

hypercholesterolemia (17.1%), diabetes (13.4%), psychiatric illness (13.4%) and pulmonary disease (13.3%) suggested significant chronic disease burden. Substance abuse, HIV, and TB were rare. Of the evacuees with chronic disease, 42.4% lacked their medications upon arrival; 34.5% arrived at the shelter with symptoms warranting immediate medical intervention including dehydration (12.3%), dyspnea (12.0%), injury (10.0%), chest pain (9.3%), and fever (8.5%). Infected wounds, suicidal ideation, and recent sexual assault were rare. Known history of chronic disease and lacking medication upon arrival were the greatest risk factors for presenting with acute symptoms (OR 3.24; CI 1.96, 5.35).

Conclusions: The displaced, sheltered Katrina population was vulnerable and carried a significant acute and chronic disease burden; population-based knowledge guides relief preparation and response.

Keywords: disease burden; evacuees; Hurricane Katrina; shelter; vulnerability

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Public Health Issues Associated with a Radiological Medical Emergency Involving Mass Casualties

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The public health community will play a number of key roles in the event of a nuclear or radiological emergency such as a terrorist attack involving a radiological dispersal device. These activities include: (1) treating immediately life-threatening injuries; (2) developing and implementing criteria for entry into and operations at the incident site; (3) monitoring the health and safety of workers reporting to the event; (4) field investigations and monitoring of people for radiation exposure and contamination; (5) assuring the safety of shelters for people displaced by the event, as well as assuring the availability of healthy food and water supplies; (6) coordinating the gathering of biological samples and laboratory analysis of these samples; (7) implementing a wide range of disease control and prevention measures; (8) developing medical intervention recommendations; (9) treating impacted citizens; (10) dealing with contaminated decedents; and (11) establishing a registry and evaluating the long-term health and medical impacts on the public and emergency personnel. The Centers for Disease Control and Prevention (CDC) is developing guidance, training, and information materials that may be useful to the public health community. Some of these materials are currently available on the Internet at <http://www.bt.cdc.gov>, and others are in various stages of development. This presentation will highlight some of these materials, and the audience will be encouraged to comment on current CDC activities.

Keywords: disease; mass casualties; preparedness; public health; radiological dispersal device

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Combined Clinical and Public Health Response in the Aftermath of Hurricane Katrina: Operation Assists and Utilization of Mobile Medical Units

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In the immediate aftermath of Hurricane Katrina, the Children's Health Fund (CHF) and the National Center for Disaster Preparedness (NCDP) at the Columbia University Mailman School of Public Health combined resources to create Operation Assist (OA). The CHF is a non-profit organization that provides comprehensive medical care to underserved children in rural and urban sites across the US using fully equipped, mobile medical units (MMU). Initially, deploying MMUs and medical teams from five of its national sites, OA was able to provide health services in Mississippi and Louisiana. Venues were coordinated with state emergency response officials, but the MMUs were able to follow displaced populations who moved en masse from one shelter to another. Units were able to provide a wide range of services including vaccinations, wound care, acute and chronic care, and mental health support. The staff include experienced, physician-led health care teams, and are equipped with a computerized patient database and satellite communications capability. Operation Assist coordinated services through the New York headquarters of the CHF, rotating teams through sites in the affected areas. More than 12,000 medical encounters were provided within the first three months. Services have been provided continuously, and now are supported by newly raised funds. Through the coordination with NCDP, OA also conducted extensive field surveys of health and mental health needs among displaced children and families living in a variety of shelter settings. Data and analyses collected in these surveys have helped to drive program development and ongoing advocacy on behalf of displaced persons.

Keywords: advocacy; children's health; displaced population; healthcare; Hurricane Katrina

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Hurricane Relief Efforts Outside of an Overcrowded and Overworked Hospital

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National Disaster Medical Assistance Teams (DMATs) established an aid station outside of West Jefferson Hospital, the only operating hospital on the West Bank of New Orleans. There was a pressing need for both routine and emergency medical care. The Georgia-3 DMAT took over operation of a three tent facility on the lawn of the hospital from the Oregon DMAT team on October 26. Treatment tents were set-up as Red for Emergent and or

Complex, Yellow for Urgent, and Green for stable. Problems ranged from simple prescription refills to dangerous falls and pulmonary embolism and heart failure. Numerous patients with lacerations, sprains, minor fractures, and/or abscesses and infections that needed both incision and drainage as well as IV antibiotic administration were encountered. Oxygen and nebulized treatments were made available using a multiple patient manifold connected to a single Oxygen tank. Simple chemistries and a hematocrit measurements were available. The hospital was able to augment diagnostics with advanced laboratory studies and X-ray and Computerized Axial Tomography Scanning (CT) as needed. Direct radiologic-viewing was available by laptop computer, and final reading interpretations were provided by radiologists from the hospital. A total of 1,067 patients were seen during the 9 days of 10 to 12 hour shifts. The number of hours were gradually decreased with the intention to phase out of services November 15 when two other hospitals were scheduled to come online.

Keywords: hospital; hurricane; overcrowding; overstaffing; public health; relief

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Poster Presentations—Theme 13: Public Health

(210) Model for Medical Records for International Disaster Relief Operations

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The ability to triage a large number of patients during an international disaster relief operation (IDR) is important. In order to ensure effective triage and treatment, useful and practical medical records are necessary. In 2003, the Shinchi's Medical Record (SMR) for IDRs was proposed. The SMR is contained on only one sheet of paper that includes the medical record, laboratory data, and prescribed drug sheet. Use of SMR also registers the urgency class and primary diagnosis. Use of the SMR was simple, inexpensive, and easy to prepare for many patients. After the publication of the SMR,¹ the instrument was revised according to the advice of 61 doctors and nurses who had participated in IDRs. The laboratory data sheet was deleted, because few medical teams were able to use laboratories in field medical facilities. The authors referenced the same kind of medical records used by the Japan Medical Team for Disaster Relief, the International Committee of the Red Cross, and other non-governmental medical teams. According to this medical record information, the SMR was revised and renamed the "IDR Medical Record". The IDR Medical Record is more useful because it is easier to record the chief

complaints and symptoms. This Medical Record should enhance effective medical relief activities in IDRs.

References

1. Shinchi K: Proposal of a model for medical records for international disaster relief operations. *Mil Med* 2003;168:120–123.

Keywords: international disaster relief operations; medical records; model; relief

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(211) Assessment of Major and Minor Events that Occurred in the Kingdom of Bahrain during the Last Century Using a Disaster Severity Scale Score

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Introduction: Epidemiological research about disasters is difficult to perform, since data collection may not be possible during the disaster.

Objectives: The objectives are to enumerate and assess the severity of the disasters that occurred in the Kingdom of Bahrain during the last century using a Disaster Severity Scale (DSS), to set a standard method for the classification of previous disasters, and to improve disaster management and planning.

Methods: Data will be collected from reports of the Civil Defence Directorate and the Ministry of Interior of the Kingdom of Bahrain and will be used to calculate the DSS Score. Disasters will be classified into major and minor disasters according to the number of deaths and severity of the damage. The number of deaths will be compared with the obtained DSS Score. A seasonal trend for different types of events will be obtained to assess if there is a relationship between the type of event and the time of the year in which it occurred, as related to the weather conditions existing at that time.

Keywords: Bahrain; deaths; Disaster Severity Scale; major events; minor events

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(213) Tehran Residents' Knowledge, Attitude, and Practice Regarding Earthquake Preparedness

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Introduction: Earthquakes are the most prevalent natural hazard to result in a disaster in Iran. More than 70% of all Iranian cities—including the capital, Tehran—have been built over zones of geological weakness (faults). Preparedness in disaster management can minimize the loss of life and property, and one of the most basic elements of any disaster preparedness program is public education. Assessing the public knowledge, attitude, and practice (KAP) is a crucial first step in designing successful educational initiatives. **Methods:** This research comprised a succession of qualitative and quantitative studies that together produced the input necessary for devising recommendations for educational interventions.