiners <http://www.theiacme.com/home2.html>). Need standardized definitions for disaster-related deaths to be used by coroners/MEs.
 - The American Red Cross needs to get their mortality counts to state and local PH partners, in addition to the reporting they do now for CDC.
- Syndromic surveillance: Inventory/develop and validate syndromic system queries for disaster-related health outcomes that can be shared with all states. Note: Different syndromic systems may be more or less easy to query with special queries.
- Shelter surveillance needs to be done during disasters, but be mindful not to let it drain resources that would be needed for surveillance efforts that are likely to have a higher “yield/impact” – e.g. injury or carbon monoxide surveillance.
- Data collection: Need to develop and evaluate platforms for rapid data collection and data sharing using electronic tools like tablets, or cell phones (to photograph and transmit data forms).
- Best practices in disaster epi: Should do a follow-up to the recent CSTE disaster epi state survey, asking states with experience in disaster epi to provide more detailed information, with a goal being to compile materials on best practices.
- Population data:
 - Need to be sure that you have identified all your populations at risk, noting that state-funded PHEP programs are required to do this so there should already be a lot of information available. There are new tools available to conduct HVAs.
 - Know your background population data and data sources, so that you are prepared to answer the question “...compared to what?”
- Emergency Responder Health Monitoring and Surveillance guidance, available from NIOSH, will help states meet PHEP Capability 14 and improve health and safety of responders, contractors and volunteers.

Join the CDC Disaster Epidemiology Community of Practice (DECoP) and use it to post and find information to improve disaster epi practices.

Group 3 – Responding to severe weather events (SWEs) as part of disaster epidemiology

- Need to wed prevention messaging as well as the responses needed to deal with the effects of the SWE. What preventive measures were in place for an SWE?; what mitigated the impact and what measures did not?
- Death certificates take a long time; NWS can get early information from medial examiners (ME's) early on in the aftermath, but difficulty in getting final assessments due to time lag in death certificate reports. ARC is another source of more rapid mortality information.
- Syndromic systems are in place, but need partners to report into them! Build those collaborations before the disasters strike.
- NWS now has maps that show the predicted areas of impact for a SWE, and can summarize the population at risk under the mapped area.
- Collaborative partners:
 - Training needed for people who enter information from death certificates –work with CDC's National Center for Health Statistics (NCHS).
 - Request coroners and ME's to report more consistently.
 - Consider use of hospital preparedness (HPP) Regional Healthcare Coalitions
 - During and after a SWE, when the hospitals are overwhelmed, consider using the healthcare associations to gather data. Could also consider dispatching an Epi Strike Team to extract data at the facility.
- Recommendations:
 - Don't try to reinvent new wheels- use current surveillance systems in place, but reach out before the next SWE to be sure the system is ready.
 - Develop a workgroup in the CSTE Disaster EpiSubcommittee to accumulate and make recommendations on suggested guidance for increased SWE disaster epidemiology- how a state can use existing HPP and PHEP resources to collect more real-time morbidity and mortality data.
 - Continue collaboration with the CSTE Climate Change Subcommittee.
 - Collaborate and share data and information with Emergency Management, and with Media, as appropriate.
 - Disaster Epi Subcommittee should review the Climate Change strategic plans and recommendations that the state grantees have developed in response to the NCEH grants that went out to various states.
 - Are heat and cold extremes reportable in each state?
 - What are the case definitions for a SWE? Would they not differ according to state (e.g., Hawaii versus MI)
 - Identify the necessary data elements needed for valid, reliable and useful shared information amongst partners (NWS, EM, media, PH, etc.)
 - Work with NCHS.
 - Work with NWS.
 - NWS needs age, gender, date of death, and location of death.