Community Planning for Pandemic Influenza: Lessons From the VA Health Care System

Nicole Lurie, MD, MSPH, David J. Dausey, PhD, Troy Knighton, EdS, LPC, Melinda Moore, MD, MPH, Sarah Zakowski, BA, and Lawrence Deyton, MD, MSPH

ABSTRACT

Background: Coordination and communication among community partners—including health departments, emergency management agencies, and hospitals—are essential for effective pandemic influenza planning and response. As the nation's largest integrated health care system, the US Department of Veterans Affairs (VA) could be a key component of community planning.

Purpose: To identify issues relevant to VA–community pandemic influenza preparedness.

Methods: As part of a VA–community planning process, we developed and pilot-tested a series of tabletop exercises for use throughout the VA system. These included exercises for facilities, regions (Veterans Integrated Service Networks), and the VA Central Office. In each, VA and community participants, including representatives from local health care facilities and public health agencies, were presented with a 3-step scenario about an unfolding pandemic and were required to discuss issues and make decisions about how the situation would be handled. We report the lessons learned from these pilot tests.

Results: Existing communication and coordination for pandemic influenza between VA health care system representatives and local and regional emergency planners are limited. Areas identified that would benefit from better collaborative planning include response coordination, resource sharing, uneven resource distribution, surge capacity, standards of care, workforce policies, and communication with the public.

Conclusions: The VA health system and communities throughout the United States have limited understanding of one another's plans and needs in the event of a pandemic. Proactive joint VA–community planning and coordination—including exercises, followed by deliberate actions to address the issues that arise—will likely improve pandemic influenza preparedness and will be mutually beneficial. Most of the issues identified are not unique to VA, but are applicable to all integrated care systems. (*Disaster Med Public Health Preparedness.* 2008;2:251–257)

Key Words: pandemic influenza, Department of Veterans Affairs, community planning

Since 2003, the growing number of human cases of H5N1 influenza have contributed to concerns that a new influenza pandemic could emerge.[1] Experts estimate that a pandemic could kill as many as 2 million Americans and 62 million people worldwide.[2] Countries around the world have been developing pandemic influenza plans to ensure effective and coordinated responses both within and across their national borders.

The US government has directed all federal agencies to develop detailed operational pandemic influenza plans.[3] In addition, Congress has provided the Centers for Disease Control and Prevention with upward of $600 million to support state and local pandemic preparedness activities.[4] These grants emphasize the need for enhanced communication and coordination among all community partners involved, including health departments, emergency management agencies, and hospitals.

VA operates the largest integrated health care system in the United States, touching nearly every community in the nation. In fiscal 2006 approximately 8 million of the nation's 25 million armed forces veterans were enrolled for VA health care; nearly 6 million received care from VA. VA is also the largest single health system employer of health workers in the nation, with nearly 200,000 employees in heath care–related jobs. The Veterans Health Administration's (VHA) responsibility during a pandemic is to perform its mission-essential functions, which include serving veterans enrolled in its health care system and providing backup care to the Department of Defense. VA also is one of the primary federal agencies that supports the Department of Health and Human Services' coordination of the National Response Frame-

work's Emergency Support Function no. 8, as well as a principal support for the National Disaster Medical System, the mechanisms used to provide coordinated federal medical and public health assistance in a national emergency. Where resources are available, VA facilities have flexibility to provide humanitarian care to nonveterans. Examples of such humanitarian assistance include VA's responses to Hurricane Katrina and to the shootings at Virginia Tech in April 2007.

VA's National Pandemic Influenza Plan aims to strengthen pandemic preparedness at all levels of its health care system, including by improving its coordination with community partners that encompass public health and emergency response agencies as well as other hospital and nonhospital health care providers and suppliers.[5]

VA has both operational experience and resources of potential significance to community pandemic planning, including equipment and supplies, staff, and a nationwide system for health care emergency management coordination and communications. As such, VA can be an important partner in state and local planning and preparedness. Conversely, VA functions within the communities in which its facilities are located and therefore depends on state and local public health and health care infrastructures throughout the country.

As part of its pandemic planning process, VA has required local VA health care facilities and regional networks to develop pandemic influenza plans and to test their feasibility by conducting tabletop exercises that include community partners. Tabletop exercises are discussion based and are well suited to teaching and identifying issues that need further resolution. To standardize this process, we developed a series of pandemic influenza tabletop exercises to be used throughout VA. Here, we report on issues that surfaced relevant to VA–community planning during the initial pilot tests of these exercises at the local and regional levels.

METHODS

Setting

VA consists of 3 administrations: the Veterans Benefits Administration, the National Cemetery Association, and VHA[6]; the latter has responsibility for pandemic influenza planning and response. VA consists of 3 administrations: the Veterans Benefits Administration, the National Cemetery Association, and VHA[6]; the latter has responsibility for pandemic influenza planning and response. The VHA is organized on 3 levels: local VA health care facilities, including 156 tertiary care hospitals, 136 nursing facilities, 73 home care programs, 43 domiciliary programs, more than 875 community-based outpatient clinics, and 207 counseling centers; 21 regional networks known as Veterans Integrated Service Networks (VISNs); and the national VA Central Office (VACO). From a planning perspective, it is important to note that VA's 21 VISNs, the 10 Federal Emergency Management Agency regions, and the 53 states and territories that comprise the Centers for Disease Control and Prevention's grantees for pandemic planning do not easily align. VISNs often include facilities located in multiple states and, in most, VA is rarely involved officially with state, local, or Federal Emergency Management Agency planning entities. Although VA decision making is often encouraged at the most decentralized level feasible, VA health care facilities ultimately report through their VISNs to VACO.

Goals and Design

The goals of the exercises were to enhance VA's planning and preparedness for pandemic influenza by operationalizing internal VA procedures and processes within and across each VHA level, and to examine external communication and coordination between VA and state and local partners. Working closely with stakeholders throughout VA, we designed the exercises based on a previously developed approach.[7,8] We developed separate exercises to examine salient issues at each organizational level within the VHA: local facilities, VISNs, and VACO. First, by reviewing VA's National Pandemic Influenza Plan, stakeholders identified candidate preparedness topics for inclusion in the exercises. Decisions about which topics were included in the final exercises were made based on whether the topic was considered a high priority by relevant stakeholders, represented a high-impact aspect of preparedness likely to concern most or all of the facilities or VISNs, involved decision making at more than 1 organizational level, and/or involved decisions that needed to be made with, or had implications for, the surrounding community health care and public health systems. Final preparedness areas are shown in Table 1.

Participants

Two facilities and 3 VISNs, located in communities with varying levels of public health system preparedness and of VA-community integration, were invited to participate in 5 separate pilot tests of the exercises; all agreed. A sixth exercise was focused on VACO and concentrated on decision making at the VISN–VACO interface. Facility and VISN directors were provided with a list of suggested participant types. In addition to VA staff, these types included local and state health department and emergency response representatives, and representatives from 1 or more local non-VA medical centers. Consistent with Dausey et al,[7] we aimed for an exercise with 18 to 22 participants and permitted up to 20 observers for each. Note-takers captured exercise proceedings in detail.

Exercise Structure

In each exercise, we presented participants with a 3-step scenario set at a time in the near future. The scenario unfolded during the course of the day, beginning with person-to-person transmission of the virus either outside the United States (for the facility exercises) or outside the region (for the VISN exercises), and escalating to a full-blown pandemic in the region of the facility or VISN. Each of the 3 steps in the

TABLE 1

Preparedness Topics Addressed

Preparedness Topic	Facility Exercises	VISN Exercises	VACO Exercises
Health care surge capacity	X	X	
Surveillance and information sharing	X		
Disease control: antiviral medications and nonpharmacological interventions	X	X	
Workforce challenges		X	X
Resource constraints		X	X
Crisis response and incident management	X	X	
Communications and coordination	X	X	X
Alternative modes of operation		X	
Handling competing requests for resources and services			X

VISN, Veterans Integrated Service Networks; VACO, Veterans Affairs Central Office.

scenario was followed by a discussion period in which participants were asked to make decisions about 2 issues. For example, once the pandemic had spread to the United States, participants had to decide in what manner sick patients would be cared for across VA facilities and across VA and non-VA facilities. Probes included questions such as: What planning assumptions do community partners have related to veterans in their communities and community members who receive care at VA facilities? What planning assumptions do VA facilities have about other community partners? Has the local VA organized a pandemic response team? If so, how does the team interface with the rest of the community? How have participants avoided double-counting in their assessment of available staff and volunteers? Have medical surge plans extended beyond hospitals to clinics and domiciliary facilities?

Facilitators encouraged participants to "play themselves" in the exercise to generate more realistic responses, and used a set of predetermined probes to help ensure that key issues related to each preparedness topic were addressed. (Copies of the full exercise and probes are available from the authors upon request.) At the conclusion of the scenario, participants met as a group to discuss the responses that they outlined. They were then asked to prioritize the issues and challenges identified during the exercise, and to develop an initial action plan to address them. More detailed planning followed receipt of an after-action report.

A team from RAND and VA conducted 2 exercises at the local facility level, 2 at the VISN level, and 1 at the VACO level, making minor revisions to exercise templates after each exercise. Each exercise was 6 to 8 hours in length. The VACO exercise was similar in structure but involved 3 groups: VACO policy staff, VISN representatives, and individuals charged with coordination of VA health care system emergency response. In a real event, the last group would make recommendations to senior officials. This was simulated during the exercise and was followed by a decision-making session led by the VA deputy secretary and VHA senior leadership staff.

Analysis

Immediately after each exercise, the RAND–VA team met to review the issues identified during the exercise. Using a checklist to guide the discussion, the group discussed the strengths and weaknesses of the participants' pandemic preparedness, as evidenced by their responses to the exercise scenario. In addition, the team reviewed the process and delivery of each exercise. Because reliable and valid scoring methods for tabletop exercises have not been sufficiently developed, we did not attempt to rate the level of preparedness of the various sites. Subsequently, the study team conducted a qualitative analysis of observer notes and after-action reports and, using content analysis, identified key themes in addition to those identified in the immediate postexercise review. Finally, we provided a detailed after-action report for each exercise to the facility, VISN, or VACO staff member with the responsibility for planning.

RESULTS

We elaborate on key lessons learned about pandemic influenza response, focusing primarily on issues that have implications for community planning. Because VA is not only a federal system but also an integrated health care system, we highlight those issues that are relevant to the interface between other, nonfederal integrated care systems and community planning efforts (Table 2).

Coordination Between VA and the Community

In general, we found limited understanding, communication, and coordination between VA health care system representatives and local and regional emergency planners. Representatives of local and regional community emergency health planning agencies were generally unaware of the significant flexibility that the VA health care system has in providing humanitarian assistance to nonveterans as part of a public health emergency response, how to best communicate with VA, or with whom they need to work. Similarly, although VA facility participants were clear about their accountability for their US Congress–mandated mission, many were unclear about the level of autonomy they had in decision making. In

https://doi.org/10.1097/DMP.0b013e3181fdaf43 Published online by Cambridge University Press

TABLE 2

Exercise Lessons With Implications for Integrated Care Systems Involved in Community Pandemic Planning

Issue	Application to Integrated Care Systems
Mutual awareness (between the health care system and its local and regional community partners)	Stakeholders need awareness of one another's resources and policies, their roles, and when and how coordination may take place
Resource sharing	Plans for sharing of resources both within the health care system and between it and its community partners are needed
Resource availability and uneven resource distribution	Most entities within a given community may rely on the same suppliers and large integrated systems. Some may have contracts filled before other community providers. This has the largest implications for those without preferred purchasing agreements
Surge capacity	Large systems may wish to be aware of the capacity of other institutions in the communities they serve. Electronic health record availability may facilitate caring for select patients via telephone or e-mail as a way to triage them away from hospitals and clinics. Planning for such care should be done in advance.
Standards of care	Large systems may be in a position in which some regions have different levels of resources, or may experience more patient load than others. As a result, facilities in different areas may provide different levels of care, which in turn may create patient demand for a higher standard of care than is feasible. Similarly, because of their size and organization, some facilities may be able to provide a higher standard of care than others in the community, creating an additional demand on their resources
Communications and coordination	For integrated health systems, message coordination up and down the internal chain of command will be further challenged by the need for consistency in messaging at the community level. Large systems may wish to coordinate communications with public health and emergency management agencies in the multiple jurisdictions in which they are present
Workforce policies	Large systems with multiple facilities may wish to develop and disseminate policies for shifting workforce among various sites and geographic locations throughout the country. They may wish to have explicit policies regarding absenteeism. They may also reap the greatest benefit from just-in-time training, and may wish both to plan such training in advance and identify staff who would likely be asked to receive and use such training. In some areas, advanced credentialing may be appropriate
Demand for care (from eligible patients who previously did not use the system)	Just as many veterans do not routinely use VA for care, many adults are dually insured through policies at their workplace and family coverage obtained through a spouse. Integrated care systems may observe a surge in patients who are technically covered but have not previously used the system

addition, they did not fully appreciate the importance of close coordination and planning with local and regional community agencies to veterans' health care

Resource Sharing

VA and community participants had a limited understanding of the resources that one another had, including those that have already been stockpiled. For instance, some community participants were surprised to learn that various local VA systems and VISNs had stockpiled N-95 masks and that VA had its own stockpiles of oseltamivir. Conversely, VA participants were not fully aware of supplies available at non-VA health care facilities in their communities. In addition, it was not always clear whether VA could share resources with the community or vice versa, and at what level within VA the decision to share (or accept) resources would have to occur. Most communities had not considered VA resources as community assets and had developed pandemic preparedness plans that excluded VA facilities, armed forces veteran patients, and VA health care staff.

In theory, VA can transfer material resources and staff from 1 facility or VISN to another, although participants discovered that the policies and procedures for doing so were not well developed. For example, mechanisms for pickup and delivery and for ensuring the security of supplies usually were unclear. Participants also called into question policies and procedures for transferring staff from 1 VA facility to another because they did not fully consider the implications for disease containment with staff traveling back and forth between affected and unaffected areas.

Uneven Resource Distribution

During the exercises, most participants learned that VA has preferred purchasing agreements with key suppliers because of the size of the organization and its power as a customer, suggesting that VA orders may well be filled before those of community health care facilities. This issue is of particular concern in communities where all of the hospitals rely on the same limited number of vendors who, in turn, have finite capability; for example, for oxygen supplies or laundry services. This, in addition to the realization that sometimes VA had more and at times better equipment (eg, N-95 vs surgical masks) than the community raised concerns that VA may become the "preferred provider" in the community and would face requests to care not only for veterans but also the broader community.

Surge Capacity

VA and community providers had specific concerns about one another's possible hospital surge capacity plans for dealing with a pandemic. For example, VA representatives were concerned that they could be overwhelmed by veterans who do not usually seek care in the VA system, or that community facilities would triage all veterans to VA facilities. Conversely, community hospital representatives were concerned that VA would discharge or discontinue care for veterans with chronic illnesses, inadvertently causing them to use an already stressed community system.

In addition, participants realized that VA's fully deployed national electronic health record system could provide rare resources for veterans to receive telehealth services, thereby freeing up additional outpatient space and staff. For example, veterans could renew their prescriptions on the telephone or receive case management services for their chronic conditions. The lack of national standards for interoperability of electronic medical records among all health care providers, whether private or public, limits fully deployed use of telehealth in many communities.

Standards of Care

The potentially uneven resource distribution between VA and the community has implications for the care provided during a pandemic. Nearly all of the participants recognized that at some point, the focus of health care delivery would need to shift from an individual perspective (in which unlimited resources are used to save 1 life) to a population health perspective (in which scarce resources are used to save as many lives as possible) and in which population-level disease control efforts become paramount.

Although the challenges of prioritizing patients who would receive care were recognized by all of the participants, VA faces some special challenges. Because VA facilities have the flexibility to provide care to nonveterans on humanitarian grounds during emergencies, conflicts may arise in prioritizing which patients or populations should receive this care. For example, participants asked whether veterans' family members receive preference over other community members without a veteran connection, or whether the VA should provide care to community members knowing that the situation may worsen or that they may be called upon to meet federally mandated requirements later in the pandemic.

It was also noted that VA patients are typically older and sicker than the general population and thus may receive a lower priority for care if resources were prioritized across the general community. This, however, would directly conflict with VA's mission to serve veterans first.

In addition, as previously indicated, VA facilities may be able to provide a different, possibly higher, standard of care than community facilities. As a result, many VA participants felt they would not need to lower their standards of care in a pandemic as dramatically as others in the community might, nor did they want to do so. Participants recognized, however, that this could generate tensions between VA and community providers.

Finally, participants recognized that because different communities and facilities have different populations and resources, and because a pandemic may affect communities differently and at different times, the level of care that can be provided may not be consistent either within or across VISNs. They noted that a veteran who is eligible and enrolled for VA health care may receive his or her services at any VA facility in the nation, and that this may not only cause veterans to travel long distances to facilities where they believe that they will receive a higher standard of care (potentially hampering disease containment efforts) but also will likely also raise complex communication and management issues within the VA structure.

Communication With the Public

One tenet of emergency response is that government should "speak with 1 voice" to ensure that the public does not receive mixed or confusing messages. Coordination of messages between community partners, state and local governments, and VA may be particularly challenging during a pandemic. The exercises led to several realizations about communications with the public when local, regional, and federal agencies are involved.

First, participants realized that VA has usually not been a part of the communications planning by public health or emergency management systems at the community level. Second, VISN exercise participants were challenged by the recognition that VA must not only coordinate with local communities but also simultaneously with multiple federal and state governmental agencies. Finally, VA is a large national organization with an internal chain of command and policies and procedures for communicating to veterans or to its employees. Although VA facilities have significant latitude for communicating, they are expected to coordinate with VISN and national counterparts for events of broader significance. The challenge of simultaneously coordinating messages up and down the VA chain, while striving for consistency on a community-by-community basis, was evident to participants.

Workforce Policies

A major concern in an influenza pandemic will be the availability of essential staff, including not only frontline care providers but also staff from security, housekeeping, and other infrastructure support departments. Participants suggested that staff could be cross-trained before an emergency or receive just-in-time training during an emergency. Also, resources could be pooled to conduct just-in-time training across all community health care settings. Community and VA facilities alike reported having limited knowledge about the full skill sets of all of their employees, and agreed that identifying these skill sets was something that could be done

before a pandemic. Many suggested that a system of advanced credentialing be developed so that cross-trained people could be authorized to perform duties outside their primary responsibilities without questions about liability.

Assuming that the Internet can sustain telework for the nation during a pandemic emergency, telework arose as an important strategy to maintain self-isolation for staff whose jobs do not require them to work onsite. Although their electronic medical record system may facilitate more telework than would otherwise be possible, VA's recent increased—and laudable—focus on information privacy and security mechanisms has created new and significant barriers. For example, new information technology security requirements, such as that only VA-owned equipment be used for telework, may limit telework options. Some VA encrypted hardware and software can be read only by VA-owned systems.

Health care facilities have a responsibility to protect staff who can work. VA may be in a better position to protect its staff because of its stockpiles of personal protective equipment and antiviral medications. The greater availability of personal protective equipment may have implications for the willingness of staff in community facilities to come to work.

Planning for Increased Patient Demand

Although more than 6 million of the 25 million eligible veterans are enrolled in VA, many also are covered by additional insurance or regularly receive some health care elsewhere in the community. The exercise scenario specified the attack and fatality rates in the community, but the lack of certainty about where patients will choose to present for care caused both VA and community planners to struggle with how to estimate the demand either of their systems may experience in a pandemic.

DISCUSSION

We have described lessons learned from an initial set of 6 tabletop exercises designed to identify gaps and strengths related to pandemic influenza preparedness within the VA system itself and to explore VA's relationship with community partners. Although our focus has been on gaps and opportunities for improvement, it is important to note that we observed numerous strengths throughout the exercises. Among them were the commitment to planning and serving the community, the mutual respect participants from different sectors and communities had for one another, and creative approaches to addressing some of the gaps highlighted above.

Overall, exercises highlighted a real need for VA to become a larger part of community planning efforts for emergency response to pandemic influenza. VA health care facilities are critical parts of community health care systems. Better planning is needed regarding how VA will balance its roles providing health care to veterans, providing emergency backup for the Department of Defense, and as a federal resource to state and local providers for public health and medical responses. Central to this planning is gaining a better grasp of how VA may be able to both meet its Congressionally mandated missions and share resources in emergency situations that may involve competing requests from local, state, and federal partners.

The nature of the VA's responsibilities and the general differences in organizational culture between VA and many community health care providers presents special challenges in planning. For example, coordinating federal and military assets with local assets challenges the normal channels of communication and can be logistically complex. Furthermore, federal and military agencies are more used to a "command" method of communication and operation, whereas local partners are often more collaborative and value their autonomy. They may resent being told what to do, particularly when they have more detailed knowledge of how logistics plans may or may not work. On the health care delivery side, VA functions as an integrated health system and is generally better positioned to make use of medical records and hotlines to manage patient flow. VA's history in the quality arena suggests that staff may be more comfortable with standardization than those in community hospitals, which may become critical as resources become limited and public health priorities or alternative standards of care need to be implemented.

Local facility- and VISN-level exercises addressed similar issues; however, VISN-level exercises highlighted the complexities of communication and resource allocation across various facilities. They also identified challenges in dealing with more than 1 state public health agency, in addition to local public health agencies.

The issues faced by VA are likely representative of those that may be faced by other large, integrated health care systems, particularly those with coverage areas spanning multiple geographies. For example, all providers rely on the health care and public health infrastructure in their communities to function. The purchasing power of large systems may enable them to receive critical medical supplies when others cannot, which could quickly make them the provider of choice in the community. Like the VA, other large integrated health care systems may face challenges related to the consistency and coordination of communication across their systems, with community partners, and with the public. Integrated systems would likely benefit from coordinating community planning and making explicit their assumptions about which entity is responsible for what. Like the VA, they may also benefit from exercises that further explore issues and gaps in planning.

We recognize that the simple conduct of exercises does not necessarily lead to improved preparedness. Rather, lessons learned must be systematically incorporated into the daily work, as well as the planning, of respective entities. To that end, VA is reviewing issues identified in the more than 100 exercises that have been conducted since this pilot test, and

is updating its own pandemic plans as a result. At the local level, a recent effort to help health departments use quality improvement methods to advance their pandemic preparedness provides 1 model for moving forward.[9] In addition, community planners should consider not only integrated health systems in their planning but also other entities, such as large businesses and educational institutions that are geographically dispersed, yet need internal consistency in their approaches to emergencies.

This study has a number of limitations that should be recognized. First, these exercises were conducted in a small convenience sample of facilities and VISNs, which may not be representative of the country at large or representative of the VA health care system as a whole. This project, however, was exploratory in nature and was designed to begin identifying issues rather than to develop an exhaustive list of preparedness issues to describe the entire VA system. The exercises were time limited and focused on a short list of preparedness topics. As such, they may not have forced participants to truly confront the full range of issues that may arise in a pandemic. Additional exercises will be necessary to test a wider range of topics and to continue to make improvements to existing plans.

Finally, the degree to which exercise performance predicts response to an actual event is unclear. To date, there are no validated, objective methods for quantitative measurement of exercise performance or for benchmarking progress in pandemic preparedness over time.[8]

Many hospitals and health departments report anecdotally that public health preparedness planning and exercises serve to strengthen their core, day-to-day functions, and expand their relationships with other community partners around issues beyond preparedness. We hope that this model of VA–community exercises can be a first step toward greater collaboration and improved population health in a pandemic emergency or in routine care.

About the Authors

Drs Lurie, Dausey, and Moore, and Ms Zakowski are with the RAND Corporation. Mr Knighton and Dr Deyton are with the Department of Veterans Affairs.

Address correspondence and reprint requests to Nicole Lurie, MD, MSPH, RAND Corporation, 1200 South Hayes St, Arlington, VA 22202 (e-mail: lurie@rand.org).

The views expressed in this manuscript are those of the authors and may not represent those of the Department of Veterans Affairs.

Received for publication July 13, 2007; accepted April 16, 2008.

Authors' Disclosures

The authors report no conflicts of interest.

Acknowledgments

This study was supported by NAID, subcontract #4011-202. The authors are grateful to VA staff and community representatives who participated in the exercises and provided their feedback. We also appreciate the advice of the members of the VA Pandemic Influenza Advisory Committee, who provided feedback at each step in the exercise development process. Dr Kathleen Toomey helped with exercise development and helped interpret the study findings. Finally, we appreciate the advice of Victoria Davey, Amy Hertz, and Kevin Hanretta, who observed the exercises and provided feedback on their structure, conduct, and findings.

ISSN: 1935-7893 © 2008 by the American Medical Association and Lippincott Williams & Wilkins.

DOI: 10.1097/DMP.0b013e31817dd143

REFERENCES

1. World Health Organization . Epidemiology of WHO confirmed human cases of avian influenza (H5N1) infection. *Wkly Epidemiol Rec*. 2006;81: 249–260.
2. Murray CJ, Lopez AD, Chin B, et al. Estimation of potential global pandemic influenza mortality on the basis of vital registry data from the 1918–20 pandemic: a quantitative analysis. *Lancet*. 2006;368:2211–2218.
3. Homeland Security Council. National Strategy for Pandemic Influenza: Implementation Plan. White House Web site. *http://www.whitehouse.gov/homeland/nspi_implementation.pdf*. Published May 2006. Accessed February 25, 2007.
4. Pandemic Influenza Guidance Supplement to the 2006 Public Health Emergency Preparedness Cooperative Agreement Phase II. Centers for Disease Control and Prevention Web site. *http://www.bt.cdc.gov/planning/coopagreement/pdf/phase2-panflu-guidance.pdf*. Published July 10, 2006. Accessed July 17, 2006.
5. VA Pandemic Influenza Plan. US Department of Veterans Affairs Web site. *http://www.publichealth.va.gov/flu/pandemicflu_plan.htm*. Published March 31, 2006. Accessed June 26, 2007.
6. Gateway to Veterans Affairs Organizations. US Department of Veterans Affairs Web site. *http://www.va.gov/about_va/organization.asp*. Accessed April 16, 2007.
7. Dausey DJ, Buehler JW, Lurie N. Designing and conducting tabletop exercises to assess public health preparedness for manmade and naturally occurring biological threats. *BMC Public Health*. 2007;7:92.
8. Dausey DJ, Aledort JE, Lurie N. Tabletop Exercises for Pandemic Influenza Preparedness in Local Public Health Agencies. RAND Corporation Web site. *http://www.rand.org/pubs/technical_reports/TR319/*. Published 2006. Accessed May 2, 2007.
9. Shugarman LR, Eiseman E, Jain A, et al. Enhancing Public Health Preparedness: Exercises, Exemplary Practices, and Lessons Learned. RAND Corporation Web site. *http://www.rand.org/pubs/technical_reports/2005/RAND_TR249.pdf*. Accessed August 10, 2008.