Should critical care doctors be part of the cardiac arrest call team?

The composition of the cardiac arrest team varies widely both throughout the UK and the world. There are no agreed standards regarding the composition of the resuscitation team, and variety in teams is often dictated by availability of staff and financial constraints. This article discusses the evidence for and against the inclusion of critical care doctors on the cardiac arrest call team.

Maxime T Rigaudy[1]

Feras Tomalieh[2]

Sanya Caratella[3]

Author details can be found at the end of this article

Correspondence to:
Maxime T Rigaudy;
rigaudymaxime@yahoo.fr

Introduction

The Resuscitation Council quality standards recommend that local resuscitation service structures determine the composition of each trust's resuscitation team. The Resuscitation Council sets standards of minimum training that are covered by up to date Adult Life Support training or equivalent certification. The team must include a team leader and a resuscitation officer. The Resuscitation Council sets no further standards as to the other members of the resuscitation team, although it recommends access to individuals with skills including tracheal intubation, central venous access, cardioversion and echocardiography (UK Resuscitation Council, 2016).

The composition of the cardiac arrest team varies widely both in the UK and worldwide, and there is a paucity of evidence to support any standardised guideline (Brahmajee Nallamothu et al, 2018). Indeed, a review of the composition of the cardiac arrest team at 23 different hospitals in the West Midlands revealed that 30.4% did not include an anaesthetist or intensivist in the core team, instead contacting them via fast bleep when necessary (Cooper et al, 2013). Similarly, in an analysis of over 100 American hospitals, 35% reported not having doctors who were consistently trained in airway management during in-hospital cardiac arrests (Mitchell et al, 2019).

Intensive care teams should not attend crash calls

Cardiac resuscitation teams can range in size from three to ten members (Cooper et al, 2013); this is often directed by availability of staff and financial constraints of healthcare organisations. Yet, it is still not clear whether not including critical care doctors in the resuscitation team is safe. A qualitative review of resuscitation teams and general cardiac arrest outcomes in nine American hospitals stratified these hospitals into high-performing and low-performing. It suggested that the team composition of top-performing vs bottom performing hospitals did not differ. Outcomes at top-performing hospitals differed on the following: including dedicated resuscitation teams vs ad hoc resuscitation teams, inclusion of diverse disciplines within the core resuscitation team, clear roles of the team members, improved communication and leadership during the cardiac arrest and training with in-depth simulation training (Brahmajee Nallamothu et al, 2018). Morris et al's retrospective study of outcomes of cardiac arrests suggests similar outcomes for events led by attending-level intensivists and events led by resident physicians (Morris et al, 2012). Intensivists may assume an advisory role rather than be directly part of the cardiac arrest team – being consulted to specifically give care or negotiate triage for selected patients.

Intensive care teams should attend crash calls

National Early Warning Scores, medical emergency teams, early escalation and systematic care escalation decisions have significantly reduced the rate of ward in-hospital cardiac arrests compared to that seen in intensive care unit and emergency department settings (Solomon et al, 2016). This has resulted in relative de-skilling of ward level physicians

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and healthcare providers as a result of reduced exposure to cardiac arrests (Morrison et al, 2013). Intensive care specialists on the crash team provide clinical skills (eg airway and central access) and advanced clinical decision-making skills in these acute situations, and allows early input in case admission to intensive care is required.

A study at John Hopkin's Hospital found that the addition of a senior critical care physician to a cardiac arrest team improved clinical decision making and reduced mortality for patients in cardiac arrest. This study also demonstrated improved documentation of cardiac arrests leading to improved coding and pricing of these events, offsetting the cost of employing an additional senior clinician to be part of the resuscitation team (Romig et al, 2018).

Conclusions

Patient outcomes, staff availability and cost-effectiveness are three of the main factors when considering the presence of intensive care doctors on cardiac arrest teams. The presence of intensive care doctors confers equal or better patient outcomes, so if financial resources and staff availability allow it, intensive care doctors should be present. In hospitals where the general expertise of running cardiac arrest calls is becoming a rarity, specialists in resuscitation should be present.

Author details

[1]Department of Critical Care, Guy's and St Thomas' NHS Foundation Trust, London, UK

[2]Department of Gastroenterology, Aintree University Hospitals NHS Foundation Trust, Liverpool, UK

[3]Department of Critical Care, Manchester University NHS Foundation Trust, Manchester, UK

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