Summary of the Infectious Diseases and Disaster Response Conference in Abu Dhabi

Priya Baliga, MPH
Brittany J. Tang-Sundquist
David R. F. Hajjar, JD, MPH
Faith A. Cooper, MPA
CDR Annette Von Thun, MC, USN

Due to the interconnectedness of the world today and the ease with which infectious diseases can spread globally, collaboration within and among countries around the world on pandemic planning and response is immensely important. One of the first steps for pandemic planning involves identifying existing gaps in a nation's current plans, and examining previous outbreaks for lessons learned. To identify such gaps, the World Health Organization (WHO) created a framework with 5 main components for assessing disaster and pandemic planning and response: surveillance, healthcare response, public health intervention, communication, and command.[1]

Assessing a country's current pandemic planning and response capability can be accomplished by examining each of the 5 aspects of the WHO framework.[1] The first component is surveillance. Countries need a robust surveillance system to detect emerging infectious diseases or potential outbreaks. However, many countries may lack the capacity for such a system. In resource-limited settings or countries recovering from a disaster, foreign militaries can play a key role in disease surveillance.[2] Foreign militaries may have the capacity to support local civilian ministries of health in disease surveillance and reporting. Healthcare response focuses on ensuring that current hospital resources meet demands and that contingency plans exist for continuity of operations during an emergency. Public health intervention is important for preventing or containing the spread of disease. Strategic communication is also a fundamental part of disaster response and should occur pre-event, during the event, and during response and recovery phases. Finally, the incident command structure is an integral aspect of disaster response. Identifying roles and responsibilities of key staff and cross-training ahead of time will enable individuals to better respond in the event of a disaster.

The WHO framework provides a structure to assess a country's pandemic response capabilities, but many countries around the world may lack capacity for efficient and effective pandemic response. The Armed Forces Health Surveillance Center–Global Emerging Infections Surveillance and Response System (AFHSC-GEIS) partners with many countries around the world to build sustainable public health surveillance and laboratory capacities.[3] In addition to partnering with laboratories around the world, the AFHSC, in collaboration with the Center for Disaster and Humanitarian Assistance Medicine* (CDHAM) and the geographic combatant commands, also works closely with partner nation militaries and local ministries to conduct training workshops and exercises on important topics such as infectious diseases and disaster response.

THE CONFERENCE

The AFHSC, collaborating with the CDHAM and the US Central Command, held the Infectious Diseases and Disaster Response Conference (IDDRC) July 11-14, 2011, hosted by the United Arab Emirates Armed Forces in Abu Dhabi. This conference promoted regional interoperability and enhanced the capability of regional countries to respond to complex humanitarian and health emergencies, with a particular focus on response to infectious disease-related disasters such as pandemics.

Specific objectives of the conference included:

a. Creating a platform for military leaders and civil authorities to share best practices and lessons learned in regards to emerging infectious diseases and disaster response;

b. Providing regional partners with current updates on global emerging infectious threats and surveillance improvement;

c. Assisting regional partners to understand the roles of the international community (international organizations, nongovernmental organizations, and regional governments) in the management of disasters; and

*The Center for Disaster and Humanitarian Assistance Medicine is a component of the Department of Military and Emergency Medicine at the Uniformed Services University of the Health Sciences in Bethesda, Maryland. The Center is the Department of Defense's focal point for academic aspects of medical stability operations.

d. Identifying national and regional opportunities for improvement of surveillance and regional coordination that will assist in the development of a regional response to emerging infectious hazards and disasters.

The conference included a total of approximately 95 distinguished participants and lecturers from the United Arab Emirates, the United States, Iraq, the Hashemite Kingdom of Jordan, Lebanon, Qatar, the Kingdom of Saudi Arabia, and Yemen. Individuals from each of the countries were invited to present on best practices in disaster mitigation within their countries. Subject matter experts from the US Department of Homeland Security, AFHSC, Georgetown University, the George Washington University, and the Carolinas Medical Center presented on topics relevant to infectious disease and disaster response. The conference incorporated facilitated discussions on the Sphere Project,[a] strategic communication in disaster response, and the World Health Organization's International Health Regulations.[4] Attendees had the opportunity to participate in a regional pandemic response tabletop exercise, which identified gaps and promoted regional communication.

During the conference workshops, participants were able to identify existing gaps in their current national and regional plans and methodologies, examine previous infectious disease outbreaks for lessons learned, consider possible ways to address some of the identified gaps, and build relationships with their regional counterparts. Future interactions will fortify regional partnerships and cooperative agreements to strengthen infectious disease and disaster response within the region.

Emerging Infectious Diseases and Surveillance

The Institute of Medicine[b] defines emerging infectious diseases as conditions that have increased incidence in humans and that are clinically distinct.[5] In his lecture "Emerging Infectious Disease Updates," Dr Daniel Lucey[c] presented information on newly emerging diseases as well as disease prevention strategies for controlling outbreaks. He further distinguished between emerging and reemerging infectious diseases, explaining that emerging infectious diseases are newly recognized pathogens, such as Nipah virus, Severe Acute Respiratory Syndrome (SARS), and pandemic (H1N1) 2009. Reemerging infectious diseases have been previously recognized, but are now seen in a new location, such as Monkeypox, West Nile virus, and Rift Valley fever.

Dr Lucey was an integral part of a response team to the 2003 SARS epidemic in Toronto, Canada. He elaborated upon several measures for preventing disease transmission, including the importance of SARS assessment triage centers that were established in trailers outside of hospitals to prevent the spread of disease while still providing care for sick patients. Having dedicated staff members to deal with SARS patients, screening check points at all hospital entrances, and providing adequate personal protective equipment for patients provided further mechanisms for reducing transmission within the hospital.

Dr Lucey outlined 5 major contributions of the early 21st century regarding emerging infectious diseases: (1) the One Health concept (collaboration of human, animal, and environmental health disciplines, see http://www.onehealthinitiative.com/index.php); (2) the importance of international partnerships; (3) antibiotic and antiviral drug resistance; (4) the WHO International Health Regulations[4] (IHR), and (5) global infectious disease surveillance. Dr Lucey also mentioned the importance of organizations such as the AFHSC-GEIS and the WHO in current global surveillance efforts.

The AFHSC-GEIS laboratory surveillance network has been an important player in global biosurveillance of infectious diseases. In 2009, AFHSC-GEIS provided funding and oversight to a network of 39 partners at approximately 500 sites, impacting a total of 92 countries through active surveillance projects, capacity-building initiatives, or participation in training exercises.[6] Many of these training initiatives have been in direct support of the WHO IHR.[7] During the IDDRC, COL Robert Lipnick[d] and Ms Priya Baliga[e] led a small-group session on the importance of the WHO IHR, and reviewed the framework for a member state to report a potential Public Health Emergency of International Concern (PHEIC). They also introduced scenarios of potential PHEICs and

[a] The Sphere Project, headquartered in Geneva, Switzerland, is a voluntary initiative that brings a wide range of humanitarian agencies together to improve the quality of humanitarian assistance and the accountability of humanitarian actors to their constituents, donors, and affected populations. Information available at: http://www.sphereproject.org/.

[b] The Institute of Medicine is the health component of the National Academy of Sciences. It is an independent, nonprofit organization that works outside of government to provide unbiased and authoritative advice to decision makers and the public. Information available at: http://www.iom.edu/About-IOM.aspx.

[c] Adjunct Professor, Department of Microbiology and Immunology, Georgetown University

[d] Director, Communications Standards and Training Divisions, AFHSC

[e] Epidemiologist, AFHSC

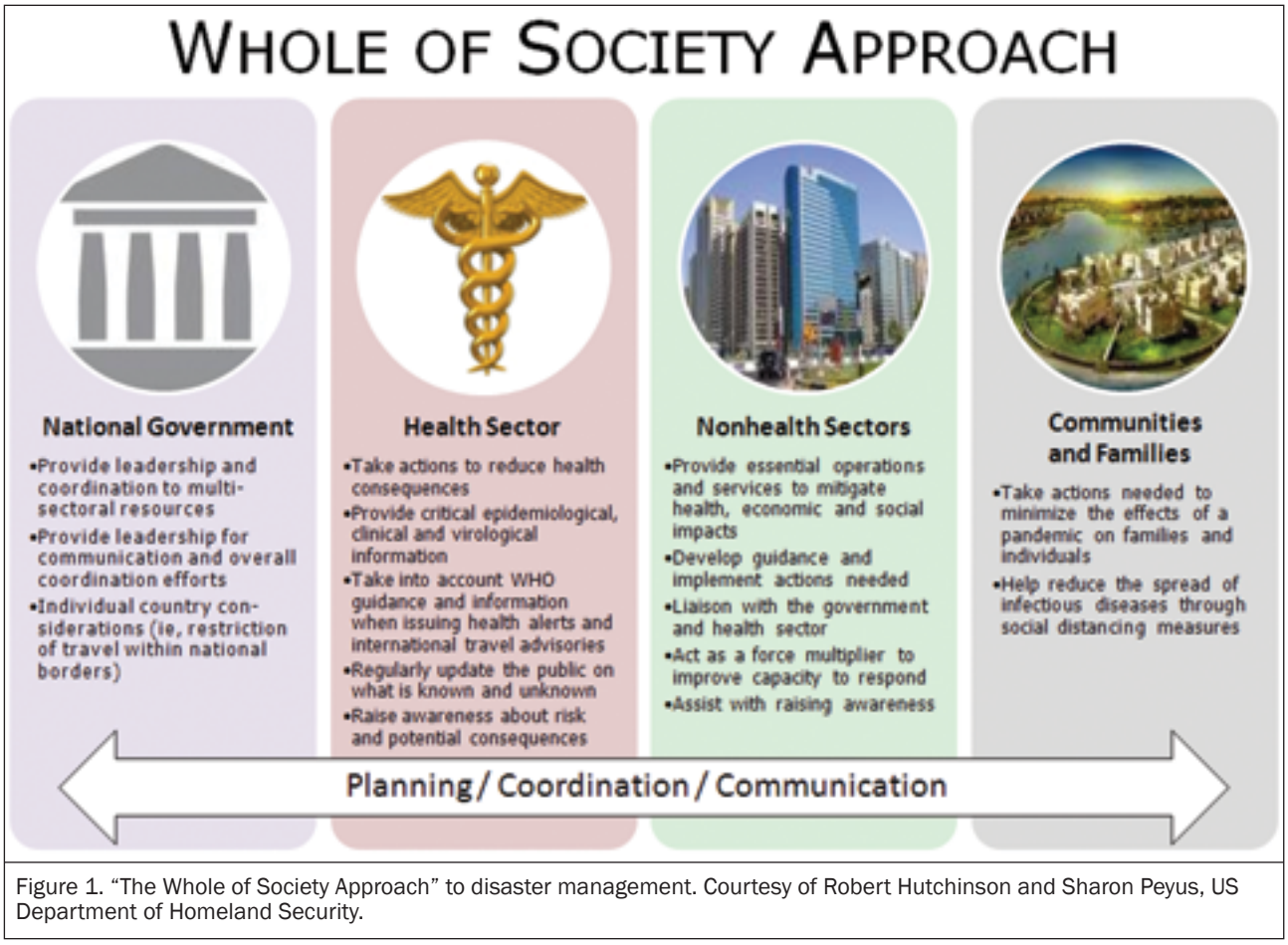

Figure 1. "The Whole of Society Approach" to disaster management. Courtesy of Robert Hutchinson and Sharon Peyus, US Department of Homeland Security.

led discussions on the intricacies of reporting through a country's ministry of health to the WHO. Further discussions deliberated upon the consequences of countries not disclosing a potential PHEIC to the WHO, the criteria that constitute a PHEIC and when to report, and complications of detecting and reporting potential PHEICs in countries with limited resources and capacities. Thus, infectious disease surveillance is only the first step to overall disaster planning and response.

Disaster Planning and Response

When planning for disasters such as an infectious disease outbreak or pandemic situation, it is extremely beneficial to have a whole of society approach to the disaster, including integrated planning and preparation (Figure 1). Mr Robert Hutchinson[a] and Ms Sharon Peyus[b] highlighted the importance of identification of essential sectors in supporting relevant authorities, and the need for development of business continuity plans for critical sectors. They also emphasized the benefits of multisectoral preparedness through close interministerial collaboration and communication, commitment of subject matter experts, and the leveraging of resources.

In their lecture on contingency planning, they presented a variety of lessons learned during the US response efforts for Hurricane Katrina in 2005, the H1N1 pandemic in 2009, and the earthquake in Haiti in 2010. The after action report (AAR) on the H1N1 pandemic evaluated several functional areas, including emergency operations center management, information gathering and recognition of indicators and warnings, responder safety and health, critical resources logistics and release, and managing risk. Some of the strengths of the pandemic (H1N1) 2009 response, including previously conducted H5N1 planning and training efforts, greatly assisted the development and refinement of pandemic mitigation measures. Assessment of the AAR established that DHS effectively communicated with state, local, territorial, and tribal government officials. Some of the areas of improvement noted in the AAR included increasing efficiency of incident command/control to streamline

[a] Assistant Special Agent in Charge, US Department of Homeland Security
[b] Director, National Incidence Response Unit, US Department of Homeland Security

decision making, improving communication, information sharing, and strengthening partnerships.[8]

The US Federal Emergency Management Agency's Incident Command System (ICS)[9] is a standardized, on-scene, all-hazards incident management approach. In his lecture "Force Health Protection in Disaster Response," Dr David Callaway* discussed the ICS, which helps to manage incidents through concepts such as unity of command, common terminology, management by objective, flexible and modular organization, and span-of-control (Figure 2). The ICS has an systematic approach to managing safety of responders through 4 functions of the safety management cycle: information acquisition, analysis of options, decision-making, and taking action. He emphasized force health protection as an essential element for maintaining resources to respond to crises through standardized processes and customized response, and that there is a full spectrum of requirements throughout the disaster and deployment cycle.

In addition to ICS and the importance of force health protection, Dr Callaway also spearheaded a small group discussion on strategic communication during a disaster, deemed critical during all stages of the event. He provided 2 case examples: Hurricane Katrina and the consequences of failed strategic communication, and the success of strategic communication during the earthquake in Haiti. During the Katrina event, the lack of a basic coordinating instruction, a knowledge management plan, and an overall situational awareness was the reason that strategic communication failed. In contrast, successes in Haiti were attributed to a clear strategic message, which allowed decentralized command and execution. Additionally, relationships with the press and nongovernmental organizations (NGOs) were firmly established prior to the earthquake. These relationships fostered a sense of trust between all parties involved and were offered as further reasons why strategic communication was so effective (Figure 3).

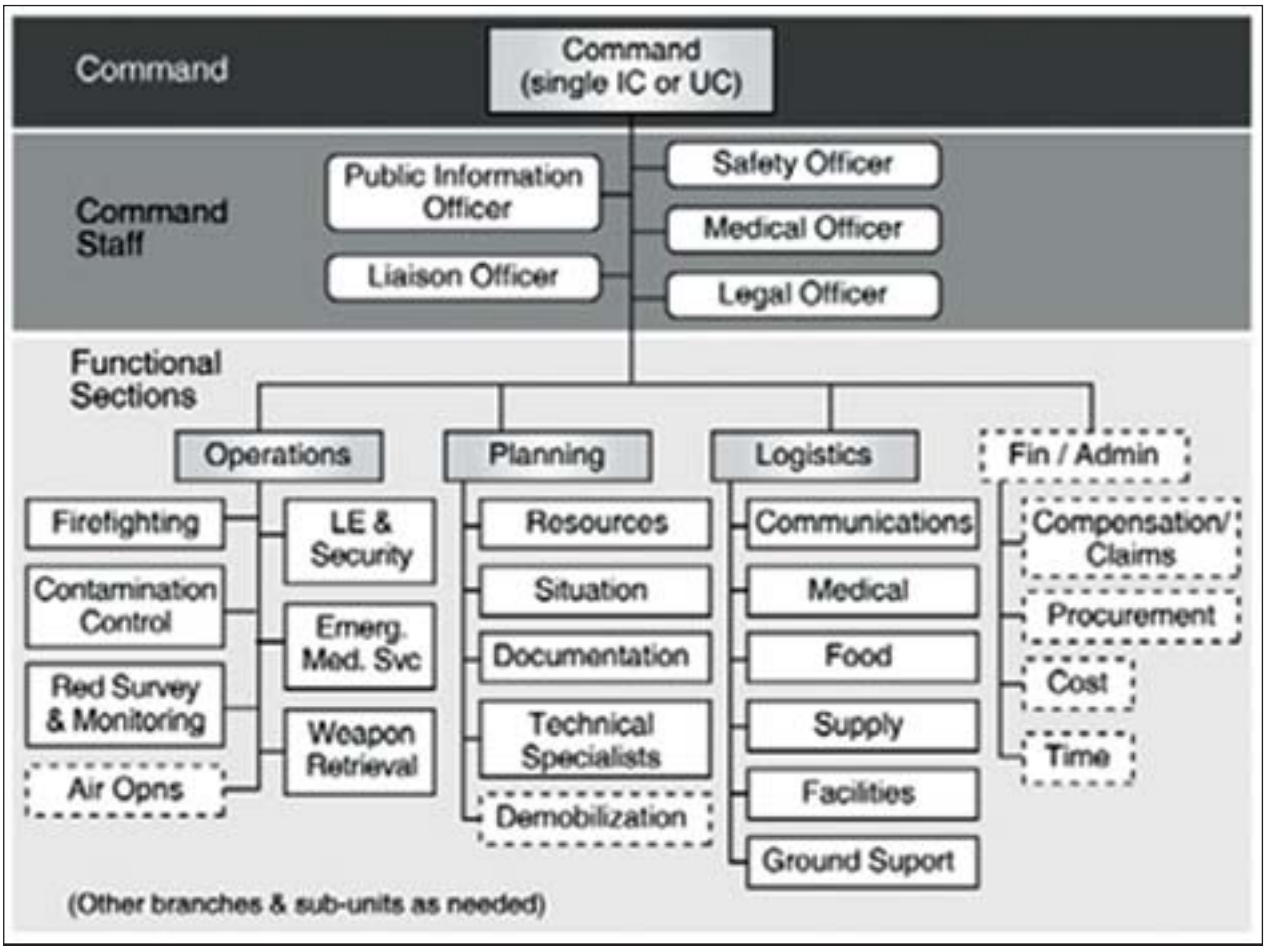

Figure 2. The structure of a nominal Incident Command System (US Dept of Homeland Security).[9]

*Director, The Operational Medicine Institute and Assistant Professor of Emergency Medicine, Carolinas Medical Center, Charlotte, NC

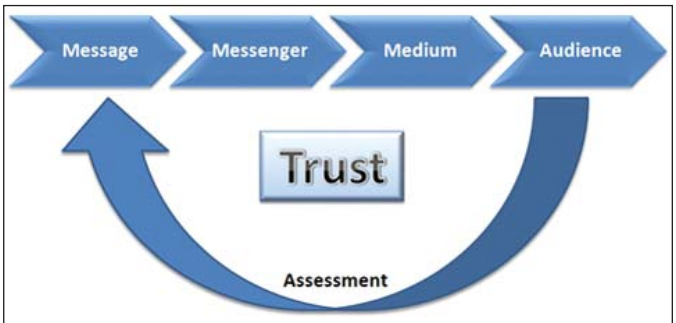

Figure 3. Five elements of communicating a message. Source: Dr David Callaway.

Nongovernmental organizations play a key role in response to disasters. During the IDDRC, Dr David Hajjar* guided a small-group discussion on the Sphere Project and the Sphere Handbook,[10] which is designed for use in disaster response and is applicable to natural disasters as well as armed conflict. During the small-group discussion, Dr Hajjar presented a case study on a migration of Ugandans crossing the border to Tanzania after a pandemic outbreak resulted in violence and limited resources.

Throughout the session, discussions arose about minimum and adequate standards for conditions in refugee camps, when and how refugees should be persuaded to return to their countries of origin, and various other factors that must be taken into account when caring for individuals fleeing a crisis (security, political situation, weather, health, capacity, mental state, etc). A lively debate surrounded the topic of adequate standards for camps without indulging refugees in luxuries, so they would still feel compelled to return to their countries of origin once the emergency has been resolved. The importance of maintaining dignity while balancing the desire to return home was recognized as a pervasive challenge in the refugee camp setting.

Best Practices in Disaster Response: Country Presentations

The IDDRC was designed to foster contribution by attendees. Participants from invited countries were encouraged to make presentations on best practices in disaster response within each of their respective countries. Dr Saleh Fares, a consultant for the Emergency Department at the Zayed Military Hospital in Abu Dhabi, presented "Regional Critical Infrastructure and Key Resources for Disaster Response" within the United Arab Emirates (UAE). The unique population of the UAE, which is made up of more than 80% guest workers with thousands of people crossing borders daily, makes responding to disasters in the country a particular challenge. One of the key resources Dr Fares highlighted for managing disasters in UAE was the Higher National Security Council National Emergency and Crisis Management Authority. He discussed the command structure, starting with Level 1–the President of the UAE; Level 2–the National Security Advisor; Level 3–the Ministries of Health, Interior, and Environment; and Level 4–local or Emirate level. He shared the UAE's national response plan to H1N1,[11] including surveillance elements, case investigation and management, strengths, and areas for improvement. Strengths of the H1N1 response included adequate funding, political support, coordination of various organizations, and incorporation of past lessons learned. Areas for improvement included lack of a "real-time" surveillance system, limited laboratory capacity and capability, poor communication, and suboptimal ICS coordination.

Dr Mahmud Abdallat, representing the Preventive Medicine Department of the Royal Medical Service (RMS) of Jordan, lectured on Jordan's pandemic influenza response. He explained that the RMS had representatives on the National Steering Committee, National Technical Committee, and National Treatment Committee for Pandemic Influenza Response, and that the RMS pandemic response plan is part of the national response plan for pandemic influenza in Jordan. This response plan encompasses the RMS surveillance system, external communications, and their internal communications, including RMS medical outpatient clinics and military units. These communication systems are coordinated by a senior officer in a designated operations room in the RMS directorate. Dr Abdallat also described the structure of teams for surveillance and treatment of pandemic influenza cases in RMS hospitals.

Dr Awni Abulail, also of the Jordanian RMS, gave a briefing on the RMS role in international medical assistance. Dr Abulail presented some of the capabilities of the main RMS hospital, King Hussein Medical Center, (http://www.jrms.gov.jo/Default.aspx?tabid=54), as well as Jordan's field hospitals and surgical teams and facilities, who have provided medical assistance to 21 locations throughout the world as part of United Nations Peacekeeping Forces or humanitarian aid missions.

Brigadier General Maurice Sleem, Surgeon General of the Lebanese Army, addressed the nature of disasters in Lebanon, most of which are man-made and involving wars. He reviewed response efforts to a major oil spill in the Mediterranean Sea as a result of the bombing of the Jiyeh power station, which caused the leakage of nearly 15,000 tons of oil reaching areas on the Syrian coastline, and the waters of Turkey and Cyprus. The Lebanon

*Senior Consultant, IDEAS, Inc, Kirtland, Ohio

Ministry of Environment requested assistance from 31 countries, 71 national and international organizations, and 80 NGOs in response to this disaster. The quantity of waste collected and safely stored is estimated to be about 200 cubic meters, however, there are still 12 polluted sites undergoing cleanup operations along the shoreline of Lebanon.

Brigadier General Sleem discussed health security in relation to the response to unexploded ordnance in Lebanon where the Ministry of Public Health continues to provide emergency medicine and supplies for acute and chronic conditions. He shared the role of the WHO and the United Nations Children's Fund in health security in support of response efforts. These organizations worked with a broad range of partners in Lebanon to save lives, protect civilians, and support basic services such as health, water, sanitation, education, and psychosocial care.

Brigadier General Sleem added that Lebanon's National Committee for Disaster Management held its first national conference on disaster management in November 2009, bringing together many key stakeholders. However, due to current political circumstances in Lebanon, there has been a delay in setting plans and policies, and in strengthening infrastructure development in the country.

Major General Dr Samir Abdullah Hasan from the Directorate of Iraqi Military Medical Services gave a presentation on the "Emergency Health Plan of the Iraqi Surgeon General's Office." The Iraqi plan's purpose is to establish a policy under the new democratic Iraqi law to protect military and civilian installations, facilities, and personnel in the event of a public health emergency, whether due to manmade or natural disaster, outbreaks of infectious disease, biological warfare, or terrorism. The plan contains elements of isolation, public health emergency response, quarantinable communicable diseases, and mandatory quarantine. It also addresses those public health emergencies that occur during religious events.

The Iraq Surgeon General's office has a senior military medical office or Ministry of Defense civilian employee who is designated as a Public Health Emergency Officer (PHEO). The PHEO ascertains the existence of cases suggesting a public health emergency; investigates cases for sources of infection; recommends implementation of proper control measures; defines distribution of illness; identifies all exposed individuals; counsels individuals on the course and spread of their illness; assesses facilities for purpose of closing; evacuates affected individuals; decontaminates or destroys any materials contributing to the public health emergency; shares information with federal, provincial, or local officials; notifies applicable military channels; and reports public health emergencies to the Surgeon General and the Ministry of Defense. The PHEO is also responsible for providing written notice to all quarantined individuals, screening and safely disposing of corpses, and informing all affected individuals of control and mitigation actions to take during a public health emergency. Dr Samir listed education and training of PHEOs and commanders as one of the most pressing challenges faced by the Iraq Surgeon General's office for emergency health planning.

The country presentations were an essential element of the IDDRC. Through learning about country-specific approaches to controlling infectious diseases and responding to disasters, groups were better able to interact and have open discussions during the tabletop exercise (TTX) portion of the conference.

Regional Pandemic Tabletop Exercise

The UAE Regional Pandemic TTX was based on an outbreak of influenza-like illness that initially presented in a rural village in Thailand. The participants were divided, as much as possible, into 4 groups with representatives from all of the countries present. Each group was given about 3 hours to discuss the exercise before reconvening to present the main findings of their discussion. Participants were encouraged to take the information gained from the previous days' lectures to guide their TTX group discussions.

The objectives of the TTX were to:

- Create a platform for military leaders and civil authorities to share best practices and lessons learned in emerging infectious disease and disaster response activities.
- Provide regional partners with current updates on global emerging infectious threats and surveillance.
- Assist regional partners in understanding the roles of the international community (international organizations, NGOs, regional governmental organizations) in the management of disasters.
- Promote regional interoperability and enhance the capability of host nations to respond to complex humanitarian emergencies.
- Identify national and regional opportunities for the improvement of surveillance and regional coordination that will assist in the development of multicountry response to emerging infectious hazards and disaster response.

Sharing best practices and lessons learned throughout the region, each country contributed specific experiences and significant discussion points to the exercise. In one group, representatives from both the UAE and Jordan noted having a national food stockpile for emergency purposes, which can feed their respective country's current populations for 3 to 6 months. As part of their national pandemic response plan, the Jordanian government has informed retired medical personnel who, in case of a pandemic, may be recalled to service. The Jordanian plan has the capability to increase personnel capacity by 30% through extending normal emergency department shifts from 8 to 12 hours.

Timely, accurate and effective communication is critically important during disasters as it contributes to saving lives and increases the public awareness and understanding. Discussions from the breakout groups focused heavily on effective communication practices during the pandemic scenario. Participants from the UAE and Jordan discussed how they would strategically choose one government representative as a spokesperson, who would serve as the only source of communication between the government and the media. This trusted individual would be responsible for relaying facts, dispelling rumors, calming the public, and delivering the government's messages about the pandemic. This open communication with the media would help inform and empower, building trust among the government, the media, and the public.

Another critical issue for pandemic response planning is that of refugees and internally displaced persons (IDPs). Concerns arose, such as prioritizing resources between refugees and citizens, focusing on high risk individuals within these groups, as well as exploring legal mandates on basic needs of refugees, communicating with the refugees' country of origin, and enforcing border security. One Jordanian participant noted that during a severe crisis, schools would be closed and therefore could be used as a shelter to house IDPs, whereas refugees would be in camps and the burden would remain on the refugee field hospitals to treat those sick individuals. It was concluded that it is essential to include neighboring countries in pandemic planning efforts.

Groups identified 2 major gaps during their TTX discussions. First, they found the countries' postpandemic planning insufficient. The transition to long-term recovery and the resources needed for the postpandemic phase was unclear. Additionally, they found that the role of NGOs and the UN during a pandemic in the region was vague. The groups additionally alluded to the relevance of the One Health concept, emphasizing the importance of human and animal disease surveillance and the integration of human and animal health in the control of pandemics.

One of the facilitators noted that most of the participants in his group consisted of high-level officials who have not previously focused on contingency plans for some of their critical resources. For example, contingency plans in many countries did not appear to address employee absenteeism, a phenomena that could greatly affect the size of the critical workforce during a pandemic situation. A concrete plan did not seem to be in place in many of the participating countries for securing borders and supporting the interior with the limited personnel and resources that would be expected in such a crisis. Some countries may not have previously planned for the ramifications of interrupted electricity, sanitation pickup, food deliveries, medical supply deliveries, etc. Although most of these examples represent worst-case scenarios, it is important for countries in the region to have these components incorporated into their contingency plans for pandemics and disasters.

CONCLUSIONS

Over the course of the 4-day conference, a number of common themes were brought to the forefront by the presentations, discussions, and tabletop exercise. Among these is the need to be proactive by taking steps to identify, detect and respond effectively to crises rather than wait for a disaster to occur and then be dependent on external organizations (such as the UN) to address national needs. Participating national governments understood their role as the primary responsible party for the wellbeing of their citizens. The attendees understood the value of being proactive, taking immediate action, and enhancing their own capacity to prepare for, respond to, and recover from emergency and disaster situations. Participants expressed their appreciation for the value of the multisectoral, all-hazards, whole of society approach and pronounced their desire to move forward with such a comprehensive plan.

In addition, participants exhibited a new appreciation for (1) the value of redundancy in emergency management procedures and methodologies; (2) the importance of continuity of operations and continuity of governance procedures; and (3) the critical role of effective coordination and information-sharing mechanisms for enhancing timeliness and effectiveness of their disaster response efforts. Finally, due to the wealth of participant experience and breadth of geographical representation, participants embraced the importance of developing clearly articulated and tested standard operating procedures, coupled with written mutual aid agreements and

procedures at the local, national, regional, and international levels.

As a result of the time shared together at the workshop, participants identified existing gaps in their current national and regional plans and methodologies, examined previous infectious disease outbreaks for lessons learned, considered possible ways to address some of the identified gaps, and built relationships with their regional counterparts.

The IDDRC was one of several workshops planned by the AFHSC, the Center for Disaster and Humanitarian Assistance Medicine, and US combatant commands that focus on emerging infectious disease outbreaks and disaster planning and response as a means of contributing to national, regional and global security.[12] These engagements (workshops, conferences, tabletop exercises) bring together civil and military personnel to develop common strategies on surveillance, laboratory techniques, implementation of public health policies, use of vaccines, and military support for an effective pandemic response. The information obtained from this conference in Abu Dhabi will help to inform ongoing efforts to improve capacity while enhancing the capability of regional countries to respond to complex humanitarian and health emergencies.

Preparing globally to address pandemics is a significant challenge, but the consequences of being unprepared could be catastrophic. Meeting this challenge will require a comprehensive, multidisciplinary approach to building sustainable capacity in partner nations to recognize, prevent, and respond to the threat of emerging and reemerging infectious diseases which are critically important for an effective global response. Additionally, future engagement strategies will be designed to focus on regional partnerships and cooperative agreements geared towards strengthening infectious disease and disaster response efforts.

ACKNOWLEDGEMENTS

The authors thank the following individuals for their presentations at the conference, facilitation of the tabletop exercise, and contributions to this report:

Dr Mahmud Abdallat (Jordan Royal Medical Services); Dr Awni Abulail (Jordan Royal Medical Services); Dr Yousif Al Hosani (UAE Armed Forces Medical Services Corps); Dr Charles Beadling (CDHAM); Dr David Callaway (Carolinas Medical Center); Mr Brian Engel (George Washington University Medical Faculty Associates); Dr Saleh Fares (Zayed Military Hospital); Dr Samir Abdullah Hasan (Iraqi Military Medical Services); Mr Robert Hutchinson (Department of Homeland Security); Mr John Jordan (United States Agency for International Development); Ms Amy Keim (George Washington University Medical Faculty Associates); Mr Chris Lafranniere (United States Central Command); COL Robert Lipnick (Armed Forces Health Surveillance Center); Dr Daniel Lucey (Georgetown University); Ms Daniela Macander (George Washington University Medical Faculty Associates); Mr James Marinucci (George Washington University Medical Faculty Associates); Ms Sharon I. Peyus (Department of Homeland Security); CAPT Kevin Russell (AFHSC); Maj Issam Sebaihi (US CENTCOM); Brigadier General Maurice Sleem (Lebanese Army); CDR Carlos Williams (CDHAM)

REFERENCES

1. Craig AT, Kasai T, Li A, Otsu S, Khut QY. Getting back to basics during a public health emergency: a framework to prepare and respond to infectious disease public health emergencies. *Public Health*. 2010;124(1):10-13.
2. Chretien JP, Blazes DL, Coldren RL, et al. The importance of militaries from developing countries in global infectious disease surveillance. *World Hosp Health Serv*. 2007; 43(4):32-37.
3. Chretien JP, Blazes DL, Gaydos JC, et al. Experience of a global laboratory network in responding to infectious disease epidemics. *Lancet Infect Dis*. 2006; 6(9):538-540.
4. *International Health Regulations*. 2nd ed. Geneva, Switzerland: World Health Organization; 2005. Available at: http://www.who.int/ihr/9789241596664/en/index.html. Accessed November 10, 2011.
5. Lederberg J, Shope RE, Oaks SC Jr, eds. *Emerging Infections: Microbial threats to Health in the United States*. Washington, DC: National Academies Press; 1992. Available at: http://books.nap.edu/openbook.php?record_id=2008&page=R1. Accessed March 15, 2012.
6. Russell KL, Rubenstein J, Burke RL, et al. The global emerging infection surveillance and response system (GEIS), a U.S. government tool for improved global biosurveillance: a review of 2009. *BMC Public Health*. 2011;11(suppl 2):S2.
7. Otto JL, Baliga P, Sanchez JL, et al. Training initiatives within the AFHSC-GEIS: support for IHR(2005). *BMC Public Health*. 2011,11(suppl 2):S5.

8. Influenza Pandemic: Lessons from the H1N1 Pandemic Should Be Incorporated into Future Planning. Washington, DC. US Government Accountability Office; June 2011. Report GAO-11-632. Available at: http://www.gao.gov/assets/330/320176.pdf. Accessed November 3, 2011.
9. Incident Command System. The Federal Emer-gency Management Agency Web site. Available at: http://www.fema.gov/emergency/nims/IncidentCommandSystem.shtm. Accessed November 3, 2011.
10. *Humanitarian Charter and Minimum Standards in Humanitarian Response*. 3rd ed. Rugby, United Kingdom: Practical Action Publishing; 2011. Available at: http://www.sphereproject.org/handbook/. Accessed November 3, 2011.
11. Khan G, Al-Mutawa J, Hashim MJ. Pandemic (H1N1) 2009, Abu Dhabi, United Arab Emirates, May 2009-March 2010. *Emerg Infect Dis*. 2011;17(2):292-295.
12. COCOM Engagements page. Armed Forces Health Surveillance Center web site. Available at: http://www.afhsc.mil/trainingCOCOM. Accessed November 3, 2011.

AUTHORS

Ms Baliga is an Epidemiologist at the Armed Forces Health Surveillance Center, Silver Spring, Maryland.

Ms Tang-Sundquist is a Project Officer, Center for Disaster and Humanitarian Assistance Medicine, Uniformed Services University of the Health Sciences, Bethesda, Maryland.

Mr Hajjar is Lead Consultant, IDEAS Inc, Kirtland, Ohio.

Ms Cooper is Program Manager, Center for Disaster and Humanitarian Assistance Medicine, Uniformed Services University of the Health Sciences, Bethesda, Maryland.

CDR Von Thun is Head, Training and Combatant Command Initiatives, Armed Forces Health Surveillance Center, Silver Spring, Maryland.