



Service Priorities and Programmes Electronic Presentations

Convention ID: 1174

Submitting author: Dr King Chung Kenny Chan

Post title: Consultant, Tuen Mun Hospital, NULL

The Impact of a Seven-Month Suspension of Clinical Information System in an ICU Ward

Chan KC, Wong MY, Mak LLL, Mak CM

Department of Anaesthesia and Intensive Care, Tuen Mun Hospital

Keywords:

Health Informatics

Mortality

Intensive Care

Introduction

Use of Clinical Information System (CIS) is standard in the ICUs of Hong Kong. It provides a clear documentation of physiology data, laboratory data, settings of life support machines, clinical notes, medication order and its administration. There is a contingency plan for reverting back to paper charting in case the system has failed. However, it is uncertain whether such plan works adequately, especially when ICU staff are no longer familiar with the paper charts, after using CIS for more than ten years. Our hospital had two ICU wards, each with 14 beds. One of the ICU ward required a major renovation from June 5, 2014 to January 14, 2015. This necessitated relocation to another ward where CIS was not part of the infrastructure. As such, paper charts were used to manage ICU patients at this location. The other ICU ward continued to use the CIS.

Objectives

Monitor the risk-adjusted hospital mortality before, during and after the renovation of one ICU ward, using the other ICU ward as control

Methodology

The hospital mortality of the two wards, 6-month before, during the renovation and 6-month after were obtained. Patients who received treatments in both wards were excluded. The APACHE IV model of the first ICU admission was used to adjust for disease severity, thus calculating the standardized mortality ratio (SMR). A lower figure indicated better performance.

Result

In the ward using CIS throughout, 338, 469 and 383 patients, before, during and after the renovation of the other ward were included for analysis. The SMRs were similar at 0.64 (0.49-0.82), 0.67 (0.54-0.82) and 0.47 (0.35-0.63) respectively. For the ward being renovated, 373, 426 and 410 patients analyzed respectively. The SMRs before and after renovation (i.e. when CIS was used), were similar at 0.58 (0.43-0.78) and 0.65 (0.49-0.85) respectively. The SMR during renovation, with no CIS, were higher at 0.82 (0.0.63-1.04), but did not reach statistical significance. When

combining all periods/wards with CIS, the SMR was 0.61 (0.54-0.68), which was significantly lower than that when paper chart was used in one location during renovation. In conclusion, although confounding might be a possibility, one should make all efforts to avoid reverting back to paper charting in an ICU accustomed to CIS.