

## Keynote 4

### Myths and Realities of Disaster Epidemiology

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Since the mid-1980s, there have been major changes in approaches to manage disasters and conflicts. Among others, expansions in global travel and major improvements in telecommunications have transformed the ways in which we provide relief and manage disasters. International policies to respond to crises as well as techniques to improve the effectiveness of interventions have come a long way in the last few decades. Along with many positive changes also have come stereotypes and preconceived notions of how disasters and conflicts affect a community and how these communities react to shocks. This presentation will explore some of these notions from epidemiological perspectives and suggest sustainable future directions.

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## Oral Presentations—Public Health

### Socioeconomic Disaster Risk in Affluent Society

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Socioeconomic inequalities in health are well documented in the relatively affluent, industrialized world. Components of social status, such as income, education, primary language, legal status, and ethnicity, might seem to have little to do with the impact of ostensibly random “acts of nature”, such as hurricanes, floods, and earthquakes. However, ecological upheavals are not egalitarian; they disproportionately affect those in lower socioeconomic levels. Many high-risk geographical areas have a disproportionately high percentage of marginalized populations, and this same population is at a disadvantage for preparation, evacuation, response, and recovery. Multiple peer-reviewed articles and anecdotal reports demonstrate that Hurricane Katrina disproportionately affected the most socially vulnerable. This presentation will review disaster vulnerability and compare known risk factors to what occurred. It will review cultural and economic issues that put people at greater risk; what prevents their adequate preparation and evacuation, how disasters may disproportionately affect health, and finally, specific recovery issues.

**Keywords:** disaster; public health; risk; socioeconomic status; vulnerability

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### An Outbreak of Equine Influenza in Eastern Australia: Lessons for Pandemic Planners

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On 08 August 2007, 13 horses from Japan were quarantined in Melbourne and Sydney. Blood samples showed that five horses were positive for equine influenza. This led to the first known outbreak of equine influenza in Australia. The first horses became ill on 17 August and the disease spread rapidly throughout Northern New South Wales (NSW) and South East Queensland. By 10 October, there were 4,500 infected premises covering 278,000 square kilometres throughout NSW and Queensland.

A complete restriction on horse movement was implemented. This led to approximately 250 horse owners voluntarily quarantining themselves with their horses at an equestrian center approximately 200 kilometers from Brisbane near the NSW border. While the Queensland Department of Primary Industries and Fisheries retained responsibility for the disease outbreak, a team based on the State Disaster Coordination Group provided the infrastructure to support the operation. From a health perspective, catering, environmental health, and acute medical and mental health services were provided at the equestrian center for approximately six weeks. The decision to vaccinate horses led to a mammoth logistics operation including sourcing overseas vaccines, decision making by priority groups, security and dispersal of vaccines, acquisition of syringes, etc.

The outbreak was eradicated successfully. Contact tracing was almost 100%. Social distancing could not be achieved. The last case occurred on 25 December 2008 and by 31 January, 112,000 horses had been vaccinated. The outbreak cost \$3.35 million(m) in lost equine business, betting turnover dropped by \$327 m, the NSW Government spent \$46 m, and the Australian Government provided \$268.8 m in aid.

The successful strategies included standstill orders and vaccination. A government inquiry identified some procedural issues at the quarantine entry points that are being investigated. Using the disaster management system to support the lead agency proved effective, and provides an appropriate model for pandemic planners.

**Keywords:** Australia; equine influenza; outbreak; pandemic; quarantine; vaccine

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### Health Threats and the European Commission

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The threat of a pandemic and other major health threats, along with the terrorist attacks in the US in September 2001 prompted governments and international bodies, with responsibilities related to health protection, to review and reinforce policies, contingency plans, and resources to prevent and mitigate the effects of such threats. The need for joint action in the European Union (EU) led to the

establishment of the Health Security Committee. Since then, health threats activities have been, and are still, under development mainly within the framework of the Health Threats Unit at the Health and Consumers Directorate General (DG SANCO).

The main aim of the European Commission's actions within the health threats area is to facilitate cooperation and coordination within the EU. Areas of great concern are surveillance, reporting, and preventing communicable diseases, performed with the technical support of the European Centre for Disease Prevention and Control (ECDC). Other areas of importance are preparedness planning and response for chemical, biological, radio-nuclear (CBRN) events, and generic preparedness planning and response. Technical guidance documents within these areas are published. Technical tools for facilitating reporting and information sharing are available. Training and exercises are performed regularly. Close cooperation with international organizations, such as the World Health Organization (WHO) and the Global Health Security Initiative (GHSI), are established. Cooperation and coordination between the different services of the European Commission also are important factors for the successful management of major events and crises.

**Keywords:** European Commission; health threats; pandemic; public health; terrorist attacks

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### Preparing Prisons for Health Emergencies

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**Introduction:** Prisons generally are organized and well-equipped for emergencies, including power outages, extreme weather, labor actions, and unrest among inmates. Emergencies generated by unusual health conditions such as influenza or a rapidly spreading gastro-intestinal outbreak present unusual challenges in an incarcerated population and its associated workers.

**Methods:** The American Correctional Association (ACA) has been encouraging all member organizations to plan for a possible pandemic influenza event, with many state and local governments simultaneously expecting every agency to have a "flu plan". Guidance developed for emergency response agencies and traditional health organizations requires adaptation to the culture of incarceration. A university-based health emergency preparedness program has worked with the ACA to provide materials and workshops on planning and exercising for flu and other major health emergencies.

**Results:** The evaluations of the several influenza planning/exercise workshops presented at the ACA have been positive. The interactive approach with practical tools for considering health emergencies has been well received. Understanding the mutual risk to prisoners and staff members is a critical step. Translating tools developed for health facilities allowed participants to return to work better prepared to integrate health emergencies into the facility's emergency plan, and to efficiently organize staff.

**Conclusions:** With a concentrated population disproportionately drawn from populations at high risk for poor

health, prisons and jails present a great challenge to planning for health-related emergencies. Collaboration between corrections and health emergency planners can lead to effective responses.

**Keywords:** health emergency; influenza; planning; preparedness; prison; public health

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### Evidence-Based Decision-Making in Disaster Relief Operations

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**Introduction:** The Good Humanitarian Donorship (GHD) Initiative is an international effort by donor countries to improve donor practices in the aftermath of disasters. For the 2007–2008 meeting cycle, the US Office of Foreign Disaster Assistance commissioned a study on evidence-based decision-making in disaster relief operations.

**Methods:** The authors performed full searches of original research, reports, and reviews using MEDLINE, PubMed, and databases of the selected institutional libraries. Keywords were "evidence", "evidence bases", "decision-making", and "humanitarian assistance". The authors also used unpublished data from disaster medical coordinators worldwide.

**Results:** Twenty-two information management initiatives were identified. Evidence-based disaster management varied between the medical, public health, and humanitarian communities. Clinical medicine emphasized evidence from systematic research in which data possessed a hierarchy of strength based on the method of acquisition. By contrast, public health emphasized evidence from rapid health assessments, population-based surveys, and disease surveillance for which the strength of evidence obtained was not measured easily by the grading scales of evidence-based medicine. Humanitarian assistance was characterized by eminence-based decisions.

**Conclusions:** Twenty-six recommendations emerged from the study. A pilot course on needs-based decision-making, sponsored by Sweden, is currently under development.

**Keywords:** decision making; disaster; evidence-based; Good Humanitarian Donorship; relief

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### Public Health Services—Coping with the Challenges of Epidemics in the 21<sup>st</sup> Century

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**Introduction:** Since the end of the 20<sup>th</sup> century, the discipline of public health and the public health system have found themselves facing old and new challenges as never before, including the emergence of new epidemics and the re-emergence of infectious diseases. Public health should look at this phenomenon not as a threat but as an opportunity to improve by investing in public health system preparedness. The aim of this study was to identify the services that must be upgraded in order better prepare for epidemics such as pandemic influenza.