

Methods: A 14-question survey was administered via structured interviews to individuals occupying activated HEICS leadership positions at the NCKUH about the organization, structure, and function of the HEICS units and sub-units they led and the job actions they performed from 25 March to 16 June 2003.

Results: A total of 33 persons (87%) occupying 39 of 44 (89%) activated HEICS leadership positions directly participated in the survey. Collectively, the participants reported: (1) the creation of four new HEICS unit leaders and corresponding units during the outbreak, including the infection control officer (management section) and the SARS assessment, isolation, and critical care unit leaders (operations section); and (2) the creation of six new HEICS sub-units, including functional areas for fever screening, the SARS assessment, and resuscitation outside of the hospital, and SARS patient care, SARS critical care, and employee isolation inside the hospital; and (3) the performance of new job actions related to infection control by all HEICS unit leaders.

Conclusions: The HEICS provides a flexible framework that appears to have assisted the NCKUH in the organization of its emergency response to the SARS outbreak in Taiwan.

Keywords: coordination and control; hospital emergency incident command system (HEICS); implementation; outbreak; severe acute respiratory syndrome (SARS); Taiwan

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Pandemic Planning for Primary Care: How to Set Up a Community Assessment Center

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New Zealand has strengthened its national pandemic plans over the past two years. However, the organization of primary care in a pandemic has received less attention, even though this sector is both essential and highly vulnerable in a pandemic. A review of the literature suggests that this situation may be common in other countries. The concept of non-traditional sites for delivery of basic health services is mentioned in a number of national plans, but often do not appear to be fully developed.

This presentation will describe a project in Wellington, New Zealand, which assessed whether community-based assessment centers (CACs) would be feasible in the region. Community-based assessment centers are defined as centers which would provide triage, initial assessment, and outpatient management of cases of pandemic illness. The rationale is to streamline services, relieve the burden on other primary care services, and improve triage to secondary care. Such centers also could be used to distribute antiviral medication and vaccines.

Based on the literature, a checklist for CACs was developed. This checklist then was used to assess potential sites in the region. Using FluAid, the anticipated excess consultations in primary care were assessed, as well as whether the proposed sites could cope with the load.

This study concluded that CACs are feasible and would

be a useful part of the primary care response to a pandemic. Considerable detailed planning is required in the inter-pandemic period, including funding, supplies, development of detailed resources, and a strong focus on infection control training in primary care.

Keywords: community-based assessment centers (CACs); pandemic; primary care; review

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Theme 10: Planning for Mass Gatherings

Chairs: Andrew Bacon; Demetrios Pyrros

Hajj: The Oldest and Largest Mass Gathering

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Introduction: Hajj is an annual, six-day, religious event, in which >2.5 million Muslims from >140 countries, including Saudi Arabia, gather at the holy shrine of Mecca to perform this cornerstone ritual of Islam. This study aimed to give an overview of Hajj and the different health problems repeatedly encountered in this event.

Methods: An extensive review was conducted using the computerized databases Medline and Medscape for searches from 1960 through September 2004. Articles containing information pertaining to Hajj were read, abstracted, analyzed, and compiled.

Results: Various large-scale, health problems and critical illnesses were reported during Hajj. Non-communicable problems included stampede mass casualties, motor vehicle trauma, fire-related burn injuries, skin diseases, accidental hand injury during animal slaughter, under-utilization of automated external defibrillators (AEDs), and terrorist actions. Communicable problems included outbreaks of multiple infectious diseases; for example, a new strain meningococcal meningitis and Rift Valley encephalitis.

Conclusions: Hajj represents a challenge to Saudi health authorities. Hajj reconnaissance and developing an understanding of various factors and problems associated with it should be the first step for planning, prevention, and resource allocation of hazards.

Keywords: disease; Hajj; mass gathering; Saudi Arabia

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Emergency Planning for Mass Gatherings at Dragon Stadium in Porto, Portugal

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Football, or soccer as it is called in the United States, is probably the most popular sport in Europe. The passion people have for it makes football games, especially those of the Europe Cup, mass gatherings with special characteristics. History has presented us with sad examples of what can happen if things go wrong during football matches.

The Dragon Stadium at Porto is a new UEFA, five-star facility that frequently holds major football events, such as Portuguese Superleague games and Champions League matches. The average attendance is well over 30,000 people per game.

The medical emergency plan designed for this stadium will be described, including what events can trigger the plan and who can activate it. The stadium layout will show the locations of the central medical post and satellite posts. Communication protocols, lists of stored drugs, and medical team composition and location during matches will be discussed. Cardiac problems are among the most common major emergencies during this kind of event; the number and placement of defibrillators will be shown. Also presented are the number and location of rescue vehicles, together with means of evacuation.

Data from a year of operation will be presented, including the number and type of events, actions taken, and lessons learned. Factors such as weather, risk, and importance of the game will be discussed. It is shown that bad weather increases orthopedic injuries and that matches between rival teams generally result in more emergency cases. The analysis of this one-year experience led to minor changes in the emergency planning that also will be described.

The emergency plan responds efficiently to the prehospital needs for events of such type and is integrated well with the Portuguese Emergency System.

Keywords: Dragon Stadium; football; medical emergency plan; Portugal; soccer

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Hellenic National Centre for Emergency Care's Preparedness for the Olympic Games in Athens 2004

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Greece, the birthplace of the Olympic Games, was designated to host the 28th Olympiad in Athens during the summer of 2004.

To ensure the success of the 28th Olympiad in Athens, the Hellenic National Centre for Emergency Care (HNCEC) had to plan for providing emergency prehospital health care and transportation for all the people that would visit the Olympic and Paralympics Venues in Athens and other Olympic cities.

To respond to all these needs, the HNCEC appointed a Committee for Operational Planning to edit and perform the plan for providing health care during the Olympic Games. Health services provided included conventional health care but also mass-casualty health care related to natural disasters, transportation crashes, terrorist attacks, and chemical, biological, radiological, and nuclear CBRN threats.

The Committee faced a challenge in planning for an adequate response and for the acquisition of special equipment, ambulances, a new command and coordination center, insertion of new communication systems (tetra, AVL, GPS), enforcement and training of HNCEC's personnel, special plans for mass-casualty, healthcare-related disasters, terrorist attacks, and CBRN threats. All plans had to respect interagency cooperation, crisis communication, and

other security issues. For the coverage of all athletic venues, "Olympic Village" Olympic Family hotels, VIPs and the media centers, 100 ambulances were deployed, along with 13 mobile intensive care units (ICUs), and five emergency medical service motorcycles. For the coverage of the rest of the city, 100 ambulances, ten mobile ICUs, and six emergency medical services (EMS) motorcycles were deployed. During the Olympic Games in Athens, 413 persons had to be treated and transported from the Olympic Venues to the Olympic Hospitals or the Olympic Village Polyclinic, while from the other Olympic cities, 34 persons had to be treated and transported.

The 28th Olympiad in Athens was successful, and all the international media reported the same. The Greek health services fulfilled the requirements of the organization, contributing to the success of the games.

Keywords: Athens; emergency medical services; Greece; healthcare; Hellenic National Centre for Emergency Care (HNCEC); Olympics; planning

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Modeling Mass Gatherings and the Development of Theory

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Mass gatherings are an increasingly common feature of modern society, and their impact on the demand for health services has been documented widely. However, descriptive papers that focus on a single event or event type dominate the literature, and, while these contribute to our understanding of the patient care required at such events, they do not provide an adequate analysis of the health effects of the mass-gathering phenomenon itself. This presentation argues for the development of conceptual models and theories to underpin mass-gathering research. The development of theory and conceptual models provides a strategy to improve the understanding of the health effects of mass gatherings across different contexts and situations. Two preliminary conceptual models are presented as a means to encourage further debate about the dominant influences on the health of people where crowds gather, and to promote less superficial forms of analysis of the research data.

These conceptual models are based on the idea that mass-gathering health can be understood as an inter-relationship between three domains: (1) the biophysical; (2) the environmental; and (3) the psychosocial. Key features that influence the rate of injury and illness characterize each domain. These key features are well understood and combine to produce an effect—the patient presentation rate, and a response—the health plan. A new element, the latent potential for injury and illness, is introduced as a mechanism for describing a precursor state important in assessing health risk during mass gatherings.

Keywords: conceptual models; health risk; mass gatherings; theories

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