



**Service Priorities and Programmes
Electronic Presentations**

Convention ID: 1061

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Sustainable Reduction in Trauma Mortality after the Introduction of an Inclusive Trauma System in Hong Kong: secondary analysis of an administrative database

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Keywords:

Trauma system

Patient outcome

Major Trauma

W score

Mortality

Mortality

Introduction

Prince of Wales Hospital (PWH) has been part of a trauma system since 2001 and was designated as a trauma center in 2003. To improve patient outcomes, PWH has introduced primary trauma diversion, a fast track CT scan protocol, a massive blood transfusion protocol, and it has faced the SARS epidemic and serious manpower shortages.

Objectives

The objective of this study was to describe the long-term associated impact on post-trauma mortality and to evaluate the overall impacts of additional initiatives and healthcare system stresses on trauma survival.

Methodology

In a secondary analysis of an administrative database, patients admitted to PWH between 2013 and 2013, and included in the trauma registry were compared with a pre-trauma system cohort collected from 1 January to 30 June 1997. The primary outcome was post-injury adjusted mortality at discharge using TRISS methodology.

Result

There were 7,033 patients in the study period and 2216 (31.5%) were major trauma (ISS>15). The annual number of major trauma patients gradually increased over time (P<0.001). The mean ISS \pm SD was 12.0 \pm 17.5, median 9. The mean length of stay (LOS) \pm SD was 12.9 \pm 114 days. 1031 (14.6%) patients were admitted to the intensive care unit (ICU) and mean ICU LOS \pm SD was 6.5 \pm 15.1 days. The overall mortality rate was 5.8%. The mortality rate for major trauma was 17.2%. In 1997, there were 4.8

excess deaths per 100 trauma patients. By 2001, survival as assessed using the W score had improved to -0.5 (equivalent to the US average). Survival has fluctuated between 0.5 excess deaths in 2001 and a peak of 1.7 excess survivors per 100 patients in 2013. The survival rate has gradually improved although there have been no changes of statistical significance in the W score. Conclusion After the introduction of a trauma system in PWH, there were early clinically significant improvements in survival which have persisted for a decade despite significant stresses on the healthcare system.