

Missouri Department of Health and Senior Services

Emergency Preparedness Annual Update

2010 - 2011

Missouri Department of Health and Senior Services

The Missouri Department of Health and Senior Services (DHSS) protects the health and well-being of everyone in our state. This is accomplished through widely diverse public health initiatives, though with a singular focus: healthy and safe Missourians.

Preparing for and responding to any emergency that could threaten public health is one of the DHSS' key responsibilities. Disease outbreaks, natural disasters, environmental emergencies and bioterrorism attacks are all included in the DHSS all-hazards emergency response plan. "All-hazards" preparedness means that DHSS must be ready to respond to any and all of these emergencies—anytime, anywhere.

Clearly we cannot do it all alone, so close coordination and collaboration with other entities is crucial to effective emergency planning and response. To sustain the highest levels of readiness, DHSS works closely with local, state and federal public health and other emergency response partners to assure that well-tested plans are in place and ample resources are always ready to activate when disaster strikes.

While staying vigilant for emergencies across the entire state, DHSS is mindful that the "anytime—anywhere" nature of disasters includes the very heart of department operations at our central offices here in Jefferson City. A disaster that strikes here could seriously jeopardize the safety of our staff and threaten our ability to continue providing crucial public health services, including emergency response operations elsewhere in the state.

Accordingly, DHSS continues to place a great deal of emphasis on an intensive Continuity of Operations (COOP) planning effort. Through COOP planning we seek to determine how best to ensure that the department's essential functions are maintained when normal operations are disrupted or that we can resume operations as soon as possible.

Following an all-hazards approach, COOP planning ensures that, regardless of the emergency or other disruption, essential functions and services will continue. This approach includes cross-training staff and preparing for a wide variety of possible problems.

Fast Fact

The mission of the Missouri Department of Health and Senior Services is: Promoting, protecting and partnering for health.

Center for Emergency Response and Terrorism (CERT)

The Center for Emergency Response and Terrorism (CERT) coordinates planning and response activities for public health emergencies, such as natural disasters, pandemic influenza and biological, chemical and nuclear terrorism. CERT assures that DHSS has an Emergency Response and Terrorism Response Plan, Strategic National Stockpile Plan, Pandemic Influenza Plan, Continuity of Operations Plan, along with standard operating procedures. It is imperative that these plans are kept current to ensure they are ready to facilitate a rapid and coordinated state response to any public health emergency. State and local public health emergency plans are tested regularly through exercises and drills, then evaluated and refined based on outcomes of the exercises and evaluations.

One of CERT's most important responsibilities is to serve as the department's administrator for emergency response-related federal funding. This responsibility includes learning and staying abreast of the complex funding guidelines and regulations, transmitting millions of funding dollars to Local Public Health Agencies (LPHAs) and other healthcare partners and providing oversight on those contracts to assure that all funding requirements are met.

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Federal grant funding is the fuel that keeps the public health emergency response engine running day and night. As the steward entrusted with this responsibility, DHSS strives to use every dollar wisely. Following is a brief summary of how the various sources of federal grant funding are used to maintain a high state of readiness for any public health-related emergency.

Each year CERT is responsible for two federal grants, The Public Health Emergency Preparedness/Cities Readiness Initiative (PHEP/CRI) Grant and the Assistant Secretary for Preparedness and Response (ASPR) Hospital Preparedness Grant.

The PHEP/CRI grant is provided to DHSS annually by the Centers for Disease Control and Prevention (CDC) to support on-going emergency response readiness activities by state and local public health agencies and partners. For the grant period, August 10, 2010 through August 9, 2011, the funding amount is \$12,422,343.

Because emergencies begin and end at the local level, DHSS seeks to help LPHAs maximize PHEP dollars to build and strengthen public health emergency response capacity and capabilities at the local and regional levels. DHSS also helps LPHAs improve their response plans, identify key local, state and federal resources and to connect with other emergency response partners so that limited resources can be used.

To ensure that Missouri's hospitals and other healthcare entities are fully prepared to respond to terrorism, natural disasters and other public health emergencies, CERT collaborates with key Missouri healthcare organizations and associations to administer the ASPR Hospital Preparedness Grant. Much like the PHEP/CRI grant, ASPR funds are dedicated to assuring Missouri's healthcare systems are prepared to handle the staggering demand that disasters and other public health-related emergencies can place on them with little notice.

Key partners include the Missouri Hospital Association (MHA), St. Louis Area Regional Response System (STARRS), Mid-America Regional Council (MARC), Missouri Primary Care Association, MO-1 Disaster Medical Assistance Team (MO-1 DMT), Taney

County Ambulance District, Missouri Funeral Directors and Embalmers Association Disaster Response Team (MFDEA-DRT), University of Missouri and the Department of Mental Health. For the grant period, July 1, 2010 through June 30, 2011, the funding amount is \$6,707,932.

Department Situation Room (DSR)

The Department Situation Room (DSR) serves as the coordination point for all DHSS Emergency Support Function #8 (ESF #8) responses to public health-related emergencies. The DSR monitors the day-to-day emergency preparedness of the public health system and allied systems. The toll-free number, 800-392-0272, is answered 24 hours a day, seven days a week, and can be quickly activated and fully staffed to function as a command and control center in an emergency.

When in emergency response mode, the DSR is divided into stations organized by function. Among the various DSR stations are Volunteer Management, Senior and Disability Services, Medical Surge, Investigations and Surveillance and Community Management.

During an emergency response effort, these and other stations serve under the direction of a DSR Branch Director who works with a team led by the public health Agency Incident Commander who reports to the State Emergency Operations Center (SEOC).

The DSR uses the Health Alert Network to rapidly receive and disperse communications among public health and healthcare partners at the local, regional, state and federal levels. The EMSsystem, a real-time hospital tracking system, is used to detect possible outbreaks and mass casualty incidents and to send instant messages to hospitals.

The DSR had been instrumental in coordinating and supporting the ESF #8 public health response to the H1N1 flu pandemic in addition to past destructive, deadly winter and early spring ice storms and summer storm power outages.

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In May 2011, the DSR was fully activated as Missouri was one of eight states who participated in the New Madrid Seismic Zone National Level Exercise (NLE). Operations that included the movement of patients, set-up of the Mobile Medical Unit (MMU) and deployment of a Disaster Mortuary Team were coordinated through the DSR. Participation in this massive exercise was beneficial as three days following the exercise an EF-5 tornado swept into Southwest Missouri and ravaged the city of Joplin. This event required the DSR to play a key role in the public health response.

Fast Fact

The mission of the Center for Emergency Response and Terrorism is to provide leadership and coordination of efforts to prepare and respond to public health threats in partnership with other federal, state and local agencies.

Medical Countermeasures/Strategic National Stockpile

The Medical Countermeasures/Strategic National Stockpile (MCM/SNS) Unit manages the planning, receipt, distribution and storage for pharmaceuticals and/or medical equipment necessary to respond to a major emergency or disaster when local supplies may become depleted.

The SNS is a national repository of critical drugs and medical supplies designed to supplement and resupply state and local public health agencies and hospitals in a national emergency. These supplies can be deployed anywhere and at anytime within the United States or its territories. The goal is to deliver SNS lifesaving pharmaceuticals to any location within 12 hours once the federal decision to deploy is made.

Ultimately managed by the CDC, the SNS program is carried out through close coordination between a wide variety of federal, state, regional and local emergency response agencies and entities. The success of this effort also greatly depends on collaboration with local communities, which are responsible for developing their own plans to receive and distribute SNS supplies within communities.

MCM/SNS also plays a key role in planning for and responding to a biological or chemical terrorism attack. Integral to the program's terrorism response capability is the "12-hour push package," designed to provide an initial dosage of prophylaxis medications to cover up to 500,000 people, for rapid response. The package contains a supply of medications, medical supplies and equipment necessary to counter the effects of biological pathogens.

To assist local communities with a large-scale rapid prophylaxis event (dispensing of medications), a state law was passed which allows volunteers to assist with dispensing. Local community volunteers are trained and certified for dispensing using a comprehensive curriculum developed specifically for this purpose.

All LPHAs have plans in place and are capable of opening and staffing dispensing sites in their area to distribute and dispense emergency medications to their residents within a few hours after receiving SNS assets. DHSS staff work closely with all areas of the state to identify needed resources and tools to assist local public health jurisdictions to maintain and/or enhance local planning efforts.

DHSS sponsors workshops and focused training events to meet any identified gaps in local planning efforts. To maintain a high level of preparedness, various types of exercises and drills are held to test state and local capabilities for effective use of MCM/SNS resources.

During this grant period, three major exercises were completed that demonstrated the ability of Missouri to receive MCM/SNS assets and distribute or dispense to local communities. These included a full-scale, bi-state mass antibiotic dispensing exercise in the Kansas City Metropolitan Statistical Area.

During this exercise, 18 local public health jurisdictions and numerous emergency management agencies, law enforcement and hospitals participated.

A second, full-scale exercise tested the operations of a warehouse designed to receive, stage, store (RSS) or distribute MCM/SNS assets in response to a major earthquake.

In addition, a functional exercise focused on the ordering and receipt of those medical assets to the St. Louis

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region, in response to the earthquake scenario. Hospitals and other community partners tested using HAM radios to place orders and also reviewed other planning elements (such as transportation of items) that would be needed immediately following a major earthquake.

To assess the ongoing readiness level at the state and local levels and to assure that federal funding is being used properly and prudently, CDC reviews LPHA and state SNS plans using a standardized Technical Assistance Review (TAR) tool.

The tool uses 13 planning elements such as Management of SNS; Tactical Communication Planning; Security; Dispensing Prophylaxis; and Public Information and Communication. At the conclusion of the annual assessment, DHSS and the 19 jurisdictions that comprise Missouri's Cities Readiness Initiative (CRI) receive a TAR score that indicates the level of preparedness. After the TAR conducted in 2010, DHSS received an overall score of 97 out of 100 possible points.

Fast Fact

An important but little known part of public health disaster response involves mass fatalities and disaster mortuary services. DHSS works with local, state and federal partners, including the Missouri Funeral Directors and Embalmers Association Disaster Response Team and the Missouri Disaster Medical Response Team to conduct human remains recovery, mortuary operations and provide a Family Assistance Center during disasters causing large numbers of deaths.

Cities Readiness Initiative

The Cities Readiness Initiative (CRI) program was developed to prepare for the possible distribution of an aerosolized biological agent over a large urban area. If this were to happen, it would require initial doses of prophylactic antibiotics to be distributed to very large numbers of exposed persons.

To protect large populations living in urban areas, CDC selected cities across the nation to become part of the CRI program, which is part of the larger SNS program. CRI cities must plan for and collaborate on multiple levels to provide lifesaving medications early enough within the event to make a significant health impact.

These jurisdictions must focus their planning efforts toward developing and maintaining the capacity to deliver medications and supplies to their entire populations within 48 hours. To effectively limit illness and death from such an attack, this task requires intensive planning for response to any of several possible methods used to disperse the biological agent.

Missouri currently has two Metropolitan Statistical Areas which participate in CRI: St. Louis and Kansas City. These areas encompass 19 local public health jurisdictions within Missouri boundaries. Illinois and Kansas also participate in these two CRI programs respectively.

CHEMPACK

Missouri must be prepared to mount a swift and effective response to acts of terrorism involving nerve agents, as well as situations involving accidental releases of organophosphates, to minimize potential loss of life. To better prepare for a chemical weapon attack, CDC developed a program within the SNS system called CHEMPACK.

Through this special program, large quantities of antidotes to chemical exposure throughout the nation have been pre-stationed in a number of local areas to make them readily accessible in an emergency.

Working together with CDC and the U.S. Department of Homeland Security, Missouri has identified community partners who act as custodial sites for pre-positioned nerve agent/organophosphate antidotes and associated pharmaceuticals that will be readily available for use when local supplies become depleted.

MCM/SNS has continued to provide training to first responders, hospitals, emergency management and others who have a 'need to know' how to obtain the forward-placed caches throughout the state.

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Fast Fact

The Division of Regulation and Licensure has worked diligently to encourage child care facilities across the state to develop emergency plans. A child care facility emergency planning template was developed and 31 staff from the Section for Child Care Regulation were trained to teach others how to use the template. These staff then conducted 37 training events for child care providers across the state on how to use the planning template to create their own emergency plans. More than 500 people attended the first round of 37 trainings this summer.

Planning and Capacity Building Unit

Emerging out of an internal CERT reorganization is the Planning and Capacity Building Unit (PCBU). In addition to maintaining DHSS' Continuity of Operations Plans and all-hazards emergency operations plan, this unit provides direction and oversight to Missouri's disaster mortuary affairs planning effort; ensures a robust external communications capability and capacity; provides information to improve individual, family and community readiness through the *Ready in Three* program; and works with internal and external partners to improve Missouri preparedness for any public health emergency.

The unit also provides oversight and consultation for local public health planners in preparing for a wide variety of emergencies such as tornadoes and other naturally occurring disasters, man-made accidents and terrorism attacks of public health significance.

PCBU staff also help facilitate collaborative planning between state and local planners so that emergency response plans at all levels compliment and support each other, not only through on-site visits to LPHAs, but through regular communications including the monthly newsletter, the *Planners Update* and through bi-annual Planners Meetings.

A priority for PCBU was preparing for and participating in the New Madrid Seismic Zone National Level Exercise (NLE) on May 16-20, 2011. The NLE was the largest exercise ever to be conducted in the state, and the first NLE nationally to exercise a naturally occurring event, a New Madrid Seismic Zone Earthquake. This multi-state, multi-jurisdiction exercise involved participants at all levels and included both notional emergency operations center play and full-scale functional exercises. During the week-long exercise, PCBU served in a variety of roles, including supplying staff as the Health and Safety Officer, in the Mortuary Branch and especially in the Planning Section.

One of the exercise's full-scale components managed by PCBU was the disaster mortuary exercise conducted at Branson Airport in conjunction with the Missouri Disaster Medical Assistance Team. CERT, through the ASPR grant, had previously supplied the Missouri Funeral Directors and Embalmers Association's Disaster Response Team (MFDEA-DRT), the state's disaster mortuary response team, with funding to purchase equipment and supplies in preparation for a mass-fatality event.

The NLE tested the capabilities of local, state, federal and even military mortuary services. This helped clarify lines of communication and coordination between the various entities. It also was the first time that all of these mortuary components had ever exercised together.

The Sunday following the NLE's conclusion (May 22) an EF-5 tornado devastated a great swath of Joplin, destroying a hospital, causing thousands of injuries and, ultimately, 161 deaths. PCBU staff served in critical capacities during the emergency response at the DHSS and SEOC. Their duties included gathering and analyzing information in the Planning Section to develop and recommend incident objectives and coordinating with a wide assortment of public health-related services to those impacted by the tornado.

The ability to communicate among emergency responders and with the public is crucial during emergencies, but communication lines are often affected by disasters.

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To help fill potential communication gaps during future emergencies, PCBU staff coordinated a major effort to enhance and expand DHSS' amateur radio capabilities. This was accomplished by increasing the department's technical assets and by sponsoring new amateur radio training opportunities for DHSS staff and for staff from partner agencies. Nineteen people from DHSS and other agencies successfully completed the course, earning their amateur operator license. These advances will dramatically improve Missouri's ability to maintain communications during future disasters.

Ready in 3 Program

A cornerstone of the department's emergency preparedness education effort is the *Ready in 3* program. Using a wide variety of resources and materials, *Ready in 3* seeks to educate Missourians about planning for emergencies.

The *Ready in 3* program encourages individuals, families, businesses and communities to follow three simple steps to prepare for emergencies:

1. Create a plan;
2. Prepare an emergency kit; and,
3. Listen for emergency information.

Using *Ready in 3* resources, state and LPHAs collaborate with other state agencies, faith-based organizations, schools, emergency responders, employers, seniors and special needs populations, community groups and the Missouri General Assembly to inform Missourians about what everyone can do to prepare for an emergency.

The *Ready in 3* program provides Missourians with useful tools and resources that can help them prepare for emergencies of all kinds. This year the program has shared resources with dialysis patients, schools, meteorologists, employers, faith-based organizations, pet owners and the homebound.

Tools and resources available from *Ready in 3* are provided at no cost and many are offered in multiple languages. Over the past year more than 320,000 *Ready in 3* Family Safety Guides were distributed to Missourians across the state. For more information, go to www.health.mo.gov/emergencies/readyin3.

Fast Fact

Public Health's Role in an Emergency

- ▶ Activate and maintain high-alert disease surveillance
- ▶ Assure public health investigation response
- ▶ Assure rapid medical care on a large scale
- ▶ Assure lifesaving medical supplies (SNS)
- ▶ Prevent secondary disease transmission
- ▶ Provide public information
- ▶ Provide ongoing education and training
- ▶ Assure rapid chemical and nuclear response
- ▶ Assure management of fatalities
- ▶ Assure immediate communication between experts, supply sources and on-site managers

Training and Exercise Unit

Training is an important part of any organization and it holds true for CERT as well. Training and Exercise Unit staff are responsible for tracking the various training requirements for all CERT staff and assuring that everyone is up-to-date on the training they need. The Training and Exercise Unit staff also coordinate emergency response educational opportunities for other DHSS staff, as well as for representatives from partner agencies.

A major undertaking planned and coordinated by this unit is the Public Health Preparedness Conference held each year in Columbia. The 2011 Public Health Preparedness Conference was held on June 28-29, 2011 at the Holiday Inn Executive Center in Columbia, Missouri. The conference theme was "**Call to Action: Planning for Threats and Responses.**" The conference, attended by more than 350 people, offered informative, educational sessions, dynamic speakers and excellent opportunities to network with colleagues.

The opening presentation was *The 21st Century Threat of Bioterrorism*, presented by Col. Randall J. Larsen, USAF (Ret), Chief Executive Officer of the Weapons of Mass Destruction Center and an internationally recognized expert in bioterrorism.

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Other sessions included *The Central U.S. is Earthquake Country: The Science Behind Earthquakes*, presented by David A. Gaunt, Geohazards Geologist, Geological Survey Program, Division of Geology and Land Survey, Missouri Department of Natural Resources; and *Functional Needs Support Services: Preparedness for All Missourians*, presented by Karen Benson, Director, Global Disaster Response, Convoy of Hope.

Grants and Contracts Unit

The Grants and Contracts Unit is responsible for coordinating the PHEP grant. This unit also assists with administering the ASPR Hospital Preparedness Grant, and managing all contracts with the LPHAs and other vendors.

Coordinating the PHEP grant involves providing assistance for grant applications, managing all reports due to CDC, tracking grant progress, providing technical assistance to LPHAs on contractual concerns, developing contract scopes of work and processing invoices for grant expenditures.

To coordinate the ASPR Hospital Preparedness Grant, unit staff assist the Health Care Systems Preparedness Program Manager with the grant application process, contract monitoring and grant invoicing. In addition, the Grants and Contracts Unit manages the recently developed Partner Readiness Evaluation Program (PREP). PREP is designed to assist LPHAs in strengthening their public health emergency preparedness program through document review, such as emergency plans and after-action reports, tabletop exercises, technical assistance and providing various types of resources.

Emergency Public Information, Risk Communication, Education

DHSS public information officers are trained and experienced in the methods and techniques of crisis and emergency risk communication. During public health emergencies, the department's public information response team uses this expertise to assure the public receives timely, accurate information.

Public information efforts also regularly include close collaboration with LPHAs, Missouri's State Emergency Management Agency (SEMA) and the CDC, as well as many other local, state and federal agencies and entities. This ensures that vital emergency messages to the public are timely, accurate and credible.

The department maintains the ability to activate an emergency hotline to provide the public and healthcare professionals easy access to critical emergency public health information. DHSS' public health nurses have been trained as hotline operators and are available through a 24/7 call-down list.

Department technicians are also available to update the DHSS website to assure that vital public and technical information is accessible during emergencies. DHSS also has a contract in place with four companies to provide immediate translation of emergency public health messages and materials for non-English speaking residents; languages include Spanish, Bosnian, Vietnamese and others.

Environmental Health and Communicable Disease Surveillance and Response

The Division of Community and Public Health (DCPH) has statewide responsibilities to prepare for and respond to public health threats to food and private water supplies, and from infectious diseases including zoonotic threats and radiological or chemical events whether natural, deliberate or accidental.

Comprising key elements of these coordinated efforts within DCPH are the Center for Emergency Response and Terrorism, Section for Disease Prevention, Section for Environmental Public Health, Section of Epidemiology for Public Health Practice and the Missouri State Public Health Laboratory (SPHL).

DCPH has mission-critical emergency response roles in disease surveillance, investigation, radiological emergencies and environmental public health. Program staff collaborate closely with LPHAs to support coordinated emergency response efforts at the state and local levels.

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State and local disease control specialists and environmental public health specialists are located around the state and have responded to a number of emergent situations, including “white powder” incidents, suspected ricin poisoning threats, food tampering incidents, smallpox and avian influenza scares, along with other similar incidents.

Staff have also provided invaluable expertise during a number of high-profile events, including response to the Joplin tornado, regional flooding, hurricanes Katrina and Rita, presidential and vice-presidential debates, World Series baseball games, ice storms, power outages, blizzards and the threat of other emerging exotic infectious and animal-borne diseases. Staff also participated in the May 2011 NLE.

Staff have also successfully conducted a Mucormycosis investigation, responded to a bacterial colonization with *Bacillus cereus* in a Newborn Intensive Care Unit and coordinated a *Streptococcus pneumoniae* study, in addition to daily investigations and interventions. These daily activities are essential as any disease outbreak, or even a single case, could signal the beginning of a large-scale incident or terrorist attack.

DHSS has also enhanced its surveillance efforts through the PHEP grant. Effective surveillance is key to detecting and analyzing a wide variety of available information about disease cases.

Of special interest is information about disease cases or outbreaks that could cause widespread illness or result from an intentional release. This is crucial for supporting fast but prudent decision making and for guiding public health interventions and the actions of the epidemiologists.

The Bureau of Communicable Disease Control and Prevention (BCDCP) manages the Bioterrorism Surveillance System and Electronic Surveillance System for Early Notification of Community-based Epidemics (ESSENCE). In Missouri, ESSENCE enables hospitals that meet certain criteria to send data for each emergency department visit to DHSS. These data are then used to look for trends in broad disease categories (e.g., respiratory, gastrointestinal), also called syndromes.

In addition, BCDCP manages and performs surveillance of the state’s disease registry known as WebSurv.

Because data from these surveillance systems are gathered and analyzed daily, near real-time awareness is achieved, increasing our chances of identifying disease outbreaks or bioterrorism attacks.

Missouri State Public Health Laboratory

The State Public Health Laboratory (SPHL) continually strives to increase and improve its testing capacity. Over the past few years it has developed the capacity to respond to most Category A agents such as Anthrax, Plague, Tularemia and Orthopox virus. The SPHL can also respond to Category B agents such as Brucellosis, Glanders, Melioidosis and Ricin toxin. The SPHL has the capacity to test for all Level II chemical agents as well as several other Level I agents.

SPHL can also now test for agents potentially used for biological terrorism using rapid testing technologies, which significantly reduces the time to identify these lethal agents; what once took up to three days now takes only a few hours. The SPHL added Gene Sequencing and Pyrosequencing technology to assist in bacterial and viral identification.

Disease-reporting systems are used by LPHAs, hospitals, schools, healthcare providers and large employers to constantly monitor public health, so an unusual disease or an unusual number of disease cases can be identified quickly. An electronic laboratory reporting system has been developed to provide disease reports from hospital laboratories within hours.

SPHL is a member of PulseNet, a national disease outbreak tracking system operated by CDC. SPHL also tests samples from an early detection system on a daily basis and is the confirmatory laboratory for positive samples from the U.S. Postal Service’s BioDetection Systems throughout Missouri.

To ensure a more rapid laboratory response to food-related outbreaks, SPHL has incorporated new technologies in fast, real-time specimen testing. Food testing plays a key role in the early detection of food-borne disease outbreaks.

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SPHL continually tests and validates emergency laboratory response plans by participating in various exercises throughout the year with partner entities.

Fast Fact

The Missouri State Public Health Laboratory collaborates with the FBI in response to bio-terrorism threats. Last year the Laboratory tested potentially hazardous substances in eight “white powder” investigations.

Information Technology Services Division

The Information Technology Services Division (ITSD) works to ensure that DHSS has a robust information network and highly reliable information technology resources. DHSS depends heavily on information technology systems to effectively conduct public health emergency preparedness and response activities.

One of ITSD’s key roles is to provide technical support for maintaining the department’s existing emergency response software applications and to implement needed enhancements of these vital resources. Some of these applications include the SNS Application, WebServ and the Bioterrorism Surveillance System.

The Bioterrorism Surveillance System is a web-based application used to gather daily, aggregate syndromic data provided by disease-reporting sites such as hospitals and schools. These disease tracking systems are used to quickly identify the presence of an uncommon disease or unusually high case numbers of more common but potentially severe diseases.

ITSD’s Geographic Information Systems (GIS) unit provides valuable support for emergency preparedness and response efforts. Using satellite-based imagery and mapping, along with other electronic information sources, GIS can help locate outbreaks, track contagions, determine at-risk populations and assist with a broad spectrum of other logistical details.

Center for Local Public Health Services

The Center for Local Public Health Services (CLPHS) is the Department’s primary liaison with Missouri’s 115 LPHAs. CLPHS extends this role into the emergency response arena by convening LPHAs, state partners and other stakeholders to address a wide variety of emergency preparedness issues in local communities.

Healthcare Systems Preparedness

To develop and enhance Missouri’s healthcare systems’ capacity and capability to respond to any public health emergency, CERT collaborates with key healthcare organizations and associations within Missouri to administer the ASPR Hospital Preparedness Grant.

To help healthcare systems maintain a high level of emergency readiness, DHSS provides competency-based education to hospitals and other entities through contracts with the Missouri Hospital Association (MHA), St. Louis Area Regional Response System (STARRS), Mid-America Regional Council (MARC), and the Department of Mental Health. Through a contract with the Missouri Primary Care Association, ASPR funds have allowed staff from the federally qualified health centers (FQHCs) to participate in planning efforts, educational opportunities and exercises. Now, FQHCs across the state are equipped to assist LPHAs and hospitals in an emergency. Their offices may be used as triage sites or alternative care centers, based on regional emergency response plans.

To increase hospital surge capacity during emergencies, DHSS, in collaboration with MHA, MARC and STARRS, has provided Missouri hospitals significant funding for equipment and supplies. Hospitals have received emergency blankets, towels, hospital emergency triage response kits, redundant communication equipment, handheld radiation detection meters, Class C personal protective equipment, military-style stretchers and stands with decontamination capability and other decontamination equipment. Medical surge caches, which include bedding and very basic medical supplies, have been assembled and distributed to hospitals. The caches increase the capacity for medical surge, alternate care, special needs or mass care shelter for approximately 5,500 individuals.

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Hospitals and communities were selected based on their ability to store and manage the inventory, willingness to assume responsibility, access to major highways and level of hazard vulnerability. In addition, oxygen caches were acquired and placed with health and medical partners throughout the state. Antibiotic caches were purchased and are being stored in a pharmaceutical warehouse for health and medical providers.

Mobile emergency response trailers have also been purchased, equipped and located throughout the state to assist in developing additional surge capacity. The regional placement of the trailers provides reduced response time to deploy to a mass casualty incident or disaster. Hospitals hosting a trailer have agreed to maintain the trailers for use within their communities or in response to regional or state emergencies.

The MO-1 Disaster Medical Assistance Team (MO-1 DMT) is a local, regional, state and federal resource. Team members include professional and paraprofessional medical personnel (supported by a cadre of logistical and administrative staff). MO-1 DMT is designed to provide emergency medical care during a disaster or other event. Three regional response teams are located in strategic locations around the state: St. Louis, Kansas City and Springfield/Branson.

MO-1 DMT provides support to the Mobile Medical Unit (MMU) owned by the Taney County Ambulance District (TCAD). The MMU can be moved to the disaster scene and uses tents to expand into a 60-bed hospital.

The MMU provided critical emergency medical care during the Joplin tornado response. Designed specifically to support a damaged or destroyed hospital, the MMU was ideally suited to become Joplin's Mercy Field Hospital after the hospital was heavily damaged and evacuated completely in the hours after the tornado.

The MMU remained in operation until early October 2011, treating approximately 130 patients a day. The MMU allowed Mercy to continue its mission to care for Joplin area residents.

The special unit was purchased through funds from the Office of Homeland Security, Missouri State Emergency Management Agency and DHSS.

Fast Fact

The Division of Senior and Disability Services has Disaster Response Teams who focus specifically on assessing and meeting the unique needs of Missouri's senior adults and persons with disabilities during emergencies.

Show-Me Response Program

The Emergency System for Advance Registration of Volunteer Health Professionals (ESAR-VHP) program, known in Missouri as *Show-Me Response*, recruits healthcare professionals to assist in emergency situations. Working with key partners like the Medical Reserve Corps, hospitals and local communities, the *Show-Me Response* program provides a secure web-based platform 24 hours a day, seven days a week to support the efficient registration, professional credentialing, management and activation of pre-registered volunteers and those who register at the time of an emergency.

Show-Me Response provides readily available, verifiable and up-to-date information about a volunteer's identity, license credential status and employment information, as well as tools to notify and manage volunteer deployments. More than 6,000 healthcare professionals are currently registered as *Show-Me Response* volunteers including over 2,800 registered nurses.

Show-Me Response was exercised as a part of the May 2011 NLE in response to a scenario in which 580 medical professionals were requested.

Show-Me Response was activated on May 22, 2011 in response to the Joplin tornado. AmeriCorps requested RNs to staff a first aid and triage station to address the needs of volunteers working to clear debris. The nine-day mission was filled by eight RNs working in overlapping two- to eight-day deployments with two to three RNs per shift.

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At the time of the request there were 59 ECL-2 (Emergency Credential Level) RNs registered in the system. The mission was 50 percent staffed within two hours of receiving the request and fully staffed within 24 hours. The first RN arrived on scene less than 18 hours after receiving the request to deploy.

When Disaster Struck

Two weather related emergencies that struck Missouri this year help define public health's diverse response role and serve to underscore how important public health is to protecting the health and well-being of Missourians when disaster strikes.

Winter Storm

Even before the snow started falling on January 31, 2011, DHSS' emergency response team had its collective eye on weather forecasts warning of an approaching snow storm that threatened to dump up to two feet of snow across the state and threaten power systems and roadways with an additional coating of ice. The ominous forecasts included high winds and plunging temperatures that would combine with the heavy snow to create a rare Missouri blizzard.

As snow-laden clouds moved in and the first flurries began falling that January 31 afternoon, the department's emergency response engine was already switched on and warming up, ready to shift into gear and meet any public health challenges the storm might create. Following the DHSS emergency response plan, the Department Situation Room (DSR) was readied for activation, response staff were placed on alert and 12-hour work shifts were being established.

By day's end, it looked like the predicted storm would hit with force and most of the state would soon lie under a two-foot blanket of snow and ice. The full brunt of the storm was not expected to hit until the next day, February 1, so the department's response effort was set to begin early in the morning.

Fast Fact

The Center for Local Public Health Services provides training opportunities to LPHA staff through the on-line Learning Management System. Currently there are 45 different on-line curricula and 523 competency-based courses available.

Even so, skeleton teams were assembled to staff the DSR and the State Emergency Operations Center (SEOC) through the night to keep apprised of the situation and be ready to respond to any changes or problems that might arise before morning. Members of the DSR skeleton team voluntarily spent the night on cots in offices and other areas near the DSR while the SEOC team stayed in dormitory housing nearby on the campus of the Missouri National Guard's Ike Skelton Training Center.

The blizzard hit with full force the next day and the DHSS emergency response engine was running, but travel conditions had become extremely hazardous. This compelled some DHSS staff to stay a second night to carry on the response. While several stayed again on the DHSS and SEMA campuses, a few thankfully accepted the gracious offers of other DHSS employees to stay the night in their nearby homes. This shows how DHSS employees are willing to pull together in difficult circumstances and how seemingly small things like a soft bed and a hot shower can make a huge difference in sustaining an emergency response effort.

The department's emergency response and Continuity of Operations (COOP) plans include providing transportation for response staff who cannot travel to work and back home because of severe weather or other circumstances that prevent them from safely driving to and from their response assignment.

As sometimes happens in emergencies, response staff were called to respond to the DSR and SEOC even while weather forecasters were urging people to stay home and avoid travel. Three words can be used to explain: Mission, Planning and Dedication.

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Joplin Tornado

On May 22, 2011 at 5:17 p.m., the National Weather Service issued a tornado warning that included the city of Joplin, Missouri. The tornado struck Joplin 24 minutes later.

The tornado traveled from west to east along 32nd Street cutting a path $\frac{3}{4}$ to 1 mile wide over 13.8 miles. The tornado eye was approximately 300 yards wide. It was later rated an EF-5 with winds exceeding 200 miles per hour. In its wake, the devastating twister left 161 people dead and hundreds wounded. Nearly 8,000 structures were destroyed, including 400 businesses, eight schools and 18,000 vehicles destroyed.

Such a devastating disaster calls for an equally massive response and the Joplin tornado required an immediate, all-out effort from countless emergency response agencies and entities at the local, state and federal levels. Because this tornado impacted the community in so many different ways, the public health and healthcare systems response also had to be diverse. While this part of the overall response took many different forms, nearly all fell into one of three categories: public health, hospital and medical and mass fatality.

Every emergency begins and ends at the local level. The Joplin tornado is a perfect example of a major emergency response effort that was launched by local responders who were then aided by regional, state and federal partners.

Following is a brief summary of the public health effort at the state level and includes only a few examples of the numerous actions taken during the response and recovery phases, some of which are still ongoing. More detailed accounts of the response to the Joplin tornado can be found in other after-action reports and summaries.

- DHSS staff tracked 713 individuals who were evacuated to 42 hospitals in the four-state region (Missouri, Arkansas, Oklahoma and Kansas.), using a specialized patient tracking database. This number includes all St. John's Regional Medical Center patients who were hospitalized at the time of the tornado and had to be evacuated when the hospital took a direct hit from the tornado.
- Assessed the impact on the Joplin area's medical system. To assess operational status, DHSS staff contacted rehabilitation centers, medical clinics,

surgical centers, dialysis clinics, physicians' offices and dental practices.

- Provided team members to inspect mass care shelters, mass care kitchens and restaurants reopening after the tornado and food inspections for products received at the shelters.
- Assisted with the purchase and distribution of 13,000 doses of Tdap vaccine to the Joplin area.
- DHSS public information officers assisted in the state joint information center. Messages emphasized hand washing, wound care and infection prevention and food and water safety.
- DHSS radiation team transported radioactive materials from St. John's Regional Medical Center to a secure location in Springfield.
- Worked with St. John's Regional Medical Center to ensure their pharmaceutical cache was secured.
- Completed multiple HAvBED inquiries of hospitals across the state for potential patient evacuations from Joplin.
- Worked with the Missouri Department of Transportation and local officials to ensure private vendors could continue making regular deliveries of needed medical supplies.
- Completed emergency waivers allowing hospitals to expand their abilities to treat more patients and continue daily business.
- Completed waivers for pharmacy, home health and hospice care.
- Completed waivers for St. John's Regional Medical Center so they could set up the MMU Field Hospital.
- *Show Me Response* was activated to determine the availability of volunteer healthcare officials to respond as requested and needed.
- Thousands of medical professionals signed up in *Show Me Response* after the tornado.
- Monitored ESSENCE for data related to patients hospitalized from the tornado.
- Consulted with EPA on air monitoring in Joplin.
- Consulted with local officials on vector control. Arranged for the purchase of 300 gallons of mosquito spray for fogging the affected area.
- Worked with FEMA and ESF #6 to provide Durable Medical Equipment (DME) to shelter residents and those who lost their DME in the tornado.

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- Worked with Department of Mental Health to ensure mental health professionals were working at the Family Assistance Center.
- The Greenbriar Nursing Home, a Long-term Care Facility (LTCF), was destroyed and at least 10 residents lost their lives in the tornado. Two other LTCFs were destroyed and two more sustained extensive damage. Several other LTCFs were forced to run on generator power.
- Following is a brief summary of actions in which DHSS staff were involved to meet numerous needs of Joplin-area LTCFs and other senior services providers:
 - Maintained constant contact with all affected LTCFs.
 - Contacted in-home service providers to determine their status and ability to provide service to their clients.
 - Contacted Area Agencies on Aging (AAA) within the four-state region to determine needs of clients and if the out-of-state AAAs were receiving request for service.

Health Professional Volunteer Response and Management

During major emergencies, volunteers often play key roles in successful response efforts. During the Joplin tornado response, health professional volunteers across Missouri were ready to help if needed.

During emergencies, requests for emergency healthcare volunteers are made through the Emergency System for Advance Registration of Volunteer Health Professionals (ESAR-VHP), known in Missouri as *Show-Me Response*.

Prior to the Joplin tornado, the *Show-Me Response* database held 2,545 registrants. In response to the tornado, thousands of volunteers registered in case they were needed. There are now 7,500 health professional volunteers registered in the system.

After the tornado, requests for volunteers focused on Emergency Credential Level (ECL) 1 professionals (working in the hospital setting). More than 300 credentialed physicians registered in *Show-Me Response*. Ultimately, eight RNs were deployed during the Joplin response through requests to *Show Me Response*.

Hospital and Medical

In response to the tornado's aftermath, many of the ASPR Hospital Preparedness Grant resources were deployed. Planning, training and exercises funded through ASPR for hospitals and Federally Qualified Health Centers provided the infrastructure, in part, for the prepared response during the tornado.

Partnership and coalition building, including the development of a statewide hospital Mutual Aid Agreement, was utilized with many of the 40 hospitals that accepted injured individuals.

Roughly 30 percent of the City of Joplin's infrastructure was destroyed including St. John's Regional Medical Center which had to evacuate all 183 patients from the facility. Med Sleds, funded through the ASPR, assisted staff in evacuating patients down as many as eight flights of stairs.

With the assistance of the National Guard and the MO-1 Disaster Medical Assistance Team (MO-1 DMT), the fully operational 60-bed Mobile Medical Unit (MMU) was deployed and fully operational within a week of the tornado. The MMU, purchased with ASPR and Homeland Security funding and owned by Taney County Ambulance District, provided emergency services, in-patient care and intensive care and, in conjunction with other resources brought in by St. John's Regional Medical Center, supported surgery, MRI and CAT Scan capabilities.

The Mobile Medical/Communication trailers were deployed to provide medical supplies and redundant forms of communication. MO-1 DMT deployed Rapid Response Trailers and team members to assist with triage and emergency treatment. Fatality management equipment was deployed. The EMResource communication tool was used to provide situational awareness and hospital bed status.

The Department of Mental Health Office of Disaster Readiness' ASPR funded staff assisted with coordination of the deployment of volunteers into the field, as well as distributed *Emotional First Aid* brochures and various other educational materials addressing typical trauma response to a disaster.