

of the Jeddah declaration on mass gatherings which aims to generate a new internationally-recognised evidence-based medical discipline.

**Conclusion:** The drastic reduction in mortality since the introduction of the aforementioned measures indicates a huge improvement in the healthcare of Hajj pilgrims. However, continual improvements are required to ensure safety is assured at an annual mass gathering whose size is ever-increasing.

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### ID 472: Impact of a Series of Operational Interventions on Patient Access and Flow in an Overcrowded High-Volume Emergency Department

*Anthony Montefusco IV,<sup>1</sup> Ian Ferguson,<sup>2</sup> Christine Nguyen,<sup>3</sup> Jeffrey Arnold<sup>4</sup>*

1. Santa Clara Valley Medical Center (United States)
2. Santa Clara Valley Medical Center
3. Santa Clara Valley Medical Center
4. Santa Clara Valley Medical Center

**Background:** Overcrowding is especially challenging for Emergency Departments (EDs) with limited bed capacity to treat patients.

**Objective:** We sought to determine the impact of a series of interventions on the operational performance of an overcrowded high-volume ED in a public teaching hospital.

**Methods:** We performed a retrospective observational analysis of electronic medical records of patient visits during the implementation of 21 interventions aimed at improving patient access and flow in a 47 treatment space ED from 2006 to 2010. Novel interventions included positioning an ED provider as the first healthcare worker that patients encountered when they walk into the department (provider on arrival). Outcomes included the annual and monthly number of patient visits, percentage of patients who left without being seen (LWBS), mean time to provider (TTP), mean time to discharge (TTD), and the annual ED mortality rate.

**Results:** The monthly mean patient visits increased from 212 patients per day (95% CI: 206-217) in January 2006 to 366 (95% CI: 348-394) in December 2010. The LWBS percentage decreased from a peak of 16.0% (95% CI: 15.1-17.0) to 1.4% (95% CI: 1.2-1.7) in December 2010. The monthly TTP decreased from a peak of 203 minutes (95% CI: 196-210) to 22.2 minutes (95% CI: 21.5-22.9) in December 2010. The monthly TTD decreased from a peak of 372 minutes (95% CI: 362-382) to 174 minutes (95% CI: 171-176) in December 2010. The annual ED mortality rate decreased from 9.0 deaths per 10,000 visits (95% CI: 7.0-11.5) in 2006 to 4.8 deaths per 10,000 visits (95% CI: 3.8-6.2) in 2010.

**Conclusion:** This series of operational interventions was associated with significant decreases in the LWBS rate, TTP, TTD and ED mortality rate in our high-volume ED despite a near doubling of patient volume during the implementation period.

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### ID 473: The Growing Demand for Emergency Healthcare

*Gerry FitzGerald,<sup>1</sup> Sam Toloo,<sup>2</sup> Peter Aitken<sup>3</sup>*

1. School of Public Health, Queensland University of Technology
2. Queensland University of Technology (Australia)
3. James Cook University

Emergency health is a critical component of health systems; one increasingly congested from growing demand and blocked access to care. The Emergency Health Services Queensland (EHSQ) study aimed to identify the factors driving increased demand for emergency healthcare.

This study examined data on patients treated by the ambulance service and Emergency Departments across Queensland. Data was derived from the Queensland Ambulance Service's (QAS) Ambulance Information Management System and electronic Ambulance Report Form and from the Emergency Department Information System (EDIS). Data was obtained for the period 2001-02 through to 2009-10. A snapshot of users for the 2009-10 year was used to describe the characteristics of users and comparisons made with the year 2003-04 to identify trends.

Per capita demand for EDs has increased by 2% per annum over the decade and for ambulance by 3.7% per annum. The growth in ED demand is most significant in more urgent triage categories with decline in less urgent patients. The growth is most prominent amongst patients suffering injuries and poisoning, amongst both men and women and across all age groups. Patients from lower socioeconomic areas appear to have higher utilisation rates and the utilisation rate for indigenous people exceeds those of other backgrounds. The utilisation rates for immigrant people is less than Australian born however it has not been possible to eliminate the confounding impact of age and socioeconomic profiles.

These findings contribute to an understanding of the growth in demand for emergency health. It is evident that the growth is amongst patients in genuine need of emergency healthcare and public rhetoric that congested emergency health services is due to inappropriate attendees is unsustainable. The growth in demand over the last decade reflects not only on changing demographics of the Australian population but also changes in health status, standards of acute health care and other social factors.

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### ID 474: Risk Factors for Early Preventable Hospital Trauma Mortality in an Urban Lower Middle-income Setting

*Martin Gerdin,<sup>1</sup> Monty Khajanchi,<sup>2</sup> Vineet Kumar,<sup>3</sup> Roy Nobhojit,<sup>4</sup> Johan Von Schreeb<sup>5</sup>*

1. Karolinska Institutet, Sweden
2. King Edward Memorial Hospital
3. Lokmanya Tilak Municipal General Hospital (India)
4. Jamsetji Tata Centre for Disaster Management, Tata Institute of Social Sciences
5. Division of Global Health IHCAR, Karolinska Institute (Sweden)

**Background:** A substantial part of excess trauma deaths in low- and middle-income countries today may potentially be prevented using low-cost targeted interventions. However, most research on preventable trauma mortality is from HIC settings, hindering a context-specific approach. The aim of