How Public Health Preparedness Changed in North Carolina after Anthrax

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When the first case of intentional anthrax occurred, I was the North Carolina State Epidemiologist. I received the phone call from the Centers for Disease Control and Prevention (CDC) as soon as there was suspicion of terrorist activity and the potential for further exposure/cases of inhalational anthrax. Coincidentally, the NC Governor’s Terrorism Task Force was meeting that day.

We, at public health, shared the development with members of the task force including Federal Bureau of Investigation (FBI) agents before they heard of it through their own channels. This further established the lead role of public health for this event in NC.

Based on what we knew about anthrax at the time and the travel history of the index case, it was believed that the exposure occurred in North Carolina. Therefore, the state was at the center of this public health emergency. I was tasked with leading the public health response along with the State Health Officer, Dr. Leah Devlin.

Our history of natural disasters (floods and hurricanes mostly) provided a strong base of experience for organizing the State Emergency Response Team (SERT) and partnering with local responders. Consequently, the framework for organizing the response was similar to other emergencies.

Of course, it differed dramatically in scale with the whole state potentially at risk and with the fear of the unknown. In a hurricane, we can see it coming, track the flooding and devastation and then organize the clean up and recovery efforts. With anthrax, we did not know who the enemy was, if they were going to attack again and we couldn’t see the weapon. This meant that FEAR ruled the day and public communications were critical. During the response we established a “battle rhythm” of regular communications with 1), our local response partners; 2), our national response partners; and 3), the media to keep the public appropriately informed.

The attack created many challenges for the public health and emergency response system throughout government. In addition to communication, there was a lack of public health infrastructure. One area where this was keenly acute was in the lack of electronic systems for public health surveillance. Since the attacks, North Carolina has made tremendous progress in this regard. Instead of having to wake hospital infection control staff in the middle of the night to pull charts and track down lab results, we now have a near real time electronic emergency department surveillance and reporting system in every hospital that allows us to do public health surveillance much more efficiently.

Ultimately it became known that North Carolina was not the site of the powder drop. However, we made incredible public health improvements in the decade since the attacks.
Strengthening Local Preparedness Statewide

- Provided funding and guidance to all (85) local health departments and the Eastern Band of the Cherokee Indians to establish public health preparedness and response programs, including a smallpox vaccination plan, a Strategic National Stockpile (SNS) distribution plan, and other plans.

- Established seven Public Health Regional Surveillance Teams (PHRSTs) in strategically located local health departments to provide statewide public health preparedness and planning capacity. PHRSTs consist of a physician, a medical epidemiologist, an industrial hygienist, an administrative assistant, and an affiliated field veterinary officer.

Providing State Level Leadership and Expertise

- Established a state level Public Health Preparedness and Response (PHP&R) team to build expertise and response capacity at the state level.

- Appointed the Public Health Preparedness and Response Advisory Committee to guide efforts around state and local preparedness.

- Created the Public Health Coordinating Center (PHCC) in accordance with the NC Emergency Operations Plan to provide space and equipment for key public health operations response personnel to come together during a public health event to enhance effectiveness. The PHCC has been activated for multiple public health events, including Hurricane Isabel, Charley, Frances and Ivan; SARS; the Apex Chemical Emergency and the influenza vaccine shortage.

Creating Necessary Legal Authorities

- Sought passage of two new laws by the NC legislature in the June 2004 session and one in 2008. One mandates reporting by hospitals of Emergency Department data for NC DETECT. The other extended isolation and quarantine authority to better respond to practical needs. Public health isolation or quarantine orders can now be given for duration up to 30 days.

- Secured new legislation to allow access to medical records when an emergency or potential environment risk is occurring.

- Sought passage of major legislation to include reporting of zoonotic diseases from the state veterinarian to public health.

- Secured legislation to give embargo authority for state environmental health specialists for contaminated food.

Developing And Exercising The Plans

- Developed numerous state level plans including the Public Health All-Hazards Plan as a part of the NC Emergency Operations Plan, developed a SARS Response Plan, Smallpox Plan, a plan to dispense the Strategic National Stockpile, a Chempack Utilization Plan, and the Avian Influenza Plan.

- Developed the first FEMA approved mitigation plan for infectious disease and zoonotic agents which will allow for federal reimbursement for corrective measures to minimize damages incurred as a result of an outbreak.

Assuring Earliest Detection: Surveillance

- Initiated the development of the North Carolina Public Health Information Network (NC-PHIN), an enterprise level information technology infrastructure to integrate key state and local public health data systems. Key components within NC-PHIN include the NC-Health Alert Network, a statewide disease reporting and surveillance system that is compliant with the National Electronic Disease Surveillance System (NEDSS), the NC Hospital Emergency Surveillance System (NCHESS), and a pre-hospital emergency medical services data system called PreMIS, the Laboratory Information Management System (LIMS), and the NC Immunization Registry.

- Created the NC Hospital Emergency Surveillance System (NCHESS) which receives emergency department data from NC’s hospitals to assist state, regional and local public health professionals in disease surveillance efforts.
Established NC-DETECT (North Carolina Disease Event Tracking and Epidemiology Collection Tool) which receives, compiles, and analyzes data from a variety of sources with public health implications. Data currently being collected includes hospital emergency department data, reportable diseases and conditions, poison control center, pre-hospital management information system, and NC Wildlife surveillance.

Improving Communications
- Established the North Carolina — Health Alert Network (HAN), a highly secure and fully redundant communication system that is designed to immediately alert key state and local health officials and care providers to acts of bioterrorism, emerging disease threats, and other public health emergencies.

Identifying The Agent Early
- Developed the NC Laboratory Response Network (LRN) in the State Laboratory of Public Health, which is designed to respond to acts of bioterrorism or other public health threats and emergencies. SLPH doubled its Biosafety Level 3 (BSL-3) capacity in Raleigh and established three new strategically located regional BSL-3 labs.
- Created the first statewide registry of biological agents in the nation which allows for tracking and improved security of agents of bioterrorism.
- Developed the white powder protocol used by all first responders, provide laboratory testing for white powders while maintaining the appropriate chain of custody.
- Secured $101 million from state legislation to build a new state of the art public health laboratory.

Learning from Real Life Experiences
- Established and operated shelters in Wake and Mecklenburg counties for hundreds of Hurricane Katrina and Rita evacuees in NC. These shelters initially focused on providing for the basic public health needs of these evacuees. State, regional, and local public health staff conducted surveillance studies to assess pre- and post-event health and social issues, and then assisted with assimilation of these evacuees into the communities. Other hurricanes in North Carolina such as Isabel in 2004 provided additional real life experiences including the use of GIS and handheld technology to identify people in need and target resources accordingly.
- Investigated and contained one of the eight laboratory confirmed cases of SARS in the country in 2003. This investigation included the use of quarantine and isolation, public health directives to the families, health care workers and the employer — a major university system.
- Managed the distribution of limited flu vaccine available during the 2004 flu season. This effort included issuing legal orders to providers of all types limiting vaccine to high-risk groups, communicating with the public and providers, coordinating with long term care facilities, hospitals, health departments, private distributors to maximize the use of the vaccine and providing follow-up evaluation.
- Continue to respond to suspicious substance (“white powder”) incidents. Local, regional and state Public Health response teams responded to 15 suspicious substance calls that required interagency analysis and response.
- State and local Public Health teams responded to a Department of Defense environmental detector alarm for tularemia.
- Local, regional, state and federal teams responded to a threatening passenger on an incoming flight. The passenger was threatening the other passengers with a substance he identified as smallpox.
- State Public Health investigated potential toxicity from a dietary supplement with high levels of selenium in a multi-state incident.
- Local, regional and state Public Health has investigated at least four large multi-state food borne illness outbreaks.
- Local and state Public Health teams provided critical expertise on re-entry of a community after evacuation for a chemical plant fire (2007).

- Provided by Steve Cline