The Meyerhoff Incident: Simulating Bioterrorism in a National Security Class

Volker Franke, *McDaniel College*

Saturday night, downtown Baltimore, Maryland. A sold-out concert performance at the Joseph B. Meyerhoff Symphony Hall. Unknowingly, the 2,400 members of the audience become victims of a bioterrorist attack when an aerosol of plague (*Y. pestis*) is silently released. Over the course of the next 36 hours increasing numbers of residents seek medical attention at area hospitals for cough and fever. By mid-morning on Monday some 300 persons with these symptoms have received medical care; 17 of which have died. The State Health Department notifies the Center for Disease Control (CDC) and by mid-afternoon plague is confirmed first by the state laboratory and subsequently by the CDC's Washington, D.C. lab.

This scenario is the backdrop for a simulation exercise in national security decision-making. Much has been written about the value and merits of using simulations in the classroom. Obvious benefits include reinforcing theoretical knowledge through active learning, exposing students to situations and decisions they don't normally face, promoting cooperative learning from and with peers, and enhancing students' ability for group or teamwork (Ambrosio 2004). Simulating the Middle East conflict, Beth Dougherty (2003) found that simulations can also help develop critical thinking and public speaking skills, increase understanding of a topic area, force students to examine multiple perspectives, and generate enthusiasm.

Typically, simulations either mirror real situations, as in the case of Dougherty's Middle East simulation or Stephen Shellman's (2001) mock German election and coalition building simulation, or they place students in a fictitious scenario, as in Thomas Ambrosio's simulation of multiethnic politics where participants assume the role of delegates at a fictitious country's constitutional convention or in John Grummel's (2003) decision-making simulation in which students play the role of city council members deciding on a policy to alleviate parking shortages.

While all of these exercises may achieve the general learning objectives mentioned above, they remain classroom exercises without direct connection to "the real world." In contrast, "The Meyerhoff Incident" moves beyond the classroom by involving members of the local community. Students, who assume roles as first responders, interview community officials and draft role descriptions in preparation for the exercise based on these interviews. Ideally, community officials then participate in the simulation and provide real-time feedback to the students.

The Exercise

Asking students to prepare for and participate in an exercise that takes them from the classroom into the local community provides educational benefits above and beyond those offered by traditional classroom simulations. First, students learn first-hand about the structure and decision processes of local government and the interplay of local, state, and federal concerns in those processes. Second, as they schedule and conduct role interviews, students learn to present themselves effectively in a professional environment, communicate their ideas and thoughts beyond the "safe" classroom setting, operate independently and as members of a team, and discover connections between theoretical concepts and practical application.

This type of exercise also benefits participating practitioners who are encouraged to reflect in different ways on their daily routines. Since emergency response training at the local level focuses largely on traditional emergencies such as natural disasters, fires, accidents, or hazardous spills, participation in this exercise could provide a valuable opportunity for practitioners to apply their professional expertise in the context of a bioterrorist attack. As I developed and revised this exercise, I consulted with the town mayor and key members of the emergency response community to make the scenario and the policy choices as realistic as possible.

Background

Before discussing the details of the specific exercise, it is useful to provide some background on the particular educational setting. McDaniel College, founded as Western Maryland College, is a small (some 1,700 students), private liberal arts college in Westminster, Maryland, about 30 miles northwest of Baltimore and 60 miles north of Washington, D.C. Of course, it is unlikely that a college town with a population of approximately 17,000 would itself become the target of a terrorist attack. However, because many local residents work, shop, and attend events in the greater Baltimore/Washington, D.C. area, a bioterrorist attack on that area would have a considerable immediate impact on Westminster.

The Scenario

The exercise begins on Monday morning following the Saturday evening attack. The Westminster town mayor is informed about a possible outbreak of pneumonic plague. Advised by the county health officer that the county emergency operations plan has been activated, the mayor calls a meeting of his emergency response team. Students are assigned to play specific members of this team and are charged with developing an emergency response plan and with briefing the mayor and community officials on it. Students assume the following roles:

- Administrator of the County Office of Public Safety
- County Health Officer
- Chair of the County HAZMAT Team
- Bureau Chief of the County Roads Department
- Chief County Engineer for the State Highway Administration
- Coordinator of the County's Red Cross District Disaster Action Team
- City Police Chief
- City Fire Chief
- City Public Works Director
- City Finance Director
- State Police Barracks Commander
- Community Hospital Safety Manager
- Community Hospital Infection Control Coordinator

Volker Franke *is associate professor of political science and international studies at McDaniel College in Westminster, Maryland. He currently also serves as director and managing editor of the National Security Studies Case Studies Program at the Maxwell School of Public Affairs at Syracuse University.*

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The exact list of roles may vary depending on the geographic location and nature and magnitude of the incident, but roles can be combined according to area of expertise (e.g., the same player may be responsible for county roads and state highways or function as hospital safety manager and infection control coordinator) or class size. For considerably larger classes, it is also possible to run multiple exercises with different teams and separate emergency response briefings. This could even be set up as a friendly competition at the end of which the attending community officials decide the "winner."

The exact structure of the exercise and the assignments may also vary across educational settings and will depend on ease of access to community officials. If necessary, the scenario can easily be adapted to a traditional classroom-only format. Students can complete their role paper assignment through a combination of library and Internet research and instructors can assume the role of community officials. Instructors interested in community participation may involve a wide range of officials. Any member of a local fire or police department should be able to advise on the functions of the fire marshal or police chief in an emergency; public affairs officers in local hospitals or area health or public works departments might be willing to participate in this exercise as part of their community outreach responsibilities; and many local politicians or campus safety directors could assume the role of mayor for the purpose of the emergency response briefings. Inviting community officials to attend the exercise briefing helps emphasize the exercise's real-life import and raises students' level of professionalism.

Preparing for the Exercise

Running an exercise that involves community participation requires careful preparation and scheduling. Preparation for this exercise should become the focal point of a dedicated segment of the course. Reading assignments and classroom discussion might examine the nature of asymmetric warfare, the history and rise of global terrorism, the growing threat of biological and chemical weapons, the 9/11 attacks, and the strategies in America's war on terrorism. Useful non-academic assignments include the final report of the 9/11 Commission (Strasser 2004) and Richard Preston's (1997) novel, *The Cobra Event*, which portrays a lone terrorist's attack on New York City using a genetically engineered virus. Using a novel or a film such as *Outbreak* (1995) very vividly illustrates the possible effects of bioterrorism and allows students to connect emotionally to the scenario. In addition to specific reading assignments, preparation for the exercise includes:

The Role Paper

To prepare for their roles, students write their own role descriptions before they receive any details about the exercise scenario. This requires them to research the responsibilities of their role and, if possible, to interview community officials who either serve in or have professional expertise related to those roles. The central objective for this assignment is to get students into the local community to conduct personal interviews and independent research through library and Internet searches. During the exercise itself, students are evaluated, in part, on how well they are able to apply their role functions and responsibilities to the emergency at hand. Role papers are typically two to three pages in length and contain basic information on the qualifications for and responsibilities of each respective role. Students are also encouraged to include biographical information and any additional facts they find interesting. Role papers are graded and returned in advance of the exercise to allow students time to conduct additional research if necessary to play their roles more effectively.

The Incident Command Presentation

Students attend a guest lecture on the responsibilities of the various actors responding to an emergency at the local level and on command structures and potential courses of action. Scheduling this presentation before students conduct their research and interviews for the role paper helps them prepare for the exercise and develop interview questions. Presentations on incident command are a routine component of emergency response training across the country and local fire departments should be able to help organize a guest lecture on this topic.

Reference Materials

About a week before game night, and after completion of the role paper assignment, students receive the detailed exercise scenario informing them of the exact nature and magnitude of the attack. In addition, students receive a set of reference materials including fact sheets about pneumonic plague and the National Pharmaceutical Stockpile, maps and demographic information about the incident area, information about pneumonic plague from the bioterrorism readiness plan for healthcare facilities, the terrorism incident annex to the federal response plan, a copy of Presidential Directive 39 detailing "U.S. Policy on Counterterrorism," and academic articles on bioterrorism (Block 2001) and the pneumonic plague (Inglesby et al. 2000).

Classroom Prep Time

Apart from the classroom discussions on terrorism, it is useful to reserve class time (ideally 50–60 minutes) after students have reviewed the exercise scenario and reference materials so they can coordinate their response efforts, design a unified emergency response plan, and decide on who will present which part(s) of the plan and who will act as incident commander and public information officer. In addition, students should be encouraged to meet in their teams outside of class to prepare and practice for game night.

Game Night

The exercise is designed in three stages that can be played either concurrently in one extended three-hour class period or over the course of two—Stage One during the first, and Stages Two and Three during the second—or three shorter class periods. For classes that cannot devote this much time to the exercise, it is possible to simulate only the initial emergency briefing during one class period. For the full exercise, instructors should set aside 30–45 minutes for Stage One, 30 minutes each for Stages Two and Three and, depending on the participation of community officials, 30–45 minutes for the debriefing.

Stage One

The exercise begins with a mid-afternoon meeting in city hall during which the students assume their roles and brief the mayor and community officials (or the instructor) about their emergency response plan. Students start by introducing themselves in role, summarize their general emergency responsibilities, and identify who assumes the roles of incident commander and public information officer. Next, students can either provide a formal presentation on their emergency response plan or the mayor (instructor) can direct specific questions to individual members of the team. In preparation for Stage One, students are given a memorandum detailing the following charges for the initial briefing:

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- Assess the nature and severity of the emergency as it pertains to the local community, i.e. what might happen over the next 2–3 days or week;
- Determine which issues are most important to address first and justify your decision(s);
- Formulate an emergency response strategy and develop concrete recommendations for addressing the incident and its effects on the safety of local residents;
- Provide an estimate of the resources needed to accomplish the task; and
- Outline how each individual player and his or her office will cooperate with the team in the overall response.

Upon completion of Stage One, the exercise is advanced twice to Stages Two and Three. Each time students are presented with a scenario update and given 10 minutes for informal team discussion in order to coordinate their response to the unfolding events. This requires students to think on their feet in their respective roles and enables instructors to more accurately assess their performance. Similar to Stage One, the mayor (instructor) will again question students in role to illicit specific recommendations for how to respond to the advancing crisis.

Stage Two

The exercise is advanced by three hours. Although it is becoming clear to officials that the state is faced with a severe outbreak of pneumonic plague, the public has not yet been informed. The governor is scheduled to hold a press conference carried live on all TV and radio stations later that afternoon. During this press conference, citizens will receive specific instructions for how to respond. Meanwhile, the media suspect something big has happened. TV and radio stations begin speculating that Baltimore was struck by a bioterrorist attack. Panic begins to set in.

What happened in Westminster during these three hours? The State Emergency Management Agency has asked the Community Hospital to free up as many beds as possible to provide overflow capacity for Baltimore city hospitals. The County Health Department is activating six dispensing sites at county high schools to provide the public with antibiotics. The state and city police have been activated to coordinate security at the dispensing sites. The media have set up camp in front of city hall and the county health department and are descending in droves on any person entering or leaving the building. The county public safety administrator, health officer, HAZMAT team chair, police chief, and the hospital safety manager are continuously flooded with media requests demanding information.

Apart from continuing preparations for responding to the medical emergency and for controlling travel in and out of Westminster, the primary focus during this phase of the exercise is on control of public information and how to deal with the media. After these issues have been discussed, the game is advanced once more.

Stage Three

For the final briefing, the scenario is advanced another 6–8 hours. By now, the governor has informed the public about the attack. TV channels provide a running total of the number of patients infected and the number of deaths. Information is still fuzzy and, as a result, some numbers are grossly inflated. Citizens are flooding to the various dispensing sites set up around the state to receive treatment. The number of citizens who are either on their way to dispensing sites or are already waiting in line to receive treatment by far exceeds the number anticipated by state health officials.

While most citizens follow instructions, incidents where individuals are trying to "jump the line" are increasing and crowd control is becoming an issue. Virtually all members of the emergency response team are now inundated with media inquiries. Thirty-five patients showing symptoms of pneumonic plague have been admitted to the local hospital. Dispensing sites are opened by early evening at six high schools in the county. So far, some 1,000 county inhabitants have been treated with antibiotics. Another 3,500 are waiting for treatment at the sites. Roads to and from the dispensing sites are clogged with thousands more hoping to get treatment as soon as possible. During this phase of the exercise the focus lies on public information, crowd and traffic control, and prevention of panic.

The Debriefing

The simulation concludes with a general debriefing session during which all participants reflect on the exercise and the insights produced by it. First, if practitioners and community officials are present, they have the opportunity to assess the effectiveness of the students' overall emergency response plan and evaluate what, if anything, could be improved upon at each stage of the exercise. Second, students complete individual evaluations in which they assess their experience and suggest changes and improvements. This evaluation is conducted either after community officials leave or at the beginning of the debriefing for exercises that do not involve community participation. Finally, the floor is opened for general discussion during which students have a chance to comment freely on their experience and, where applicable, on their interactions with the practitioners. At this point, the instructor should comment on the learning objectives, the flow of the exercise, students' performance, practitioners' contributions, and possible improvements for future exercises.

Grading

Students' performance is assessed on a scale from excellent to poor in terms of how accurately they describe their responsibilities, how true to their roles they act, how articulate, professional, and organized they present themselves, how informed, logical, and convincing their recommendations and responses to questions are, and how well they are able to think on their feet, defend their recommendations, and integrate into their team.

Benefits of the Exercise—What Worked, What Didn't

Overall, I have been very satisfied with the extent to which this exercise has achieved the learning objectives outlined above. It promoted cooperative learning and enhanced students' ability to work in a team. It helped develop critical thinking and public speaking skills, increased students' understanding of the complexities of political decisions at the local level and, more specifically, of responding to a bioterrorist attack at the local level, and allowed them to translate theoretical knowledge into political practice and interact with practitioners and local politicians in a professional context.

Many students really "get into" their roles. While this is a desirable outcome, it also presents a possible source of contention, especially when specific students begin to dominate the discussion and consistently volunteer responses to the questions. The exercise itself is skewed by the nature of the role responsibilities. Roles that, according to the exercise scenario, are more dominant are the county health officer, the public safety administrator, the police and fire chiefs, and the individuals who function as incident

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commander and public information officer. Instructors and community officials who ask questions must ensure that every student has a fair chance to present his or her ideas and recommendations. For instance, health questions can be distributed between the county health officer and the hospital safety manager and infection control officer, and questions regarding traffic and crowd control can be spread to the police chief, the county roads bureau chief, the state highway engineer, and the state police barracks commander.

In evaluating the merits of this exercise, students overwhelmingly agreed that, among other things, it was relevant to a course on national security, presented a useful teaching tool, provided a good balance between book knowledge and practical application, was challenging intellectually, and, importantly, was fun. Most students also indicated that they liked playing their roles, interviewing community officials, and briefing real emergency responders.[1]

In addition, a number of students commented favorably about the exercise in their final course evaluations. One student observed that the "exercise made students react to the real world," another liked that it forced him or her "think outside the box." Some students enjoyed the teamwork aspect of the exercise and others expressed appreciation and respect for the challenges first responders face and, more generally, for the contributions of local government to national security. One student concluded, "far more than most other assignments, I really began thinking as if I were in that position . . . . It was an incredible experience, especially with real people in their positions listening and critiquing."

In general, students' level of enthusiasm and engagement and their comments about the exercise indicate that "The Meyerhoff Incident" was a great success, especially because it broke up the ordinary classroom routine, gave students a stake in their education, and put them in control of their own learning. The exercise was not only intellectually exciting but it also made this course, and more generally the study of politics, more relevant to the real world.

Notes

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1. This information was obtained from analysis of exercise evaluations administered to students in three different emergency response teams. Even though a total of only 33 students provided their evaluation of the exercise, the overwhelmingly positive responses indicate a very clear support for continuing this exercise in the future.

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