

as we move forward in strengthening our response capabilities. These programs are sponsored by the HHS's Office of the Assistant Secretary for Preparedness and Response (ASPR), which provides Federal guidance and policy direction; the Agency for Healthcare Research and Quality (AHRQ), conducting research and evidence-based guidance for the US healthcare system; the leadership of the Office of the US Surgeon General (OSG) in supporting and encouraging volunteer medical and public health response teams to augment local healthcare; and US Department of Homeland Security (DHS) training for healthcare staff, leaders, and executives offered at its federal training facilities. This presentation also will summarize public health and medical preparedness synchronization in current and future Federal planning and funding initiatives. The most recent findings relating to integration of hospital and public health preparedness activities, in light of the recent H1N1 outbreak, also will be addressed. This critical update presents current efforts at the US national, state, and local level for hospital and healthcare preparedness activities and how these issues affect each healthcare leader. **Keywords:** disaster; funding; government; health care; preparedness  
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### Disaster Preparedness in America

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**Introduction:** After 11 September 2001, the threat of further attacks on America soil stimulated the recognition of the need for improved preparedness. Since that time, >100 organizations, Federal and private, were created to produce guidelines for disaster planning and response. About eight billion dollars have been spent in preparing the nation for disasters caused by manmade or natural hazards.

**Objective:** The goal of this study is to identify the most important lessons learned related to disasters preparedness over the past eight years.

**Methods:** This study consisted of a systematic literature and Internet review.

**Results:** The medical responses to the Minneapolis bridge collapse and to Hurricane Gustav showed improved population evacuation, prehospital response, and hospital deployment. Nevertheless, many areas are still of concern and require immediate attention. Hospital funding has decreased, there is no unified and standard approach for surge capacity planning, there are no standard hospital plans to manage sudden mass-casualty events, and there is a lack of realistic drills at the prehospital- and hospital-level. In May 2008, a survey was presented to the US House of Representatives named "Hospital Emergency Surge Capacity: Not Ready for the Predictable Surprise". It concluded that neither the hospitals nor the trauma centers at seven major US cities would have been able to manage the number of victims during an incident similar in magnitude to the train bombing in Madrid.

**Conclusions:** After eight years of planning and preparedness and eight billion dollars in spending, there still are major gaps in disaster preparedness in America.

**Keywords:** guidelines; preparedness; response; standards; United States

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### Control of Patient Flow during Wartime

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**Introduction:** Overcrowding of emergency departments (EDs) and increased patient volumes affect the ability to provide quality care. Optimization of patient flow can alleviate such overcrowding. During the 2<sup>nd</sup> Lebanon War, the MOH issued a directive ordering patients to go to specific EDs in a large metropolitan area. Admissions to all general hospitals were classified as: (1) medical; (2) childbirth; (3) civilian trauma; and (4) war-related trauma.

**Objectives:** To analyze the impact of the Ministry of Health (MOH) decision to control the patient flow to EDs during the 2<sup>nd</sup> Lebanon War.

**Methods:** Classified admissions to the various EDs during the 2<sup>nd</sup> Lebanon War were evaluated daily and graphs were created to help identify trends and determine the need for further intervention.

**Results:** Significant differences were found between the following ED admissions, before and after the notification: medical admissions in all hospitals; non-war trauma admissions, in all hospitals; births in one hospital; and war casualties admissions in one hospital.

**Conclusions:** It is possible to impact on the flow of patients to EDs and rationalize the use of resources, in order to direct patients to the ED best able to care for them. While this paper dealt with the patient flow during a period of armed conflict, the findings may be relevant to other situations in which control of patient flow is deemed necessary. Direct communication with the public is recommended in order to minimize delay between the issuance of a directive and its effective implementation.

**Keywords:** emergency department; hospital; patient flow; resources; war-time

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### Who Responds to Emergency Preparedness Messages: The Story of Lions, Lambs, and Lone Wolves

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Despite a considerable investment of US federal funds directed at increasing individual preparedness since the 2001 terrorist attacks, overall population preparedness barely has increased. In trended US survey data collected between 2003 and 2008, the National Center for Disaster Preparedness (NCDP) has found that the proportion of

citizens reporting having a minimal family emergency plan only has increased from 37% to 43%. More detailed questioning of respondents reveals that the proportion of those having complete and functional preparedness plans and supplies is, at best, half that amount. Interestingly, in a national, random-digit dial survey conducted by NCDP in 2008, it was asked whether others would turn to the respondent to lead them in an emergency (the “Lions”), whether they would safeguard only themselves and their families (the “Lone Wolves”), or whether they would wait for others to help them (the “Lambs”). In this and other replicated survey work it was found that the trend among the general population is that approximately 20% are Lions, 60% are Lone Wolves, and the remaining 20% are Lambs. The uptake of actual preparedness varies significantly among these groups as well. In a logistic regression analysis of the 2008 national survey data, Lions were nearly three times as likely as Lambs to have complete family emergency plans, and Lone Wolves were nearly twice as likely. Given that it may be difficult to increase overall individual or family preparedness beyond a fixed ceiling, preparedness strategies might be more effectively customized by enhancing skills and situational awareness among the Lions, and by encouraging some proportion of the Lambs to be more skilled and more community-focused (so as to be more like Lions, and more likely to help Lambs). This presentation will explore how Lions, Lambs, and Lone Wolves can be incorporated in to a “herd preparedness” strategy.

**Keywords:** emergency preparedness; family; individual; planning; population

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## Public Health

### US Public Health Lessons Learned from Hurricane Responses

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Hurricane Katrina (2005), was the costliest and one of the five deadliest hurricanes to ever strike the United States. The response of the US government, although massive, was widely criticized and resulted in extensive assessments of lessons to be learned across government and in individual agencies. The (US) Centers for Disease Control and Prevention (CDC), the lead public health agency, participated in these assessments and implemented changes to its response structure and procedures. Changes implemented included: (1) revisions to the Agency’s incident management system; (2) developing systems for improving field coordination with other medical response partners and other national response agencies, including the Department of Health and Human Services; (3) developing new mechanisms for coordinating with state health departments; (4) streamlining systems for providing assistance to states; (5) expanding and diversifying inventories of emergency medical supplies to be delivered to local authorities; and (6) training CDC’s own responders. Subsequent hurricane respons-

es identified other opportunities for improvement. In particular, health surveillance for disaster-related morbidity and mortality remains challenging in the absence of national reporting for these conditions outside of disaster settings. This presentation will identify challenges and lessons learned in the public health response to Hurricane Katrina, describe changes made to the national public health response system, and report on new and persistent challenges identified in subsequent responses.

**Keywords:** hurricane; Hurricane Katrina; lessons learned; public health; response

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

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**Introduction:** Since the closing stages of the 20th century, public health as a discipline and the public health system have found themselves facing old and new challenges. One challenge is coping with the emergence of new epidemics and the re-emergence of infectious diseases. Public health should view 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 to better prepare for epidemics such as pandemic influenza.

**Methods:** A new model for the public health system was developed and validated, based on the four health system framework functions: (1) stewardship; (2) resource generation; (3) financing; and (4) provision of services, determined in the World Health Report of 2000, as well as on the essential public health functions.

**Results:** This model includes: (1) the roles and performance standards required from the public health system in developing and executing a contingency plan to combat epidemics of infectious diseases; and (2) a checklist that allows examining and evaluating whether the contingency plan is feasible in face of the essential public health functions.

**Conclusions:** A framework to evaluate public health system performance and structure, identify strengths, weaknesses, and gaps, as well as how to create a platform to upgrade their infrastructure in order to cope with the current challenges will be suggested.

**Keywords:** epidemic; public health

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### Emergency Department Preparedness for Early Detection and Management of an Infectious Disease Outbreak

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**Introduction:** Singapore is a global travel hub with many thousands of visitors passing through its borders every day. Tan Tock Seng Hospital is the designated “infectious disease