Epidemic Response Scenario: Decision Making in a Time of Plague

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OBJECTIVE

The objective of this scenario is to illuminate what we believe are three of the most critical and complex issues that might arise in the management of an epidemic after a biological weapons attack on civilian populations: scarcity, containment of contagious disease, and decision-making processes. By scarcity, we mean conditions, even if local or temporary, that limit or constrain the availability of essential, potentially life-saving resources such as health care professionals, antibiotics, vaccines, equipment, and other logistical capabilities. By containment, we mean a spectrum of measures that might be used to limit the spread of contagious disease. These measures include the use of simple surgical masks, isolation of infected patients, mandatory immunization, travel advisories, prohibition of public gatherings, and forced quarantine of entire areas. By decision-making processes, we mean those rapid and complicated decision-making processes that a bioweapons attack would be likely to precipitate, forcing collaboration among a diverse array of individuals, organizations, and professional communities who do not typically interact.

BACKGROUND ON MEDICAL AND PUBLIC HEALTH ASPECTS OF PLAGUE

Plague is one of the most serious biological weapons that could be used. Individuals exposed to an aerosolized plague bioweapon experience symptoms of plague 1 to 6 days later. Affected persons experience a rare form of plague called pneumonic plague. Symptoms of pneumonic plague essentially resemble other forms of severe pneumonia at first: hematemesis, fever, cough, and chest pain. Patients rapidly become seriously ill and require intensive care units. If not promptly treated, victims are likely to die between 1 and 5 days after exposure.

The diagnosis of plague is not simple. Initially, there are no specific hallmarks of the disease, and routine laboratory studies are slow to detect plague, if they detect it at all. In all likelihood, the laboratory diagnosis requires a request for specialized testing. This request needs to be prompted by a suspicion of plague based on either clinical or epidemiologic clues.

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Plague is a treatable disease if the proper antibiotics are used rapidly. Unfortunately, some of the antibiotics used to treat routine pneumonia are not effective against pneumonic plague. Mortality will be high if the proper treatment is delayed. There is no vaccine to prevent transmission.

Person-to-person transmission of pneumonic plague is possible but uncommon. Historically, transmission occurs between close contacts (< 2 m) via the respiratory route. Available evidence suggests that simple disposable surgical masks substantially diminish the risk of transmission.

SCENARIO ROLES AND PARTICIPANTS

Each scenario participant has been asked to assume a specific role for the duration of the exercise and to rely on his or her judgment and experience to react to the scenario and make necessary decisions. The participants, who have been asked to be as specific as possible and to do their best to remain in their roles throughout the scenario, are listed:

Moderator and facilitator: Tara O'Toole, MD, MPH, Deputy Director, Center for Civilian Biodefense Studies, Johns Hopkins University Schools of Public Health and Medicine; former Assistant Secretary of Energy for Environment, Safety and Health.

Comoderator and narrator: Thomas V. Inglesby, MD, Senior Fellow, Center for Civilian Biodefense Studies, Johns Hopkins University School of Public Health and Medicine; Assistant Professor, Johns Hopkins School of Medicine.

Director, State Emergency Management: Jerome Hauer, MPH, Managing Director, Kroll Worldwide Crisis and Consequence Management; former Director, Office of Emergency Management for New York City.

State Health Commissioner: Michael T. Osterholm, PhD, MPH, Director, Center for Infectious Disease Research and Policy, School of Public Health, University of Minnesota; former State Epidemiologist and Chief, Acute Diseases Epidemiology Section, Minnesota Department of Health.

Hospital Chief Executive Officer: Kenneth Bloem, MPA, Senior Fellow, Center for Civilian Biodefense Studies, Johns Hopkins University School of Public Health and Medicine; former Chief Executive Officer, Georgetown University Medical Center and Stanford University Hospital.

Director, Department of Emergency Medicine: Steven Cantrill, MD, Associate Director of Emergency Medicine, Denver Health Medical Center, Denver, CO; senior participant in Denver Top Off exercise.

Governor: Jack Marsh, former four-term member of Congress from Virginia; former Secretary of the US Army; former Assistant for National Security Affairs for President Gerald Ford; former Assistant Secretary of Defense for Special Operations and Low Intensity Conflict.

President's National Security Advisor: Jeffrey Smith, JD, partner at Arnold and Porter; member of the Council of Foreign Relations; former general counsel of the Central Intelligence Agency; Chief of 1992 Clinton transition team at the Department of Defense; former General Counsel for the Senate Armed Services Committee.

Senior CNN correspondent: Laurie Garrett, MPH, Peabody, Polk, and Pulitzer prize-winning news correspondent currently writing for *Newsday* magazine; author of *The Coming Plague* and *Betrayal of Trust: The Collapse of Global Public Health.*

Secretary, DHHS: Margaret A. Hamburg, MD, Assistant Secretary for Planning and Evaluation, US Department of Health and Human Services; former Commissioner of Health, New York City.

State Attorney General: David Fidler, JD, Associate Professor of Law, Indiana University School of Law; advisor to summer 2000 Defense Science Board; author of *International Law and Infectious Disease* and *International Law and Public Health.*

PART 1: THE START OF THE EPIDEMIC

DR. INGLESBY: The Centers for Disease Control and Prevention (CDC) has confirmed six cases of plague in Goodtown, an East Coast city with a population of 1 million and a metro area population of 2.5 million. Over the past 2 days, an estimated 100 persons have died with plague-like symptoms. As many as 500 more have presented to hospitals and doctors' offices in Goodtown and surrounding East State with symptoms consistent with pneumonic plague.

All casualty estimates are considered highly uncertain. No common source of the illness has been identified. Because naturally occurring plague has never been reported in this region of the country, a biological weapon attack is strongly suspected as the cause.

There is growing fear and shock in the city as word quickly spreads that "a weapon of mass destruction may have been used against the innocent civilians of Goodtown." All intensive care units and hospital beds in the city and surrounding towns are full. Ambulances are having difficulty responding to the volume of 911 calls. Hospitals are reporting dwindling antibiotic supplies and are struggling to keep up with the

flood of patients. They are urgently asking for more personnel and resources.

Local and national media are reporting that plague is loose in Goodtown and that the health care system is struggling. The local newspaper headline reads "Faceless Enemy Attacks Goodtown with Germ Weapons." There is wide speculation on the location of the attack, the identity of the attacker, and the number of people exposed and likely to die. Media reports refer to the Black Death, the plague epidemic that killed one third of the population in Europe in the 14th century.

Good news: in modern times, antibiotics can treat plague. Bad news: the Black Death was mostly bubonic and not easily transmissible, whereas the Goodtown outbreak is pneumonic plague, which can be spread from person to person by cough. The governor has called on his cabinet to draft a plan to pinpoint the source of the outbreak and bring it under control and to address the emergent health care needs of his state. He has requested that CDC immediately release an antibiotic push pack from the National Pharmaceutical Stockpile to provide urgently needed antibiotics.

Goodtown's plague outbreak is occurring in the context of a growing overseas crisis. A close US ally is being threatened by invasion. The United States has pledged its support to its ally and is moving naval vessels into the area. Some commentators are linking the apparent bioweapons attack with this international crisis.

DR. O'TOOLE: Dr. Osterholm, as state health commissioner, you know that at this point there are cases consistent with plague in 14 counties of the state and patients with a reasonable case definition in more than 20 hospitals. There are no common exposures identified as yet, despite a hard press by your staff to find commonalities among the victims. What are you thinking now? What are the most important public health directives to execute?

DR. OSTERHOLM: Well, first, I'm immediately going to make an assumption that it's some type of a bioterrorist event, because, knowing the epidemiology of plague, you wouldn't expect to see what you're seeing here if it was a naturally occurring event as such. So I'm going to lean heavily toward bioterrorism. The second thing is that I'm going to be a middle person in a chain of communication that will become critical very quickly. So I have to relate to my governor. Depending on which state you're from, it may be very important that your attorney general and your governor have a good relationship, because that obviously is going to become an issue. In my state the governor and the attorney general seldom see things the same. One must be very sensitive to how the information flow is going, because often it's going to be the governor who is key.

The first thing I would do is look at the resources I need to truly understand what is happening and determine how to identify these resources and acquire them. In addition, we must begin to talk about how we deal with care and containment issues.

DR. O'TOOLE: Dr. Cantrill, you are the chief of Emergency Medicine at University Hospital. Approximately one quarter of your staff are calling in sick for the third shift. You are seeing three times as many patients as you normally see. You've already admitted twice as many patients by 3 p.m. as you normally do. What are you thinking and doing?

DR. CANTRILL: Well, obviously, just trying to keep the hospital operational, especially the Emergency Department and the upstairs services, becomes the major issue. We've had many people call in sick and not only among the professional staff. We only have about one third of our food service people working. Two thirds didn't show up. In addition, about 20% of our housekeeping folks have showed up for work. We have a real problem, not only at the professional level, but at the infrastructure level of trying to keep the hospital operational. My chief executive officer is working on that for me right now.

DR. O'TOOLE: Mr. Bloem, you are the CEO, and your head of Emergency Medicine is telling you that he is overwhelmed and needs more staff and more resources. How do you know if the hospital is truly overwhelmed and whether or not you should call the state health commissioner or the governor and ask for permission to refuse additional patients until you can stabilize the current situation?

MR. BLOEM: There is no way that I'm likely to know in any definitive way. In fact, this is the early December season. Flu season has already begun. My hospital has been on bypass, meaning that ambulances are rerouted from my hospital to other hospitals in the community. Now, Dr. Cantrill suddenly tells me that we are on a state of bypass, but all of the hospitals are on bypass, or at least the red lights are starting to blink. I'm walking the halls trying to talk with the chiefs of medical services and surgical services and with Dr. Cantrill to find out whether we can continue. However, it's a little unclear. There are probably 40 or 50 hospitals in this metropolitan area of Goodtown. Presumably, of the 500 patients who have presented, let's say that 200 or so have shown up in doctors' offices. I'm not ready yet to call the governor, but I'm getting real close to it.

DR. CANTRILL: We have a major problem just with the number of dead bodies alone. You know, our death rate is normally about 1.1 a day. We've had 10 deaths in the last 2 days. Our morgue will only hold eight bodies. We have problems all over, and we're not talking about just bypass. Right now I have 250 people in my waiting room demanding care. We're starting to worry about institutional security here and about the necessity to lock the building down. People waiting for care are about ready to come over the counter because they're not being seen in a timely fashion. In addition, I've got an exhausted staff.

DR. O'TOOLE: Governor Marsh, you are about to go onto local and national television live. What questions do you want answered before you face the cameras, and who are you going to call for answers to your queries?

MR. MARSH: First, I wish my political opponent had won the governor's contest. Second, why am I so late hearing about this from my medical people since today, under the present scenario, terrorism is presumed to be a crime? The lead federal agency is the FBI, so we ought to get them in here right away. I also need to hear from my adjutant general. We also need our press people because we're going to have to prepare some sort of a statement.

DR. OSTERHOLM: Well, I think at this point I would attempt very hard to lobby the governor to, first, have some faith in the Health Department and, second, dismiss this idea that he wants to go to his adjutant general as his lead consultant in this area. I would try to convince him that this is going to unfold as a biological issue. This is what you can anticipate. It's that old adage that you don't skate to where the puck is; you skate to where it's going to be. I would try to tell him: This is what's going to happen tomorrow and the next day and the day after that, and this is why you want to do what you want to do. Just don't react to the moment. I think, actually, that would be very important. Who wins the battle in the first 12 to 24 hours of information coming in is likely to set the tone for how the first 3 to 5 to 7 days are going to go.

DR. O'TOOLE: Which battle is this now?

DR. OSTERHOLM: I'm referring to the battle regarding who takes control of this situation.

DR. O'TOOLE: Okay. So we're at 5 minutes into the scenario and we've got a turf battle on our hands. Is that what you're saying?

DR. OSTERHOLM: I wouldn't say it's a turf battle. I think we, as a public health system, owe our elected officials a pre-outbreak review, so that they understand where it's headed. However, let's say we haven't had that opportunity. What we need to do is say that everyone will have a political role. When you start talking about the issue of understanding what's happened, the governor wants more information. Well, how do you get that? The US Army is not going to provide it, and the National Guard is not going to get it.

MR. MARSH: I take issue with you on that because the new structure of the National Guard allows states to take some responsibility in defense against biological weapons. The responsibility was placed with teams, originally called RAID teams, but they've gotten away from that name. However, there are groups in the National Guard that are being trained to respond to biological situations. In addition, you have resource teams in the US Marine Corps, the Department of the Army, and the US Air Force that can be made available in these types of situations. I'm not saying that we have to use them, but access to them is going to be through the adjutant general, who will go up through his chain of command into the Office of Domestic Support in the Pentagon and into Federal Emergency Management Agency (FEMA).

DR. O'TOOLE: Mr. Emergency Management Director?

MR. HAUER: Yes. In fact, the civil support team in the state we're in right now is 22 people, and they have some moderate biodetection capability, but that's about it. They still haven't gotten a field-deployable PCR. Thus everything has to work through the Department of Health from both an outbreak perspective and an epidemiologic perspective. We will be calling through FEMA, requesting that, and at this point probably will not request Chemical-Biological Incident Response Force (CBIRF), because CBIRF doesn't have the capability. However, certainly we'd request that some medical support be put on standby, because we don't know the magnitude of this situation. I'd depend on Mike at this point to supply some potential casualty estimates. If Mike tells the governor and us that this thing could be just the tip of the iceberg, it would be in our best interest to go through FEMA and Health and Human Services (HHS) to get MMRS and NDMS put on standby. To address Steve's concern about bodies, we would ask for a Department of Defense morgue team to assist with management of fatalities. Those are the recommendations we'd make to the governor at this juncture. I'm not convinced at this point that CBIRF would give us any additional capability because this is not a chemical incident; it's a biological incident.

DR. O'TOOLE: Okay. Ms. Garrett?

MR. MARSH: If I can interrupt, Mr. Hauer pointed out one of the problems we have to deal with; in some

states the principal emergency advisor to the governor is the adjutant general; I think that is the case in 22 states. In other states, the adjutant general goes through another designated individual. There is a need for uniformity among the states on how we manage these emergencies internally in each state. States have worked it out very, very well, but it's different from state to state.

DR. O'TOOLE: Ms. Garrett, you hear rumors from your friends in the medical profession and long-time contacts in the Health Department that there aren't going to be enough antibiotics available in the next 24 to 48 hours to take care of all of the health care professionals, public safety officials, and patients who are already sick in the city, let alone their contacts. Who are you going to call, and what questions are you going to ask, from among the people on this stage?

MS. GARRETT: Well, I likely already know that there aren't enough antibiotics because I've done my background work. I know from past epidemics and from all of the reports that antibiotics are not available. I will call the health commissioner, Dr. Osterholm. He's not available, and the press officers are putting me on hold. I can't get answers from the Health Department. If I'm at CNN, I have a whole staff working for me, so I've instructed a whole bunch of these young interns to start calling pharmacies all over Goodtown and find out if they have appropriate drugs. Are we assuming we're looking for tetracycline or ciprofloxacin or what?

DR. O'TOOLE: There are rumors that it could be any of those.

MS. GARRETT: Okay. I'm going to have them call pharmacies to ask whether they are stocked with ciprofloxacin and tetracycline. I also am going to call HHS because I've learned from my piles of information, the background, or something I checked on the Internet that there is supposed to be someone at HHS who is responsible for stockpiling some kind of antibiotic. I'm going to call and ask what the heck is going on. I'm probably going through a press officer at HHS, who is, once again, going to say, "Well, I have to get back to you on that." I'm going to say, "I'm on deadline," and they're going to say, "We'll try," and then I'm not going to hear from them for 2 or 3 hours.

DR. O'TOOLE: Okay. Madam Secretary, you hear reported on CNN about an hour and a half later that there is a shortage of antibiotics in Goodtown. What are your concerns at this point, and what do you do?

DR. HAMBURG: I am angry because nobody from within my organization has informed me that there is any kind of problem in Goodtown at all. However, I quickly contact my people, and I don't accept as an answer that they're not available. I speak with the director of the CDC and CDC's bioterrorism initiative director; I also get the director of the Office of Emergency Preparedness in my office to update me as to what is going on and to ask about what our department needs to do now. Clearly, we're already engaged. We sent some people from the CDC, I think, if I listened correctly, in the early stages of this. However, the question immediately comes up about whether we can we do more, both in terms of our expert personnel at CDC and our laboratory capacity, to provide a confirmatory diagnosis and backup support.

Also, of course, there's the question of the stockpile. We have a crisis going on and a limited supply of antibiotics. We do have a civilian stockpile of pharmaceuticals. The question is: when can that stockpile be deployed? If the stockpile was created under the bioterrorism initiative and we have not yet formally declared this a bioterrorist event, can the stockpile be released? My inclination, as a leading health official, is that there's a public health need, we have a stockpile, and we're going to get that stockpile released if that's what the state officials want.

PART 2: EFFORTS AT CONTROL AND CONTAINMENT

DR. INGLESBY: It is December 2, the next day. It is estimated that there are now more than 300 dead from pneumonic plague in Goodtown and surrounding East State, a growing percentage of whom are children.

An estimated 1,500 state residents may now be sick with plague. Firm numbers are difficult to obtain, given the pace of the outbreak and the lack of rapid and reliable diagnostic tests. The location of the attack and the identity of the attacker have not been discovered. State officials cannot firmly rule out that more than a single attack has occurred in Goodtown.

The media report the story of four members of one family developing plague with two already dead. Speculation is that one of the family members passed it to the others. At the same time, it is also reported that there are insufficient isolation rooms in hospitals to keep those with suspected pneumonic plague separate from other patients. Some persons with plague symptoms are being kept in hospital hallways, wearing surgical masks. Others are reported to have been coughing in hospital waiting rooms and doctor's offices while waiting to be seen.

Interviewed citizens of Goodtown report a growing fear of catching plague from others. They complain

that the government is not doing enough to prevent the spread of infection. The media also report that many people are beginning to leave the Goodtown metro area by car. Some are leaving because of fear of ongoing attacks. Some are afraid of catching plague from a stranger. Some are in pursuit of antibiotics to protect themselves and family members. Others are leaving in fear of possible civil disruption.

Talk radio is reporting on the fastest routes out of the city. A number of traffic fatalities have occurred in the exodus. Security has become a growing concern in Goodtown and East State. Sporadic violence around hospitals and pharmacies has escalated upon reports surfacing that vital antibiotics are scarce or not available. Antibiotic distribution centers require particular attention.

Meanwhile, on the other side of the country, in West State, 50 people have died of what appears to be pneumonic plague. At least 200 are ill with plague-like symptoms. The analysis suggests a second separate bioweapons attack. There are also reports of 75 cases of suspected plague in 10 additional states. Most of these individuals had recently been in East State or West State. West State has now officially requested delivery of the National Pharmaceutical Stockpile.

Finally, the media report that antibiotic supplies are being set aside for the protection and treatment of military forces. US Navy ships continue to steam toward the shores of the beleaguered US ally. Its threatening neighbor has increased its war-like rhetoric and is advising the United States to tend to its own internal disease matters rather than intrude where it is not welcome.

DR. O'TOOLE: Mr. State Attorney General, you have been told that there are not enough antibiotics to go around. The state health commissioner and the state emergency management director are arguing about how they should prioritize existing antibiotics. Another ongoing heated discussion must be resolved in the next 5 minutes, so that you can advise the governor with respect to whether or not force should be used to isolate people who are symptomatic and may be contagious. What is your advice to your colleagues in the health professions, and what do you suggest the governor be told with regard to forcible isolation?

MR. FIDLER: I have some political reactions first. I just returned from an American Bar Association junket in Honolulu. I returned to my office, and I had absolutely no messages from either the health commissioner or the governor's office about this, although this seems to be spinning out of control, particularly in connection with law enforcement issues.

The lawyers need to be brought into this immediately because this is going to trigger orders that the governor has to issue. In terms of the priority in connection with antibiotics, I need instructions from my political bosses and the health commissioner as to the proper way to ration the antibiotics.

Then I have to go find some staff, although I understand that most of my staff is home sick as well, to dig up whether the governor or anybody has any legal authority to make those sorts of decisions. The only public health contact that I've had in my reign as state attorney general is in connection with tobacco litigation.

None of my staff has any idea about these issues of containing infectious diseases. I also need instruction on the public health side as to whether compulsory treatment, compulsory isolation, is a proper public health policy in connection with this particular outbreak. I have no idea. So I need some hard, clear, fast instructions, and then I need authority from the governor to employ some lawyers to help me figure out whether the governor has sufficient authority to take the actions that he has in mind.

I'm also concerned about state-federal turf actions. I'm hearing in the press that the state wants to call in federal officials. I'm nervous about that because the state has the constitutional responsibility to protect public health. However, I'm getting no instructions from anybody.

DR. O'TOOLE: Okay. Mr. State Health Commissioner, what are your thoughts on mandatory isolation and separation of family members?

DR. OSTERHOLM: Well, let me just say, if any attorney general really acts like that, I pity the state that elected him. Typically, an attorney general will be in the loop because the lawyers who represent state agencies are actually supplied by the state attorney general's office. I think that's uniform throughout the 50 states, even when you have a Republican governor and a Democratic attorney general. Where the real rub comes as to how we get antibiotics or what we do on this issue is how you work it out at the state agency level. I think that's true for city government. The point is that the scenario, one hopes, won't unfold as you just suggested.

The manner in which we obtain antibiotics depends on the governor. We've got to convince him, because the governor is going to be the air traffic controller in this situation in our state. We've got to convince him that he needs to have professionals dealing with these issues.

Governor, right now, we're in the middle of a big crisis, and you're going to have to trust your professional

staff because they are the people we are depending on to get the job done. I hope that the emergency management director and the health commissioner would work together like hand in glove. What we're telling you is we need to get the federal organizations in here because these are the resources we're going to need. However, having said that, we've got to keep a tight reign on them because of the issue of how bringing in the Feds would mesh with our state system. Otherwise, they can kind of come in like the cavalry and take over. Here is our plan. I would come together with the emergency management person and try to devise a plan for federal interaction, send it to you, and then have you be the champion of it and carry it through, so that it has the weight of the governorship. You are going to trust emergency management and the health commissioner to tell you what ought to be done.

DR. CANTRILL: To make this realistic, though, in most states, health does not work with emergency management. They may not even know each other.

MR. HAUER: Yes. In most of the states these days, particularly because of the interactions on things like the MMRS, there is good interaction between the emergency management folks and the state health folks. It has gotten better. I wouldn't have said so 10 years ago. Back then, they didn't talk to each other. There was a total disconnect.

DR. CANTRILL: During Top Off, that was not demonstrated in our state, although we just may be a little behind the times.

DR. OSTERHOLM: During the last 12 months in this country, one of the real pluses that has occurred involves working relationships. They don't exist everywhere. However, I think there are very few states in which the leading public health people are not now working much more closely with the emergency management officials. I think that's been one of the real pluses since the last symposium on biodefense.

DR. O'TOOLE: Governor?

MR. MARSH: I agree with that recommendation because it is time to start triggering possible access to federal forces, which I could do in one of two ways. I can issue an emergency declaration, or I can seek assistance under disaster certification of an emergency situation. I may want to go with emergency first to get the appropriate people involved, but there are an enormous number of federal agencies that have to come up to speed on this. Some federal statutes may provide money, for example, the Stafford Act. However, we need to give a heads-up to the federal system since that will make it easier if we do have to introduce forces. There will be a difference of opinion on quarantine and who has the authority to implement quarantine.

DR. O'TOOLE: Are you going to make the quarantine decisions yourself?

MR. MARSH: It depends on whether the director of health believes that quarantine is necessary. In some states the director of health has the authority to issue and implement a quarantine in conjunction with the governor. The governor does not have that authority exclusively. There is also a question as to whether the federal government, under HHS and the CDC, can come in and impose quarantine and bypass the state. These are vague areas of the law that need to be resolved.

DR. O'TOOLE: Mr. National Security Advisor, you now have governors of two states calling the White House, both worried that finite amounts of antibiotics are in the National Pharmaceutical Stockpile and that their people won't get what they need. What are you thinking about now? You're about to see the president in 5 minutes. What are you going to advise her?

MR. SMITH: Well, actually I'm not about to see the president because yesterday I advised her that, after seeing Laurie's report on CNN, I had appointed myself head of the US delegation for the negotiations on the preservation of important cultural properties, currently underway in Paris, and I left yesterday afternoon for Andrews Air Force Base.

Like my governor here, I would be happy not to have to deal with this. The question of making federal resources available to the state in this circumstance is, as everybody has said, very confusing. Fortunately, as the national security advisor, it's not entirely my responsibility. As national security advisor, I would put in motion several things. One is finding out whether this is an intentional attack and, if so, who did it? For that, I would convene a meeting of the director of Central Intelligence, head of the Defense Intelligence Agency, director of the FBI, a representative of the attorney general, and others to quickly get on top of it and find out what's going on and what degree of proof we have.

I would direct the joint staff to prepare some sort of retaliatory response, and I would worry a great deal about the activities going on overseas at the moment as to whether or not this is perhaps a diversionary attack, given the fact that US forces are steaming toward a crisis.

If the president asks the Department of Defense to make its resources available domestically, I would worry about whether these resources will be needed for overseas deployment. If so, somebody is going to have to

make a horrible decision about whether these resources are used for domestic purposes, held in reserve, or sent with the forces overseas.

All of the press is in the White House press room demanding to hear from the president, and the president is going to be under enormous pressure to speak to this issue immediately.

Thus, I've got about eight or nine things I have to worry about. I neglected Congress. Nobody has mentioned Congress. Clearly, the administration will have to brief Congress to make sure that its members are comfortable with what is going on, because everybody says that Congress does not like surprises. We also have to get the State Department involved to tell our allies about what's going on because they're going to want to know. I would have been very wise to have gone to Paris.

DR. O'TOOLE: Did you have something to add, Mr. Emergency Management Director?

MR. HAUER: Yes. While all of that's going on, we're sitting down here in Goodtown trying to manage this thing and waiting for federal assets. We are now trying to plan through the next 48 hours and beyond to figure out what resources we're going to get. We've got to figure out antibiotic distribution, and we cannot manage it on our own. We are in over our heads at this point. We do not have enough staff. We do not have enough medical staff in the hospitals, and the staff we do have is starting to burn out. Steve and Ken are calling, asking for security in the emergency rooms. We have problems with crowds in the emergency rooms. Our police department is working 16-hour shifts. We have got to get some answers from the federal side. We've already got the National Guard providing the limited assets they can, but they really don't have any organic medical assets that we can use. We've got to get the reserves or Department of Defense in, and we're going to need to understand quickly what kind of federal assets are coming in because we've got a major evolving crisis, and we're not getting any answers from the feds on what we can expect. I understand there's another theater of operations overseas, but we have got to get some answers from the feds.

DR. O'TOOLE: Ms. Garrett, what are you reporting at this point?

MS. GARRETT: By now, at CNN, when I talk about competing data points, there is no competing data point here. This is it. We've pretty much preempted everything else, giving only minor other coverage. We've created teams, much as you saw during the Florida voting issue. You've seen team reporting. You've seen the legal teams. They come on reporting with their legal expertise, much like your political teams come on with political issues. The primary team is concerned with who did it? That team involves our national security/State Department reporter and reporters who have sources at FBI and law enforcement. We've already decided in the newsroom to take a quick look around the globe and determine where the biggest trouble spots are, and we're aware, because our Pentagon reporter has told us, that US naval operations are responding and moving to a region where there's a standoff between a so-called rogue nation, a nation with whom we've had a history of problems, and its neighboring state, which is threatening to invade. We're wondering if that particular situation might be connected with the pneumonic plague situation. We are flying Christiana Amanpour over there. She's on her way now.

Meanwhile, we are among those in the White House press room demanding statements from White House Press Secretary Jody Powell. Jody is in a panic, and I can't get any information. He keeps saying, "We'll be updating you." We've got another team that is specifically deployed to Goodtown. Because we know the plague is the agent, because we've called our CNN physician and asked what the reporters should do, and because CNN is providing prophylaxis with tetracycline, we have told the reporters the full story and the danger they face. We're hoping that's adequate to make sure our reporters are okay. We've also sent a team to the West Coast and it is broadcasting live. Bernie Shaw and Judy Woodruff will say, "And now we go to Goodtown," and they're constantly updating and looking for fresh footage. We've got film crews combing all over, trying to get pictures of sick people, hospitals, beleaguered staff, meetings, and we're constantly reporting back and forth among all of these situations. Similarly, we've got our FBI reporter desperate to get the FBI director on the telephone or on camera.

As part of the question of who did it, we've got at least one staffer who is doing nothing but monitoring the Internet for traffic on all those sites where the wackos are. We know the wacko sites because we monitor them all the time. Now we're looking to see whether any of them are likely candidates for having executed this event. Basically, at this point, this is a massive news operation. Nobody is going to be going home early tonight or any time in the next few days.

We've got people in Washington, Goodtown, on the West Coast, and some neighboring major cities who are doing nothing but monitoring police scan and emergency radio transmissions. So we know absolutely every single thing you guys are saying.

PART 3: STATE VERSUS FEDERAL POWERS

DR. INGLESBY: It is now 4 days after the first plague case was reported. Across the United States, there are more than 3,000 dead. Some 15,000 are sick with symptoms consistent with this disease. Cases are spread throughout multiple cities in 15 states and in foreign countries. In several cities, shootings have occurred over the distribution of antibiotics. In most affected states, the National Guard has been called in to provide for the secure distribution of antibiotics and medical resources and to ensure the continued safety of hospital operations.

The sight of an armed military presence in US cities has provoked protests about curtailment of civil liberties, but at the same time some governors are requesting additional support from the Department of Defense in the provision of supplies, personnel, and security.

There is wide state-to-state variation in isolation policies and actions. In some states, any person with symptoms that could be plague is placed in mandatory isolation under guard. Many are being boarded, treated, and isolated at hotels because hospitals have been unable to manage the burden. So far, all persons forcibly isolated have been given appropriate medical care and received antibiotics.

Health and law enforcement officers have been asked to actively search for cases of plague. There are reports of persons violently refusing to submit to isolation or threatening violence when authorities attempt to separate family members. In other states, there have been no attempts to impose mandatory isolation, and voluntary isolation policies are still in effect. There is no way to assess whether mandatory or voluntary isolation has been more effective overall.

Each state is deciding whether to impose restrictions on public movement, including possible curfews, possible prohibition on meetings of more than a few people, and possible closure of highways, airports, and train stations. The governors of nonaffected states have called for temporary cessation of all traffic out of states with plague cases. Some states contiguous with East State and West State have established highway checkpoints and are refusing entry to nonresidents. Internationally, some countries have stopped allowing the arrival of US flights.

US warships are off the coast of its ally. The ally has been invaded. It is expected that the president will be making an announcement shortly regarding the possibility of a US military response.

DR. O'TOOLE: Okay. I'm going to back up a little bit to the beginning of this segment chronologically. The confusion over who has authority to do what in Goodtown and in East State has delayed decisions about whether or not to institute mandatory quarantine or isolation procedures, home curfews, and so on. The state emergency management director, the state health commissioner, and the secretary of HHS are now on a conference call with the governor trying to advise him as to whether the attorney general has determined that he has the authority to institute curfews and isolation procedures of all kinds. The question on this telephone conference is whether or not these kinds of mandatory isolation procedures and quarantines are a good idea. Would you four people please have this conversation?

MR. HAUER: Thanks. Well, I think the first issue is, can we enforce it? If Mike feels that isolation of some type is necessary and recommends this, I'd certainly defer to his judgment. The question is, however, how do we enforce it and to what degree? How much force do you use to keep people in their homes? I'd certainly like to understand how we can go about it when we use the National Guard, because they haven't been federalized so we can use them along with our local police for law enforcement purposes. I think that's the issue.

DR. OSTERHOLM: I think at this point, from the science side, it's going to require a whole new way of thinking. What I mean is that it's okay to be right and win the battle, but if you're wrong and lose the war it didn't really matter. That is, I may come up with the ideal plan for quarantine, for isolation—a plan that meets all of the scientific rigors but yet doesn't meet the societal/political rigors of what we need at the time. I think what's going to be truly important is to come up with something that you can do and do well. One of the things we're going to have to get comfortable with, as a society, as a public health group, and as a medical group, is the concept of acceptable losses. I'm presently sitting with colleagues who have never understood the concept of acceptable losses. Now, a couple of colleagues farther down the aisle do because, in the military, acceptable losses are considered a part of the norm.

We're going to have to figure out how we can achieve voluntary isolation and quarantine so that people recognize we're doing it for everyone's safety. This plan must have the most impact for the bang. We're going to let certain things go that we would not ideally and scientifically let go. We'll accept those as losses with the potential of people getting infected and dying. However, at least we're in charge. Right now, more important than anything else, somebody has got to be in charge.

DR. O'TOOLE: Governor, what would you like to know in terms of how you make this decision?

MR. MARSH: The problem that we're moving into here is a serious gap between federal and state authority. The governor has that authority for quarantine. He can control the traffic on the streets, and he can expropriate property. He can do all of those things. However, in the field of quarantine, there is federal legislation that authorizes quarantine at the federal level. If I'm not mistaken it's done through HHS and CDC, but there is a question as to whether it can preempt the state authority. This situation is so grim that the governor, in my view, should go ahead and impose a quarantine and argue about it later.

DR. O'TOOLE: Dr. Hamburg, in the last 3 hours, the Congress has rushed through a law giving the federal government clear authority to impose quarantine on states over state authority. Under what conditions would you impose quarantine, and what types of quarantine are you thinking about?

DR. HAMBURG: Theoretically, it would be nice to contain the disease; you could more effectively control it. However, I think it is, as Mike very eloquently explained earlier, not a practical reality. As secretary of HHS, I would be clearly striving very hard to do the right thing from a public health perspective. However, I also would be concerned about the political context in which it was going to occur and trying to think about a national perspective and recognizing that we already have two separate localities where these issues are emerging. We may have more.

We are not, as a nation, going to be able to invoke multiple quarantines across the country and enforce them. We need to think about what makes sense to try to contain and control the disease as practically as possible with very limited resources. We would have to take every single support person in Goodtown and the state to try possibly to enforce quarantine, and then we'd still have all the issues about food and care for the people while we're enforcing the quarantine.

Consider the images. If we didn't have panic before, I think we would absolutely have panic as CNN blasts out to the entire world pictures of distraught mothers screaming that they can't get to their children who are across the state or county line.

Thinking about quarantine as an actual containment has very limited utility. If you told me that an airplane just landed at the Goodtown airport, someone on it was known to have a highly communicable respiratory disease, and officials were afraid to do anything about it because they thought it might adversely affect tourism in Goodtown, I would suggest that quarantine is appropriate until we could identify the medical problem. However, here I think we have to think about more viable approaches to disease containment. I would recommend or put in place bans on public gatherings and recommend that people stay at home if they're not sick. I would make recommendations about various sorts of restrictions of travel, but I would not try to impose a true quarantine in the sort of classical sense.

DR. OSTERHOLM: Can I add an important point? I think that there's an issue here that would be very helpful for the audience. The governor is wrong. Unless you did pass this legislation in 3 hours, the federal officials do not have quarantine authority other than for people coming from outside the country.

MR. MARSH: There's a federal statute on it, but there are no regulations.

DR. OSTERHOLM: There is not a statute on state health quarantine. I know it.

MR. MARSH: Well, state. This is federal…

DR. OSTERHOLM: No. However, I'm talking about at the state level where you can apply it. My job, as a good public health practitioner, is going to be right now. Part of the authority has to come from the bottom up, and it has to be manifest in someone like the governor. However, we're not doing our jobs if we let the governor make a mistake. In the long run, it's going to hurt us all. I think that one of the things we need is empowerment to ask, what do we really know at our staff-level jobs?

The governor is somebody I revere as my boss, but I'm going to sit here and say, "You're wrong. And this is what you've got to do. If you don't do it, then go find somebody else to solve the problem."

DR. O'TOOLE: Your advice at this point is, "Look, we can't enforce a quarantine. We can't enforce a home curfew. We don't have any place to isolate people. Basically, the best we can do is give warnings and advice as to how people ought to behave to protect themselves." Is that your advice?

DR. OSTERHOLM: Well, my advice may be different from that to some degree. What I'm saying is I've got to have a governor who's going to go with me, because either I know my job or I don't know it. If I don't, hire someone who does know it and do that well in advance of a public health threat. The point is that we have to get our elected officials comfortable with it. When the emergency management guy comes in and says, "This is what it is. You know, I'm a career guy. I know this stuff. And I'm telling you, what you're doing, you're going down the wrong path here," the

official needs to be able to listen to the recommendation.

Our elected officials have got to trust the people who are the professionals. I may argue with my governor behind closed doors and tell him, "If you do this, you're a fool." However, the point is, he's got to have enough confidence in his decision to let it be carried out. I really would have disagreed with you vehemently on this quarantine issue because it would have diverted us off into something that would have been very injurious to the overall process of where we're going.

DR. O'TOOLE: But you would not quarantine?

DR. OSTERHOLM: Oh, I would quarantine. However, the feds don't have any authority or responsibility here.

DR. O'TOOLE: What do you mean by "quarantine" here?

DR. OSTERHOLM: Clearly, in this case, those people who are infected and those who may be infected and are coughing have to be moved away from others. We need to isolate them somehow.

Now, the classic concept of quarantine—and this is, again, for the audience—where did quarantine come from? The concept of quarantine did not begin with the act of isolating sick people. The concept of quarantine first came from watching ships coming into harbor that might have sick people who would infect others. The health officials then would watch well people for signs of infection. There are still a lot of meanings given to the term "quarantine" in the modern world.

DR. O'TOOLE: Let me cut to the chase here, though. We have expanding numbers of plague cases. We have not instituted any kind of isolation procedures other than advising people to stay home if they are sick.

DR. HAMBURG: Well, I thought we had already . . .

DR. O'TOOLE: Stay home if they are well.

DR. HAMBURG: . . . implemented isolation procedures for people who were sick.

DR. O'TOOLE: Well, that's what I was trying to clarify. I thought Mike had just changed the scenario.

DR. OSTERHOLM: No, I haven't changed it. I would try to do those kinds of things. However, classic quarantine is much more extensive.

DR. O'TOOLE: We have to interrupt this because your argument with the governor is interrupted by a call from the national security advisor. Governor, the neighboring state is actually posting National Guard members at the highways, preventing residents of your state from coming in for fear that they will spread the contagion. Mr. National Security Advisor, you are being asked to help the governor figure out what to do about this problem. Plus, you are now worried about how this burgeoning situation in East State and West State might affect national strategic flexibility. What are you thinking? What is your conversation with the governor?

MR. SMITH: My conversation with the governor is that we really have a mess here. I don't know, candidly, what legal authority a governor has to call out the National Guard to block entrance to a state. However, it does seem to me that you folks down there have got to get control of this real fast, and the idea that one governor would use the National Guard to block and protect his own state is, I think, politically unacceptable.

Somehow we've got to find a way to work together and find a common solution to this that we all agree on and that requires leadership, not only in the White House but also among the governors. I don't know what the answer is, but we've got to figure this out.

With respect to the impact overseas, you're absolutely right. We have been receiving intelligence reports suggesting that this is, in fact, part of an effort to divert us from our activities in defense of our allies, and the Secretary of Defense and the DCI are saying to the president, "Mr. President, you've got a real choice to make here. How do you want us to proceed?" We don't want to be intimidated by the act of a couple of terrorists from pursuing our national agenda, because the signal that would send, not only to our allies but to everybody else around the world, is that the United States can be easily diverted from its national interest by plague attacks at home.

Now, admittedly, there have been a lot of deaths, but as of today, what do we have? Five hundred dead? Three thousand dead? Now, that's clearly a national tragedy, but your job is to think long term because we don't have enough resources to do both the activity overseas and the activity at home. What do you want us to do, Mr.—beg your pardon—Madam President? My recommendation to you is to try to find some way to do both because we've got to respond to the domestic situation, but at the same time we cannot let the United States be held hostage by these kinds of activities.

CONCLUSION

We'd like to thank our esteemed participants for lending their experience and knowledge to these scenario discussions. These scenario participants have well represented the types of leaders who would have to make

these tough decisions during an outbreak, either natural or intentional. We thank them for their time and effort in addressing the difficult questions posed by the scenario. The issues presented in the discussions encompass only a small portion of the true complexity of this hypothetical event. We hope that through this exercise and others like it, we have given you insight into the decision-making process and the kinds of difficulties that might arise. We also hope that this will contribute to an open dialogue with all major groups involved. This would minimize conflicts and help ensure the safety and health of all Americans.