thrombosis. This is despite a weight-adjusted application of low molecular weight heparin during a plane descent toward Santiago, Chile on 02 October 2007. Due to a permanent open foramen ovale, a thromboemolic clot closed the right internal carotid artery. The resuscitation began immediately at the gate and the patient was transferred to Clinica Alemana, where a cerebral computed tomography (CT) was performed within an hour. The decision was made for immediate lysis (lovcal and systemic) with RTPA. A vena cava umbrella was inserted and the lysis began. During the lysis, the patient developed brain pressure signals. Another CT was performed and the neurosurgical team was informed. Despite the lysis treatment, the neurosurgical team decided upon a decompression craniectomy. During the surgery, the patient received transfusions. Otherwise, the procedure was successful. After 16 days on the Neuro-ICS/IMC, the patient returned to Germany's Intensive Care Unit of Lufthansa.

In May, the patient received a recraniectomy with implantation of a palacos bone. In October, the patient received a closure of the patent foramen ovale with a 25 mm Starflex-Occluder. An incomplete left-sided hemiplegia remains at that time, but the patient recovered within a year. The patient began working full-time as an internal medicine doctor in a cardiology department exactly one year after the event. The etiology of the clot had been due to increased Lipoprotein (a).

Keywords: airplane passenger; Chile; emergency health; lysis; treatment
Prehosp Disast Med 2009;2(2):s51–s52

(N41) Growing Demand for Emergency Health Services in Queensland, Australia

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Introduction: The demand for emergency health services (EHS), both in the prehospital (ambulance) and hospital (emergency departments) settings, is growing rapidly in Australia. Broader health system changes have reduced available health infrastructure, particularly hospital beds, resulting in reduced access to and congestion of the EHS as demonstrated by longer waiting times and ambulance "ramping". Ambulance ramping occurring when patients have a prolonged wait on the emergency vehicle due to the unavailability of hospital beds. This presentation will outline the trends in EHS demand in Queensland compared with the rest of Australia and factors that appear to be contributing to the growth in demand.

Methods: Secondary analysis was conducted using data from publicly available sources. Data from the Queensland Ambulance Service and Queensland Health Emergency Department Information System (EDIS) also were analyzed.

Results: The demand for ambulance services and emergency departments has been increasing at 8% and 4% per year over the last decade, respectively; while accessible hospital beds have reduced by almost 10% contributing to the emergency department congestion and possibly contributing to the prehospital demand. While the increase in the proportion of the elderly population seems to explain a great deal of the demand for EHS, other factors also influence this growth including patient characteristics, institutional and societal factors, economic, EHS arrangements, and clinical factors.

Conclusions: Overcrowding of facilities that provide EHS are causing considerable community concern. This overcrowding is caused by the growing demand and reduced access. The causes of this growing demand are complex, and require further detailed analysis in order to quantify and qualify these causes in order to provide a resilient foundation of evidence for future policy direction.

Keywords: ambulance; Australia; demand; emergency health services; emergency medicine; prehospital; Queensland
Prehosp Disast Med 2009;24(2):s52

(N42) In-Flight Vital Signs Blackbox for Trauma Care

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Introduction: A prompt and adequate medical response following an injury is the predominant goal in trauma care. Advances in telemedicine technology have made it easier to record patient vital signs (VS), events, and life-saving interventions (LSI) in real-time in the hostile terrain of emergency medical services (EMS) practice. The results of vital signs blackbox (VSB) used for aero-medical transfer to a major trauma center for collecting real-time vital-signs trends, waveforms, and events are reported in this presentation.

Methods: The VSB uses a personal digital assistant (HP-iPAQ) with an embedded box (Inovamar Inc.) to capture VS from a field patient VS monitor (Propaq 206). Real-time electrocardiogram (ECG), Heart Rate, SPO_2, End-Tidal CO_2 trends and waveforms are recorded continuously on a memory card (240 hours, 2GB). Nine on-board LSI events were configured for rapid in-flight documentation.

Results: Six Medevac helicopters were equipped with the VSB systems, which have consistently captured waveforms (182 Hz) and numerical data (1 Hz) for 163 patients in a six-month period. The average duration of VS data was 25.9 minutes (±5 minutes). Patients were monitored constantly during the air transfer. Specific VS monitored during the transfer were ECG/electrocardiogram-heart rate/RR (95%), SpO_2/SPO_2-PR (87%), systolic blood pressure/mean blood pressure/dias-

tolic blood pressure (76%), CO_2/$ETCO_2$ (5%) for all cases. Prehospital care standards were assessed and captured waveforms and trends are being analyzed in association with patient outcomes.

Conclusions: A fully operational VSB system has been effective in collecting prehospital trauma VS.

Further mapping the pre-hospital physiologic trends with outcomes show promise in improving patient triage and standards of trauma care.

Supported by #W81XWH-05-0374, W81XWH-06-C-0034, and W81XWH-07-2-0118.

Keywords: air transport; emergency medical services; trauma; vital signs

Prehosp Disast Med 2009;24(2):s52–s53

(N43) Improvement of Prehospital Medical Care System in Tbilisi 2005–2008

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Tbilisi, the capital of Georgia, has a population of 1,500,000. The Tbilisi First Aid Center conducts prehospital medical care.

Until 2005, the prehospital medical care system of the former Soviet Union in 2003 was financed partially by the state and partially by patients. The equipment was poor, ambulances defective, wages low, medications scarce, and communication inadequate. Cable or cellular telephones provided communication between the call center and substations. Communication was unstable and depended on subjective factors. There were many cases of late dispatches and unqualified medical care.

In 2005, the state began funding prehospital medical care. The main directions were education, equipment, and communication. Staff participated in an urgent medical care program; after testing, physicians were selected to continue working in prehospital medical care. For vacancies, competition for the position was announced and the board selected the physicians. At the same time, 50 Kia Picanto-type vehicles (Fast Car) were added, the call center equipment was upgraded with digital VHF transmitters, each ambulance was equipped with a VHF transmitter, equipment needed for urgent care, necessary medications, and a global positioning system. This allows the calls to be transmitted from the call center directly to the medical teams. The time of arrival to the patient was reduced to 8–12 minutes.

Today in Tbilisi, there are 70 prehospital medical teams in 13 sub-stations, with a total of 44 ambulances and 26 Fast Cars. The mean number of calls per day is approximately 900. The period of duty of the medical staff is 24 hours. Cases of late dispatch are minimal. The quality of prehospital medical care is controlled by the following parameters: (1) the time between call and arrival to patient; (2) adequacy of first aid; and (3) population satisfaction

The introduction of new technologies and retraining of medical staff gave rise to the improvement of prehospital medical care quality within the same funding conditions.

Keywords: emergency health; emergency medical services; Georgia; improvement; prehospital care

Prehosp Disast Med 2009;24(2):s53

(N44) Epidemiologic Profile of Victims of Firearms and Cutting Weapons in the Emergency Room in the Outskirts of Brasília

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Introduction: Violence management is one of the most important challenges in the Latin America health system. This study describes the epidemiologic profile of victims of trauma by firearm and cutting weapons with the intention of improving the hospital routines and allocation of resources, thereby increasing the efficiency of healthcare services.

Methods: Age, gender, type of injury, day of the week, and time of the day were considered in this study. The data were collected in 2005 from an emergency department at a hospital in Gama, located in the outskirts of Brasilia, the Brazilian capital.

Results: The first three months of the year had the highest average number of patients presenting to the emergency room, with 72 cases documented. Approximately 50% of the patients presented during the weekend and almost 66% of all of the incidents occurred during the nocturnal period. Adult males between 18–60 years of age had a higher prevalence (80%). Injuries caused by firearms were responsible for the majority of the presentations (66%).

Conclusions: It was possible to determine the epidemiological profile of the victims of injuries from firearms and cutting weapons. This information will help to provide better assistance to the provision of care in emergency rooms.

Keywords: Brazil; cutting weapons; emergency medical services; epidemiologic profile; firearm; violence; trauma

Prehosp Disast Med 2009;24(2):s53

(N45) Fastrach Laryngeal Mask Airway Management in Out-of-Hospital Critical Care Patients

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Introduction: This presentation will describe the epidemiologic profile of Fastrach Laryngeal Mask (FLM) intubations in out-of-hospital critical care patients attended by the Emergency System (ES) staff.

Methods: An observational, descriptive, and retrospective study of patients attended by the ES staff that required a FLM for airway management January 2002 to December 2007. Data were collected analyzing computerized clinical histories, including: (1) age; (2) gender; (3) medical or traumatic etiology; (4) first cardiac rhythm; (5) survival until hospital admission; and (6) the percentage of usage of this technique in the total amount of patients that required airway management.