Center for Biosecurity

The 2009 H1N1 Experience: Policy Implications for Future Infectious Disease Emergencies

CONFERENCE BRIEF

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BACKGROUND

On March 5, 2010, the Center for Biosecurity of UPMC convened an invitational conference in Washington, DC, to review the most significant lessons learned from the response to the 2009 H1N1 influenza pandemic and to consider policy implications for future infectious disease emergencies. More than 140 participants attended, including federal and state government officials, congressional staff, policy analysts, academics, members of the media, and experienced practitioners from medicine, public health, and emergency management. The conference included speeches by:

- Dr. Nicole Lurie, Assistant Secretary for Preparedness and Response, Department of Health and Human Services
- Dr. Thomas Frieden, Director, Centers for Disease Control and Prevention
- Dr. Richard Besser, Senior Health and Medical Editor, ABC News
- Col. Randall Larsen, Executive Director, Commission on the Prevention of Weapons of Mass Destruction Proliferation and Terrorism

In addition, 3 panels of distinguished experts explored some of the most challenging questions that arose over the past year and their implications for future public health and medical responses.

MAJOR THEMES AND CONCLUSIONS

The prioritization and distribution of vaccine in future influenza pandemics should be reexamined.

In the event that a future infectious disease emergency requires the mass vaccination of the American people, immunization programs should have an explicitly stated goal (eg, the reduction of morbidity and mortality in vulnerable populations vs. the reduction of viral transmission). The supply of initially available vaccine should be a primary consideration in determining this goal of the vaccination program and in the formulation of priority groups. As a pandemic progresses, the supply of available vaccine and the emerging epidemiologic data may necessitate changes in the priority groups. Guidance from the federal government and plans for communication with the public should reflect this reality. As Dr. Besser noted, honest, prompt

communication with the public is an essential function in the response to a public health emergency. Finally, as Dr. Lurie emphasized, the systems in place to distribute the vaccine to the public should take advantage of all possible outlets, including hospitals, school-based clinics, healthcare providers, and pharmacies.

Improvements are needed in the healthcare response to a large-scale bioterrorism attack.

While the 2009 pandemic was a significant health event—as Dr. Frieden pointed out, it sickened millions of Americans and caused tens of thousands of deaths—it was not a true test of our healthcare system's ability to respond to a catastrophic event, because it did not cause a level of systemic stress sufficient to overwhelm our ability to respond. It did, however, significantly increase the workload in emergency departments and intensive care units, which already operate near capacity. Even a slight increase in the severity of the disease caused by the 2009 H1N1 influenza virus could have proved disastrous. In this sense, the pandemic can be thought of as a large-scale drill and can be used to evaluate and improve the nation's medical response capacity.

In the event of a large-scale bioterrorism attack, similar issues would likely emerge: many thousands of victims would need hospital care, and many times that number would seek screening or preventive countermeasures. However, the ability to quickly ramp up the nation's medical response capability remains severely limited. State and federal governments have neither the capability of sending in sufficient medical resources for such an event nor the capacity for transporting a large number of patients to other parts of the country for medical care. The mismatch between patient needs and medical capacity in such an event requires the further development of crisis standards of care. Likewise, the need exists for increased coordination of the medical and public health response at the local, state, and federal levels. To address these needs, the further development of local or regional healthcare coalitions should be fostered by the federal government and improved systems for healthcare situational awareness should be developed.

The role of disease containment measures in the response to a SARS-like emerging infectious disease should be reconsidered.

In response to a contagious infectious disease emergency, government leaders and health officials should anticipate public and political pressure to take actions intended to prevent the further spread of disease, such as the implementation of travel restrictions or screenings, quarantine, and isolation of cases. During the 2009 H1N1 pandemic, some nations did implement such restrictive actions, contrary to the recommendations of WHO.

The decisions as to which measures to employ will depend largely on the disease's epidemiology, especially its mortality, which may be difficult to determine accurately in the early days of the outbreak. Because every infectious disease is unique, the methods used in one outbreak may not be effective in another. Yet, for the actions to be effective, the decisions must be made early on with incomplete information. It is likely that as the situation evolves and more data are gathered, the actions and policy will need to be adjusted.

These measures have historical precedent and in some cases may theoretically be beneficial, but many may not be operationally feasible. For example, in planning to respond to pandemic influenza, the Canadian government considered quarantining passengers arriving on planes

from Asia but realized that they would run out of room to put the quarantined passengers before the end of the first day. Public health and political leadership should recognize that the unintended consequences of these actions, including economic disruption, might outweigh any public health benefit.

With the benefit of the recent pandemic experience, both the scientific and practical bases for these interventions should be reconsidered. Political realities and the difficulty of communicating complex messages laced with uncertainty must be considered as well. Because these issues are so difficult, state and local public health officials expressed the need for more specific guidance from the federal government during the 2009 H1N1 pandemic.

While much progress has been made, much remains to be done.

Drs. Lurie, Frieden, and Besser all made the point that the response to the 2009 pandemic benefited greatly from the years of work on pandemic and all-hazards healthcare preparedness that preceded it. This progress notwithstanding, each of the panels highlighted a different set of important challenges that remain in preparing for a future infectious disease emergency. Col. Larsen, in his closing remarks, reminded the audience that it was the unanimous conclusion of the WMD Commission that the threat of large-scale bioterrorism is very real and that the country remains ill-prepared in many key ways.