IMPLEMENTING A RAPID RESPONSE TEAM - IS IT WORTH IT?

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Background

The Rapid Response Team (RRT) was formed at Nordsjællands Hospital - Hillerød as part of the Danish Safer Hospital Programme - targeting patients at risk of significant clinical deterioration or risk of cardiac arrest (CA), aiming to reduce the incidence in HSJR numbers with 15% over a 4 year period.

![Image of RRT team]

Method

The study is an observational cohort study, primary- and secondary endpoints being the incidence of CA and number of calls for the RRT/1000 bed days.

4 periods analysed: baseline; 2006-7 - before RRT, and period 1; 2008-9, period 2; 2010-11, and period 3; 2012-13 serving as comparison.

Codes for CA and the number of bed days were drawn from hospital databases and RRT calls were logged on datasheets.

Data was calculated for 3 months intervals and plotted against time.

Results

Before implementation of RRT (baseline), the incidence of CA was 0.55 per 1000 bed days, compared to 0.49, 0.32 and 0.72 in the following 3 periods (figure 1).

Concomitantly, the RRT calls increased from 2.36 to 4.47, 5.45 and 4.97 per 1000 bed days, respectively (figure 2).

There was no significant difference in the incidence of CA, when comparing the period before RRT with the 3 periods after RRT pooled (p<0.47).

However, a subgroup analysis demonstrated a significantly lower incidence of CA in period 2; OR 0.62 (0.47-0.82), p<0.001 and a higher incidence in period 3; OR 1.31 (1.05-1.65), 0<0.012 compared to baseline.

![Graph showing call and incident rates]

Discussion

Within the first 4 years after the RRT implementation, a significant reduction in the number of CA’s was observed with a directly proportional increase in the number of RRT calls.

This effect was not sustainable during the following 2 years. Major organizational changes could be part of the explanation, including merger of 3 regional hospitals during the study period resulting in admission of more and sicker patients, the employment of staff unfamiliar with the RRT approach and the procedures of “do not attempt resuscitation” (DNAR). RRT is a complex intervention and CA has a complex pathogenesis, so looking for a cause-effect relationship may be of limited value.

And finally, but most importantly is p-value statistics a relevant tool in describing multifactorial systems?

Conclusion

In conclusion, we were not able to demonstrate a sustainable significant reduction in CA after implementation of RRT despite a marked reduction in CA during the first 4 years after implementation. However, seen from a patient safety angle the RRT has been part of a joined lift in quality through out the whole system, with implementation of EWS and systemised CA calls, and is WORTH IT!

References