

#### (47) A Retrospective Analysis of Cancelled Helicopter Emergency Medical Services Missions in Nijmegen

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**Introduction:** In 2005, 40% of all Helicopter Emergency Medical Services (HEMS) Nijmegen dispatches were cancelled. The background for cancellation is poorly understood and little is known about the condition of the patients involved. This study was designed to elucidate the background of the HEMS dispatch cancellations.

**Methods:** All of the HEMS Nijmegen dispatches in 2005 were reviewed. The cancellations were traced through a chain for the HEMS database, the ambulance services, and the emergency department of the receiving hospitals. Data were collected on the reasons of dispatch, the timeframes of the cancellations, the conditions of the patients, and the treatment provided.

**Results:** There were a total of 599 dispatches, of which 240 were cancelled (40.1%). For 205 of the cancellations, grounded ambulance data were found. The reasons for canceling were very diverse. For 135 cases, one or more vital signs were recorded. Twenty-three of the patients had a suboptimal revised trauma score (RTS). The majority of patients were treated by paramedics according to the national ambulance protocol. Five patients were intubated and 11 patients had an Injury Severity Scale (ISS) score  $\geq 16$ . There were a total of 151 patients that were transported to a hospital and 62 hospital records were found. Thirty-four patients were admitted with an average length of stay of 7.3 days. Five patients (3.3%) were admitted to intensive care unit and no emergency surgery was performed. Thirty-three patients (22.2%) died at the scene, two died in emergency department, and seven died at an unspecified time following the event.

**Conclusions:** Data collected throughout the chain is far from complete. Therefore, registration of cases and communication between the HEMS and hospitals must to be improved. An option could be the use of an online registration system.

**Keywords:** ambulance; dispatch cancellation; helicopter emergency medical services (HEMS); hospital data

*Prehosp Disast Med 2007;22(2):s38*

#### (48) Primary Care Referrals to the Emergency Department of the Regional Hospital of Kébili

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**Introduction:** Primary care referrals to the emergency department of the regional hospital are a current practice. The goal of this study is to determine the frequency and to evaluate the appropriateness of primary care referrals to the emergency department of the regional hospital in Kébili.

**Method:** This retrospective study concerned 380 patients referred and admitted to the emergency department between 01 February 2005 and 31 March 2005. Data were collected for each patient that included various epidemio-

logic and clinical characteristics. The evaluation of the appropriation of medical referrals was judged according to a model based on the level of the care provided in the emergency department.

**Results:** The referrals rate was 14% (1/5th followed-up for chronic diseases). Of the cases, 83.4% (317) were considered appropriate according to the model, with an admission rate of 31.3% (119). Emergency department doctors over-estimated the appropriation of these referrals. This is shown by a facility in the indication of the complementary examinations (82.1%), calls of the specialist (83.4%), and a low rate of feedback (6%).

**Conclusion:** Over-estimation of the appropriation of these primary care referrals reflects a lack of emergency medical training among doctors at the emergency and primary care levels.

**Keywords:** appropriateness; emergency department; Kébili; primary care referrals; regional hospital; training; triage

*Prehosp Disast Med 2007;22(2):s38*

#### (49) System Development in the Izmir 112 Command Control Center and Hospital Coordination

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**Introduction:** Izmir 112 Prehospital Emergency Medical Services serves 3,370,886 people with 40 ambulance stations. Police and firefighting departments have their own telephone numbers. Izmir 112 ambulances responded to 55,165 cases in 2005. Izmir 112 ambulances responded to 90.2% of cases in <10 minutes. This is important because time is a key factor in proper treatment for injuries and illness. While important, ambulance response times are not the only predictive criterion for efficient treatment of patients.

**Method:** The Izmir 112 Command Control Center (CCC) was renovated in August 2006. Before this date, call responders answered approximately 20,000 calls per day. After the renovation, robots answered these calls, making the number of calls/day decline 50%. Caller waiting time also declined. The hospital coordination system was improved to show available intensive care unit/ventilator capacities and specialized physicians working certain shifts online. This was done in an effort to prevent time delays.

**Results:** Twenty-six hospitals, including two university hospitals, were introduced to the system immediately. Every hospital updated their available intensive care unit/ventilator capacities every two hours between 07:00 h and 13:00 h, and indicated what specialized physicians were working the shifts. While time-intervals are not available to determine the effects of the newly developed system, healthcare providers provided positive feedback.

**Conclusion:** The Izmir 112 CCC was renovated to provide coordinated prehospital emergency services, emergency services, and intensive care units in Izmir. Time to definitive treatment of injured and medically ill patients decreased.

**Keywords:** ambulance response time; Command Control Center; hospital coordination; treatment; Turkey

*Prehosp Disast Med 2007;22(2):s38*