

# Bio Terror Bible

## EXPOSING THE COMING BIO-TERROR PANDEMIC

**BIOTERRORBIBLE.COM:** To date, there have been 5 published bio-terror war-games that shed light on possible future bio-terror attack scenarios. Based on these elaborate war-games, it can only be concluded that a bio-terror attack is in the cards and may be played in a last ditch effort to regain political, economic and military control of society.

**Title:** Atlantic Storm

**Date:** January 14, 2005

**Source:** UPMC (Center for Biosecurity of the University of Pittsburgh Medical Center)

### Abstract:

### Exercise Overview:

Decision-making during a bioterrorism crisis of the magnitude described during the *Atlantic Storm* exercise is not an easy task. The major public health, economic, and political stumbling blocks that proved challenging for players in the exercise would undoubtedly have an impact on the efforts of leaders attempting to coordinate an effective international response in an actual bioterrorism event. *Atlantic Storm* was designed to highlight the major international issues that would likely come into play and to provoke further thought, dialogue, and ultimately action to improve the transatlantic community's ability to prepare for and respond to biological terrorism. A brief description of the exercise follows.

*Atlantic Storm* was a ministerial table-top exercise convened on January 14, 2005 by the Center for Biosecurity of the University of Pittsburgh Medical Center, the Center for Transatlantic Relations of the Johns Hopkins University, and the Transatlantic Biosecurity Network. The exercise used a fictitious scenario designed to mimic a summit of transatlantic leaders forced to respond to a bioterrorist attack. These transatlantic leaders were played by current and former officials from each country or organization represented at the table. There was an audience of observers from governments on both sides of the Atlantic as well as from the private sector, but the venue was designed to focus all attention on the summit principals and their discussions around the table.

The exercise was held in real-time using the world's current geopolitical context as a backdrop. Throughout the exercise, the summit principals received information in the format of: briefings by the "Summit Staff," periodic news videos from the "Global News Network," and personalized bulletins from their "national advisors." The exercise was designed to trigger intense discussions amongst the principals on a series of issues central to the international response to bioterrorism. While the epidemic caused by a bioterrorist attack would ultimately be a global crisis, the exercise focused on the transatlantic community since this region has a high potential for a successful, collaborative bioterrorism response. It contains both closely aligned nations (NATO and the EU), and a high concentration of resources essential for an effective response.

In the scenario, the transatlantic leaders had assembled for a long-planned "Transatlantic Security Summit" in Washington, DC. In attendance were the Presidents of the European Commission, France, and the United States, the Chancellor of Germany, the Prime Ministers of Canada, Germany, Italy, the Netherlands, Poland, Sweden, and the United Kingdom, and the Director-General of the World Health Organization. On January 13, the eve of the summit, smallpox cases were reported in Germany, the

Netherlands, Sweden, and Turkey. The leaders decide to meet for a few hours on the 14th before heading home to deal with the emerging crisis.

During the six hour meeting, the transatlantic leaders wrestled with the enormity and rapid pace of the emerging epidemics of smallpox, the tension between domestic politics and international relations, the challenge of controlling the movement of people across borders, and an international shortage of critical medical resources such as smallpox vaccine.

The total number of reported smallpox cases rose throughout the day from 51 cases in four European countries at 9:00 am to 3,320 cases throughout Europe and North America just 4.5 hours later at 1:30 pm—with projections indicating the possibility of 660,000 cases worldwide within 30 days. Ultimately, the outbreaks were discovered to be the result of covert attacks on transportation hubs and centers of commerce in six cities: Istanbul, Rotterdam, Warsaw, Frankfurt, New York, and Los Angeles.

**Throughout the day, the Summit Principals focused on a series of key issues:**

1. How should nations in the transatlantic community work together to respond to this new type of security threat?
2. Was this a public health or an international security crisis, or both?
3. What is the role of multilateral organizations such as NATO, the EU, and the UN?
4. Should NATO's mutual defense clause ("Article 5") be invoked?
5. How will domestic political pressures affect the ability of leaders to work together internationally?
6. How should limited medical resources be shared among nations, when, for instance, some countries have enough vaccine to cover an entire population, but many more do not? Is sharing even possible?
7. Should the World Health Organization serve as the "honest broker" to distribute pooled stocks of vaccine and other medical resources?
8. Should leaders restrict the movement of people within their nations and across national borders? What would be the economic consequences?
9. What messages should be conveyed to the public and the media?

After deciding upon their message to the public, the Summit Principals convened a press conference with journalists from Europe and North America (played by current and former members of the international press). At the conclusion of the press conference, the exercise ended and the summit principals stepped out of their roles. To reflect on the day's events, the participants joined in a moderated discussion, led by Nik Gowing of the BBC, in which they discussed lessons learned, and what steps could be taken to resolve the dilemmas they faced throughout the day.

The organizers would like to thank the distinguished participants of *Atlantic Storm* who had the courage to immerse themselves in this unfamiliar and challenging scenario. We did not expect the participants to find the "right" answers. The hope was that the collective experience and wisdom of the group would illuminate the difficulties of a transatlantic response to bioterrorism and suggest possible paths forward, and in this, the *Atlantic Storm* players were successful.

**Pre-Scenario Briefing: Issues To Consider: Received January 13, 2004:**

**Summary**

The agenda originally planned for this summit has been changed. Summit discussion will now focus on how to respond to the reports of smallpox cases in Germany, the Netherlands, Sweden, and Turkey. The German Chancellor, the Dutch and Swedish Prime Ministers, as well as the other summit participants have agreed to postpone their departures briefly so they may meet together to discuss ways to cope with the crisis. Since smallpox no longer exists in nature, it must be assumed for the present that the discovery of smallpox cases represents a misdiagnosis, an accidental release from a laboratory, or a terrorist

attack. Press offices in each country have released statements to inform citizens that their government is mobilizing all resources to respond to the situation and that their leaders will be attending an urgent summit with transatlantic leaders in Washington, DC tomorrow morning.

## Issues to Consider

These issues present themselves immediately:

**1. Determining whether there has been an attack:** All military, intelligence, and law enforcement services have been alerted to the possibility of terrorist attacks in Europe. Response is being coordinated with key allies. The UN Security Council will meet at 11:00 a.m. EST to consider the crisis.

**2. International health response:** The World Health Organization (WHO) has notified members of the Global Outbreak Alert and Response Network (GOARN) about the reports of smallpox cases in Europe. The GOARN members are health experts and institutions from around the world who have agreed to help respond to international public health crises. The GOARN is now working to assemble a team of experts from a number of countries to respond to the smallpox crisis, but this will take time to organize. The WHO itself is expected to be able to contribute a modest number of its own health experts in response teams to assist in the investigations, but this may also take one or more days to get started.

European Union member states have been notified of the smallpox reports through the EU Rapid Alert System for Biological and Chemical Attacks (RAS-BICHAT). This system allows EU member states to notify other member states of biological or chemical emergencies through a phone and fax protocol. RAS-BICHAT is also intended to rapidly identify and coordinate experts from member states who could comprise an expert response team. That coordinating effort has begun, but will take some time.

**3. National and international smallpox vaccine supplies:** Only a handful of nations have enough smallpox vaccine for their entire population. Best estimates are that there are only 700 million doses of vaccine in the world today, enough to vaccinate only 10% of the global population.

The WHO has 2.5 million doses of smallpox vaccine stockpiled in Geneva. The WHO Director-General may authorize the release of the stockpile should this become necessary. However, it is not clear how decisions will be made regarding distribution of this vaccine stockpile, and the WHO does not have the logistical capacity to physically transport its vaccine from Geneva.

**4. Activating NATO:** The North Atlantic Council will meet in Brussels at 9:00 a.m. EST to consider the crisis. NATO's mutual defense clause, "Article V," has been activated only once, after the attacks on the U.S. on September 11, 2001. NATO was formed to wage a conventional war with the Soviet Union; therefore, NATO's role in the current bioterrorist crisis is not clear. *Atlantic Storm* was a tabletop exercise convened on January 14, 2005 by the Center for Biosecurity of the University of Pittsburgh Medical Center (UPMC), the Center for Transatlantic Relations of the Johns Hopkins University, and the Transatlantic Biosecurity Network. © 2005 UPMC. All rights reserved. Pre-scenario Briefing: Issues to Consider, received January 13, 2005

**5. Managing travel and commerce:** Due to the limited supplies of vaccine, the leaders at the summit may wish to discuss travel restrictions and border closures as a means of controlling the spread of disease from person to person. The lack of controls at borders shared by European nations that have implemented the Schengen Treaty would make actions to restrict free movement of persons challenging to implement. A slowdown or shutdown of travel or commerce in reaction to this crisis would do serious damage to the \$2.5 trillion transatlantic economy.

**6. Crafting a coordinated message:** Public fears are running high in Europe, and anxieties could grow around the globe. The public statement made at the end of this summit will be an important opportunity to

communicate expectations and maintain public confidence, which will be critical to the successful management of this crisis in the coming days and weeks.

### **Smallpox Fact Sheet:**

Smallpox is one of history's greatest scourges, and its eradication is one of medicine's greatest triumphs. Because it is both highly contagious and highly lethal, smallpox presents a preeminent threat as a biological weapon.

### **Key Facts**

1. Smallpox is caused by the virus variola major.
2. It spreads from person to person in droplets, creating a self-propagating epidemic.
3. It kills 30% of those infected; there is no effective treatment.
4. Vaccination before exposure prevents infection; vaccination within 4 days after exposure can reduce the severity of the disease.
5. The incubation period, which is the time between infection and the onset of symptoms, is usually 12 to 14 days, but can be as short as 7 days.
6. All infected patients develop fever and rash; there are no asymptomatic carriers.
7. The virus infects only humans. Interruption of spread from human to human eradicated the disease.
8. There are only two official stocks of smallpox virus in the world (U.S. and Russia). However, many tons of weaponized virus were secretly produced by the Soviet Union, and there is concern that other countries may now possess the virus
9. Vaccination stopped in 1980, and many of the people vaccinated before this time have lost immunity. It is estimated that 75% of the world's population is now susceptible.
10. Most countries have little or no vaccine. Global stockpiles, in toto, amount to fewer than 800 million doses—enough to vaccinate some 10% of the population.
11. Only five companies now manufacture smallpox vaccine.

### **Transmission**

Smallpox is transmitted from person to person, usually through face-to-face exposure. On rare occasions it can carry through the air for some distance. It can also be transmitted via contaminated clothes and sheets. Under most circumstances one victim infects 2 to 5 other persons, but infection can occur only after the onset of fever and rash. Thus, early isolation of an infected patient is an important control measure.

### **Clinical Illness**

1. Symptoms start suddenly with high fever, severe headache, and muscle and abdominal pain. Victims are usually so sick that they take to bed.
2. After 2 to 3 days a rash begins, at which point the patient becomes contagious.
3. Pustules develop primarily over the face, arms, and legs. Similar pustules in the mouth and throat make eating and drinking difficult.
4. Scabs form over the pustules and fall off after 3 to 4 weeks.
5. Most survivors are left with permanent disfiguring facial scars, and some survivors are left blind.

### **History**

1. Throughout history, from the time of the pharaohs, smallpox has been the most devastating of all pestilential diseases.
2. As recently as the 20th century, smallpox killed 300 million people before being eradicated.
3. In 1967 the WHO launched a campaign to eradicate smallpox. The last case occurred in 1977, and smallpox was declared eradicated in 1980.

### **Control of Smallpox:**

In the global campaign, the principal strategy to contain smallpox and the one now recommended is called “surveillance and containment” or “ring vaccination.” This calls for the isolation of all patients, the vaccination of all persons who have been in contact with a patient since he or she became ill, and the vaccination of the patient’s household contacts. Healthcare workers are also vaccinated as a priority. During the eradication campaign, these measures proved to be more effective than mass vaccination.

During an outbreak, vaccination is recommended for all at risk of acquiring smallpox—even individuals who may experience more serious reactions. Vaccination under non-epidemic circumstances is not recommended for certain people who are more likely to experience complications—such as those whose immune system may be suppressed (patients with HIV and those receiving chemotherapy or radiation) or who have a history of eczema.

### **Now vs. 1980**

1. Many more people are traveling, and there is no way to identify travelers who may be infected but do not yet have symptoms.
2. Urban populations are larger and immunity is much lower.
3. Hospitals are functioning at full capacity, with little capacity to deal with patients in an epidemic.

### **Issues to Consider: Vaccination Strategies: Ring VS. Mass Vaccination:**

**Ring Vaccination** (targeted vaccination) is a strategy in which only direct contacts (friends, family members, and coworkers) of confirmed smallpox victims are identified and vaccinated.

**Mass Vaccination** is a strategy in which all persons in an area (city, region, or entire country) are vaccinated, whether exposed to the smallpox virus or not.

### **Issues to Consider: Small Pox Vaccine Dilution:**

Several U.S. studies<sup>1</sup> have suggested that the U.S. vaccine can be safely diluted 5-to-1, and health officials have stated publicly that in the event of a crisis, the U.S. could dilute its vaccine supply. This type of dilution has never been used in an actual emergency.

1. The European Commission<sup>2</sup> has reviewed the two U.S. dilution studies and concluded that diluting vaccine would be inadvisable. The EC believes that dilution would increase the risk of ineffective inoculations.
2. WHO has decided that there will be no diluted vaccine in the WHO stockpile because of the risks associated with dilution.

### **Scenario Planning Assumptions: Method of Smallpox Attacks:**

#### **Smallpox Biological Weapons**

Seed stocks of variola major virus (the causative agent of smallpox) were obtained by Al-Jihad Al-Jadid from a bioweapons facility in the former Soviet Union. The Al-Jihad Al-Jadid scientists received training in microbiology at Indian and U.S. universities. These scientists received additional training when the group hired a scientist who was part of the former Soviet Union’s offensive biological weapons program. This scientist taught the Al-Jihad Al-Jadid scientists how to grow a number of biological agents, including variola major, Bacillus anthracis, Ebola virus, and Burkholderia mallei (glanders). The terrorist group combined this knowledge with publicly available technical information to develop dry powder preparations

of the viruses. Then, with their own microbiology training, the terrorist group was able to acquire all the required laboratory equipment to grow and process the Variola major seed stock they had acquired into a relatively high-quality dry powder that was then used in the attacks.

The attacks were carried out by vaccinated terrorists who walked throughout the target locations for several hours during periods of peak occupancy. A commercially available dry powder dispenser the size of a small fire extinguisher was hidden in a backpack and used to disseminate the agent.

1. Based on reports from former Soviet scientists, variola virus stocks are believed to exist in at least two, and possibly three, biological weapons laboratories in the former Soviet Union. Many of those who once worked in these laboratories are now working in other countries, but little information is available as to where they are or what they are doing.<sup>1</sup>

2. The former Soviet Union made smallpox biological weapons in industrial-scale (i.e., tens and hundreds of tons) quantities.<sup>2</sup>

Smallpox virus can be grown in embryonated eggs and in a variety of tissue cell culture systems.

3. If one were to make a dried powder preparation of a virus, one would have several sources for information on methods. Variola virus can be processed to a stable dried form just as vaccinia virus is dried to make a vaccine. There is a significant amount of open source technical information on the creation of dry powder bioaerosols.

4. There are many commercial freeze-dryers available; a simple internet search will pull up a bench-top model that would be adequate.

5. The amount of smallpox virions required to infect humans is presumed to be very low.

6. Disseminating bioaerosols via dry powder dispensers and sprayers is possible, and a number of these devices are commercially available.

### **Issues to Consider: Smallpox Response Plans:**

Smallpox is one of history's greatest scourges, and its eradication is one of medicine's greatest triumphs. Because it is both highly contagious and highly lethal, smallpox presents a preeminent threat as a biological weapon.

While all the countries represented in *Atlantic Storm* have smallpox response plans, which vary widely in their substance and length, all address roughly the same set of key issues:

#### **1. Alert Levels**

A. Most countries have developed a system of "alert levels" that direct their actions for preparedness and response.

B. Alert levels generally start at "zero," which signifies no cases of smallpox anywhere in the world, and progress upward through levels determined according to the number and location of suspected and/or confirmed smallpox cases.

C. The most vigorous responses are triggered when smallpox cases appear within a given country's boundaries.

#### **2. Smallpox Vaccine & Vaccination Strategies**

A. Countries have varying amounts of smallpox vaccine stockpiled for use in an emergency. Some countries have enough vaccine to cover every person in the nation, while others have minimal amounts that would cover less than 5% of their population.

B. Most countries, and the World Health Organization, consider "ring vaccination" to be the preferred strategy for controlling the spread of disease. Ring vaccination is typically characterized by an effort to identify and vaccinate all of the direct contacts of confirmed smallpox victims, including friends, family members, and co-workers.

C. Most countries indicate that if it appears that a smallpox epidemic cannot be controlled through ring vaccination, they would switch to mass vaccination, which is the vaccination of all individuals in an area (city, region, or entire country) regardless of exposure to the smallpox virus.

D. In every country, the decision to switch to mass vaccination would be made by very senior government officials, but most plans do not specify or define specific triggers for the switch.

### 3. Command & Control

A. All plans describe command and control structures to guide the nations' responses to a smallpox outbreak.

The command and control structures vary greatly, ranging from centrally-organized responses by the federal government to highly B. devolved systems in which provincial or even local authorities are in charge of response.

### 4. Public Communication

A. Most plans describe, in varying levels of detail, how government authorities would communicate with the public during a smallpox crisis.

### 5. International Communication & Cooperation

A. Other than alerting international bodies such as the World Health Organization and other communication networks, most plans focus primarily on actions that would be taken within the borders of a given country, and do not discuss interactions with neighboring countries or the broader international community.

### **Scenario Planning Assumptions: Smallpox Response and Methods for Acquiring Them:**

Methodology for Summarizing National Smallpox Response Plans: *Atlantic Storm* was designed to illustrate the challenges of mounting an effective international response to bioterrorism. It was not intended to test individual nations' bioterrorism response plans. However, the people playing the roles of national leaders needed to be briefed on their nations' plans. Therefore, the smallpox response plans for the nations involved in the exercise were summarized by the exercise design team. All the summaries distributed during the exercise were reviewed by knowledgeable experts from the respective nations. From these summaries, one-page briefing memos were prepared for each participant.

### **Scenario Planning Assumptions: Smallpox Epidemiology:**

#### **Total Infected During Attacks: 84,000**

1. 8,000 infected in Istanbul on January 1 (Grand Bazaar)
2. 16,000 infected in Frankfurt on January 2 (Frankfurt Airport)
3. 8,000 infected in Rotterdam on January 2 (Metro)
4. 12,000 infected in Warsaw on January 2 (Metro)
5. 16,000 infected Los Angeles on January 4 (LAX airport)
6. 24,000 infected in New York on January 4 (Penn Station)

**Emergence of Cases:** Epidemiological curve for the emergence of smallpox cases was based on: Figure 4.7, in Fenner, et al., *Smallpox and Its Eradication*. Geneva, Switzerland: World Health Organization; 1988:188.

**It was assumed that:**

- A.** Smallpox symptoms began (as early as 7 days after infection) with 2 days of fever, followed by a rash.
- B.** Initial diagnoses in European countries on January 13 were made in people who had at least day 3 of rash. This assumption is based on pictures in Fenner, et al.,<sup>2</sup> and the expert medical opinion of the Center for Biosecurity's medical doctors, including Dr. D. A. Henderson.
- C.** By January 14, numbers of suspect smallpox cases would begin to reflect reports of smallpox cases in much earlier stages of development (day 1, 2, or 3 of rash). Once the attacks are recognized, smallpox will be suspected in people who exhibit rash or fever but who are, in fact, not infected with smallpox.

**Accumulation of cases** from 9 a.m. to 1:30 p.m. on January 14 (start to end of exercise) was calculated based on the assumption that by 1:35 p.m. EST on January 14, between 10% and 30% of patients with day one rash and beyond would be reported to health authorities. These reports would include some "false positive" cases.

**Calculations of total casualties and deaths for the final video:** We assumed a 25% case fatality rate. We assumed a modest decrease in the historic case fatality rate of 30% due to access to modern health care for some victims and some degree of residual immunity in a modest number of adults vaccinated before 1980.

- 1. Person-to-person spread in the first generation of cases was 1:3 in all countries.<sup>3</sup>
- 2. Person-to-person spread in second generation was 1:0.25
- 3. This lower transmission rate is used because highly effective disease control measures had been established by mid-February, including vaccination of millions of contacts and healthcare workers in all the countries that were attacked.
- 4. It was assumed that leaders of countries with large vaccine stockpiles would share vaccine with affected countries that had small vaccine stockpiles.
- 5. It was also presumed that large-scale vaccination would begin within days after January 14, that countries would impose strict isolation of cases, and that residents in affected countries would self-impose social distancing (e.g., cancellation of big public events).
- 6. The spread and fatality assumptions were necessary to create a final video that depicted a possible outcome of the players' decisions. The *Atlantic Storm* participants may have chosen different actions than what exercise designers believed they would take.

**Scenario Planning Assumptions: Explanation of Increases in Cases & Projections:**

Suspected cases of smallpox identified on January 14 are all first generation cases in people who were infected during the smallpox attacks, which occurred sometime in early January. The increase in the number of cases reported throughout the course of the exercise is due to increased discovery and reporting of these original victims of the attacks. The rising numbers do not reflect contagious spread of the disease. Symptoms of smallpox do not usually become apparent until 7 to 17 days post-exposure, so it will take perhaps another week before all of the original victims have begun to show signs of disease.

Historical analysis of smallpox outbreaks suggests that the number of cases reported on January 14, following attacks early in the month, would likely represent just 2% of the total number of people infected during the attacks. The transatlantic leaders were provided with estimates of the future course of the epidemic to help inform their deliberations about response. A disease transmission rate of 1 to 3 was chosen for the first-to-second generation of cases (that is, 1 infected person would on average infect 3 others). For second-to-third generation transmission, a rate of 1 to 0.25 was assumed, taking into account estimates of the effects of vaccination and other disease control efforts that could be employed in the



weeks following discovery of the epidemic. Projections of case numbers through February are based on these assumptions.

For a more thorough explanation of the exercise assumptions and calculations of morbidity and mortality, please see the Assumptions document that was prepared for the exercise observers and is referred to throughout this presentation.

### **Scenario Planning Assumptions: Discovery of Bioweapons Laboratory in Austria:**

This laboratory was disguised as a small brewery in Klagenfurt, Austria. The facility contained seed stocks of the smallpox and Ebola viruses and the *Bacillus anthracis* bacterium. The laboratory contained all the equipment required for a modern microbiology laboratory, including: incubators, fermenters, freezers, and biocontainment cabinets, as well as instruments and reagents required for modern molecular biology techniques and genetic engineering. All of this laboratory equipment is entirely dual-use, is available on the open market, and could be housed in a building as small as a 3-car garage.

### **Atlantic Storm: Scenario Planning Assumptions:**

(Distributed at the End of Exercise—January 14, 2005)

## **I. Exercise Background**

### **Premise**

An informal group of international leaders was scheduled to meet in Washington, DC, on January 14, 2005, for a “Transatlantic Security Summit” on international cooperation in preparing for and responding to WMD terrorism. On the eve of the summit, it became apparent that people from several European countries were infected with smallpox. Before returning to their home nations to manage the crisis, the assembled leaders agreed to convene an emergency meeting to address the steps that the transatlantic community could take to respond to the crisis.

The exercise was designed to run in real time in the real world of January 14, 2005. No other artificial political or economic context was added.

### **World Leaders in Attendance**

Prime Minister of Canada  
President of the European Commission  
Chancellor of the Federal Republic of Germany  
President of France  
Prime Minister of Italy  
Prime Minister of the Netherlands  
Prime Minister of Poland  
Prime Minister of Sweden  
Prime Minister of the United Kingdom  
President of the United States  
Director General, World Health Organization

## **II. Method of Smallpox Attacks**

### **Smallpox Biological Weapon**

Seed stocks of Variola major virus (the causative agent of smallpox) were obtained by Al-Jihad Al-Jadid from a bioweapons facility in the former Soviet Union.

The Al-Jihad Al-Jadid scientists received microbiological training at Indian and U.S. universities. These scientists received additional training when the group hired a scientist who was part of the former Soviet Union's offensive biological weapons program. This scientist taught the Al-Jihad Al-Jadid scientists how to grow a number of biological agents, including variola major, *Bacillus anthracis*, Ebola virus, and *Burkholderia mallei* (glanders). The terrorist group combined this knowledge with publicly available technical information to develop dry powder preparations of the viruses. Then, with their own microbiology training, the terrorist group was able to acquire all the required laboratory equipment to grow and process

the variola major seed stock they had acquired into a relatively high-quality dry powder that was then used in the attacks.

The attacks were carried out by vaccinated terrorists who walked throughout the target locations for several hours during periods of peak occupancy. A commercially available dry powder dispenser the size of a small fire extinguisher hidden in a backpack was used to disseminate the agent.

Based on reports from Russian scientists, variola viral stocks are believed to exist in at least two and possibly three of the former biological weapons laboratories in the former Soviet Union. Many of those who once worked in these laboratories are now working in other countries, but little information is available as to where they are or what they are doing.

1. The former Soviet Union made smallpox biological weapons in industrial-scale (i.e., tens and hundreds of tons) quantities.
2. Smallpox virus can be grown in embryonated eggs and a variety of tissue cell culture systems.
3. If one were to make a dried powder preparation of a virus, one would have several sources for information on methods. Variola virus can be processed to a stable dried form just as vaccinia virus is dried to make a vaccine. There is a significant amount of open source technical information on the creation of dry powder bioaerosols.
4. There are many commercial freeze-dryers available; a simple internet search will pull up a bench-top model that would be adequate.
5. The amount of smallpox virions required to infect humans is presumed to be very low. Disseminating bioaerosols via dry powder dispensers and sprayers is possible, and a number of these devices are commercially available.

### **III. BW Laboratory Discovered in Austria**

This laboratory was disguised as a small brewery in Klagenfurt, Austria. The facility contained seed stocks of the smallpox and Ebola viruses and the *Bacillus anthracis* bacterium. The laboratory contained all the equipment required for a modern microbiology laboratory, including: incubators, fermenters, freezers, and biocontainment cabinets, as well as instruments and reagents required for modern molecular biology techniques and genetic engineering. All of this laboratory equipment is entirely dual-use, is available on the open market, and could be housed in a building as small as a 3-car garage.

### **IV. Smallpox Attacks: Sites and Rationale for Attack Size**

#### **Frankfurt am Main, Germany**

**Date of attack:** January 2, 2005

**Attack site:** Frankfurt Airport

**Number of infected:** 16,000

**Rationale:** 131,500 people go through Frankfurt airport on an average day. Holiday traffic could be as much as 50% higher.

#### **Rotterdam, Netherlands**

**Date of attack:** January 2, 2005

**Attack site:** RET Metro System

**Number of infected:** 8,000

**Rationale:** The Rotterdam Metro has two lines, the Erasmus line (110,000 people per day) and the Caland line (119,000 people per day). The Caland line includes the Pernis stop, which serves the Port of Rotterdam.

### **Warsaw, Poland**

Date of attack: January 2, 2005  
Attack site: Metro Warszawskie  
Number of infected: 12,000  
Rationale: 280,000 passengers per day

### **Los Angeles, USA**

**Date of attack:** January 4, 2005  
**Attack site:** Los Angeles International Airport  
**Number infected:** 16,000  
**Rationale:** 150,000 passengers per day; holiday traffic could be as much as 50% higher

### **New York City, USA**

**Date of attack:** January 4, 2005  
**Attack site:** Penn Station  
**Number of infected:** 24,000  
**Rationale:** An estimated 600,000 people travel through Penn Station each day

### **Istanbul, Turkey**

**Date of attack:** January 1, 2005  
**Attack site:** Grand Bazaar  
**Number of infected:** 8,000  
**Rationale:** The Grand Bazaar of Istanbul is a covered market with 5,000 shops. It has 25,000 employees and 250,000 visitors per day.

## **V. Smallpox Epidemiology Planning Assumptions**

### **Total Infected During Attacks: 84,000**

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### **It was assumed that:**

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2. Initial diagnoses in European countries on January 13 were made in people who had at least day 3 of rash. This assumption is based on pictures in Fenner, et al.,<sup>12</sup> and the expert medical opinion of the Center for Biosecurity's medical doctors, including Dr. D. A. Henderson.
3. By January 14, numbers of suspect smallpox cases would begin to reflect reports of smallpox cases in much earlier stages of development (day 1, 2, or 3 of rash). Once the attacks are

recognized, smallpox will be suspected in people who exhibit rash or fever but who are, in fact, not infected with smallpox.

4. Accumulation of cases from 9 a.m. to 1:30 p.m. on January 14 (start to end of exercise) was calculated based on the assumption that by 1:35 p.m. EST on January 14, between 10% and 30% of patients with day one rash and beyond would be reported to health authorities. These reports would include some “false positive” cases.

**Calculations of total casualties and deaths for the final video:** We assumed a 25% case fatality rate. We assumed a modest decrease in the historic case fatality rate of 30% due to access to modern health care for some victims and some degree of residual immunity in a modest number of adults vaccinated before 1980.

1. Person-to-person spread in the first generation of cases was 1:3 in all countries.<sup>13</sup>
2. Person-to-person spread in second generation was 1:0.25
3. This lower transmission rate is used because highly effective disease control measures had been established by mid-February, including vaccination of millions of contacts and healthcare workers in all the countries that were attacked.
4. It was assumed that leaders of countries with large vaccine stockpiles would share vaccine with affected countries that had small vaccine stockpiles.
5. It was also presumed that large-scale vaccination would begin within days after January 14, that countries would impose strict isolation of cases, and that residents in affected countries would self-impose social distancing (e.g., cancellation of big public events).
6. The spread and fatality assumptions were necessary to create a final video that depicted a possible outcome of the players’ decisions. The *Atlantic Storm* participants may have chosen different actions than what exercise designers believed they would take.

#### **Intelligence Briefing, 9:10 a.m. EST:**

##### **Al-Jihad Al-Jadid**

Al-Jihad Al-Jadid (The New Jihad) is a radical al Qaeda splinter group that is small, well-funded, fanatical, and well-educated.

1. Western intelligence agencies have been tracking this group for the past eight months.
2. Two months ago, three suspected members were killed in a raid at a small laboratory in Islamabad, Pakistan. More than 50 liters of growth medium were discovered in this facility. No dangerous biological pathogens were found.
3. The group has made contacts with former Soviet bioweaponers.
4. Ahmed Alnami is one of the senior leaders of this group. Alnami has a Ph.D. in microbiology, and he is deemed to be fully capable of weaponizing and mass producing the variola virus that causes smallpox. He dropped out of sight of intelligence six months ago.
5. This group is willing to suffer collateral casualties in Muslim populations in pursuit of Jihad.

#### **Intelligence Cooperation**

This information is being corroborated by U.S., UK, French, and German intelligence. Cooperation among these organizations is good. Intelligence and law enforcement agencies from all of the countries seated at this table, working in very close cooperation, are responding to what we are convinced is a deliberate release of the smallpox virus in several European countries.

#### **Situation Update, 9:15 a.m. EST:**

**1. Actions Needed to Stop Spread:** Persons already infected by these attacks will now get smallpox no matter what we do. The focus should be on stopping the spread of smallpox, which will be a race against time. Actions that should be taken immediately include:

- A. Finding cases and isolating them. This will be a difficult task, because there is no precise information on the place and time of exposure.
- B. Finding and vaccinating close contacts of smallpox victims. If these contacts develop fever, they will be suspected of having smallpox and should be isolated immediately. Vaccination within 3-4 days of exposure can prevent smallpox. Vaccination will not prevent the disease once a patient has developed symptoms.
- C. Vaccinating healthcare workers. This should be a top priority.

**2. National Smallpox Vaccination Strategies:** All of the countries participating in this summit have national smallpox vaccination plans. Most plans begin with targeted (ring) vaccination of close contacts, healthcare workers, and other high risk personnel. Some plans call for a switch to mass vaccination, generally when the outbreak is too large for ring vaccination. Triggers for vaccination of national command structures and military personnel are not identified in these plans.

**3. International Actions Underway:** The World Health Organization (WHO) has notified members of its Global Outbreak and Alert Network (GOARN). The WHO Emergency Operations Center is activated, but because of the tsunami, the WHO faces competing demands on its finite resources.

- A. The EU has activated its rapid alert system, and response teams are being assembled.
- B. Interpol and Europol are working with national governments.
- C. U.S., UK, French ambassadors are preparing a draft UN Security Council Resolution condemning attacks
- D. NATO permanent representatives are now meeting in Brussels.

#### 4. International Strategic Issues

The Summit staff recommends that leaders focus on the following strategic issues:

- A. Apprehending perpetrators and protecting against further attacks
- B. Using limited vaccine supplies strategically
- C. Stopping the spread of smallpox
- D. Communicating with the public

#### Situation Update, 10:00 a.m. EST:

##### 1. National Smallpox Vaccine Stockpiles

Table 1 compiles the most recent information provided by each country; some countries were reluctant to disclose vaccine stockpile data. The total global inventory of smallpox vaccine is just over 700 million doses, which is enough to vaccinate a little more than 10% of the world's population:

- 1. 40 countries have some smallpox vaccine supply.
- 2. Many countries have little or no vaccine.
- 3. Some countries have enough vaccine to cover their entire population
- 4. No country has extra vaccine.

##### 2. Methods Used to Determine National Smallpox Vaccine Stockpiles

Vaccine stocks for countries were determined in the following manner:

- 1. First, a search of open source literature was performed by the *Atlantic Storm* team to determine current country stockpiles. Members of the *Atlantic Storm* team then communicated with officials

from the World Health Organization, commercial sources, and other knowledgeable experts to assess the status of global national vaccine stocks.

2. Population figures were gathered from the CIA World Factbook. Available at <http://www.cia.gov/cia/publications/factbook/index.html>. Accessed December 2004.

3. Countries that specifically stated they had sufficient vaccine supplies to vaccinate their populations were assumed to have a number of vaccine doses equal to or greater than their country's population.

4. Reports of vaccine orders were assumed to be filled unless there was specific information to the contrary.

5. For this exercise, we assumed that nations have sufficient bifurcated needles to administer vaccine, regardless of how much the vaccine was diluted.

### 3. Smallpox Vaccine Production Capacity

Table 2 summarizes currently available information about the world's annual smallpox vaccine production capacity. Smallpox vaccine must be made in dedicated facilities, and other vaccine production facilities cannot be easily converted to make smallpox vaccine.

1. Four companies make smallpox vaccine.

2. Total global production capacity is 274 million doses per year, or 23 million doses per month.

3. Under emergency conditions, production could be ramped up to produce 480 million doses per year. Even with ramped up production capacity, it would take 10 years to produce enough vaccine for the entire planet.

4. Russia is thought to have production capacity of 25 million doses per year, but this data is not yet confirmed.

### 4. Smallpox Vaccine Dilution

Several U.S. studies<sup>1</sup> have suggested that the U.S. vaccine can be safely diluted 5-to-1, and health officials have stated publicly that in the event of a crisis, the U.S. could dilute its vaccine supply. This type of dilution has never been used in an actual emergency.

1. The European Commission<sup>2</sup> has reviewed the two U.S. dilution studies and concluded that diluting vaccine would be inadvisable. The EC believes that dilution would increase the risk of ineffective inoculations.

2. WHO has decided that there will be no diluted vaccine in the WHO stockpile because of the risks associated with dilution.

### 5. National Smallpox Vaccination Strategies

**Rationale for Ring Vaccination:** Ring (targeted) vaccination is the preferred strategy for all countries, and is the strategy advised by the WHO. Targeted vaccination will ensure that vaccine is used where it is most needed. If countries use targeted vaccination, there will be more vaccine available to share with other nations.

**Rationale for Mass Vaccination:** Mass vaccination will provide immediate protection for all persons who are vaccinated. Mass vaccination will protect against future or ongoing smallpox attacks. Political pressure and public demand for mass vaccination will be extreme. Mass vaccination will be difficult because there is no existing international framework to plan or implement vaccine sharing between nations. Many nations do not have enough vaccine for all of their citizens. No nations have implemented such a mass vaccination campaign in decades.

## **6. International Vaccine Sharing**

Summit participants must decide whether or not to share national vaccine supplies. Vaccine can be shared through bilateral and/or multilateral arrangements. There are no existing multilateral arrangements for international vaccine sharing. The WHO, NATO, the EU, the UN, or an ad hoc sharing coalition are all international entities that might be used to share national vaccine stockpiles. While some of these entities have worked on developing virtual stockpiles that could be used in a crisis, none have been used in an actual crisis situation. Also, it is important to note the EU explicitly decided not to have a smallpox vaccine stockpile because of the challenge of implementing a stockpile during a crisis.

### **Situation Update, 11:35 a.m. EST:**

#### **Controlling Smallpox Spread**

Countries need to control the spread of the smallpox outbreak while minimizing social and economic disruption. Imposition of major quarantine, border closures, and travel bans are national actions that would have significant international implications. Because quarantine and border closures may have great international consequence, they should be addressed as international issues.

#### **Historical methods of intervention to prevent the spread of smallpox include:**

1. Early detection and isolation of cases
2. School closures during epidemic
3. Cancellation of big public gatherings
4. Mandatory vaccination
5. Travel advisories
6. National conditions for entry (e.g. vaccination certificates, health screenings at border)
7. Large-scale quarantine
8. Closure of borders

#### **2. Large-scale Quarantine**

##### **Arguments for quarantine:**

1. May stop or limit smallpox spread within and between countries
2. May make response measures easier to execute
3. May be the only way for countries without vaccine to stop smallpox spread
4. Sends a strong signal to the public that the government is taking action
5. May forestall more extensive quarantine and/or draconian action later

##### **Arguments against quarantine:**

1. Its effectiveness has not been clearly demonstrated
2. Foreign nationals will be trapped inside quarantine zones
3. Has major economic consequences, including disruption of global trade flow
4. May provoke the public to flee
5. Enforcement requires resources and management of complex logistics
6. It is unclear when it is safe to end quarantine

#### **3. Border Control**

The WHO or independent national travel advisories are one border control option. This approach was used during the SARS epidemic, and in the past, some countries have used travel advisories to wage economic warfare. For example: economic competitors used travel advisories in an attempt to harm India during a plague outbreak in 1994.

Another border control measure is to set national conditions for entry from smallpox infected countries. During the SARS epidemic, temperature screenings were conducted at borders in Canada, China, and Singapore. However, it is not clear how cost-effective this measure was: 13 million people were screened, and only 12 people were found to have SARS.

Total border closure is the most severe method, and has been instituted only once in the past 50 years after a traveler returning home to Yugoslavia from the Middle East became ill with smallpox in 1972. All countries surrounding Yugoslavia closed their borders to prevent the spread of smallpox. Borders were kept closed for 2 months while the entire population of 20 million people was vaccinated by the communist Yugoslavian government. It is not clear to what extent border closures helped to end this smallpox outbreak.

If countries decide to close their borders, shortages of food, oil, and other goods will develop rapidly, and the economic impact will be great. For example, the value of the import/export business into the EU alone is 28 billion euros per day. If the Ambassador Bridge spanning the US-Canadian border were closed for just two weeks, it would cost \$2 billion in losses to the American and Canadian economies.

**Bulletin 1, 9:40 a.m. EST:**

**Turkey Requests Invocation Of Nato Article 5 and requests vaccine**

**TO:** Members of the North Atlantic Council (Canada, France, Germany, Italy, the Netherlands, Poland, United Kingdom, United States)

**FROM:** Recep Tayyip Erdogan, Prime Minister of the Republic of Turkey

The Republic of Turkey formally requests that the North Atlantic Council immediately invoke Article Five of the North Atlantic Treaty. The Republic of Turkey and other NATO members have been attacked with smallpox.

Under Article 5, the Republic of Turkey requests immediate assistance from its NATO allies. The Republic of Turkey has minimal stocks of vaccine, and this request would cover its entire population of 70 million persons.

**Note from Staff:** This bulletin was presented at the North Atlantic Council meeting in Brussels at 9:15 am EDT. The NAC is in recess pending instructions from member governments.

**ARTICLE 5 OF THE NORTH ATLANTIC TREATY**

*The Parties agree that an armed attack against one or more of them in Europe or North America shall be considered an attack against them all and consequently they agree that, if such an armed attack occurs, each of them, in exercise of the right of individual or collective self-defence recognised by Article 51 of the Charter of the United Nations, will assist the Party or Parties so attacked by taking forthwith, individually and in concert with the other Parties, such action as it deems necessary, including the use of armed force, to restore and maintain the security of the North Atlantic area.*

**Bulletin 2, 10:30 a.m. EST:**

**SPAIN REQUESTS VACCINE**

**TO:** Members of the North Atlantic Council (Canada, France, Germany, Italy, the Netherlands, Poland, United Kingdom, United States)

**FROM:** José Luis Rodríguez Zapatero, Prime Minister of Spain



Spain does not yet have confirmed cases of smallpox, but cases are likely to emerge given Spain's proximity to affected countries. The Government of Spain respectfully but urgently requests that the North Atlantic Council guarantee an immediate donation of 34 million doses of smallpox vaccine to Spain. Spain has 6 million doses of vaccine and a population of 40 million.

**Bulletin 3, 10:30 a.m. EST:**

**POSSIBILITY OF CASES IN U.S.**

**TO:** President of the United States

**FROM:** Your Chief of Staff

CDC is investigating 33 suspected cases of smallpox in LA, NYC area, Denver, and Salt Lake City. No cases confirmed by laboratory testing yet; definitive scientific results expected within the hour.

**Bulletin 4, 10:30 a.m. EST:**

**MULTIPLE REQUESTS FOR VACCINE**

**TO:** Director General of the WHO

**FROM:** Your Chief of Staff

WHO has received urgent formal requests for smallpox vaccine from the following governments:

Spain requests 34 million doses of smallpox vaccine. Spain has 6 million doses and a population of 40 million.

Serbia and Montenegro request 11 million doses of smallpox vaccine. Serbia and Montenegro have no vaccine and a population of 11 million.

Croatia requests 4.3 million doses of vaccine. Croatia has 200,000 doses of vaccine and a population of 4.5 million.

Egypt requests 76 million doses of vaccine. Egypt has no vaccine and a population of 76 million.

Total doses requested: 125 million

**TO:** President of France

**FROM:** Your Chief of Staff

The Government has received formal requests for urgent donations of smallpox vaccine from the following francophone Africa national governments:

Algeria requests 32 million doses of vaccine. Algeria has no vaccine and a population of 32 million. Democratic Republic of Congo requests 58 million doses of vaccine. The nation has no vaccine and a population of 58 million.

Niger requests 11 million doses of vaccine. Niger has no vaccine and a population of 11 million. Total doses requested: 101 million

**TO:** President of the European Commission  
**FROM:** Your Chief of Staff

The following EU governments have asked for your assistance in securing the following amounts of smallpox vaccine:

Belgium requests 9 million doses of vaccine. Belgium has 1 million doses of vaccine and a population of 10 million.

Ireland requests 3 million doses of vaccine. Ireland has less than 1 million doses of vaccine and a population of 4 million.

Spain requests 34 million doses of vaccine. Spain has 6 million doses of vaccine and a population of 40 million.

Non-EU member Switzerland has formally requested that the EU provide an urgent donation of 5 million doses of smallpox vaccine. Switzerland has 3 million doses of vaccine and a population of 8 million.

**Bulletin 5, 12:35 p.m. EST:**

**SUSPECTED CASES IN MONTREAL AND PARIS; RUMORS OF CASES IN WASHINGTON, DC**

**TO:** The Prime Minister of Canada  
**FROM:** Your Chief of Staff

Three Canadian citizens have been admitted to a Montreal hospital and are suspected of having smallpox. One of these patients had recently traveled to Frankfurt, Germany, and the other two had recently been in New York City. None of these cases has yet been confirmed.

**TO:** The President of France  
**FROM:** Your Chief of Staff

Four suspected smallpox victims have been hospitalized in Paris. These people have recently returned from Frankfurt.

**TO:** The President of the United States  
**FROM:** Your Chief of Staff

The media is reporting rumors of smallpox cases in Washington, DC. CDC cannot confirm these rumors at this time, but is actively investigating.

**Draft Press Points Prepared by Summit Staff in Consultation with Leaders:**

We are united in our determination to defeat those responsible for this attack and call on all other countries to work with us.

We ask our publics to remain calm and resolute. We are working quickly and effectively to help the sick and care for those afflicted.

We have initiated actions for immediate production of additional vaccine.

We will work together to stop the spread of the disease. Already some are in the process of ring vaccination, as recommended by the WHO. We are considering how available stockpiles should be used for our common purpose in this emergency.

We will work to establish a joint EU-NATO task force based in an operations center in Brussels with European, American, Canadian, and WHO representatives. This working group will enhance cooperation among our security, political, economic, health, and intelligence resources. We encourage Russia and other nations to contribute to this effort. We understand this task force to be just the beginning of what must be a global effort.

The United States, the United Kingdom, and France have submitted a Security Council Resolution condemning the attack and invoking Chapter VII. The UN Security Council is deliberating on this resolution now.

The NATO members participating in our meeting support invocation of Article 5 of the North Atlantic Treaty.

We will work to strengthen the regime prohibiting and preventing chemical and biological weapons.

We will work closely with our Muslim allies. Governments must take strong action against violence toward Muslims. We are all vulnerable. We are united. This is a fight we will win.

### **Statement to the Press:**

#### **President of the U.S.:**

We bring together leaders from Canada, France, Italy, Germany, the Netherlands, Poland, Sweden, the United Kingdom, the United States, the EU, and the World Health Organization, to discuss what appears to be both a global health and security challenge. We showed our determination to remain united in protecting our people in defeating those responsible for the this attack, and call on all other countries to work with us.

We ask our publics to remain calm and resolute. We are working quickly and effectively to help the sick and care for those afflicted, as well as avoiding the continued spread. We have initiated immunization of our people and immediate additional production of vaccine.

We will use all available means in our countries and in the United Nations, NATO and the EU, and our partners in Muslim countries, to pursue the perpetrators and halt the spread of disease. And we will work closely with our Muslim allies, and governments must take strong action against violence towards Muslims. We are united, and this is a fight we will win. That is our declaration.

I wanted to just give you an outline of our discussions, because it is true, we have spent a lot of time together and there is a crisis. But I think that our discussions have really been very useful, because they point the way towards continued cooperation and some ideas that have to be followed out, if we are going to be able to deal with this crisis appropriately.

So, let me just give you a brief summary, and then I will open this up. Already, some are in the process of ring vaccination, as recommended by the WHO. We're considering how available stockpiles can be used for our common purpose in this emergency, and some countries have already offered vaccine supplies.

We're working towards establishing a joint taskforce to tackle this global issue. And the taskforce will be based in an operation center in Brussels, with European, American and Canadian, and WHO, and NATO, and EU representatives. And the working group has cooperation among our security, political, economic, health, and intelligence resources. And we encourage other countries to contribute to this effort. We understand that this is a beginning and that the taskforce must end up really turning into a global effort.

The United States, the United Kingdom and France have submitted a Security Council Resolution condemning the attack and invoking Chapter 7 and the Security Council is deliberating that resolution now. The NATO members are participating in our meeting—the NATO members in this meeting are supporting invoking Article 5 of the North Atlantic Treaty. We are looking at that.

The NATO Council is meeting also. We will work to strengthen the regime, preventing chemical and biological weapons. So we are looking at various paths.

I think we have found this to be a very productive few hours, because it has shown our unity. We will all be—I will, after our press conference, be going to the Oval Office to address the people of America, and I think that my colleagues, as they return, will be doing the same thing.

We are now open to your questions, and I hope that you will address them to my colleagues, because this is a truly united effort. We have shown our determination to work together in dealing with this huge crisis to us.

Thank you.

### **Atlantic Storm Lessons & Conclusions:**

**Preparation will matter:** Nations must begin working together now to prepare systems that will support a collaborative international response to destabilizing epidemics, whether of natural cause or the result of bioterrorism. National leaders will not be able to create such systems in the midst of a crisis. Furthermore, diplomatic and political preparation, while critical, will not matter if appropriate medicines, vaccines, and medical and public health capacity are lacking, so systems must be comprehensive in scope.

**Increased knowledge and awareness are essential:** National leaders must become as knowledgeable of the unique challenges posed by destabilizing epidemics as they are of “traditional” terrorism and national security threats. As they do for all other security threats, leaders should have on hand a “check-list” of immediate actions they must take in response to bioterrorism.

**“Homeland” security must look abroad:** Homeland security cannot be achieved without attention to the abilities of neighboring states and allies in preventing and responding to large epidemics. Uncontrolled epidemics will spread across borders, threatening illness, death, societal disruption, and economic and political destabilization. Biosecurity will only be achieved through a holistic approach to homeland security—one that looks beyond each country’s geographical boundaries.

**The World Health Organization’s authority must be aligned with expectations:** World leaders should provide the WHO with resources and authority commensurate with the broad and serious expectations they have of the organization’s role in responding to international epidemics of infectious diseases. Today, in spite of all expectations, the WHO has concrete and serious budgetary, political, and organizational limits which will only be overcome through concerted action by the WHO’s member states.

**Effective communication between nations and with the public is critical:** National leaders must be able to establish effective and accurate lines of communication with other world leaders and with the public. Otherwise, time, which is always critical in responding to an epidemic, may be wasted, and leaders may lose the public’s acceptance and trust when they need it most. Communication plans that seek to engage citizens constructively in emergency response should be established and tested well in advance.

**Adequate medical countermeasures must be developed:** World leaders should work together to make significant investments in biomedical research and development of medicines and vaccines, as well as to under gird and strengthen hospitals and public health systems, all of which are essential to biosecurity.

The current lack of medical countermeasures to infectious diseases and the inability to quickly increase global production of those that do exist may force leaders to employ disease control options such as border closures that could be socially, politically, and economically destabilizing and serve to turn a crisis into a catastrophe.

**Biosecurity is one of the great global security challenges of the 21st century:** One of the great challenges of our century is preventing the deliberate use of disease as a weapon for killing millions, destabilizing economies, and disrupting societies. One of our great opportunities is to take steps that will make us both strong and resilient in the face of destabilizing epidemics – be they natural or intentional. Our biosecurity measures must always be more potent than any bioweapon used against us or any novel infectious diseases that emerges to threaten our health and well being ([UPMC, 2005](#)).

**Title:** Exercise Illuminates Transatlantic Leaders' Reactions To Bioterror Attack: Atlantic Storm Spotlights Need for Preparedness At International Level

**Date:** January 17, 2005

**Source:** [UPMC](#)

**Abstract:** What would world leaders do if they were faced with a bioterrorist attack on cities around the world? How would they react to a fast-moving and deliberately caused epidemic?

These questions were raised Friday at Atlantic Storm, a table-top exercise that simulated a smallpox attack on the nations of the transatlantic community. The ministerial bioterrorism exercise was presented by the Center for Biosecurity of the University of Pittsburgh Medical Center, the Center for Transatlantic Relations of Johns Hopkins University, and the Transatlantic Biosecurity Network.

During the exercise, which was held in Washington, DC, former prime ministers and other senior government officials from nations on both sides of the Atlantic played the roles of the heads of government of their respective nations in a mock summit.

The scenario presented to the participants was the simultaneous outbreak of smallpox in several cities: Istanbul, Frankfurt, and Rotterdam, with attacks in the U.S. surfacing later in the day. It was made clear early on that the disease had been spread deliberately, and a terrorist group claimed responsibility for the action.

The assembled world leaders debated the availability of vaccine in their countries and were surprised to learn that although some countries—including the U.S., the UK, France, Germany, and the Netherlands—had enough to vaccinate their entire populations, many countries do not. Italy and Sweden, for example, have enough vaccine for only 10% of their populations.

The issue of whether to use "ring" vaccination—that is, vaccinating those who have been in contact with patients, and health-care workers—or to opt for mass vaccination of the whole population led to discussions of which countries would be willing or politically able to share vaccine, pitting the "haves" against the "have-nots."

Acting as the U.S. President, Madeleine Albright expressed doubts as to whether the American people would be willing to give away a portion of the U.S. stockpile to European countries whose governments had been less than supportive of U.S. policies in the recent past.

"It was clear that this group of leaders all wanted to do the right thing, and they largely agreed on what that was," noted Tara O'Toole, CEO of the Center for Biosecurity. "But they were worried that their people were not prepared to accept the necessary decisions (sharing), and they at times felt compelled to take actions that might have bad implications for world."

As the day went on, the number of reported smallpox cases grew rapidly, and the number of countries whose populations were affected also increased. Cases were reported in the U.S., in Canada, and in Mexico, as well as in countries throughout Europe.

When the participants were told that dock workers in Rotterdam were infected and that the port had been closed, and that Polish citizens were streaming into Germany to try to obtain vaccine that was not available in their country, the assembled leaders were forced to confront the economic and political consequences of the crisis. A debate ensued about the advisability of closing borders, quarantining cities, and limiting the movement of people and goods.

In a discussion after the exercise had concluded, many of the players expressed surprise that their countries had not stockpiled enough vaccine. Several agreed that there was not sufficient awareness at the highest levels of governments on both sides of the Atlantic of the possibility and consequences of such a bioterrorist act.

It was also clear to the participants that no organization or structure, including NATO, the EU, and the UN, is now agile enough to respond to the challenges posed by a bioterrorist attack of this scope and complexity. The participants wanted the WHO to manage the distribution of vaccine, but former WHO Director-General Gro Harlem Brundtland admitted that its resources were limited and were already stretched by the tsunami relief response. She reminded the others that the annual WHO budget is "about as big as that of a middle-sized English hospital."

"A bioterrorist attack will immediately be an international crisis," said O'Toole, "and countries must be able to communicate and coordinate response in near-real time. Atlantic Storm has shown how critical it is for leaders to be prepared to respond to bioterrorist attacks of international dimensions requiring stark and extraordinary decisions."

#### **The participants in the mock summit included:**

1. [Madeleine Albright](#), former U.S. Secretary of State, playing the part of the President of the United States
2. [Sir Nigel Broomfield](#), former Ambassador of the UK to Germany, playing the Prime Minister of the United Kingdom
3. [Gro Harlem Brundtland](#), former Prime Minister of Norway and former Director-General of the World Health Organization, playing the Director-General of WHO;
4. [Jerzy Buzek](#), former Prime Minister of Poland, playing the Prime Minister of Poland
5. [Klaas de Vries](#), former Minister of the Interior of the Netherlands, playing the Prime Minister of the Netherlands
6. [Jan Eliasson](#), Ambassador of Sweden to the U.S., playing the Prime Minister of Sweden
7. [Werner Hoyer](#), member of the German Bundestag and former German Deputy Minister of Foreign Affairs, playing the Chancellor of the Federal Republic of Germany
8. [Bernard Kouchner](#), former Minister of Health of France, playing the President of France
9. [Erika Mann](#), member of the European Parliament, playing the President of the European Commission
10. [Barabra McDougall](#), former Foreign Minister of Canada, playing the Prime Minister of Canada
11. [Stefano Silvestri](#), former Italian Deputy Minister for Defense, playing the Prime Minister of Italy
12. [Eric Chevallier](#), Associate Professor, Institut d'Etudes Politiques de Paris and the French Ecole Nationale d'Administration, playing the Executive Secretary of the Summit ([UPMC, 2005](#)).