Public Health Monitoring Systems: Two "Good Stories"

By JL Smither, Public Health

States have been using various technology and communications tools, such as the Internet, to detect, monitor, and track public health concerns. The effective use of these tools allows health officials to better plan their response and resource allocation to any major disease outbreak. Two of these systems – New Jersey's Hippocrates system and the Tarrant County, Texas, School Health Surveillance System (SHSS) – also provide those involved in public health efforts with a workable combination of both real-time and static data and recommendations.

In 2001, not long after the 9/11 terrorist attacks against the United States, five news media agencies and two U.S. Senators received anthrax-laden letters postmarked from Trenton, New Jersey. For years afterward, that state's Department of Health and Senior Services continued to receive calls from local citizens, the media, and various "concerned organizations" reporting encounters with what frequently are described as "white powder" substances.

The department originally tracked these reports by hand, but eventually moved to a more basic electronic record system, and then to the Health Operations Tracking system. Close to the same time, in 2003, the department was developing a new Healthcare Emergency Resource Management Information System to help track the availability of hospital beds that could be used during potential mass-casualty incidents.

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Hippocrates: TOPOFF 3, Warren Grove, and H1N1

By 2005, the department had already combined these two electronic tracking systems through the use of a software interface. However, even though the software allowed for a common interface, both programs still ran separately and could not easily be cross-referenced. To make that integration possible, the department developed what is called the Hippocrates system – which was tested during TOPOFF 3, a full-scale international preparedness exercise that included a scenario based on a mock biological-warfare attack in New Jersey. Using feedback from that event, the department enhanced Hippocrates and launched the first full version of the system in December 2006.

The Hippocrates system (available at https://hippocrates.nj.gov) requires users to log in to access public health monitoring tools. The department has gradually released access to the system to specific groups such as the State Health Command Center, various regional medical coordination centers, and a number of county and city health departments as well as the state police, acute-care hospitals, long-term care facilities, and certain federal agencies and organizations. Among the new operational tools made available to these users are geographic information systems-based maps that can be overlaid with real-time data – e.g., the locations of points of dispensing, traffic conditions, and command centers. The system also allows users to communicate with one another through chat rooms and file sharing.

Hippocrates was first used during the 2007 Warren Grove wildfire to track the fire's movement, to monitor intensive care sites, and to help evacuate long-term care facilities as needed; an estimated 18,000 acres were consumed by the fire, and hundreds of residents had to be taken out of the area as well. Following that success, the system has continued to be used, most notably to track the spread of the 2009 H1N1 influenza pandemic. (For more information about what tools are available, please see *Lessons Learned Information Sharing (LLIS.gov)* Good Story, *The New Jersey Department of Health and Senior Services' Hippocrates System.*)

SHSS: School Nurses, NACCHO Guidance, and Outbreak Maps

In Tarrant County, Texas, influenza outbreaks are now detected and monitored through the SHSS, an online portal with a mission similar to that of the New Jersey Hippocrates system. The

SHSS was launched in 2007 by the Southwest Center for Advanced Public Health Practice, an Advanced Practice Center funded by the National Association of County and City Health Officials (NACCHO). The SHSS allows the Tarrant County Public Health (TCPH) department to collect health-related information from and push related information out to county schools.

Because school children are more likely not only to contract influenza-like illnesses but also to spread those illnesses to others outside the school, TCPH focuses its monitoring efforts on schools as the best way to both detect and control disease outbreaks. The SHSS, which is accessible to school nurses as well as to county health officials, allows the nurses to record daily updates of their school's health data, including absenteeism reports. The system also provides real-time outbreak maps, helpful information on flu-prevention activities and recommendations, and places to report outbreaks of the flu and other contagious diseases.

In part because the system was built on an open-source software platform, the SHSS is highly replicable in other jurisdictions. NACCHO also offers a guidance kit to help establish monitoring systems in other communities. (Click on: http://apc.naccho.org/Products/APC20102215/Pages/Overview.aspx.) The kit focuses on Tarrant County but also includes case studies of four other similar systems. (For additional information, click on *LLIS.gov* Good Story, *The Southwest Center for Advanced Public Health Practice's School Health Surveillance System*.)

To briefly summarize: The systems described above are effective primarily because they provide a combination of collaboration tools, static information and recommendations, and real-time data updates. In addition, they are adaptable to many audiences and scalable to a number of different situations, which makes them useful in many different types of responses. They can also be emulated by other jurisdictions at a relatively low cost. (For more information on these and other types of public health systems, please visit *LLIS.gov*.)

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Delaware, Missouri, Tennessee & Washington

By Adam McLaughlin, State Homeland News

Delaware
New Medical Registry for Emergencies, Disaster Response

Delaware has launched a statewide voluntary registry to collect general information on the medical conditions of state residents so that emergency medical technicians and emergency managers may better serve them in life-threatening situations. The new Emergency Preparedness Voluntary Registry gives residents a web-based interface that can be used to verify their addresses, list emergency contacts, and provide basic information about any of their medical conditions that could affect how emergency personnel respond. Registration also enrolls residents in the state's emergency notification system.

The registry, newly operational in late April, will not replace the state's emergency medical dispatch protocols, but will give first responders additional information about individual victims during an emergency situation, said Terrence Whitham, Delaware's 911 administrator. "If the person calls and we have physical contact with … [that person], a dispatcher is going to follow their [dispatch] protocols," he said. "What this is intended to do is – when we have third-party calls on somebody or [that person] may be unconscious – we do have some … basic information [already available]."

For each household with a registered resident, an icon appears on a dispatcher's map indicating that additional information is already on file. That information is shared with dispatchers at all of the state's nine public safety answering points, and with state and local emergency managers. The shared mapping data not only provides a level of redundancy but also increases the situational awareness of call-takers; the latter benefit could be particularly important if operations from one call center must be transferred to another – or if a call-taker in Kent County, for example, answers a call that perhaps should have been forwarded to the lower part of Newcastle County.

Emergency managers will be able to use the information in the registry to prepare for and carry out advance planning for disasters. Whitham noted that a number of nursing home