

tracting during a disaster or to provide humanitarian medical assistance. The mobile field hospital supports the activities of civil protection in national and international contexts, implements local emergency medical services, and supports hospitals in bed surge capacity and treatment of mass-casualties for a specific period of time.

**Results:** The Field Hospital of Alpines, created in 1976, has operated in Italy and in different international contexts.

**Conclusions:** During complex disasters (civil conflicts, wars), field hospitals (civilian or military) have been used successfully and have a crucial role in supporting the health care of the affected population.

**Keywords:** civil-military collaboration; disasters, foreign field hospitals; hospital preparedness; international cooperation

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### Using Military Resources to Sustain Government Hospitals during Labor Unrest: The South African Experience

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**Introduction:** In 2006, a work strike by certain groups of healthcare professionals in government hospitals in South Africa completely paralyzed 84 large public hospitals for nearly one month. All hospital nursing and support personnel were absent and intimidation by strikers prevented staff from entering the hospital premises. More than 6,000 hospital beds were without caregivers. Military resources, including military medical personnel, were deployed to sustain essential health services.

**Methods:** This presentation will provide a retrospective overview of the experience gained during this operation in which nearly 1,000 military personnel were rotated daily to staff 84 hospitals throughout the country. Due to the large numbers of personnel required, unskilled and partially skilled personnel also were utilized after emergency training, to maintain advanced services.

Services required included nursing care, cleaning services, emergency care, laundry services, and logistical supply distribution.

Guidelines will be given on how to prepare and re-organize a large hospital for a total absence of nursing and support staff, as well as lessons learned in providing military personnel to sustain service delivery for an extensive period of time.

**Results:** Through the use of military resources, it was possible to sustain care of civilian patients in government hospitals for a period of nearly a month.

**Conclusions:** Military medical resources are a valuable, organized, and disciplined asset that can be used to sustain civilian facilities during crisis situations.

**Keywords:** civil-military cooperation; health care; hospital strike action; labor strike; South Africa

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### Frozen -80°C Red Cells, Plasma, and Platelets in Combat Casualty Care

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**Introduction:** Since 2004, the Netherlands military mainly has used -80°C frozen blood products for their medical treatment facilities since 2004. This report describes the experience with these products during the past two years in Afghanistan. **Methods:** All -80°C frozen red cells, plasma, and platelets are produced and stored in the Netherlands. Units are shipped at -80°C (dry ice), stored in the theatre at -80°C (mechanical freezer), and thawed on demand (all products) or stored subsequently at 4°C (red cells). Data from August 2006–2008 were collected from the Netherlands' peripheral blood banks in support of (inter)national medical treatment facilities in South Afghanistan.

**Results:** During the past two years, 397 patients (85% Afghan) were transfused with 469 4°C liquid stored red cells and 2,345 -80°C frozen blood products (941 red cells, 1,023 plasma, and 381 platelets). Approximately 10% of the frozen red cells and 100% of the platelets and plasma transfused, were prepared on demand. The data showed that most (>90%) of the transfused patients were trauma victims, of which approximately 10% required more than 10 red cell units within 24 hours. No shortages or transfusion reactions were reported.

**Conclusions:** A -80°C frozen inventory of the most essential blood components readily available after thawing (and washing) allows for safely reducing shipments and abandoning the backup "walking blood bank" without compromising the availability of blood products in theatre. Fully tested, frozen blood products, shipped, stored, and readily available on location after thaw, proved to be an effective and safe blood support for combat casualty care.

**Keywords:** blood bank; capacity building; combat; frozen; inventory; preparedness; transfusion

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### Poster Presentations—Civil-Military Collaboration

#### (L1) Developing an Integrated Civilian-Military Model for Healthcare Emergency Response Planning

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**Introduction:** Developing an integrated civilian-military (CIV/MIL) model for healthcare emergency response planning will support collaborative and synchronized medical responses in domestic disasters. Identifying opportunities for such integration through an initial strategic assessment and then, by developing, piloting, implementing, exercising, evaluating, and disseminating programs and services that meet the documented needs of civilian and military partners is