

These distractions aside, this is a balanced, well-documented, and thoughtful work that makes a significant contribution to understanding an important subject. It recognizes that the struggles between the legislative and executive branch over war funding are not new and identifies enduring war funding issues that will vex the current as well as future governments. We should look forward to further contributions from the author on this subject. **JFQ**

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Wargaming the Flu

By MARGARET M. MCCOWN

As the winter wears on and swine flu (H1N1) spreads, the importance of transnational public health issues seems more apparent. Swine flu has not proved as deadly as first feared, but the large-scale health and public communications effort mounted to address it illustrates the complex exigencies of the response, where an array of partners, both domestic and international, with numerous and overlapping areas of responsibility and expertise shape policy options and their efficacy. Analyzing and formulating policy responses to complex, strategic level issues that are dynamic and are affected by similarly rapidly changing local, state, national, and international efforts and concerns present political scientists and policy planners with great challenges.

Other recent articles from the Center for Applied Strategic Learning in *Joint Force Quarterly* have addressed how to select topics for exercises and using qualitatively specified games for teaching versus analytical purposes. This article explores the substantive and methodological findings that National Defense University (NDU) gleaned from a series of pandemic influenza exercises conducted for senior government participants over a 2 ½-year period. In particular, it focuses on how participant observations and feedback shaped the design of subsequent exercises, creating an iterative process in which lessons learned from earlier games informed structure that, in turn, elicited further and more refined insights in subsequent ones.

Background

Between February 2006 and June 2008, the Strategic Policy Forum (SPF), the strategic exercise group within NDU targeting senior executive and legislative participants, conducted six pandemic influenza exercises, addressing state, national, and international strategic issues. Two exercises were conducted in Washington, DC, in February 2006 and again in February 2007 for sets of participants that included Members of Congress and senior executive branch participants from a wide range of agencies. At the invitation of the respective governors, three state exercises were subsequently conducted in Alaska (August 2007) and Hawaii (December 2006 and January 2008) with many of the same executive branch participants, combined with state level elected officials and agencies. The cycle of games concluded with an international exercise conducted for American and Mexican officials and executive branch officials in May of 2008. Participants constituted an unusually broad and representative sample of policymakers involved in the planning for and response to pandemic.

Findings

As design work began on the first pandemic flu exercise in 2005, the issue was still somewhat new to the defense community. Another Defense Department research group shared with SPF materials that it had used for a quickly designed and executed game. This game, which SPF modified for the February 2006 exercise *Global Tempest*, was originally based on a bioterrorism policy exercise. The exercise began with a first move in which a novel, highly pathogenic influenza virus emerged overseas, asking participants questions such as:

- Are there measures to contain the virus before it reaches the United States?
- How much of the supply of antivirals in the Strategic National Stockpile should be shared with the foreign countries in which the disease is present?
- Should surveillance systems be put in place?

Subsequent moves portrayed a limited and then full-blown disease pandemic in the United States, and asked participants questions about roles and responsibilities in the response and to make prioritizations over the allocation of limited resources such as vaccine and antivirals. There was even some discussion of whether poultry flocks should be culled and the impact of this on the national economy. As the notional pandemic worsened in the United States, participants even discussed what to do if civil unrest—in reaction to deaths, disruption, and limited resources—complicated the situation. One public health participant wryly noted that one sees so few flu patients with the vigor to rise from their sick beds to riot. The congressional Members' experience of constant constituent contact allowed them to expand on and underscore the importance of effective public communications strategies appropriately coordinated



Commander, Naval Medical Center Portsmouth, Virginia, receives influenza vaccination

across levels and branches of government, so that the public received consistent and accurate information and guidance.

The exercise was a success; bringing together multiple perspectives and sets of expertise elicited new insights into the problem as well as highlighting its salience to a broad range of actors beyond the public health community. In a statement after the exercise, Senator Pat Roberts observed that the “exercise taught us a valuable lesson: we must be prepared at all levels to deal with a large-scale public health emergency such as pandemic flu. This system must be able to respond in any type of crisis, but more importantly, this system must be ready to respond before the crisis begins.”

The exercise taught SPF several valuable lessons as well, most particularly the importance of the complex Federal-state relationship where questions of public health are concerned. At the Governor’s invitation, SPF conducted an updated, but similar, version of the exercise for a Hawaii state audience that included the Adjutant General and Speaker of the House for Hawaii in December of 2006 and, 2 months later, ran it for Congress again. Like the initial exercise, these iterations presented an essentially emergency response conceptualization of the strategic challenges raised by a pandemic. Public communications and the importance of clear and credible public messages and identifying the right agency or level of government to address the right issues were a dominant topic of conversation. Public health officials began to caution against an overfocus on vaccine and antiviral allocation and prioritization, pointing out that it was far from certain the former would work or that there would be enough of the latter in time

to make a difference. Similarly, participants agreed that containing the disease overseas was probably not realistic and placed a greater emphasis on using the time before it reached the United States to prepare the public.

Drawing on these findings, the last three games introduced rather different factors. In August, SPF ran the exercise for the state of Alaska, including state policymakers and representatives from Alaska and U.S. Pacific Command. Like the Hawaii exercise, this game allowed the opportunity to discuss the need for coordinating the pandemic response in a geographically isolated state, which also hosts a significant Federal and, particularly, Defense Department presence.

One of the more interesting observations came from an Alaska Department of Labor official, addressing the assertion that a crucial part of the response would be convincing the public to stay home if ill. As the official stated, “We have a large tourism industry with seasonal employees here. What do we do about workers who won’t stay home because they have no sick leave?” This simple question informed a major overhaul of the exercise before it was run again in Hawaii in January of 2008. That exercise eliminated many of the allocation-of-limited-resources scenario details and questions in favor of factors the previous exercises had highlighted as more important.

The second Hawaii exercise, Pandemic Tempest, asked how the demographics of affected populations and, particularly, variations in access to care might shape the policy options open to decisionmakers as well as their efficacy. It also posited an antiviral resistant strain of the disease in order to focus the discussion on nonpharmaceutical response measures, such as isolation and closing schools. Throughout the exercises, public health participants had continued to put the

greatest emphasis on these measures and risk communication to make them effective. This exercise also weighed whether significant levels of unreimbursed or slowly reimbursed hospital care, coupled with many nationwide deaths, could shock health and life insurance companies to the extent to which the health care system faltered. This was the first pandemic exercise to devote a move to examining the aftermath of the pandemic.

The final international exercise incorporated many of the factors or constraints that had emerged from the different evolutions of the game. Instead of taking an “emergency response approach,” exercise Partnered Response focused on broad social issues that would shape the course of a pandemic as well as its impact. The difficulties and yet importance of the free movement of goods, services, persons, and capital across North America during a pandemic, particularly if Asian trade was heavily disrupted, was traced across all three moves of the exercise. The exercise also addressed transnational communication to a coordinated response. And, similar to the Pandemic Tempest exercise, it devoted an entire move of the game to examining the postpandemic world.

This series of pandemic flu exercises is an excellent example of how qualitatively specified games can help us refine our understanding of the key independent factors that structure a problem. Some factors or constraints, particularly public communication, were found consistently important and present across all exercises. Even this factor was refined, however, as the emphasis switched from justifying resource allocations to explaining the benefits of nonpharmaceutical measures. All told, exercises moved away from what could be characterized as an emergency response understanding of the problem toward a more public health understanding. Multiple iterations of the exercise, a set of participants who were both diverse and representative of the decisionmaking community, and exercises that were sufficiently explicit about the constraints or factors that we posited as composing the strategic challenge were the three factors key to using qualitatively specified exercises to refine and validate how we conceptualized the problem. **JFQ**

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