



## Abstract

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### Reducing In-hospital Cardiac Arrest Incidence and Mortality with "Just-In-Time" Interventions

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#### **Objectives:**

The Ng Teng Fong Intensive Care Medicine team responds to all in-hospital cardiac arrests (IHCA) or Code Blue Activations in wards, cardiac catheterisation lab, & inpatient haemodialysis unit within Ng Teng Fong & Jurong Community Hospital. These activations are tracked in a database per the International Liaison Committee on Resuscitation Utstein-style definitions and reporting templates. We noticed some IHCA patients were unwell for hours prior to deterioration. We theorised that prompt attendance by trained staff, even if just prior to actual cardiopulmonary arrest, would be able to improve return of spontaneous circulation (ROSC) & mortality.

#### **Methods:**

We formally-defined peri-arrest consisting of any of the following five criteria: airway obstruction requiring immediate intubation; respiratory rate < 8/min or > 45/min; oxygen saturation < 80% despite 15L/min oxygen via non-rebreathing mask; unexpected heart rate < 40/min; or systolic blood pressure < 70mmHg. All hospital staff were encouraged to activate Code Blue if they noticed their patient fulfilling any of these criteria.

**Results:**

In the 6 months prior to implementation in August 2017, there were 57 activations; 26 were cardiac arrests & 31 peri-arrests. 61.5% (16/26) cardiac arrests had sustained ROSC, with 23.0% (6/26) alive upon discharge. 41.9% (13/31) peri-arrests had sustained ROSC, with 70.9% (22/31) alive upon discharge. In the 6 months after implementation, there were 55 activations; 19 cardiac arrests & 36 peri-arrests. 97.2% of peri-arrests (35/36) had sustained ROSC, with 94.4% (34/36) alive upon discharge; while 52.6% of cardiac arrests (10/19) had sustained ROSC; with 21.0% (4/19) alive upon discharge

**Conclusions:**

Implementation of single-criteria triggers to activate emergent ICU review seems to have increased ROSC & decreased cardiac arrest incidence & mortality, with no increase in Code Blue Activations.