

Dutch Surgical Team Sent to the Yogyakarta Earthquake Disaster

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The earthquake that occurred in Yogyakarta, 2006, resulted in many casualties. The Bethesda Hospital in Yogyakarta received >3,000 casualties during the first 48 hours. Four international surgical teams came to support this hospital. A team from Amsterdam team was formed after a private request for help and worked there for 5-days. The circumstances in the hospital, the procedures performed by this team, and the logistical problems associated with these kinds of missions are described in this report.

The hospital was minimally damaged, but overloaded with patients and international support was appreciated. Expertise for very complex trauma patients with musculoskeletal injuries was needed. The team consisted of by a trauma surgeon, an anesthetist, a scrub-nurse, and an anesthetist-nurse and was able to work as a complete operating room (OR) team. The international teams worked in the OR, where the Indonesian doctors coordinated the wards. The team from Amsterdam performed internal fixation of fractures (lower extremity and pelvic) in 18 patients and the other international teams conducted operations for the rest of the fractures. The mean operating time was 112 minutes and 61% was performed under regional anesthesia. The mean age of the patients operated on by this team was 55 years (21 standard deviation).

The team was limited by local resources, such as the initial absence of a C-arm and extension table, while 129 patients with femoral fractures were admitted. Coordination between various international teams and between the teams and the local hospital staff sometimes was difficult. Despite these problems, after a 14-day period the majority of the patients were treated.

Keywords: coordination; earthquake; international response; operating room (OR); surgical team

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Using Baseline Data to Address the Lack of Hospital Beds during Mass-Casualty Incidents

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The management of victims during mass-casualty incidents (MCI) is improving. Physicians and paramedics are well-trained to manage these incidents. A problem that has been encountered during MCIs is the lack of adequate numbers of hospital beds to accommodate the injured. In Europe, hospitals are crowded. One solution to for the lack of beds is the creation of baseline data systems that could be consulted by medical personnel in three countries. A MCI never has occurred in northeastern Europe, but such an event remains a possibility. This paper describes how the use of baseline information concerning available of beds should help these three countries respond to a MCI by dis-

patching each patient to an appropriate hospital and informing their families and physicians in their own language.

The authors collected baseline data for all of the hospitals of Germany, Switzerland, and Strasbourg, France. Information about the number of beds and their availability hour-by-hour was included. In the case of MCIs, the baseline data program is opened and automatically connects to all of the countries. In the case of a necessary hospital evacuation, the required beds immediately are occupied in one of the three countries. Questions and conversations among medical staff or family members can be accomplished between hospitals through computer chatting that automatically is translated in to the appropriate language.

During patient evacuation phase of an MCI, respondents acknowledged that a combination of local, state, and private resources and international cooperation eventually would be needed to meet the demand. Patient evacuation is optimized through the use of this baseline data.

Keywords: baseline data; Europe; evacuation; hospital beds; mass-casualty incident

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Session 2

Chairs: P. Gregg Greenough; C. Mills

Methods for Tracking and Identifying Displaced Persons and Evacuees in a Post-Disaster Environment

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Introduction: In the post-event phase of a disaster, it becomes difficult to track persons who are forced from their homes or geographic regions. Although humanitarian organizations attempt to gather personal information and demographic data from displaced persons for reunification and relocation processes, follow-up and real-time tracking are often impractical. Additionally, recent experience with the evacuees from Hurricane Katrina in the United States points to other problems with the identification of displaced persons residing in a shelter.

Methods: Field assessment and evaluation of shelters housing evacuees and displaced persons from the 2005 Hurricane Katrina was performed. Methods for the registration of shelter occupants, identification of shelter residents and collection of evacuee information were assessed. Public services in communities with shelters (including schools, mental health services, and public safety agencies) were surveyed to evaluate if there were any issues with the identification of displaced persons.

Results: No standard for the registration or identification of evacuees or shelter inhabitants existed in the communities studied. In the shelters evaluated during this investigation, occupants were issued wrist-bands to identify and distinguish them from the general public. Schools and public safety agencies reported that this may have actually contributed to specific incidents of violence towards the displaced persons and may have placed evacuees in danger.

Conclusion: New methods for the identification and tracking of displaced persons and emergency shelter occupants

must be developed. Sensitivity to real-time tracking, and discrete methods of identification should be considered. Use of smart technologies including biometrics and photo identification should be investigated.

Keywords: disaster; displaced persons; humanitarian crises; identification; tracking

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Developing Health Indicators in Forgotten, Protracted Refugee and Internally Displaced Populations

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Objectives: Refugee health program indicators were designed for short-term emergencies yet 7 of 12 million refugees live in protracted circumstances (>10yrs). We developed indicators to evaluate long-term refugee health programs (LTRHP).

Methods: Five, protracted refugee settings were studied in Kenya, Colombia, Pakistan, Tanzania, and Thai/Burma. Diverse stakeholder focus group and key informant interviews yielded triangulated data on three indicator domains: contextual (factors external to the program that directly influence the ability of the health system to deliver care); process (the way health system goods and services are delivered); and outcome indicators (end measures and impacts of a health system/program).

Results: Long-term refugee health programs lack continuous quality improvement including the supervision of refugee health care providers, community health workers, and health educators and measures of effectiveness to evaluate the health system's impact; focus on human resource development—continuing medical education, equitable benefits for local staff, and quality feedback—improves morale. Long-term refugee health programs also lack surveillance and curative services for chronic diseases (hypertension, diabetes, mental health, nutritional deficiencies, palliative care, terminal illness); mechanisms for horizontal coordination and data sharing between sectors on linked indicators (e.g. food distribution linked with nutritional status of youngest children, water/sanitation data with diarrhea incidence); and equitable access between groups. Additionally, educational programs do not expand as health problems emerge (nutritional counseling for non-breast-feeding HIV-positive mothers, family planning, occupational integration of the disabled).

Conclusions: Current emergency indicators are not adequate for protracted refugee populations. Implementing agencies of LTRHPs require validated and standardized, long-term indicators across three domains to be effective.

Keywords: disease; displaced population; health; indicators; refugee;

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Disasters, Women's Health, and Conservative Society: Working in Pakistan With the Turkish Red Crescent Following the South Asian Earthquake

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Background: Analysis of the health disparities that women face following disasters has prompted organizations to adjust their efforts at targeting vulnerable populations such as women, children, and minority groups.

Objective: The aim of this research was to analyze and provide practical solutions for the barriers of women's health encountered in Pakistan following the 7.6 magnitude earthquake of October 2005.

Discussion: Recent disasters in Iran, Pakistan, and Indonesia have presented challenges to the international health community in providing effective, gender-balanced relief in culturally conservative societies. Assessment teams must be gender-balanced, composed of relevant specialists, and should engage the population in a culturally acceptable manner. Response strategies should be compliant with community meetings conducted in the local language to foster local participation and feedback. Gender balanced outreach groups should include local civilians. Camp geography should foster both the privacy and security of patients. Men's and women's treatment areas should be geographically separated, and camps should seek to employ women to assist in the care of women. If the physician is a male, a female nurse or translator should be present during the examination. Women's health supplies must include an appropriate exam table, basic obstetric and midwifery supplies, and sanitary and reproductive health supplies. A system of referral must be established for patients requiring a higher level of care.

Conclusion: The lessons learned in Pakistan show that simple adjustments in community outreach, camp geography, staff distribution, and supplies can greatly enhance the quality, delivery, and effectiveness of the care provided to women during international relief efforts.

Keywords: cultural respect; disasters; response; treatment; women's health

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Evaluation and Rebuilding of Health Care After Population Displacement

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Introduction: Numerous up-rootings and resettlements have caused the culture and infrastructure of the three million 1 Kurdish population of Northern Iraq to deteriorate considerably, including its healthcare facilities. During the "Anfal" in 1988, 4,000 villages were destroyed, and up to 100,000 people were killed.

Methods: During a four month stay in the Governorate of Erbil, Northern Iraq, in 1998, a survey of the healthcare facilities was performed while working with United Nations Children's Fund (UNICEF) as a health advisor, in