

# Black ICE

**Bioterrorism  
International Coordination Exercise**



**After-Action Report**

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**ALL SCENARIO EVENTS ARE FICTIONAL**

## NOTICE TO READERS

The events regarding a bioterrorism attack contained in the **Black ICE** scenario are entirely fictional and do not represent any organization or government's opinion of the likelihood of any particular bioterrorism attack scenario. The choice and source of disease agent, method of attack, pattern of infection, and nations attacked were all chosen solely to assess international organizations' abilities to respond to bioterrorism. Exercise designers did not consult any type of threat assessment in designing the scenario.

**Black ICE** organizers express sincere appreciation for the financial support of two prestigious non-governmental institutions, the Alfred P. Sloan Foundation and the Nuclear Threat Initiative's Global Health and Security Initiative.

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**ALL SCENARIO EVENTS ARE FICTIONAL**

**EXECUTIVE SUMMARY**

In an unprecedented initiative to enhance international organizations' preparedness for and response to bioterrorism, on September 7-8, 2006, the United States and Switzerland co-hosted **Black ICE (Bioterrorism International Coordination Exercise)**, a bioterrorism tabletop exercise (TTX) in Montreux, Switzerland. With high-level officials leading delegations from 12 international organizations, **Black ICE** successfully catalyzed top-level dialogue between organizations on vital bioterrorism-related cooperation, including: 1) international response coordination authority; 2) the challenges of competing international health, investigative, humanitarian, and security priorities; 3) sharing resources (financial, technical, logistical) between and among organizations; and 4) the need to coordinate response and recovery with national governments and regional entities. **Black ICE** increased participants' awareness of the international community's response capabilities and constraints and identified key challenges to a coordinated international response to a bioterrorism event. Particular areas of interest are public communication, information sharing, operational readiness, and the impact of national interests on organizational missions. Among critical issues emerging from the TTX, **Black ICE** discussion and interaction indicated clear divergences between those working in the areas of security and public health, highlighting the need for greater multi-sectoral international engagement in combating bioterrorism.

In the **Black ICE** scenario six terrorists from South Asia self-infect with smallpox and, while they are at their most contagious, travel by air to Central Asia. During their travel and upon arrival, the terrorists infect as many people as possible with the disease. National response capabilities are quickly overwhelmed and governments call upon international organizations for assistance in areas such as disease diagnosis and interventions, public health and law enforcement investigations, coordinating transportation policies, and managing displaced populations. Ultimately 465 people in 17 countries in Europe, South Asia, Central Asia, and North America are infected resulting in 108 deaths over six weeks.

Funded through a strategic public-private and international partnership, **Black ICE's** groundbreaking breadth and level of participation fueled the process of building bridges between organizations while simultaneously pointing out critical gaps in international counterterrorism coordination and response planning for a bioterrorism attack. Participants endorsed plans to further explore these issues and others in a series of two follow-on exercises that Interpol offered to host.

U.S. and Swiss **Black ICE** hosting delegations were led by Ambassador Jacques Pitteloud, Head of the Centre for International Security and Policy at the Swiss Federal Department of Foreign Affairs, and Ambassador Henry A. Crumpton, U.S. Coordinator for Counterterrorism.

Several key recommendations emerged from the observations of **Black ICE**, including:

1. Although many international organizations are important repositories of expertise, their on-the-ground response capacities have finite limitations. Consequently, nations should strengthen their own capabilities in detecting and responding to a bioterrorism attack.
2. Nations should establish mechanisms for sharing medical countermeasures (e.g., vaccines, drugs, personal protective equipment) with other nations in a response to bioterrorism. Further, nations should support international organizations' efforts to

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develop and sustain an effective system for the apportionment of available medical countermeasures.

3. International organizations should, with the support of member states, work to clarify the coordinating authority of a response by international organizations to bioterrorism.
4. International organizations and individual nations should acknowledge and emphasize the *multi-sectoral* nature of preparation for and response to bioterrorism.
5. International organizations should, within their mandates, thoughtfully evaluate their bioterrorism response capabilities to pinpoint potential areas for creative collaboration with other organizations.

**EXERCISE DESIGN AND DEVELOPMENT**

**Black ice:** A thin, transparent layer of ice on a roadway that gives the impression of being merely water. It is extremely hazardous because it is difficult to detect and may appear to be harmless.

**Black ICE (Bioterrorism International Coordination Exercise):** A September 2006 bioterrorism tabletop exercise for senior leaders of international organizations. So named because a bioterrorism attack may also be difficult to detect and may, in early stages, appear to be merely a manageable naturally-occurring disease outbreak.

*Exercise Background and Objectives*

**Black ICE** convened senior officials from 12 international organizations to discuss preparedness and response capabilities in the event of a bioterrorist attack. The exercise concept was based on preceding events, including the March 2005 Interpol Global Conference on Preventing Bioterrorism, the January 2005 Atlantic Storm exercise, and the December 2004 Eurasia Counterterrorism Conference on International Cooperation to Combat Bioterrorism. The discussions generated by this series of events, coupled with real-life scenarios such as pandemic planning and natural disaster responses, highlighted the need to identify roles, responsibilities, and capabilities of international response organizations, as well as the need for coordination among key international organizations in planning a bioterrorism response.

**Black ICE** goals and objectives included:

- Promoting greater interorganizational understanding among the participating organizations.
- Increasing awareness of bioterrorism preparedness and response capabilities.
- Identifying preparedness and response gaps as well as redundancies.
- Strengthening communication and relationships among international organizations.
- Enhancing interorganizational coordination and cooperation on a variety of issues such as public information and media relations, resource coordination, threat/hazard evaluation, and medical and public health expert assessments.

Developed in close coordination between the Government of the United States, the Government of Switzerland, and the 12 participating organizations, **Black ICE** goals reflected not only the critical international needs in combating bioterrorism through collaboration, but also the needs and aspirations of a diverse range of international entities, many of which are assessing their roles in preventing or responding to bioterrorism, and their engagement with other global partners.

**Black ICE** took place September 7-8, 2006, in Montreux, Switzerland. In addition to the time participants spent engaged in the TTX itself, lunch and dinner events facilitated participants' side-bar discussions and interorganizational networking. The participants' interactions outside of the structured exercise time strengthened informal communication by building both personal and institutional relationships among international organizations, a key objective of the exercise. Through both formal and informal means, **Black ICE** also promoted greater interorganizational

understanding among the participating organizations, increased awareness of bioterrorism preparedness and response capabilities, and identified preparedness and response gaps and redundancies.

### *Exercise Funding*

Funding for **Black ICE** was a unique and successful international public-private partnership that leveraged U.S. and Swiss Government resources several-fold through support from the Alfred P. Sloan Foundation and the Nuclear Threat Initiative's (NTI) Global Health and Security Initiative.

### *Exercise Planning*

The development process of **Black ICE** itself illustrated the broadly collaborative and international nature of the entire international bioterrorism initiative. Outreach to organizations invited to participate in **Black ICE** began almost a year prior to the exercise and continued throughout the exercise design. To strengthen international organization input into the TTX design, U.S. and Swiss organizers convened a series of conference calls involving all of the participating organizations. These calls were an important component of the inclusive nature of the **Black ICE** design and allowed international organizations an opportunity to provide thoughtful input into the development and direction of the exercise scenario.

This extensive process of inclusion of a diverse range of international organizations achieved several critical outcomes, including building a sense of trust that the U.S. and Switzerland were indeed committed to working with and listening to the input of the various organizations (such trust at the working level in each organization contributed significantly to the participation of top-level officials at **Black ICE**), creating an exercise scenario that effectively addressed the complex and multi-faceted nature of the response capacities and mandates of each of the organizations, and setting the stage for unfettered and, in many cases, unprecedented senior-level dialogue between organizations on critical but often sensitive issues.

### *Exercise Invitations*

Through consultation with many entities both inside and outside of their respective governments, U.S. and Swiss exercise planners created a list of international organizations invited to participate in **Black ICE**. (More information on each of these organizations is found in the "Participating Organizations" section below.) After much trans-Atlantic coordination, the head of each organization (Secretary General or equivalent) received an invitation letter co-signed by U.S. Secretary of State Condoleezza Rice and Swiss Vice President and Chief of the Federal Department of Foreign Affairs Micheline Calmy-Rey. Participating organizations responded to this invitation enthusiastically and at senior levels.

### *Exercise Format*

Senior leaders from international organizations participated in a tabletop exercise (TTX) that employed realistic multimedia presentations including simulated news reports, an exercise situation manual (SITMAN) that served as a reference manual through the exercise, and a PowerPoint slide presentation. In convening exercise play, the exercise facilitator presented the scenario events of the bioterrorist attack and led participants in the plenary discussion sessions, creating an effective venue for candid interorganizational interaction and introspection.



The **Black ICE** scenario was divided into three phases or “moves” (1. Initial Response; 2. Disease Climax; and 3. Transition to Recovery). The presentation of each move was followed by a fictional “World News Network (WNN)” broadcast to reinforce the most important themes. These fictional news broadcasts increased engagement among the participants, further described the scenario, and enhanced the realism of the exercise.

### *Exercise Assumptions and Ground Rules*

**Black ICE** was not played in real time. During the two-day TTX, participants were engaged in facilitated discussions driven by a scenario and thought-provoking questions pertaining to an international response to a bioterrorist attack. The fictional scenario centered on events following the intentional release of the virus *Variola major* (smallpox). The three moves of **Black ICE** were presented by the facilitator as a realistic progression of the bioterrorist attack over a timeframe of approximately six weeks. The worldwide social, political, and economic conditions portrayed in the **Black ICE** scenario were representative of actual global conditions during the time of the exercise.

Exercise organizers established additional exercise assumptions to maintain the flow of the exercise and focus on key discussion areas. The terrorists and terrorist group portrayed in the scenario, a small radical student group, were fictionalized and did not resemble any known terrorist individual or group. The terrorist group’s background and motivation were nonspecific. To allow for primary focus on the potential actions of international organizations, **Black ICE** did not involve individual countries as participants in the exercise (including the U.S. and Switzerland who served as co-hosts, but did not participate in the TTX itself).



**Black ICE** provided a forum for exploring the roles, responsibilities, capabilities, and gaps of international organizations in preparing for and responding to a bioterrorism event. To promote open and candid discussion among participants, they were assured that **Black ICE** was not a test of existing capabilities or knowledge, but rather an opportunity to explore areas for greater synergy. Participants were encouraged to think creatively and collaboratively, sharing new approaches and ideas outside of their organizations’ extant plans and capabilities. **Black ICE** was designed for senior-level participants with decision-making authority who could call their entire organization’s resources into action.

### *Participating Organizations*

**Black ICE** brought together senior officials from 12 key international organizations, including five organizations from the United Nations system and seven independent organizations,



representing such critical response fields as public health, security, transportation, law enforcement, and humanitarian response.



**International Civil Aviation Organization (ICAO)**

Specialized UN agency for promoting the safe and orderly development of international civil aviation throughout the world by setting standards and regulations and serving as a forum for cooperation among contracting States.



**International Committee of the Red Cross (ICRC)**

Impartial, neutral and independent organization whose exclusively humanitarian mission is to protect the lives and dignity of victims of war and internal violence and to provide them with assistance. **(Participated as an observer only.)**



**International Federation of Red Cross and Red Crescent Societies (IFRC)**

World's largest humanitarian organization for providing assistance, and to improve the lives of vulnerable people by mobilizing the power of humanity.



**International Maritime Organization (IMO)**

Specialized UN agency for developing international shipping regulations and promoting maritime safety and security.



**International Organization for Migration (IOM)**

Leading intergovernmental organization in the field of migration, working closely with governmental, intergovernmental, and nongovernmental partners to promote humane and orderly migration.



**International Criminal Police Organization (Interpol)**

World's largest police organization, facilitating cross-border police cooperation, supporting and assisting all organizations, authorities, and services whose mission is to prevent or combat crime.



**North Atlantic Treaty Organization (NATO)**  
Alliance of 26 countries from North America and Europe committed to fulfilling the goals of the North Atlantic Treaty, stating that the fundamental role is to safeguard the freedom and security of its member countries by political and military means.



**Organization for Security and Cooperation in Europe (OSCE)**  
Pan-European, regional security body for early warning, conflict prevention, crisis management, and post-conflict rehabilitation in its area, with a comprehensive and cooperative approach to security.



**United Nations Department for Disarmament Affairs (UN DDA)**  
Maintains the roster of qualified experts capable of carrying out biological and chemical weapons investigations, and the list of laboratories to carry out the tests and analysis of samples collected.



**World Customs Organization (WCO)**  
Aids the national economic wealth and social protection of members by promoting an honest, transparent, and predictable customs environment, permitting legitimate international trade to flourish and effective action to be taken against illegal activity.



**World Food Program (WFP)**  
UN food aid arm using food aid to support economic and social development, meet refugee and other emergency food needs and the associated logistics support, and promote world food security.



**World Health Organization (WHO)**  
UN specialized agency for health with the objective of the attainment by all peoples of the highest possible level of health. Strategic directions and priorities include enhancing global health security by maintaining a comprehensive outbreak alert and response mechanism and responding rapidly and effectively in crisis situations.

## SCENARIO OVERVIEW

The events in the Black ICE scenario are entirely fictional and do not represent any organization or government's opinion of the likelihood of any particular bioterrorism attack scenario. The choice and source of disease agent, method of attack, pattern of infection, and regions attacked were all chosen solely to assess international organizations' abilities to respond to bioterrorism. Exercise designers did not consult any type of threat assessment in designing the scenario.

### *Background*

A terrorist organization, The Council of Eight, has obtained the virus *Variola major* (smallpox) and plans to attack on the annual Independence Day celebration in a Central Asian nation on 31 August 2006. Six terrorists self-infect with smallpox and travel by air from South Asia on 30 August. They intend to expose as many people as possible during their air travel and as they circulate extensively at the Independence Day celebration.



### *Move 1: Initial Response*

After the bioterrorists successfully arrive at their destination, the leader of The Council of Eight releases a threat message on a website. Soon after, an unidentified patient is admitted to a local hospital, dying shortly thereafter. Tests produce a presumptive diagnosis of smallpox. Over the following weeks, additional patients begin to arrive at local hospitals and clinics and eventually cases appear across the Central Asian region. The affected countries request assistance from the international community.



In an effort to control the spread of the virus, individual governments begin to restrict movement. The government halts air and rail travel into and out of the city where the initial case was diagnosed, and another nation closes its borders to countries with known cases of smallpox. Central Asian governments implement border screening, close their school systems, cancel sporting events, and limit other gatherings.

People leave crowded cities and move to rural areas in an attempt to flee the affected regions. As a result of border closings and travel restrictions, camps of internally displaced populations form.

Governments and local public health systems are overwhelmed and cannot meet demands for medicine and humanitarian support.

***Move 2: Disease Climax***

Government officials and national public health authorities share information and cooperate with Interpol and regional police organizations, resulting in the identification of the first patient who died as an individual linked to the terrorist group The Council of Eight. The media run stories on the affected areas and the national and international responses to the attack, and highlight stories about The Council of Eight.

Ring vaccination programs are initiated by governments in the affected nations. Because there are no significant vaccine supplies in the Central Asian region, vaccination plans rely heavily on foreign assistance. People who are not receiving vaccinations in affected countries are dissatisfied with the distribution of limited amounts of the smallpox vaccine.



National governments worldwide struggle to keep their borders open while restricting and medically screening travelers, including those accompanying cargo. Ad-hoc camps of internally displaced populations form at some of the major border crossings and conditions deteriorate because of a lack of basic items such as food, water, and sanitation. Individuals infected with smallpox begin to appear in some camps. Within four weeks of the web release of the initial threat message, The Council of Eight releases a second message

claiming responsibility for the smallpox outbreak.

***Move 3: Transition to Recovery***

The combined efforts of governments and international organizations begin to make a positive impact as the number of new cases of smallpox begins to decline. Due to political pressure, several affected nations transition from ring vaccination programs to national vaccination programs. All governments and response organizations begin to emphasize rehabilitation and recovery.

National and local law enforcement agencies work with Interpol to locate the terrorists' safe house and secure the rogue stores of the smallpox virus. Authorities announce that the immediate threat of additional attacks by this group is eliminated.

The media continue to cover the outbreak and run stories focused on the plight of the internally displaced populations in the border camps and the efforts to return them to their homes.

As international organizations continue to support local efforts to reconstruct and rehabilitate communities, among many other recovery issues, national and international biosurveillance programs begin to receive increased global pressure to monitor and control the current smallpox outbreak and prepare for possible future outbreaks.



**EMERGING THEMES**

Participation and discussion at **Black ICE** – both during the two-day exercise and on the margins – were dynamic and vigorous with every organization engaged in the energetic and stimulating exchange. Organizations focused particularly on the issues of (1) the need for international response coordination authority; (2) the challenges of competing international health, security, humanitarian, and investigative priorities; (3) the need to efficiently share resources (financial, technical, logistical) between and among organizations with often vastly differing mandates, but similar requirements; and (4) the constant need to coordinate response and recovery with national governments and regional entities.



***The Need for International Response Coordination Authority***

Early in the exercise, several participating organizations acknowledged that there was an inherent need for a coordinating authority, however, participating organizations were unsure where that authority might lie or how it might effectively work. While technical organizations would have an important role in responding to bioterrorism, none of the **Black ICE** participating organizations envisioned a technical organization playing the overall coordination role given the multi-sectoral nature of a bioterrorism response. Some organizations suggested that perhaps a broad-based United Nations agency would be an appropriate international coordinating body.

***The Challenges of Competing Priorities***

**Black ICE** brought the challenges of competing international health, security, humanitarian, and investigative priorities into sharp focus, and organizations with vital roles in responding to a bioterrorism attack were challenged by the divide between these diverse sectors. Even though



the challenges of this sort of coordination were not resolved, organizations demonstrated an understanding of the necessity of working with the broad range of organizations represented in **Black ICE** with many expressing a desire to work more closely together. It was particularly clear that there are challenges for close cooperation between organizations focused primarily on security and those focused on health or humanitarian response. In general, humanitarian response organizations

have existing working relationships with one another and awareness of their respective roles; however, they sometimes have limited ties or understanding of the roles, capabilities, and

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activities of law enforcement or security organizations. The reverse is also sometimes true, although security-oriented organizations in general expressed more willingness to explore possible collaboration with unfamiliar organizations.

### *The Need to Efficiently Share Resources*

**Black ICE** participants repeatedly returned to the issues surrounding the need to efficiently share resources (financial, technical, and logistical) between and among organizations. Many of the organizations have significantly different responsibilities and skills, but strikingly similar requirements, especially in the area of logistics. Although some organizations have relationships with each other (particularly among the humanitarian response organizations), sharing resources among organizations seemed quite challenging, especially between organizations on either side of the security-humanitarian divide.



### *The Need to Coordinate with National Governments and Regional Entities*

Participants noted that the effectiveness of international organizations is highly dependent upon the cooperation and capabilities of countries involved and that national policies can conflict with the best advice from international organizations on issues such as vaccination strategies, border control measures, and investigative practices, among others. In addition, some organizations' mandates require that they only engage in a response when nations request their assistance. If nations delay these requests, international organizations' ability to help may be compromised or even eliminated.

## THE RESPONSE

Participating organizations were unanimous in their accolades for **Black ICE**, repeatedly seeking out U.S. and Swiss officials to express interest in next steps and solicit input and possible engagement on a range of bioterrorism-related initiatives. Senior officials across the organizations praised the networking and relationship-building opportunities that **Black ICE** offered and sought out opportunities for follow-on exercises. Stimulated by the dynamic interaction and interorganizational engagement, Interpol announced plans to convene two bioterrorism-specific follow-on exercises in 2007 and 2008 while other participating organizations expressed a keen interest in scheduling future events to discuss improving areas for coordination identified during **Black ICE**.

As both U.S. and Swiss officials noted, and as a number of participants indicated in **Black ICE** feedback forms, achieving such a collection of top-level international officials at this event for this particular purpose was in itself a significant and positive outcome, boding well for future engagement. Participants praised, in particular, the consistent and open U.S. and Swiss initiative to ensure that all organizations had a voice not just in the exercise itself, but in virtually every step of its design and implementation. Several organizations underscored the need for all invited international organizations to participate in exercises such as **Black ICE** and encouraged the U.S. and Switzerland to continue such partnership, engagement, and outreach.

**KEY RECOMMENDATIONS**

- 1. Although many international organizations are important repositories of expertise, their on-the-ground response capacities have finite limitations. Consequently, nations should strengthen their own capabilities in detecting and responding to a bioterrorism attack.** A range of international bioterrorism exercises has demonstrated that many nations worldwide plan to rely on support from international organizations in the event of bioterrorism. Although international organizations can potentially provide resources and expertise, these assets will likely be thinly spread with many nations competing for vital assets such as vaccines, personal protective equipment, clinical and laboratory capacity, and response personnel. Resources may be especially scarce in the early stages of an attack while international organizations are mustering their response capability and solving logistical and coordination challenges. Likewise, if disease transmission were to continue over many months, the resources and personnel at international organizations would likely be rapidly depleted.

Nations need not, however, be concerned that preparing for a bioterrorism attack will limit their ability to prepare for other health and security emergencies since many of the tools necessary for effective bioterrorism response are the same needed in many other emergencies. Actions such as building medical surge capacity, procuring adequate supplies of medical countermeasures (e.g., personal protective equipment, medicines, vaccines), and preparing to meet the needs of displaced populations all support preparations for responding to other crises such as naturally-occurring disease outbreaks or natural disasters. By increasing biosurveillance capacities, nations will not only enhance their ability to detect bioterrorism, but will also establish an early warning system for naturally-occurring disease outbreaks that could be similarly devastating.

Nations with well-established bioterrorism response programs can provide valuable assistance in the form of expertise and other resources to nations with less-developed systems as they work to build capabilities in detecting and responding to bioterrorism. Because of diseases' ability to travel swiftly across the globe through the rapid movement of people and goods, this type of assistance will increase the security of every individual nation as well as the entire world community.

- 2. Nations should establish mechanisms for sharing medical countermeasures (e.g., vaccines, drugs, personal protective equipment) with other nations in a response to bioterrorism. Further, nations should support international organizations' efforts to develop and sustain an effective system for the apportionment of available medical countermeasures.** Because diseases can easily spread across borders – between those countries with strong infrastructures and adequate supplies and those with fewer resources – it is in the interests of all nations to facilitate access to needed medical countermeasures in the event of a bioterrorism attack such as the one addressed in **Black ICE**. While national stockpiles may provide some resources in responding to bioterrorism, there will likely be limitations on the willingness of nations to share when confronting bioterrorism because of the risk of repeat attacks in multiple locations. As such, international organizations can play a key role in helping establish and maintain an equitable and appropriate system for determining needs, stockpiling resources, and distributing those resources. But international

organizations will require the support and political will of national governments to make such effective stockpiles and allocation systems a reality.

- 3. International organizations should, with the support of national governments and other institutions, work to clarify the coordination mechanisms and/or coordinating authority of a response by international organizations to bioterrorism.** The international organizations that participate in **Black ICE** possess a tremendous catalogue of resources necessary to a bioterrorism response. However, the **Black ICE** event demonstrated that no coordination mechanisms or central bioterrorism response coordinating body exist and that, without coordination, a bioterrorism response by international organizations would likely be inefficient and, in a worst case scenario, chaotic and ineffective. International organizations, however, will not be able to develop such effective coordination mechanisms and/or a coordinating authority without the clear support of national governments and other institutions. **Black ICE** pointed out critical gaps or redundancies in implementing a coordinated international response. The great challenge, though, is to develop an effective solution which helps coordinate international organizations' and national governments' efforts to mount an effective and complementary response. Additionally, this work will be need to achieve balance and synergy among the many competing needs in bioterrorism response (i.e., public health, humanitarian, law enforcement investigation, security, disaster relief, intelligence), while acknowledging the wide variety of capabilities and mandates in the international organizations.
- 4. International organizations and individual nations should acknowledge and emphasize the *multi-sectoral* nature of preparation for and response to bioterrorism.** An effective bioterrorism response, whether by international organizations or national governments, requires input, skill, and guidance from a broad range of sectors that includes law enforcement, public health, military, intelligence, agriculture, foreign affairs, development assistance, environment, transportation, and science sectors. Some of these sectors, however, do not traditionally work together, are not always aware of others' roles and responsibilities, and are sometimes wary of association with one another. **Black ICE** facilitated some exchange of information among key international organizations, but it was only a beginning. International organizations must proactively foster multi-sectoral awareness and coordination both within and among organizations in their work to prepare for and respond to a bioterrorism attack. Likewise, national governments should cultivate this same multi-sectoral coordination among domestic agencies as well as internationally.
- 5. International organizations should thoughtfully evaluate their bioterrorism response capabilities and systems to pinpoint potential areas for creative collaboration with other organizations.** **Black ICE** brought together a vast array of international organizations with a tremendous range of responsibilities. No matter how diverse the mandates, however, many organizations needs in common – often in the area of logistics. Organizations can leverage their bioterrorism response capabilities by creatively evaluating their resources and planning together in advance of a bioterrorism attack to avoid redundancies and overlaps.



**CONCLUSION**



**Black ICE** increased participants' awareness of the international community's response capabilities and constraints, and identified key challenges in a coordinated international response to the bioterrorism event presented in the exercise. Exercise discussions underscored the need to explore further how best to coordinate international response and recovery efforts, including whether a command structure would be useful or appropriate. Participants developed an increased awareness of the importance of multidisciplinary coordination by

international organizations. Their discussion reinforced the concept that the effectiveness of any international organization is highly dependent upon the cooperation and capabilities of the affected countries and, possibly, of other international organizations. Several participants highlighted the challenges of executing sound international policies when confronted with the sometimes conflicting policies of national governments.

Officials from most organizations found the exercise valuable in increasing their understanding of the sometimes complementary organizational roles and of the potential for overlaps and

confusion. Participants praised the networking and relationship-building opportunities that **Black ICE** offered. Overall, participants found the exercise experience valuable, and expressed their eagerness to participate in follow-on exercises. Some organizations have plans to improve coordination gaps identified during **Black ICE**. As several participants noted, inspiring the senior leadership of these diverse international organizations to participate in **Black ICE** was, in itself, a major achievement and a significant contribution to enhancing global cooperation to combat bioterrorism.

