

## REGIONAL APPROACHES TO HOSPITAL PREPAREDNESS

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This article describes issues related to the engagement of hospitals and other community partners in a coordinated regional healthcare preparedness and response effort. The report is based on interviews with public health and hospital representatives from 13 regions or states across the country. It aims to identify key ingredients for building successful regional partnerships for healthcare preparedness as well as critical challenges and policy and practical recommendations for their development and sustainability.

**H**URRICANE KATRINA, the nightclub fire at The Station in Warwick, Rhode Island, and current efforts to prepare for pandemic flu have shown that, in many cases, the healthcare community's ability to prepare for and respond to emergencies is disjointed, resulting in a breakdown in the delivery of local medical care.<sup>1-3</sup> The list of challenges facing the healthcare community today is long, and many hospitals are over capacity on a daily basis.<sup>4</sup> Hospitals are being asked to "do more with less"<sup>5</sup> at a time when there are fewer hospital beds and emergency rooms and 30% of hospitals are losing money.<sup>4</sup> Hospitals often do not have the time or resources to undertake comprehensive disaster preparedness planning, and some are unaware of their presumed roles and responsibilities within larger community disaster plans.

The importance of regional coordination among hospitals was illustrated by the experiences of the Rhode Island nightclub fire and Hurricane Katrina and is an important issue in pandemic flu and bioterrorism hospital preparedness efforts. The Station nightclub fire occurred in Warwick, Rhode Island, in February 2002. It was the ninth deadliest public assembly fire in U.S. history;<sup>6</sup> 215 people were injured and transported to nearby hospitals, where 79 were admitted,<sup>7</sup>

and 10 people, in need of severe burn care, were taken to burn centers in Massachusetts.<sup>6</sup> The communication among responders at the scene, EMS personnel, and hospital staff was insufficient.<sup>8</sup> As a result, some Rhode Island hospitals reported they did not receive advance notification or they received limited and often incorrect information about the numbers of incoming patients and severity of injuries. Without a clear understanding of the number of victims, severity of injuries, or where patients were being routed, it was difficult for hospitals to accurately determine the number of beds, staff, and resources needed.<sup>8</sup> In addition, unnecessary patient transfers were made based on incorrect information coming from the scene about additional waves of burn victims.<sup>7</sup> There also was an urgent need to share limited burn care resources, such as air evacuation, burn beds, and operating rooms, among the Rhode Island hospitals, yet no formal coordination and communication infrastructure was in place to do so. Analysis following The Station nightclub fire indicates that hospital response could have been improved by a central hospital coordinating entity to facilitate communications, patient transfers, and sharing of scarce medical resources.<sup>8</sup>

In the aftermath of Hurricane Katrina, hospitals in New Orleans faced major difficulties communicating with local

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and state officials to replenish depleted supplies and arrange for patient evacuations when hospitals could no longer operate. Patient transportation was haphazard without a coordinating regional entity, and, while hospitals in the surrounding region responded to the surge of casualties needing treatment, there often was confusion as to where and how many patients were being sent and what resources were needed. While there were many other compounding factors in the Hurricane Katrina disaster that added to the collapse of hospitals in New Orleans, having a clear regional coordinating entity to help hospitals establish emergency communications and integrate into community disaster planning prior to Katrina, as well as to assist with coordinating patient evacuations and gauging supply needs after the levee failure, might have improved the response.<sup>2,9</sup>

Following the September 11 and anthrax attacks of 2001, Congress passed the Public Health Security and Bioterrorism Preparedness and Response Act of 2002. A critical component of this legislation is the National Bioterrorism Hospital Preparedness Program (NBHPP), which was until December 2006 administered by the Health Resources and Services Administration (HRSA), which distributes formula grants to state health departments, the U.S. territories, and four metropolitan areas (New York City, Chicago, Washington, DC, and Los Angeles). The grants are to be provided to hospitals and other medical facilities to enhance and support healthcare preparedness. Originally, the monies were specifically directed toward bioterrorism preparedness, but over the past four years priorities have expanded to include preparedness and response plans for natural infectious disease emergencies as well as chemical, radiological, nuclear, and explosive incidents and coastal storm planning. The NBHPP has provided over \$2 billion from fiscal years 2002 through 2006 and has among its requirements that hospitals must plan jointly with one another and must integrate hospital plans with public health, emergency management, fire, and law enforcement personnel and others to establish a seamless response system.<sup>10</sup> Yet, despite federal efforts to improve coordination among hospitals through the NBHPP grant program, there is no template for developing and operating regional hospital coordination, and limited guidance or literature exists on how communities can develop and sustain these critical partnerships.

The purpose of this article is to examine a sample of hospital preparedness coordination efforts within communities around the country and offer observations and recommendations on what is required to make this effort successful, including views on organizational structure and functional roles. We hope to provide readers with an understanding of the experiences, challenges, and best practices of 13 local communities in establishing these coordinating entities. We also note the resulting improvements in community preparedness and response capacity stemming from increased regional hospital coordination. And, finally, we of-

fer policy and practical recommendations intended to improve the organization and management of regional hospital coordination.

## METHODS

Over a 12-week period, between June and August 2006, the authors conducted semistructured qualitative interviews with people in 13 different states or regions. Study participants were recruited through three methods. A mass email was sent to 62 CDC (Centers for Disease Control and Prevention) and HRSA grant coordinators via the federal HRSA office, and 5 sites asked to participate in response to that email. An additional 7 sites were approached for participation in the study because they are well known to the authors, and 1 site was recommended by another interviewee. We recognize that there are other regional preparedness efforts underway in the country that are not part of this study.

Interviewees represent the following areas of the country (listed alphabetically): Alabama, California (Sacramento), Florida (Palm Beach County), Kansas (North Central region), Massachusetts (Region 1), Minnesota, New York City, Ohio (Southwest region), Oregon (Region 2), Pennsylvania (Region 13), Seattle (King County), Texas (San Antonio), and Virginia (northern Virginia). Interviews were conducted over the phone and were approximately 60 minutes in length. We interviewed from one to three individuals per region, including public health officials, regional hospital coordinating group directors, hospital association executives, hospital representatives responsible for emergency management, and HRSA grant coordinators. Additional background information on the hospital coordinating groups from each region was researched via the Internet and requested from interviewees. Respondents were assured that no comment would be attributed to them directly without explicit consent. Where specific statements or examples are linked to particular regions in this article, they are used with permission of the interviewee or they appear in public documents.

The interviews focused on a series of key questions (see Figure 1) as well as the successes and challenges the interviewees experienced while developing these coordinating groups, which framed a more detailed discussion. We did not attempt to validate the program information reported by study participants; rather, the purpose of this article is to facilitate sharing of program information.

## KEY FINDINGS

All of the regions in this study are in the process of building and strengthening regional hospital preparedness, although

Figure 1. Interview Questions

1. Can you tell us about your coordinating group? (For example, why and how was it created?)
2. Has this group embarked on any preparedness activities together? If so, what?
3. How has this coordinating group been involved in responding to emergencies? (If this group has not yet been activated for an emergency, then how do you envision it would be involved?)
4. How has the coordinating group improved regional hospital preparedness and response?
5. What barriers have you experienced in the creation and management of this coordinating group?
6. What projects or roles do you see this coordinating group taking on in the future?
7. How do you view the support that has been offered thus far by the federal, state, or local government in bolstering regional hospital coordination and preparedness? Are there any specific areas for which you believe additional assistance would prove beneficial?
8. Do you know of other hospital groups that are coordinating on a regional basis in a similar manner to your group?

each is at a different stage of development. Different regions have different approaches for bringing regional stakeholders to the table, and the structure and function of regional hospital groups varies depending on local and state factors. But despite their differences, there are common features in development, governance, preparedness activities, and response capacities.

***To maximize the use of federal preparedness funds, regions created planning bodies to make decisions about how best to spend HRSA money.***

For example, recognizing that the multiple streams of preparedness funding (from the CDC, HRSA, and the Department of Homeland Security [DHS]) could result in planning silos and duplication of efforts, regional leaders in San Antonio, Texas, in 2002 created the Regional Emergency Medical Preparedness Steering Committee (REMPSC), which is made up of public health authorities, hospital leaders, and other subject matter experts, to provide strategic direction on how these funds could best be used. Their first decision was to pool the HRSA money for regional projects rather than divide HRSA funding among all hospitals, which would only have amounted to about \$12,000 per hospital. The pooled funds were to be used to implement regional projects that would make a significant improvement in regional preparedness and ensure interoperability, gain economies of scale, and consolidate accounting and reporting responsibility.<sup>11</sup>

Similarly, hospitals in northern Virginia created the Northern Virginia Hospital Alliance (NVHA), which is a private nonprofit organization formed by 12 northern Vir-

ginia hospital CEOs shortly after September 11, 2001. Following the September 11 and anthrax attacks of 2001, hospitals in northern Virginia determined that it was necessary to create an organization dedicated solely to the issues inherent in hospital preparedness (separate from but in close collaboration with other first responder agencies) and to judiciously manage the hospital preparedness funding to develop a regional approach to hospital preparedness and response.

***Defining the region and stakeholders within the region has been a key step.***

Resolving jurisdictional overlap or uncertainties has been a serious challenge for most communities that are developing regional preparedness. One approach to addressing this challenge is illustrated by the experience in San Antonio. In 1989 the Texas legislature passed a law to develop a statewide trauma system that divided the state into regions. San Antonio is part of the Southwest Texas Regional Advisory Council (STRAC), which is one of 22 Regional Advisory Councils (RACs) in Texas. Although the STRAC was not created to resolve the overlapping public health and emergency management responsibilities, it has been a key first step in defining geographic regions in which hospitals will work together.

***Working as a region to define gaps in regional planning and response enables stakeholders to clearly identify priority areas for improvement.***

For example, following the first year of New York City's (NYC) hospital preparedness program, the NYC Depart-

ment of Health and Mental Hygiene (DOHMH) conducted a series of hospital surveys to understand hospital preparedness gaps related to the HRSA benchmarks (including communication, training, equipment, staffing, bed capacity, etc.). DOHMH measured hospital preparedness in three ways: (1) subjective reporting through a NYC DOHMH bioterrorism preparedness survey completed by the hospital preparedness coordinators; (2) DOHMH review of the hospital response plans; and (3) onsite visits by DOHMH staff. The results of these surveys and subsequent gap analysis helped to determine future activities and funding priorities for NYC hospital preparedness.

*Success has been largely dependent on the support and leadership of hospital executives.*

For example, northern Virginia study participants cited executive leadership as being particularly helpful and visionary. In September 2002 there was a meeting of all CEOs from the northern Virginia hospitals at which each agreed that healthcare preparedness in northern Virginia was critical and that a regional approach was the most appropriate path. Each CEO agreed to contribute the necessary “working capital” to establish the Northern Virginia Hospital Alliance, and to hire an executive director to coordinate hospital involvement. This commitment from hospital executives paved the way for the staff from each facility to engage in the preparedness planning process, knowing they had the support and resources necessary.

Following the World Trade Center and anthrax attacks of 2001, 22 hospital CEOs from the Twin Cities of Minneapolis and St. Paul, Minnesota, launched a regional collaborative planning effort by signing the Metropolitan Hospital Compact in April 2002. The compact includes bylaws that define the governing structure of the regional coordinating group and designates a “regional hospital” to coordinate hospital preparedness and response activities within a region. The compact also provides provisions for staffing alternate care facilities, sharing of staff and supplies, and other ongoing planning activities.<sup>12</sup>

*The success of the regional planning effort requires a neutral entity to bring together organizations that are historically competitors.*

In Palm Beach County, Florida, the Palm Beach County Medical Society serves as the neutral coordinating entity for hospital preparedness and response. In the aftermath of Hurricane Andrew (1992), the Society began working with hospitals in the region to coordinate preparedness activities. Following the anthrax attacks of 2001, an official coordinating group, known as the Health Emergency Response Coalition (HERC), was formalized; it includes representation from all area hospitals, the county health department,

county emergency management, Palm Beach fire-rescue, the sheriff’s office, the Red Cross, the veterinary association, the nursing home association, the hospital association, school nurses, and mental health providers, among others. A steering committee was created, and operating guidelines, bylaws, and rules for election were written. The steering committee meets monthly and serves as the governing board for the HERC, responsible for reviewing policies and providing strategic direction. The HERC general membership also meets monthly, and these meetings often include representatives who serve the business and infrastructure needs of hospitals—for example, Florida Power & Light.<sup>13</sup> According to interviewees, one of the reasons that the HERC has been so successful is because it serves as a unifying body for the preparedness and response needs of Palm Beach County hospitals and provides a structure for including hospitals as part of regional emergency planning.

The King County Health Care Coalition, in Seattle, Washington, is a voluntary coalition launched in November 2005 with 23 hospital CEOs and COOs, along with the executives from the ambulatory care community, the King County Public Health Department, and other regional partners. The coalition became the necessary entity for bringing the appropriate people to the table who could speak for hospital assets and make executive-level policy decisions. One person within King County, the HRSA grant coordinator who works within the King County Public Health Department, serves as a neutral entity responsible for coordinating hospitals and dedicated to building the bridge between public health and hospitals. This has been critical to the success of the coalition. With the support of the coalition staff and hospital emergency managers, the HRSA grant coordinator has made significant progress in building regional partnerships, increased the visibility of the coalition, and successfully demonstrated the value of this effort to hospitals.

*Trade associations and organizations that can fairly represent stakeholders should be included in these regional partnerships.*

The Alabama Department of Public Health (ADPH) has partnered with the Alabama Hospital Association, the University of South Alabama College of Medicine, and others to create the Patient Transfer Center to manage surge capacity and regional medical assets during emergencies. The partnership with the Alabama Hospital Association has been important, because they are trusted by the hospitals and they assure that there is a level playing field (e.g., not all uninsured patients are being sent to one hospital). Study participants noted that the Alabama Hospital Association has intimate knowledge of each hospital, valuable connections, and the ability to maintain clear and open communications with hospital leaders. In the future, the Patient

Transfer Center will likely include a formal partnership with the Alabama Nursing Home Association to offer, as the Alabama Hospital Association does, a trusted partner who can fairly represent the needs of its constituents and further integrate the state's nursing homes in preparedness and response activities.

The close partnership between the NYC DOHMH and the Greater New York Hospital Association (GNYHA) has been critical to the success of NYC's hospital preparedness program. Since GNYHA represents all nonprofit hospitals in NYC (which includes all NYC acute care hospitals) and the surrounding area and since GNYHA has ready access to hospital CEOs, they have been an important partner in the NYC hospital preparedness program. NYC DOHMH also has a close partnership with the Community Health Center Association to further integrate community health centers into preparedness activities as well as to build neighborhood preparedness and surge capacity.

*Regional coordinating groups can be an effective vehicle for implementing interoperability standards for communications, equipment, training, and staff.*

In southwest Ohio, the HRSA funds and regional hospital preparedness activities are coordinated by the Greater Cincinnati Health Council. The Disaster Preparedness Committee of the Greater Cincinnati Health Council has been working together for over 20 years and includes representation from all of the 33 hospitals in the tri-state region, including areas of Indiana and Kentucky. The council has leveraged its size to standardize equipment through group purchasing of radios as well as education and training opportunities. In addition, HRSA funds are provided to individual hospitals within the region to purchase equipment that meets interoperability standards. An example of the interoperability facilitated by the Disaster Preparedness Committee includes the development of the disaster radio network,\* which serves as an interoperable communication system between hospitals and EMS to allow for routine and emergency routing of patients. Patient transportation is coordinated from the field with EMS, which has access to a hospital capacity website and therefore can make informed decisions about which patients should go to which hospitals.

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\*The development of the disaster radio network was funded by the Urban Areas Security Initiative (UASI), which is managed by the Department of Homeland Security (DHS): The "Urban Area Security Initiative Grant Program funds address the unique planning, equipment, training, and exercise needs of high threat, high density urban areas, and assist them in building an enhanced and sustainable capacity to prevent, protect against, respond to, and recover from acts of terrorism."<sup>14</sup>

The Region 13 Taskforce in Pennsylvania has developed a Mutual Aid Agreement that enables the city of Pittsburgh and the 13 neighboring counties to together prepare for and respond to all-hazard events. Included in the Region 13 Taskforce is the Pennsylvania Region 13 Metropolitan Medical Response System (MMRS), which coordinates with regional hospitals, EMS, and public health agencies to plan for and respond to mass casualty events. In order for acute care hospitals to receive HRSA preparedness funding from the Pennsylvania Department of Health, they must meet certain criteria such as participation in regional planning and disaster exercises. As a result, Region 13 has been able to standardize first responder and hospital equipment purchases and personnel training, as well as to leverage group purchasing discounts for items such as personal protection equipment and radiation detection systems. In addition, all Region 13 hospitals have adopted the same testing schedule to enable them to meet both HRSA and JCAHO requirements. Region 13 is in the process of creating the Joint Readiness Center to address healthcare preparedness and response beyond the regional level, enabling coordinated training and deployment of healthcare resources for national disasters.

*Some regions have employed creative strategies to incentivize hospital participation.*

To encourage participation from hospitals, the NYC DOHMH distributes a portion of the HRSA funds via deliverable-based contracts with each of the 27 fiscal hospital networks in NYC (which account for the 67 acute care hospitals) so that funds are allocated in return for participation in meetings, drills, tabletop exercises, and training, as well as developing and testing protocols and answering surveys. By reimbursing hospitals for the completion of activities and tasks, the NYC DOHMH is able to provide incentives for participation and to reimburse hospitals for replacement time of hospital staff.

Because NYC is a healthcare environment in which almost every hospital is part of a larger network, the NYC DOHMH implemented financial incentives to encourage hospitals to work with institutions outside of their networks. For example, the NYC DOHMH awards additional HRSA funds to hospitals via competitive grants through participation in a Center for Bioterrorism Preparedness Planning (CBPP). The NYC DOHMH created four CBPPs to encourage planning between hospital networks and to create models for surge capacity. For example, in Central Brooklyn, a private hospital, a public hospital, a long-term nursing facility, and a psychiatric facility serve as one of the four CBPPs. One of their responsibilities is the development of a memorandum of understanding (MOU) for emergency planning and response that can then serve as a template for other facilities. Over the past three years,

each of the four CBPPs has been required to complete approximately 65 deliverables and has received approximately \$1.7 million to coordinate, operationalize, drill, and integrate their surge capacity planning and response activities.

According to interviewees, the success of the multidisciplinary work groups formed within the CBPPs has led to the creation of additional interfacility planning groups that have developed guidelines for preparing and responding to emergencies related to pediatrics, burns, radiation, and large infectious disease outbreaks. Finalized protocols are then distributed by the NYC DOHMH to all acute care hospitals, often with equipment and corresponding education materials, thus allowing all NYC hospitals to benefit from the work groups' recommendations, to enable sharing of promising practices, and to create a standard of preparedness among all hospitals.

As an additional incentive for hospitals, the NYC DOHMH HRSA preparedness funds are administered by the Fund for Public Health in New York, Inc. (FPHNY). The fund is a nongovernmental agency, which allows for easier contracting, versatility, and timely reimbursement for hospitals. The fund is a "non-profit organization . . . created to work in partnership with the DOHMH and to be uniquely tailored and dedicated to combining the resources and efficiencies of the private sector with the capacity and scale of the public sector action in service of public health. . . . FPNY is able to . . . raise funds for, and administer important grant funded public health programs."<sup>15</sup>

*Electronic communication systems that connect hospitals and public health agencies are critical to providing the needed situational awareness to manage patients, resources, and staff in an emergency.*

The Alabama Department of Public Health (ADPH) realized the need for more accurate, timely, and complete information about hospital capabilities and resources, so they contracted with the University of South Alabama College of Medicine to build the Alabama Incident Management System (AIMS). AIMS provides the situational awareness for virtually every healthcare asset (excluding private physician offices) in the state and serves as a critical resource that allows public health agencies and hospitals to communicate electronically. Currently, over 70% (82 of 115) of Alabama hospitals and all medical needs shelters are using AIMS.

The NYC DOHMH and NYC hospitals share information about hospital resource capacities and needs via the New York State web-based Health Emergency Response Data System (HERDS). In Minnesota, hospital resource capacity is tracked using a web-based state system called MN-Trac, which provides diversion status and bed category availability. As agreed to in the Metropolitan Hospital Compact, hospitals are asked to provide this information on a daily basis and will do so as needed in emergency situations.

The San Antonio STRAC is implementing Web EOC, a web-based Crisis Information Management System (CIMS), to ensure hospitals, EMS, and other healthcare providers are integrated into the regional emergency response and to streamline routine activities within hospitals. For example, a current pilot project uses this software to electronically track the status and location of ventilators within the hospital, which is currently surveyed manually. This will not only help the hospital manage inventory but will also provide real-time information on ventilator availability to hospital leaders and the STRAC.

Pennsylvania Region 13 is working closely with its partner, the University of Pittsburgh Medical Center (UPMC), to develop and deploy a regional biodefense information network in western Pennsylvania that connects key civilian and military agencies to coordinate regional response. This system, known as the Strategic Biodefense System (SBS), is being developed with the Pennsylvania National Guard and is funded by the Pennsylvania Department of Military and Veterans Affairs. The goal of the SBS is to enable electronic sharing of critical public health and medical information during emergencies, including hospital capacity and needs information (e.g., assets, staffing, beds, etc.). The SBS will also facilitate simultaneous mass alerting and bi-directional communication with thousands of medical and public health first responders. It will provide a forum for communicating situational awareness, emergency instructions, and guidelines to the public during public health emergencies and disasters. This system will be offered for use to all hospitals, responding agencies, and Emergency Operations Centers (EOCs) in western Pennsylvania.

*Key operational functions of regional groups include the ability to coordinate the transfer, deployment, and distribution of patients, staff, and supplies and to make decisions regarding scarce medical resources and altering standards of care.*

Regions have developed differing levels of operational response capacity within their coordinating groups. For example, Alabama has created the Patient Transfer Center to manage surge capacity and to take ownership of the valuable information submitted to AIMS. The Patient Transfer Center serves as "one-stop shopping" for medical assets, enabling the management, transfer, and deployment of supplies, staff, and medical volunteers. It also functions as a medical and public health Emergency Operations Center (EOC) that supports the state EOC. During disasters, hospitals, public health agencies, and emergency management send representation to the Patient Transfer Center to manage the emergency and to work collaboratively with the ADPH to make difficult decisions, including the management of scarce resources and alterations of standards of care

(which may be necessary in a pandemic). According to the Alabama representatives we interviewed, the development of Alabama's Patient Transfer Center has allowed the region to better meet its mission of "getting the right patient to the right place, to the right care, at the right time so that we don't swamp or overwhelm any one medical facility during a disaster."

In Minnesota, one hospital in a region is designated as the Regional Hospital Resource Center (RHRC) to administer the HRSA grant for hospitals in the region, coordinate regional hospital preparedness activities, and serve as an information clearinghouse for hospitals.<sup>12</sup> During emergencies, the RHRC will be responsible for coordinating the redistribution of resources and patients and for managing hospital requests.<sup>12</sup> An RHRC representative will also work with the Multi-Agency Coordination Center (MACC), which includes representatives from the RHRC, EMS, public health, and emergency management. The MACC serves as a regional coordination center that, during emergencies, acts as "... a health, medical, policy, and resource clearinghouse" to make policy decisions regarding the medical and public health response, including the allocations of scarce medical resources and staff. The RHRC representative will speak for the needs and concerns of hospitals within the MACC.<sup>16</sup>

The San Antonio STRAC has created the Regional Medical Operations Center (RMOC) to facilitate coordination and collaboration among hospitals, public health agencies, and emergency management during a crisis. During an emergency, the RMOC typically involves 45–60 people, including representatives from state and local public health authorities, hospitals, nursing homes, the University of Texas Health Science Center—San Antonio, mental health authorities, fire/EMS, and the Red Cross. The RMOC was used for the first time during Hurricane Katrina (and subsequently for Hurricane Rita) when it coordinated the arrival of 108 planes and more than 25,000 evacuees in 38 hours. Of these evacuees, 10% were determined to need hospital care and were directed, via the RMOC, from the planes directly to regional emergency rooms.

In New York City, the resources and requests from hospitals during emergencies will be coordinated through a multi-agency Unified Health Command (UHC). The UHC includes representatives from the NYC DOHMH, the GNYHA, the Health and Hospital Corporation (HHC),<sup>†</sup> the NYC Office of Emergency Management, and

the New York State Department of Health. The UHC will assist in prioritizing information received via HERDS, including hospital requests; in redistributing supplies and equipment; and in ensuring receipt of material and resolution of problems.<sup>18</sup>

## RECOMMENDATIONS

Based on the key findings from the interviews, we offer the following recommendations for building effective regional hospital coordination.

### *Local, state, and federal public health authorities must work together to define "regions" and identify stakeholders.*

Many of those interviewed reported complications because of incongruent or overlapping jurisdictions of responsibility, particularly between the public health agencies and emergency management. A number of hospital participants reported confusion and frustration in having to work with multiple public health agencies in their surrounding area.

To facilitate regional preparedness, the "region" must be clearly defined. One approach to addressing this would be for federal program administrators to require that states define the boundaries of each region within their states. Where jurisdictions cross state lines, states could agree to share the responsibilities of that cross-state region. Such determinations would require the collaboration of state and local governments, hospitals, and professional organizations. There may be other ways to solve jurisdictional overlap and inconsistencies, but resolving this should be a priority if regional systems are to become a foundation for preparedness around the country.

### *Governors and mayors should provide the necessary political support and visibility to facilitate the creation and operation of "regional hospital coordinating groups" (RHoC groups).*

Many study participants reported skepticism on the part of the hospitals when they were first approached by public health about regional partnerships. There was a lack of mutual understanding among public health, emergency management, and hospitals about the others' roles in preparing for and responding to acute healthcare emergencies.

To bridge these gaps, the structure for this coordination must be defined to create something both tangible and measurable. Regions that do have such systems have given them different names. In this article, we use the term "regional hospital coordinating group," or RHoC group, to describe this entity. The purpose of the RHoC group is to

<sup>†</sup>The New York City Health and Hospitals Corporation (HHC) was created by legislation in 1970 as a public benefit corporation, governed by a board of directors, to oversee the city's public health care system in all five boroughs. The corporation consists of 11 acute care hospitals, 6 diagnostic and treatment centers, 4 long-term care facilities, a certified home healthcare agency, and more than 80 community health clinics, including communicable centers and child health clinics.<sup>17</sup>

serve as a coordinating body for regional hospital and medical services and as a joint decision-making and consultative body on matters relating to regional medical care delivery. This group should include hospitals, public health, emergency management, and other stakeholders in health care and the community, including EMS, community health centers, long-term care facilities, nursing homes, mental health facilities, home healthcare organizations, and the like. Guidelines and standards for the creation and management of these groups should be established jointly by HRSA and CDC, based on lessons learned and recommendations from existing regional groups.

*Federal, state, and local governments as well as hospitals should support the hiring of qualified staff within hospitals and public health agencies dedicated to regional preparedness.*

“There is too much to do. Everybody is wearing two or three hats. . . . We have to get serious in public health and medicine about dedicating people to preparedness.”—*Director of a coordinating group*

A number of participants reported that hospitals have difficulty coordinating with public health agencies because of a lack of local public health infrastructure. In some communities local public health organizations are run by volunteer boards or by individuals in part-time positions, with few if any public health or medical personnel. One respondent reported, “In my hometown the board [of health] are the guys . . . who put in septic systems. . . .” This has made regional planning a challenge, because hospitals are required not only to take responsibility for coordinating local healthcare preparedness activities but also to reach out to numerous public health entities that may or may not have the capacity to participate in preparedness planning.

Likewise, hospitals do not have the necessary staff dedicated to preparedness. One participant noted that, particularly in hospitals, “. . . for just about every one of us in our region, our preparedness role within our institution is an added line in our job description.” Most hospitals do not have full-time planners dedicated to this initiative. Hospital representatives often come from varying backgrounds, including security, emergency medicine, nurse management, training, and operations. Although sometimes this diversity can be advantageous by providing unique perspectives, it makes progress difficult. In addition, one respondent reported that representatives did not have the necessary access to executive staff. For example, “. . . the Emergency Preparedness Coordinator used to have direct access to the CEO. . . . Now they are two or three levels away from the CEO; . . . they’re not part of the . . . highest structure.”

A previous study also reported that the department in which the typical hospital preparedness coordinator and the

emergency contact are employed varies widely between hospitals, indicating that “no single discipline or professional group can be identified as consistently responsible for hospital preparedness. . . .”<sup>19</sup> One participant noted that having a full-time senior-level emergency coordinator at each hospital would significantly improve hospital preparedness. Another participant commented, “If we had a full-time person at every hospital devoted to this [preparedness and response], we would be worlds better.”

To make significant progress on regional hospital preparedness, communities need qualified full-time planners. This means supporting, financially and programmatically, the hiring of staff with backgrounds and experience in public health and healthcare preparedness, hospital management, and emergency response. These positions should be at a manager level or higher in the hospital’s organizational structure and should report directly to a hospital executive (CEO or COO) in order to assure sufficient decision-making authority.

*The RHoC groups should serve as neutral entities dedicated to building and maintaining regional partnerships.*

Study participants noted the intense competition between hospitals for patients and staff. One representative reported that one of the biggest challenges is “. . . getting the hospitals to see the benefits of working together.” This was evident when one region brought together pharmacy directors from competing hospitals to develop countermeasure distribution plans for hospital patients, staff, and their families. It was particularly difficult to get this group to collaborate because pharmacists are in such short supply and these directors are often competing for each others’ staff.

A neutral RHoC group can and should represent the interests of all hospitals and public health agencies in the region. In many locations, the HRSA regional coordinator already has served as a neutral facilitator and has been critical to developing the trust and social capital necessary to make these planning entities work. The HRSA regional coordinator position should be strengthened to further encourage and support these regional partnerships. The establishment of RHoC groups as a neutral, organized structure within the region would improve the ability of disparate organizations to work together.

*RHoC groups should be governed by a board of public health leaders and hospital executives.*

Many participants reported that it has been a challenge to get the attention and support of hospital leaders, which has resulted in a lack of funds and staff to adequately support preparedness efforts. One way to address this is to have each RHoC group governed by a board that is responsible for providing strategic direction, as well as direction on how to distribute and spend grant funds and how to prioritize regional

efforts. The board should include executive-level representation (CEO or COO) from each member organization to assure top-level involvement, and it should be co-chaired by a hospital CEO and the public health commissioner or director. To assure impartiality, one region interviewed has created a board that is jointly chaired by the public health director and a hospital CEO whose chairmanship rotates so that each hospital is represented in this position.

***RHoC groups need to be integrated into the ICS structure for response to regional emergencies.***

There is general concern and confusion about how the regional hospital planning entities will be operationalized and integrated with the Incident Command System (ICS)<sup>‡</sup> and the local and state Emergency Operations Centers (EOCs) for a more coordinated response. One respondent noted the need for an overhaul in regional ICS because the existing path is complicated and requires too many steps for hospitals to navigate in order to receive assistance. In addition, throughout the interviews it was clear that many regions are struggling to identify, within the existing response structure, how to coordinate regional medical assets as well as how to make decisions about altering standards of care and allocating scarce resources.

The RHoC group should be able to operationalize plans and coordinate with responding agencies during an emergency. The RHoC group should serve as a central information hub to receive and analyze information about medical needs, medical assets, patients, and staff. The RHoC group should serve as a coordinating body for regional medical services and a joint decision-making body on matters relating to local medical care delivery and alteration of standards of care. It should also serve as a consultative and advisory body to the corresponding public health authorities regarding the impacts on the healthcare system and regional medical resource needs. RHoC groups also should be represented in the EOC.

***Local, state, and federal governments should increase funding to create and sustain regional hospital preparedness.***

“You are not going to put a lot of money toward preparedness if you need to meet payroll next week.”—  
*Hospital ED nurse manager*

<sup>‡</sup>“Incident Command System (ICS), an incident command and management structure developed to facilitate and streamline emergency response during times of a public health emergency. . . . The role of ICS is to facilitate rapid and coordinated decision-making, as well as efficient communications and information dissemination.”<sup>20</sup>

We heard concerns about the sustainability of the hospital preparedness program from almost all participants. Study participants felt that, as the HRSA preparedness program now exists, there was not enough money to fund hospital preparedness or provide incentives for hospitals to get prepared. One participant noted, “Even though they [hospitals] receive funds from HRSA, many times it’s seed money and they [hospitals] end up incurring costs as a result of things they are implementing for HRSA.” Another participant reported that facilities in his region receive only about \$10,000, which is not much of an incentive for hospitals to participate. One participant noted that “Congress has not given them [hospitals] enough money that they should just drop everything and do emergency preparedness planning.” The workload continues to grow, as do the many unfunded mandates. One local HRSA program coordinator explained that the idea of doing more with less has gone to the extreme. “This whole pot of money is getting very diluted, because it’s not just about terrorism events—it’s now including natural disasters, emerging disasters, pandemic influenza. It’s just hard to ever have enough money to meet the demands that are being placed on the healthcare sector and public health departments.”

Overall, interviewees uniformly agreed that the amount of funds provided by NHBPP is not sufficient to prepare hospitals for the range of disasters they may face. Additional dedicated funds from HRSA and other organizations will be required to build and sustain regional preparedness efforts. A number of regions have been proactive in assuring the financial sustainability of their coordinating group by obtaining additional sources of funding. For example, following the anthrax attacks of 2001, Palm Beach County received support from the Palm Healthcare Foundation, an independent nonprofit community healthcare foundation, which gave the Palm Beach County Medical Society \$250,000 to support regional hospital preparedness activities. In its first year, the King County Healthcare Coalition in Seattle has received over \$200,000 in financial support from the county government.

***Federal guidelines and nongovernment accreditation requirements for hospital preparedness should be harmonized and prioritized.***

Inconsistent and confusing federal grant requirements and reimbursement rules from HRSA, CDC, and DHS have resulted in frustration and wasted time. For example, requirements from the Joint Commission on Accreditation of Healthcare Organizations (JCAHO), HRSA guidelines, and the Occupational Safety and Health Administration (OSHA) guidance on hospital preparedness all recommend that hospitals provide decontamination facilities and equipment, but the FY2005 HRSA decontamination guidelines

were far more detailed. While goals for improving hospital surge capacity and the establishment of pharmaceutical caches are addressed in the JCAHO, NBHPP, CDC Public Health Emergency Preparedness, Urban Area Security Initiative (UASI)<sup>§</sup>, and Metropolitan Medical Response System (MMRS)\*\* guidelines, specific target requirements differ.

In addition, many participants reported that federal grant requirements are a moving target with short and unrealistic timelines. Not only are the goals often unrealistic, but requirements do not account for the logistics of spending funds within the grant timelines given the cumbersome purchasing, contracting, and hiring processes required by most city, county, and state governments. For example, one participant noted that “. . . because of purchasing rules of the county government . . . it’s very, very difficult to meet those funding deadlines before you lose your grant money and still comply with the local government purchasing requirements.”

Developing a consensus on standards and priorities for hospital preparedness will likely be a difficult task, because the goals of grant providers and regulators, while similar, may not entirely overlap. However, federal grant administrators and organizations that accredit hospitals should increase efforts to achieve uniformity among hospital preparedness guidelines in order to facilitate regional coordination.

*The federal government should take steps to improve coordination with regional planners so that best practices and lessons learned can be easily shared.*

“There is a severe lack of coordination at the federal level. . . . Within HHS you’ve got HRSA and CDC who aren’t coordinated, and then you add DHS and homeland security money, . . . and none of those requirements line up so that we could utilize the funding to the most efficient methodology. . . . We’re all scurrying to meet a federal requirement in a catch-carry, helter-skelter methodology that doesn’t make any sense.”—*Regional HRSA coordinator*

<sup>§</sup>UASI: Managed by the Department of Homeland Security, the “Urban Area Security Initiative Grant Program funds address the unique planning, equipment, training, and exercise needs of high threat, high density urban areas, and assist them in building an enhanced and sustainable capacity to prevent, protect against, respond to, and recover from acts of terrorism.”<sup>14</sup>

\*\*MMRS: “The MMRS Program began in 1996 and currently is located in the United States Department of Homeland Security. The primary focus of the MMRS program is to develop or enhance existing emergency preparedness systems to effectively respond to a public health crisis, especially a weapons of mass destruction (WMD) event.”<sup>21</sup>

The lack of federal coordination, guidance, and sharing of best practices slows progress. Commenting on the lack of federal coordination and communication between the federal HRSA office and local HRSA grant coordinators, one participant reported feeling like a “pioneer.” The lack of coordination is causing each state and locality to reinvent the wheel, wasting time and money. “They’re wasting a ton of money—if there are 50 states, . . . I can only imagine that there are at least 400 coordinators nationwide—and we’re all sitting here writing a chemical plan or a pan flu plan by ourselves.”

On December 19, 2006, the President signed S. 3678, also known as the Pandemic and All-Hazards Preparedness Act, which aims to improve the public health and hospital preparedness programs by amending the Public Health Security and Bioterrorism Preparedness and Response Act of 2002. The Pandemic and All-Hazards Preparedness Act aims to consolidate federal authority for public health and medical preparedness within the Office of the Secretary for Health and Human Services (HHS), thereby bringing federal hospital and public health preparedness program management under one office to improve coordination of public health and hospital planning and response. In addition, HHS and DHS will be required to work together to expand the Lessons Learned Information System (LLIS) to better facilitate the sharing of public health best practices and lessons learned through a secure federal website. Implementation of these new federal requirements would provide RHoC groups, HRSA regional coordinators, and hospital planners around the country with a means to improve coordination and to learn critical lessons from each other. This and other relevant efforts to share valuable information in this community should be a top priority.

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