needed during the crisis, the information needed to make those decisions, and timely availability of that critical information. In April, 2009, the United States experienced a late-season outbreak of a novel H1N1 influenza virus that led to a full-scale national response. An in-process-review of the performance of biosurveillance efforts at the Centers for Disease Control and Prevention (CDC) was conducted for the first three months of the response.

Methods: Four types of engagement were held to collect information regarding systems, methods, and tools for bio-surveillance: (1) a one-hour meeting with senior Agency response leaders; (2) a series of in-person interviews with CDC subject-matter experts; (3) a focus group with CDC responders; and (4) a focus group with a convenience sample of state and local public health epidemiology practitioners.

Results: Seasonal surveillance systems were the most central to regular reporting and were flexible to the time and volume demands primarily because of the dedication of public health professionals at local, state, and federal levels. Staff-intensive manual collection and reporting efforts degraded as the volume increased. Familiarity with data was important to inclusion in reports. Many critical information requirements were filled from investigation; timeliness and exchange of this information and sharing improved with ability to have federal staff in the field. Quality staff, quality relationships, and effective partnerships were central to effective information sharing domestically and internationally.

Conclusions: Overall, the information exchange was deemed to have been timely and effective. The clarity of critical information requirements was central to the adaptability and efficiency of biosurveillance efforts. The success of information exchange was more a result of the expertise, dedication, and adaptability of staff than the technology. Efforts are underway to increase the coverage and automation of surveillance for the fall.

"Orange Flame" Project: An Integrative Approach to Building Capacity for an Unusual Biological Event

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Preparedness for an unusual biological event (UBE) comprises capacity and capability (know-how and integrative response). Traditional methods for preparing the healthcare system for a biological event fail to achieve real capability for a UBE, as they disregard the unknown agent. Furthermore, they ignore many inherent uncertainties present following event detection.

The most problematic response time to a UBE are the first 48 hours following the event: the greatest uncertainties are definitive agent identification, the scope of the event, and its origin. No governmental directives are expected at this time.

We have developed a model—and a system to implement it—to prepare all responders, mainly on a regional level, to identify and react to a UBE in an integrative and

generic way. Consequently, this model transforms them to a *modus operandi* of an outbreak while the command and control is moved to a national level.

Necessary components of this model are:
1. Setting a generic national doctrine for an unknown agent, by default, a contagious airborne transmissible disease. This doctrine is translated by each agency and institution—civilian or military—to relevant standing orders;
2. Setting a date for a drill—defining an annual timeline for a structured process of planning and training culminating in regional, two-days drills for all participants;
3. Integrating national medical assets, non-medical actors, and decision-makers in the process;
4. A single, multi-organizational, small group that prepares the various agencies, plans and executes the drill, and implements the lessons learned into the doctrine and standard operating procedures; and
5. Peer review of the trainees by veterans of previous drills.

Three "Orange Flame" drills succeeded in building regional capability for UBE, which also serves well for pandemic preparedness.

Methods of Training and Programs to Enhance Preparedness

Disaster Preparedness 101: Preparing Nursing Students for Action

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Introduction: As a result of recent disasters and emerging threats, it is imperative that nurse educators provide students with the foundations to be able to respond to a disaster situation equipped with the tools for action. The purpose of this presentation is to describe the lessons learned from a partnership between a school of nursing and a rural, federally-qualified community health center. Nursing students gained first-hand experience performing a risk assessment—developing, implementing, and evaluating the agencies' ability to manage a large, multi-victim disaster simulation exercise. In addition, this immersion method emphasized the interface relations and collaboration needed between emergency agencies and academic health partners.

Methods: The immersion method of teaching the concepts of disaster nursing was applied while partnering with a rural, federally-qualified, community health center and a group of community health students. This immersion allowed the students to work with the agency to plan, implement, and evaluate surge capacity. In planning and implementing the disaster exercise, students partnered with local agencies to enhance the reality of the exercise. Following the disaster exercise, students conducted a series of focus groups aimed at identifying the agencies' strengths and opportunities for improvement in the event of a disaster; these were shared with the agency.

Results: Students consistently stated that this experiential learning was eye-opening and provided them with more insights than had they just read about it in a textbook. Since this exercise, the School of Nursing was invited to participate in disaster drills within the community, thus providing additional experiential learning opportunities for the students and enhancing communication and collaboration through partnerships.

Conclusions: Partnerships between schools of nursing and healthcare agencies provide excellent avenues to address disaster preparedness and emergency response training for nursing students and agency staff members.

Keywords: community health; disaster; nursing; preparedness; risk assessment

Prehosp Disaster Med

Israeli Trauma Mass-Casualty Nursing Course

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Introduction: Israel is one of the few countries that has had almost 60 years to prepare deal with a variety of mass-casualty situations (MCSs).

The importance of professional training of the nursing staff became especially meaningful after recent conflicts, including the Second Lebanon War and Gaza conflict. Facing this reality, it became important to expand and promote the knowledge of the nurses who treat the injured patients in the emergency department. Under the grant of The American Physicians Fellowship (APF), the first Trauma and Mass Casualty Nursing Course was developed.

Methods: The course was established as a joint effort Emergency Division of the Israeli Ministry of Health, the Israeli Trauma Society, and the Teaching Center for Trauma, Emergency and MCS at the Rambam Health Care Campus. A total of 25 nurses from 16 hospitals participated. The main subjects were treating injured patients during peacetime and during MCSs, and preparedness for MCSs. The course included lectures and simulation drills for expanding the cognitive knowledge and psychomotor skills. Participants in the first course were trained to be the instructors.

Results: The average grade for the lectures and simulations was 4.55 (out of 5), for the knowledge gained, 4.34 (out of 5), and for the organization, 4.77 (out of 5). Participants stressed the importance of the course, as well as the knowledge and practical skills gained.

Conclusions: Professional knowledge is the base for optimal functioning. The Israeli Trauma Mass-Casualty Nursing Course is the first course for training nursing teams and providing knowledge and practical strategies for treating the injured patient during peacetime and MCSs.

Keywords: education; Israel; mass-casualty incident; nurse; training; trauma

Prehosp Disast Med

Methods of Teaching Medical and Non-Medical Personnel to Provide First Aid during Disasters

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Introduction: This study examined first aid training.

Methods: Three hundred twenty non-medical students who passed training at the Ukrainian Scientific and Practical Center for first aid and disaster medicine were studied. The teaching lasted for 48 hours. Students were placed into two groups. The first was made up of 120 students who were taught using the standard methods of teaching. The second group, which was made up of 200 students, was taught using algorithms and practical skills and worked with mankins and moulaged volunteers. The second group also trained at a morgue and the emergency department of Kiev City Hospital. Each group was evaluated with tests at the beginning and end of the training.

Results: Participants in the first group correctly answered an average of 76% of the test questions before training, and 84% after training was complete. The second group averaged 74% and 95% respectively. At the end, the speed of implementation of manipulations in the second group was 45 seconds less than the first group. During implementations of practical manipulations of a neck collar and bandages, the first group experienced 48 errors, wile the second group experienced only 12.

Conclusions: Moulaging methods, emergency department experience, and algorithms for providing medical care are instrumental for the education and training of the theoretical and practical skills.

Keywords: disasters; education and training; first aid; medical personnel; non-medical personnel

Prehosp Disaster Med

Disaster Risk Reduction in the Western Pacific Region: Strengthening Health System Preparedness for Public Health Emergencies through Safer Health Facilities

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Background: Countries in Asia and the Pacific are most affected by disasters due to natural hazards. Nine of the top 10 countries with the highest number of disaster-related deaths in 2008 were in Asia. Recent events have shown the occurrence of hydro-meteorological, geophysical, climatological, biological, and human-generated hazards in the region. Apart from economic losses, deaths, and injuries, natural hazards affect the healthcare system through infrastructure damages and functional disruption.

Methods: The World Health Organization Regional Office for the Western Pacific (WHO/WPRO), with support from the European Commission Humanitarian Aid Department (ECHO) launched the Regional Roll-Out of the International Strategy for Disaster Reduction (ISDR) Campaign on Hospitals Safe from Disasters by strengthening health systems preparedness for emergencies through safer hospitals and health facilities. The campaign has five key result areas: (1) assessment of hospital vulnerability; (2) tools and guidelines for disaster management planning; (3) enhance-