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TECHNICAL REPORT

Public Health Preparedness

Integrating Public Health and Hospital Preparedness Programs

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Prepared for the U.S. Department of Health and Human Services



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SUMMARY

Medical and public health professionals have long been aware of the need to improve coordination between their communities. The September 11, 2001, terrorist and subsequent anthrax attacks underscored the importance of finding new ways to collaborate in order to address public health emergencies and to improve overall preparedness. The federal government's bioterrorism funding is aimed specifically at encouraging such collaboration, and the cooperative agreements of the Centers for Disease Control and Prevention (CDC) and Health Resources and Services Administration (HRSA) have encouraged linkages between local health departments and hospitals and other key stakeholders to improve public health preparedness.

Hospitals and public health departments have employed a variety of approaches to improving preparedness coordination. In this study, we examined different models for coordination used by local health departments and local acute-care hospitals. Understanding which strategies have been successful allowed us to identify which aspects of public health preparedness lend themselves to being coordinated, which factors facilitate or hinder coordination, how barriers to coordination have been overcome, and how local health departments and hospitals are using the separate funding streams provided by CDC and HRSA for coordination. We developed a conceptual framework to identify factors that are likely to influence coordination between local public health departments and local hospitals. This framework guided an examination of coordination activities undertaken in 2001 and 2003 and site visits to six locations, five of which were selected as successful models of public health and hospital coordination.

ANALYTIC FRAMEWORK

We developed a three-pronged approach to explore the issues surrounding coordination between local health departments and hospitals. We began with a literature review to inform the development of a conceptual framework for thinking about coordination issues. This framework then guided the development of our analysis plan, which comprises two distinct components. First, to provide a broad national picture of coordination between local health departments and hospitals, we analyzed data from the Surveys of Federal Preparedness Programs for Combating Terrorism (see the Survey Analysis section in Chapter 1). Then, to delve more deeply into the factors that facilitate

and hinder coordination, we conducted a series of site visits to counties in which coordination appeared to be taking place.

CONCEPTUAL FRAMEWORK

Before evaluating the various coordination mechanisms that could be used, we first considered the particular tasks that would need to be coordinated. For example, a bioterrorist attack would require tasks related to identifying cases, treating cases, containing the outbreak, communicating with the public, etc. Although the focus of this report is on hospital–public health coordination, some of the tasks that would need to be accomplished would require the involvement of additional organizations, such as law enforcement, emergency management organizations, emergency medical services, and other key stakeholders. The literature on organizational behavior argues that the characteristics of these tasks and the different organizations involved determine the coordination mechanisms that would be most effective.

Coordination can be conceptualized as the “conscious activity of assembling and synchronizing differentiated work efforts so that they function harmoniously in attainment of organizational objectives” (Longest and Klingensmith, 1994). The basic notion involves bringing together in some fashion various aspects of an organization (i.e., people, departments, etc.) or different organizations, so that there is an exchange of information and/or resources in accomplishing a common task or meeting a common goal.

Coordination mechanisms fall into two broad categories (Van de Ven, Delbecq, and Koenig, 1976): programming (impersonal, formal) mechanisms and feedback (personal, informal) mechanisms. *Programming mechanisms* include development of pre-established plans, schedules, and forecasts; formalized rules, work policies, processes, and procedures (including clinical guidelines, pathways, and protocols); outcome standards (e.g., quality assurance); and standardized information and communications systems. Roles are formally prescribed, and there is little, if any, room for discretion on the part of the organizational “actors” (i.e., the people doing the work). Programming mechanisms are usually formal and institutionalized.

Less formal *feedback mechanisms* (i.e., personal or group mechanisms) include personal modes of coordination that allow individuals to respond to feedback from vertical forms of communication (e.g., supervisory staff) or horizontal or lateral forms of communication (e.g., coworkers and peers). Group modes (such as teams) enable

individuals to receive feedback from other group members. Specific mechanisms of this type of coordination include the use of teams, committees, task forces, and work groups.

KEY FINDINGS

A Wide Array of Coordination Mechanisms Was Used in 2003

Our study considered a wide array of coordination mechanisms, including both programming mechanisms (e.g., plans, policies and procedures, standards, communication systems) and feedback mechanisms (e.g., person-to-person, group modes). To understand which coordination mechanisms were used, we analyzed results from the 2001 and 2003 Surveys of Federal Preparedness Programs for Combating Terrorism, which were administered to hospitals and local public health departments by RAND on behalf of the Advisory Panel to Assess Domestic Response Capabilities for Terrorism Involving Weapons of Mass Destruction, otherwise known as the Gilmore Commission.

The data used to provide a broad, national picture of coordination among local health departments and hospitals come from national Surveys of Federal Preparedness Programs for Combating Terrorism.

Table S.1 shows the proportion of hospitals and local health departments reporting use of various coordination mechanisms in 2003.

The results indicate that, two years following the September 11, 2001, terrorist attacks, the vast majority of both hospitals and local health departments had emergency response plans in place. These plans addressed a wide range of issues, including procedures for quarantine and isolation, as well as communication with other health responders (e.g., hospitals, medical providers, emergency medical services). Local health departments were ahead of hospitals in terms of integrating their plans with those of other local organizations.

Table S.1. Summary of Survey Results: Coordination Mechanisms Used in 2003

Coordination Mechanism	Hospitals	Local Health Departments
	Percent (s.e.)	Percent (s.e.)
Emergency response plan in place	98 (2)	88 (4)
Emergency response plan addresses integration with local organizations	82 (8)	88 (4)
Organization maintains a capability list of resources in the area ^a	N/A	46 (7)
Organization maintains a list of contacts at local, state, and federal levels ^a	83 (4)	86 (4)
Mutual-aid agreements are in place ^a	86 (4)	70 (5)
Hospital (local health department) conducted joint training for terrorism-related event with local health department (hospital)	65 (3)	80 (4)
Organization participates in an interagency task force	90 (3)	92 (3)

NOTES: Standard error of the percentage estimate is shown in parentheses. This table summarizes data that are presented in greater detail in Tables 4.1 and 4.2. N/A = question not asked of this group.

^a Indicates 2001 data.

Coordination Generally Improved Between 2001 and 2003

As shown in Table S.2, the percentage of hospitals and local health departments participating in key coordination activities increased between 2001 and 2003.¹

Between 2001 and 2003, both hospitals and health departments appear to have increased their use of informal, or feedback, coordination mechanisms, such as joint training, participation in interagency task forces or working groups for disaster preparedness, and joint training activities for terrorism-related incidents with other local health organizations. Although no causal relationship has been shown, these results are consistent with the hypothesis that the influx of bioterrorism funding following the 9/11 attacks helped facilitate adoption of such informal coordination mechanisms.

¹ Our ability to examine changes over time is somewhat limited by differences in the questionnaires that were fielded in 2001 and 2003: Only a few questions were worded the same way in both surveys. In addition, any changes observed between 2001 and 2003 likely reflect both actual changes in coordination and changes in respondents' perceptions and awareness following the events of 9/11.

Table S.2. Percentage-Point Increase Between 2001 and 2003

(for those organizations responding in both years)

	Hospitals	Local Health Departments
	Percent (s.e.)	Percent (s.e.)
Emergency response plan in place	0 (<1)	23 (6)
Emergency response plan addresses integration with local organizations	18 (13)	19 (7)
Hospital (local health department) conducted joint training for terrorism-related event with local health department (hospital)	54 (10)	47 (7)
Organization participates in an interagency task force	24 (11)	25 (6)

NOTE: Standard error of the estimate is shown in parentheses.

Case Studies Provide an In-Depth Look at the Critical Success Factors for Coordination

Our site visits provided several lessons about the critical success factors for coordination at the local level. Our study resulted in the following observations and recommendations, many of which require the involvement not only of hospitals and health departments, but of other stakeholders as well (e.g., law enforcement, emergency medical services).

Preexisting relationships. Prior relationships provide a framework from which to build coordination efforts for public health preparedness. For example, local health departments can use existing interagency groups to identify key stakeholders that need to be involved in preparedness planning.

An understanding by health departments and hospitals that coordination is mutually beneficial. Health departments have an education, or outreach, role to play. Public health is relatively new to the area of emergency preparedness and response and, thus, needs to communicate its usefulness clearly to hospitals.

Strong, but flexible, leadership. Strong leadership drives the coordination process forward by providing a clear and shared statement of the mission and objectives. A flexible management style allows leaders to bridge differences in culture and priorities across the many stakeholder organizations. While personality plays a role in leadership quality, there are many aspects of successful leadership that can be learned. Therefore,

health departments and hospitals could provide leadership training to those people charged with overseeing the coordination of public health preparedness activities.

A well-developed, facilitative process. To be successful, the process of coordination must involve all stakeholders as equal partners in decision-making and be respectful of their opinions, concerns, and time. Health departments can provide some structure and guide the effort to ensure that progress is made.

Institutionalized coordination mechanisms. The use of more-formal coordination mechanisms (e.g., interagency work groups, written plans, communications systems) insulates a county against the inevitable changes in personnel that can hinder less-formal coordination mechanisms (e.g., those based on personal relationships).

Funding for successful coordination efforts. All sites noted that HRSA and CDC funding streams have helped increase coordination, in part by making public health a player in this arena and also by helping support formal coordination mechanisms. However, inflexible restrictions regarding which agency can receive the funding, what the money can be used for, and the time frame for its use all caused widespread problems. In addition, HRSA and CDC funding was sometimes received from the state late in the fiscal year, with little prior information on how much money to expect, forcing local officials to make rush decisions on how to use the money.

RECOMMENDATIONS FOR STATE- AND FEDERAL-LEVEL OFFICIALS

It is important to recognize that public health preparedness is only one, albeit important, aspect of the overall emergency and disaster preparedness of a region. In this analysis, we focused specifically on public health and the interface between hospitals and health departments; however, many aspects of public health preparedness (e.g., distribution of the SNS, quarantine plans) will require the involvement of nonhealth stakeholders (e.g., law enforcement, emergency medical services, etc.), as well. Each stakeholder in this wider group is responsible for addressing different aspects of disaster preparedness and will bring its own funding sources, missions, organizational characteristics, and priorities to the planning table. Thus, it is important to understand that public health preparedness does not occur in a vacuum, but in the broader context of the overall disaster preparedness of a region.

Many of the insights gained from the survey and case-study analyses suggest ways in which HHS and state health departments can facilitate coordination at the local level between health departments and hospitals. More generally, many of the lessons learned

from this analysis apply not just to hospitals and health departments but to interagency coordination as a whole. Not unexpectedly, the majority of recommendations for the federal and state officials are related to the funding of preparedness activities through HRSA and CDC cooperative-agreement programs and other related programs, such as the Cities Readiness Initiative.

- ***Provide a clear statement of the mission and goals regarding public health preparedness.*** This is important at both the federal and state levels. Without such a statement, local health departments are unsure about where to focus their energy and resources.
- ***Make the CDC and HRSA cooperative-agreement programs more flexible in terms of:***
 - Who can receive the funding.*** Which organization takes the lead in coordinating public health preparedness at the local level will vary by region, availability of resources, and history of collaboration. The lead organization will not always be the health department. Dollars need to be made available to interagency task forces, planning bodies, hospital councils, or other organizations, and cooperative agreements need to be more flexible about the geographic areas they serve.
 - What the money can be used for.*** Cooperative-agreement restrictions regarding what activities must be undertaken or what types of equipment can be purchased constrain the process at the local level, sometimes resulting in the ineffective use of resources. Greater flexibility would allow the local stakeholders to choose those activities that they believe are most needed.
 - The time frame for use of the funds.*** HHS should review its cooperative-agreement programs and distribution of funding to identify bottlenecks at the federal level and solutions for streamlining the cooperative agreement-making process. HHS should also encourage and incentivize states to distribute funds quickly. HHS could extend the time frame for using cooperative-agreement monies; state health departments need to distribute cooperative-agreement monies in a timely manner.
- ***Coordinate the CDC and HRSA cooperative-agreement programs with those of other federal agencies, such as the Department of Homeland Security (DHS).*** In considering how to encourage coordination, HHS needs to think more broadly than a single cooperative agreement or cooperative-agreement program about how coordination can be funded and mandated, and needs to set requirements that

standardize coordination requirements across multiple cooperative-agreement programs. More broadly, there is a need to assess how different funding streams and programs can be better coordinated across agencies (primarily HHS and DHS).

- ***Educate local health departments and hospitals about:***

- The importance of public health preparedness.*** Both HHS and state health departments can help make the case to local health departments and hospitals. Educating organizations about the importance of public health preparedness, even in remote areas, will help bring the relevant players to the table and jump-start the preparedness process.

- The importance of coordination between health departments and hospitals.*** In some cases, local health departments need to do a better job of communicating what they bring to the table and how they can contribute to preparedness activities. An education effort by HHS and/or state health departments could support such efforts.

- Ways of facilitating coordination across organizations in local communities.*** HHS could help disseminate guidelines and information on best-practice models regarding interagency coordination and how it applies to public health preparedness. Models from other areas, such as the integration of human services (e.g., provision of comprehensive services for welfare recipients) could also provide useful insights.