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. Aditionally, 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

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cooperation with the local health authorities. A total of 27 health facilities were evaluated against the World Health Organization's (WHO) standard of Primary Health Care.
Results: Of 134 health facilities with an average staff number of 42, serving a population of 1.2 million, 125 were functioning. Thirteen of the 27 healthcare facilities evaluated offered vaccinations and 13 offered antenatal care. Growth monitoring of children was performed in 24, of which 13 had a feeding center, and 14 had laboratories. The survey revealed severe insufficiencies in expertise, logistics, and administrative procedures.
Conclusions: The survey was to be a useful tool in the evaluation and improvement of health care in Northern Iraq. Local health authorities used the survey as a guide for their further investments into health care, and for the development of procedures to improve the sustainability of health care, logistics, and administration. The same method may be used through internationally deployed forces to provide support for rebuilding health care after population displacement.
Keywords: health care; hospital evaluation; population displacement; rebuilding; survey
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Landmines

Chair: Berndt Michael Schneider

Injuries and Deaths from Landmines and Unexploded Ordnance in Chechnya—1994–2005

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Introduction: For more than a decade of armed conflict and civil unrest, the civilian population of Chechnya has been among those most affected by landmines and unexploded ordnance worldwide.
Methods: An analysis of surveillance data on civilian casualties from landmines and unexploded ordnance in Chechnya was conducted. The analysis included 3,021 civilian non-combatants injured by landmines and unexploded ordnance in Chechnya during 1994–2005.
Results: The largest number of injuries occurred in 2000 (716, injury rate 6.6 per 10,000 per year) and 2001 (640, injury rate 5.9/10,000/year). One quarter of all victims were <18 years, and 19% were females. The case-fatality rate was 23%. Approximately 40% of victims were injured by landmines, 30% by unexploded ordnance, and 7% by booby traps. A large proportion of both children and adults were injured while travelling or performing activities of economic necessity. Of children, 29% were injured while tampering with explosives or playing in a contaminated area. Children were more likely to be injured by unexploded ordnance and to sustain upper body injury and upper limb amputations when compared to adults.
Conclusions: The civilian population of Chechnya experienced rates of injury from landmines and unexploded ordnance that were 10 times higher than injury rates reported from other highly affected countries, such as Afghanistan, Angola, and Cambodia. Prevention programs that focus on mine risk education, survivor assistance, and advocacy must continue and be fully supported. To prevent further civilian injuries and deaths, urgent efforts to identify, mark, and clear areas mined and/or contaminated with unexploded ordnance are needed.
Keywords: civil populations; Chechnya; injury; landmines; unexploded ordnance
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Poster Presentations—Theme 6: Humanitarian Crises

(102) Organization of Work in the Department of Anesthesia and Intensive Care Units during Wartime Bombing

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The bombings of Serbia and Montenegro from March to June 1999 provided professional and living experience for doctors and medical staff from the Surgical Clinic in Pristina, Kosovo. At the onset of the bombings, there was confusion, lack of experience in war situations, uncertainty, and concern for family members. Going to a shelter during the bombings was not possible for the patients and the medical staff of the Intensive Care Unit. Working under such circumstances was made even more difficult for the staff and patients due to power outages, water and food shortages, and the disruption of the central gas networks. To prevent patient injury from broke glass due to bomb detonation, beds and ventilators were moved away from windows. The windows also were covered by scotch tape. Thoracostomy tubes and the central gas supply lines had to be extended in order to move the patients away from the windows. Although there were sufficient supplies of medications and disposable equipment during the war, and that humanitarian help was provided, some of the received medications were outdated and unusable. Transfusion also was a problem.

Working during a period of bombing requires effective organization and poses a number of technical and professional problems.
Keywords: bombing; department of anesthesia; hospitals; intensive care unit; operations; Serbia
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(103) Medical Response from the UK to the Kashmir Earthquake

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Introduction: Scattered responses to humanitarian crises can waste resources and impose additional logistical problems. It has been estimated that small-scale donations to Bosnia in the early 1990s cost (US)$34 million for disposal. The World Health Organization (WHO) warned of similar problems in the early stages of the Kashmiri earthquake response. The aim of this study was to establish the

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