

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 21st 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

hospital” in Singapore and its staff are tasked with fronting the national response to an infectious disease outbreak such as the response during the severe acute respiratory syndrome outbreak in Singapore in 2003 and the ongoing global swine influenza outbreak. This report aims to describe the Tan Tock Seng Hospital’s systemic approach of handling any infectious disease outbreak that might be encountered in daily operations.

Methods: Early detection is critical. Hospital personnel stay vigilant to patients who may present with similar patterns of disease to conduct epidemiology studies. An updated screening form was devised so that patients and visitors are screened for history and symptoms that may have an implication on the spread of diseases. Screening the horizon for information, information is obtained from various sources such as World Health Organization (WHO) Websites, (US) Centers for Disease Control and Prevention (CDC), and medical and non-medical media to try to stay abreast on the latest outbreaks in order to constantly update the screening mechanism.

Contact tracing also is implemented in the Hospital’s screening mechanism such that the system allows personnel to track down the patients and visitors who might be exposed to an index case via an electronic medical record system.

Results: Hospital personnel have experienced the impact of the H1N1 and avian influenza outbreak in Southeast and East Asia, and also experienced, first-hand, dengue, malaria, and chikungunya disease outbreaks. This mechanism of early detection and a constantly updated screening system have allowed Tan Tock Seng Hospital to stay abreast of these disease outbreaks. In addition, contact tracing has been performed effectively so as to identify specific disease hotspots like in the case of outbreaks of dengue, chikungunya, and malaria.

Conclusions: Infectious disease outbreaks are constantly evolving issues facing healthcare institutions. It is important to stay vigilant in order to expect the unexpected outbreak in the future.

Keywords: detection; infectious disease; management; outbreak; preparedness; screening

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Large-Scale Public Health Emergencies: How Long Do They Last and How Many Staff Do You Need?

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Introduction: Multiple large-scale events of public health significance (e.g., natural disasters, pandemics, foodborne outbreaks, acts of bioterrorism) have occurred in recent years. Each required diverting staff from critical public health activities to meet the emergency response at-hand. It is critical that public health leaders be able to estimate: (1) the number (and specialties) of staff that must be diverted from their regular responsibilities to the emergency response; (2) the impact of diverting staff from critical activities; and (3) the duration of these reassignments. **Methods:** We reviewed published and unpublished US Centers for Disease Control and Prevention (CDC) staffing,

deployments, and duration-of-event data from 2001–2009—the time period during which increased resources have been invested in public health preparedness and response activities. The events studied were: (1) intentional release of *Bacillus anthracis* through the US Postal System [2001–2002]; (2) severe acute respiratory syndrome (SARS) [2003]; (3) monkeypox US [2003]; (4) South Asia Tsunami [2004–2005]; (5) Marburg, Angola [2005]; (6) Hurricane Katrina, US, [2005]; and (7) Salmonella Saintpaul, US, [2008]. Initial analyses of Novel H1N1 Influenza worldwide [2009] also were conducted.

Results: The mean duration of the “emergency response” phase for each event was 102 days (range 63–143 days.) The mean number of CDC staff deployed to respond to each of these events (to either the field or Emergency Operations Center) was 590 (range 70–1,324).

Conclusions: Analyzing workforce needs can be useful to public health managers and leaders for several reasons including: (1) better defining various objectives of the emergency response knowing that increased surge staffing will exist for a limited time; (2) anticipating the implications of reducing or curtailing activities in order to divert resources to the response; and (3) developing specialty-specific strategies to recruit and train staff that will be needed in the public health emergency response.

Keywords: emergency response; health staff; preparedness; public health emergencies; resources

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Assessment of Community Healthcare Services Delivery during Operation Cast Lead—A Cross Sectional Survey

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Background: On 27 December 2008, the Israeli Defense Forces initiated Operation Cast Lead, aiming to strike the infrastructure of the terrorist organizations in the Gaza Strip. An emergency situation was declared on the home front, allowing the security forces special jurisdiction over the area. The Home Front Command’s Medical Operation Center, in cooperation with the Superior National Health Authority of the Ministry of Health, coordinated the delivery of community health services.

Objective: The objective of this study was to evaluate the delivery of community health services to the Israeli civilian population living in proximity to the Gaza Strip.

Methods: A telephone survey was conducted during the 20th–24th days of the operation. The sample was drawn from the Jewish population living within a radius of 40 km from the Gaza Strip. Questions included need and use of healthcare services, satisfaction with healthcare services, and demographic variables.

Results: A total of 901 interviews were conducted. A total of 91.3%, 76.0%, and 89.6% of those who needed primary or a specialist health care or drug prescriptions, respectively, received these services during the operation. The reported satisfaction with the healthcare services during the combat period was very high.