

Abstract

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The impact of "Between the Flags" (BTF), a two tier rapid response system on the rate of cardiac arrest (CA) admissions to ICU

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Objectives:

The aim of this study is to assess the impact of "Between the Flags" (BTF), a two tier rapid response system across a large jurisdiction, on the rate of cardiac arrest (CA) admissions to ICU and patient illness severity following a rapid response team activation (RRTa) in hospitals with an Intensive Care Unit.

Methods:

We used prospectively collected data from the BTF registry (August 2010 to June 2016), and the Australian and New Zealand Intensive Care Society Adult Patient Database (January 2008 to December 2016) in the 35 New South Wales public hospitals with an Intensive Care Unit. The primary outcome studied was a reduction in the number of cardiac arrests occurring on the ward. Secondary outcomes included changes in the severity of illness of cardiac arrest admissions to ICU and changes in the volume of rapid response calls.

Results:

The rate of cardiac arrest admissions from the ward as a function of all ICU admissions fell significantly following BTF implementation. Between the pre- and post-implementation periods, there was a 20.9% reduction in the proportion of total ICU admissions that were admitted from the ward following a CA (IRR: 0.776, 95%CI: 0.738-0.816). The propensity score analysis also showed significant declines in ICU mortality, hospital mortality, ANZROD risk of death scores and mean length of stay among those patients admitted following a RR call (all $p < 0.001$). Secondary analysis suggests that 912 cardiac arrests may have been averted as a result of the program.

Conclusions:

The implementation the BTF program was associated with a significant reduction in the rates of ICU admissions for CAs, the in-hospital CA rate, and the ICU and hospital mortality and illness severity of patients presenting to ICU following RRTa.