Virginia Responds to the Shootings at Virginia Tech

Partnerships are critical for cohesive response to mass casualty incidents.

In April 2007, a mass shooting occurred on the college campus of Virginia Polytechnic Institute and State University, commonly known as Virginia Tech. The shooting left 34 people dead and 26 others injured. The collaborative effort of regional hospitals, emergency medical services, and state and local public health departments resulted in a quick response.

Before the shootings, the events of September 11 had increased attention to mass casualty preparedness and response, and federal funding helped establish a regional health system model ready for such a response. For example, regional collaborative planning, training, and exercising resulted in increased experience, improved communications, and closer relationships among responders. During the Virginia Tech shootings, the close relationship between state and local public health and the Virginia healthcare system led to improved communications and a better response overall. The low overall mortality rate of victims, despite limitations given the rural health care system, was evidence of a successful response.

A key lesson learned was that mass casualty situations can occur anywhere, including rural areas with limited to no access to trauma centers. Organization and leadership, possible alterations in care standards, education, communications, transportation, triage and legal issues all emerged as important issues. Lessons learned from the Virginia Tech incident will assist Virginia healthcare and public health systems to improve planning for future emergencies.

According to the Virginia Department of Health, the cooperative agreement is valuable because it has allowed for many improvements that contribute to the state's overall emergency and preparedness response capabilities, including additional staff at local, regional, and state levels within the health department and state laboratory. In addition, Virginia has been able to build an incident and unified command structure that did not exist before 2002, as well as build redundant communications systems within public health and healthcare systems statewide.

Snapshot of Public Health Preparedness

Below are activities conducted by Virginia in the area of public health preparedness. They support CDC preparedness goals in the areas of detection and reporting, control, and improvement; crosscutting activities help prepare for all stages of an event. These data are not comprehensive and do not cover all preparedness activities.

Disease Detection and Investigation

The sooner public health professionals can detect diseases or other health threats and investigate their causes and effects in the community, the more quickly they can minimize population exposure.

Detect & Report	Could receive and investigate urgent disease reports 24/7/365[1]	Yes
	- Primary method for receiving urgent disease reports*[2]	Telephone
	Linked state and local health personnel to share information about disease outbreaks across state lines (through the CDC *Epi-X* system)[3]	Yes
	Conducted year-round surveillance for seasonal influenza[4]	Yes

*Telephone, fax, and electronic reporting are all viable options for urgent disease reporting, as long as the public health department has someone assigned to receive the reports 24/7/365.

[1] CDC, DSLR; 2005; [2] CDC, DSLR; 2006; [3] CDC, *Epi-X*; 2007; [4] HHS, OIG; 2007

Virginia

Public Health Laboratories

Public health laboratories test and confirm agents that can threaten health. For example, advanced DNA "fingerprinting" techniques and subsequent reporting to the CDC database (PulseNet) are critical to recognize nationwide outbreaks from bacteria that can cause severe illness, such as *E. coli* O157:H7 and *Listeria monocytogenes*.

Detect & Report	Number of Virginia laboratories in the Laboratory Response Network[1]	2
	Rapidly identified *E. coli* O157:H7 using advanced DNA "fingerprinting" techniques (PFGE):[2]	
	- Number of samples received (partial year, 9/06 – 2/07)	29
	- Percentage of test results submitted to CDC database (PulseNet) within 4 days	86%
	Rapidly identified *Listeria monocytogenes* using advanced DNA "fingerprinting" techniques (PFGE):[2]	
	- Number of samples received (partial year, 9/06 – 2/07)	6
	- Percentage of test results submitted to CDC database (PulseNet) within 4 days	100%
	Had a laboratory information management system that could create, send, and receive messages[3] (8/05 – 8/06)	Yes
	- System complied with CDC information technology standards (PHIN)[3] (8/05 – 8/06)	Yes
	Had a rapid method to send urgent messages to frontline laboratories that perform initial screening of clinical specimens[3] (8/05 – 8/06)	Yes
Crosscutting	Conducted bioterrorism exercise that met CDC criteria[4] (8/05 – 8/06)	Yes
	Conducted exercise to test chemical readiness that met CDC criteria[4] (8/05 – 8/06)	Yes

[1] CDC, DBPR; 2007; [2] CDC, DSLR; 2007; [3] APHL, Public Health Laboratory Issues in Brief: Bioterrorism Capacity; May 2007; [4] CDC, DSLR; 2006

Response

Planning provides a framework for how a public health department will respond during an emergency. The plans can be tested through external reviews, exercises, and real events. After-action reports assess what worked well during an exercise or real event and how the department can improve.

Control	Developed a public health response plan, including pandemic influenza response, crisis and emergency risk communication, and Strategic National Stockpile (SNS)[1, 2]	Yes
	Virginia SNS plan reviewed by CDC[2]	Yes
	- Score on CDC technical assistance review (1-100)	97
	Number of Virginia cities in the Cities Readiness Initiative[3]	2
Crosscutting	Developed roles and responsibilities for a multi-jurisdictional response (ICS) with:[1] (8/05 – 8/06)	
	- Hospitals	Yes
	- Local/regional emergency management agencies	Yes
	- Federal emergency management agencies	Yes
	Public health department staff participated in training to support cooperative agreement activities[4]	Yes
	Public health laboratories conducted training for first responders[5] (8/05 – 8/06)	Yes
	Activated public health emergency operations center as part of a drill, exercise, or real event*†[6] (partial year, 9/06 – 2/07)	Yes
	Conducted a drill or exercise for key response partners to test communications when power and land lines were unavailable†[6] (partial year, 9/06 – 2/07)	Yes
Improve	Finalized at least one after-action report with an improvement plan following an exercise or real event†[6] (partial year, 9/06 – 2/07)	Yes

*Activation means rapidly staffing all eight core ICS functional roles in the public health emergency operations center with one person per position. This capability is critical to maintain in case of large-scale or complex incidents, even though not every incident requires full staffing of the ICS.

† States were expected to perform these activities from 9/1/2006 to 8/30/2007. These data represent results from the first half of this period only.

[1] CDC, DSLR; 2006; [2] CDC, DSNS; 2007; [3] CDC, DSNS CRI; 2007; [4] CDC, DSLR; 1999-2005; [5] APHL, Chemical Terrorism Preparedness; May 2007; [6] CDC, DSLR; 2007