Rapid response systems supporting end of life care: time for a new approach

Rapid response systems have been implemented worldwide to support management of deteriorating patients outwith critical care units, and are increasingly required to support end of life care. These challenges require a new approach to supporting staff involved in do not attempt cardiopulmonary resuscitation decisions.

The clinical course of deteriorating patients, suboptimal care and failure to rescue events in hospital wards has been widely documented over the past 25 years (Schein et al, 1990; Johnston et al, 2015). The early evidence heavily influenced recommendations in 'Comprehensive Critical Care: a review of adult critical care services' (Department of Health, 2000). This sentinel report heralded the development of critical care outreach teams across the UK. These teams were similar to medical emergency teams developed in Australia in the early 1990s (Hourihan et al, 1995) and subsequently rapid response teams in North America (Institute for Healthcare Improvement, 2008). All teams had similar clinical response models in that they were tasked with providing an expert critical care response to patients deteriorating within a hospital, but in areas outwith a traditional critical care unit, such as general wards – a concept known as 'critical care without walls' (Department of Health, 2000).

Most, if not all, of these (rapid response systems) were seen as part of the resuscitation spectrum – attending to patients before the onset of cardiac arrest, thereby preventing cardiac arrest and improving patient outcome. The clinical model was that of identification of deteriorating patients on wards, followed by rapid deployment of expert critical care staff to the patient and instigation of critical care organ support interventions, before transferring to a critical care unit (DeVita et al, 2006).

However, as far back as 1998 Smith and Wood identified patients in their review of cardiac arrests who received cardiopulmonary resuscitation for whom a do not attempt cardiopulmonary resuscitation decision would have been a more appropriate intervention.

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Interface between rapid response systems and end of life care

Not all cardiac arrests are preventable as a result of reversible causes, and along with deterioration in clinical status, may actually represent a natural end of life event (National Confidential Enquiry into Patient Outcome and Death, 2012). Many of these patients will have vital signs within abnormal ranges that trigger a referral to a rapid response system team (*Figures 1* and *2*).

It is becoming increasingly evident that end of life care is now an inevitable aspect of the rapid response system role (Jones et al, 2012, 2013; Nelson et al, 2015; Pattison et al, 2015; Sulistio et al, 2015), with acknowledgement that rapid response system teams are often taking on a role of 'diagnosing dying' (Jones et al, 2013).

Activation of a rapid response system in a UK specialist cancer hospital resulted in formal end of life care plans for over half of emergency referrals patients who already had limitation of treatment in place (Pattison et al, 2015). A fifth of rapid response system nurses' time was taken up with end of life care discussion. Of the 108 patients referred only 11% were being treated with curative intent; 32.4% died, most within 1 month of referral to the rapid response system.

Figure 1. Typical call criteria requiring immediate response from rapid response team or medical emergency team (Institute for Healthcare Improvement, 2008; The ANZICS-CORE MET dose Investigators, 2012).

Airway	■ Threatened ■ Difficulty breathing
Breathing	■ Respiratory rate < 8 or >30 per min ■ Oxygen saturations < 90% despite oxygen
Circulation	■ Pulse <50 or >130 per min ■ Systolic blood pressure <90 mmHg ■ Chest pain
Disability	■ Acute change in conscious level ■ Seizure
Other	■ Acute change in urine output <50 ml for 4 hours ■ Staff member worried about the patient

An Australian study (Sulistio et al, 2015) noted that almost 40% of patients referred to the rapid response system team had a life-limiting illness and had almost four times greater hospital mortality rate. In spite of an increase in palliative care referrals for all rapid response system referrals, there was a low rate of do not attempt cardiopulmonary resuscitation orders and new limitations of treatment. Mortality rate for patients with a life-limiting illness was 41.7% *vs* 13.2% without. Only 6% of the patients with a life-limiting illness had an end of life care plan in place at the time of discharge.

A large study involving hospitals in Australia, Canada and Sweden (Jones et al, 2012) found that almost one third of referrals were associated with medical treatment limitations – 11% of these decisions were made after the involvement of the rapid response system team. Almost 50% of the patients died; 30% of them had a rapid response system call on the day of their death and 28% had a call 2 days before death.

There is clear international evidence that patient populations referred to rapid response system teams are likely to trigger rapid response system call criteria and have a high risk of death (Jones et al, 2012, 2013). Rapid response system teams are increasingly required to engage with end of life care planning and work collaboratively with palliative care and the patient's admitting team. Palliative and critical care teams have already considered this and addressed some of the issues that may arise for rapid response system teams (Jones et al, 2013; Nelson et al, 2015).

Particular challenges are those relating to time constraints and the condition of the patient when the rapid response system team arrives (Jones et al, 2013; Nelson et al, 2015). Often the rapid response system team has not met the patient or family before and arrives at a crisis point. This creates additional pressures for rapid decision making by a team who do not 'know' the patient.

> **"Rapid response systems are increasingly required to engage with end of life care planning and work collaboratively with palliative care and the patient's admitting team."**

It would seem to make sense for patients, especially those with life-limiting illnesses or irreversible life-threatening conditions, to have end of life considerations addressed before a crisis point. The evidence indicates that this is not happening.

Barriers to limitations of medical treatment conversations, end of life care planning and do not attempt cardiopulmonary resuscitation decisions

There are ten potential barriers noted for intensivists (Hillman and Cardona-Morell, 2015) that can equally be applied to other clinicians involved in the care of patients where the outcome is uncertain or likely to be an unavoidable death (*Table 1*).

A survey of hospital consultants from a variety of specialities (S Polhill, K Hunt, J Welch, 2014, personal correspondence; *n*=79) carried out at one central London NHS foundation trust in 2014 found:

- 72% thought the law was unclear
- 69% thought it right to allow the patient to choose
- 64% felt pressure from families even when the situation is 'futile'

Figure 2. National Early Warning Score with medium and high score – typical triggers for referral to critical care outreach teams (Royal College of Physicians, 2012).

Physiological parameters		3	2	1	0	1	2	3
Airway and breathing	Respiratory rate (breaths per minute)	≤8		9–11			21–24	≥25
	Oxygen saturations (%)	≤91	92–93	94–95	≥96			
	Any supplemental oxygen		yes		no			
Circulation	Pulse or heart rate (beats per minute)	≤40		41–50	51–90	91–110	111–130	≥131
	Blood pressure (mmHg)	≤90	91–100	101–110	111–219			≥220
Disability	Level of consciousness				A			V,P,U
Exposure	Temperature (°C)	≤35.0		35.1–36.0	36.1–38.0	38.1–39.0	≥39.1	

Medium and high risk triggers – National Early Warning Score (total)	
Total 5 or more, or 3 in one parameter	■ Urgent assessment by clinician with core competencies to assess acutely ill patients
Total 7 or more	■ Emergency assessment by a clinical team with critical care competencies ■ Consider transfer to level 2 or 3 care facility

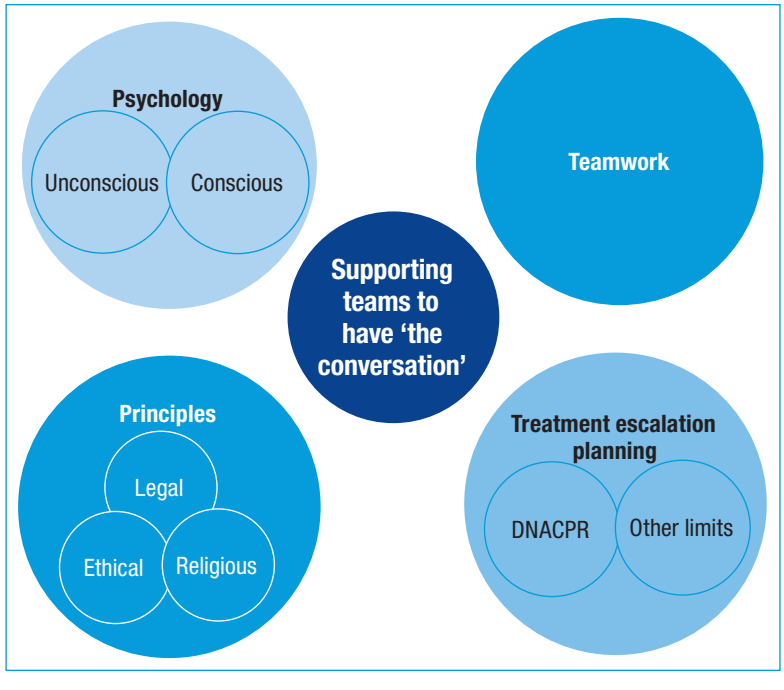
Table 1. Potential barriers encountered by intensivists (all clinicians) managing end of life care

Unrealistic expectations – societal (and medical) about what modern medicine can achieve
Reluctance of society (and some health-care professionals) to discuss ageing, death and dying
Lack of effective medical training in dealing with end of life – doctors programmed to treat, not reflect on context of treatment
Medical specialization resulting in overlooking patient's overall condition and prognosis
Uncertainty – integral part of medical practice and used as a reason to continue medical treatment
Financial incentives to continue active treatment (in some health-care systems)
Ethical ambivalence – framework is too flexible (and has not kept pace with changes in medicine)
Legal pressures – fear of litigation, challenges of fitting ethical, cultural (and religious beliefs) into legal context
Conveyor belt – admission to critical care regardless of prognosis, difficult to challenge the process(es)
Lack of alternatives – (medicalization of death) – few other health-care models for managing end of life transition

From Hillman and Cardona-Morell (2015)

- 40% worried the trust would not support them in the event of a dispute about a do not attempt cardiopulmonary resuscitation decision
- 2% considered do not attempt cardiopulmonary resuscitation decisions to be contrary to their religious beliefs.

Figure 3. Framework for a holistic training programme to support teams having do not attempt cardiopulmonary resuscitation (DNACPR) conversations.



In June 2014 further pressure was placed on UK clinicians when a change in the law resulted in a ruling that clinical staff must consult directly with patients for whom active resuscitation would not be appropriate. Lord Justice Longmore stated that 'doctors should be wary of being too ready to exclude patients from the process [of do not attempt cardiopulmonary resuscitation decision making] on the grounds that their involvement is likely to distress them' (Court of Appeal, 2014). Previously when cardiopulmonary resuscitation was considered an inappropriate treatment option, there was no requirement to discuss do not attempt cardiopulmonary resuscitation with patients or families (British Medical Association/Royal College of Nursing/Resuscitation Council (UK), 2007).

Legal decisions such as this, and recommendations such as NCEPOD to have do not attempt cardiopulmonary resuscitation decisions made within 12 hours of acute admission (NCEPOD, 2012), are theoretically sound in terms of improving patient care and experience. However, it would be unrealistic to expect all clinicians to suddenly be comfortable, confident and competent in undertaking these challenging conversations.

Avoidance of do not attempt cardiopulmonary resuscitation conversations and decisions by inexperienced and under-skilled (in do not attempt cardiopulmonary resuscitation) clinicians is common, and thus deferral to the rapid response system team at the point when a patient suffers significant clinical deterioration is often inevitable.

In recognition of these challenges and barriers the rapid response system team at a central London NHS foundation trust developed a framework for a holistic training programme which would meet the needs of clinicians undertaking do not attempt cardiopulmonary resuscitation conversations (*Figure 3*). The rapid response system team initiated an interdisciplinary project to facilitate the development and delivery of a new training programme called 'Talking DNACPR [do not attempt cardiopulmonary resuscitation]'.

A novel approach to training for do not attempt cardiopulmonary resuscitation conversations

The subject matter of do not attempt cardiopulmonary resuscitation does not lend itself to a fully didactic teaching model as no two conversations with a patient or family will be the same. Traditional teaching methods based on linear communication models are not particularly effective in adult learning (Fanning and Gaba, 2007), nor do they particularly suit the demographic of experienced medical and nursing staff who take the lead on do not attempt cardiopulmonary resuscitation work.

Members of the Talking DNACPR project team had experience of the introduction of the WHO Safe Surgery Checklist and After Action Review concept in 2008 through a high fidelity simulation model (Walker et al, 2012). This helped them understand its potential to effect behavioural change and so this forms a key part of the programme.

Each delegate participates in one of a number of high fidelity simulations while their colleagues watch via a live video stream; professional actors play the part of patients or family members. The aim is to create a challenging shared experience among the delegates from which to draw out learning. Throughout the post simulation debriefing, delegates are facilitated to reflect on these immediate experiences and the dilemmas that arise because of them, with emphasis on the emotional content of the transactions experienced. The scenarios and discussion materials also support exploration of the wider legal, religious and ethical dimensions of do not attempt cardiopulmonary resuscitation decisions.

How this approach supports change

High fidelity simulation arose in anaesthesia crisis resource management and is now increasingly used in the education of qualified physicians, nurses and allied health-care professionals. The body of research which has emerged to support it suggests that three key features are linked to successful effective learning in simulation: the degree of realism in the simulation, the quality of the debriefing and the creation of a safe supportive learning environment (Fanning and Gaba, 2007). The Talking DNACPR programme has achieved a high level of realism by using specifically designed simulation ward environments within a clinical education facility. While the delegates' emotions may be heightened by the challenge of being on camera, the Talking DNACPR faculty take a non-directional, facilitative and supportive approach throughout the day, allowing the delegate to 'construct, through reflection, a personal understanding of relevant structures of meaning derived from his or her action in the world' (Fenwick, 2000).

Results and progress

Results from the on-the-day evaluation forms completed by the first 60 delegates who have participated in the programme consistently rate the simulation experience as the greatest source of their learning (*Table 2*). This applies just as significantly to their observation of their colleagues in simulation. It is likely that in the process of watching via a live video stream, delegates are separated sufficiently from the 'drama' to see the consequences of different approaches while reflecting on their own.

> "The Talking DNACPR programme has achieved a high level of realism by using specifically designed simulation ward environments within a clinical education facility."

Further exploration of learning has been undertaken using post-course semi-structured interviews. Fourteen interviews have been conducted (to date) to understand what, if anything, changes after the delegates return to the wards. These fourteen delegates were self-selecting from an email invitation sent to 40 delegates, so it may be that for the 26 who did not wish to be interviewed nothing had changed. However, distinct themes have emerged for these 14 individuals. There has been increased confidence in approaching patients and their relatives so that more conversations are being initiated appropriately and sooner. Greater attention has been paid to more junior colleagues' potential stress and anxiety about do not attempt cardiopulmonary resuscitation. A helpful re-sensitisation process has taken place for some clinicians to the magnitude of the conversation for patients. Post course reflection has been quite profound for some and prompted further exploration of how the team addresses the issue.

What next?

Existing evidence does not support the commonly held belief that communication about end of life issues increases patient distress (Bernacki et al, 2015). However, confidence among clinicians to overcome the barriers and initiate these challenging conversations appropriately and skilfully does need to increase. The Talking DNACPR programme has begun to change behaviours and to encourage greater awareness of the importance of the do not attempt cardiopulmonary resuscitation conversation, and it will continue to run in its current form. The

Table 2. Delegates' rating of Talking DNACPR programme – on the day evaluation

	Rating of value to delegate as a % of all delegates (1 is low, 5 is high)				
	1	2	3	4	5
Course content on legal, religious, ethical and psychological aspects			2%	39%	59%
Your own participation in scenarios			3%	27%	70%
Observations of others' participation in scenarios				26%	74%
Group discussions with other delegates; learning from others' experiences and perceptions			3%	21%	76%
The support and facilitation provided by the faculty				27%	73%

KEY POINTS

- Rapid response system teams are frequently activated for patients with clinical deterioration as a result of end of life events.
- Many clinicians avoid end of life and cardiopulmonary resuscitation discussions with patients who have life-limiting conditions.
- Clinicians require effective training and support to prepare them for sensitive and challenging conversations such as do not attempt cardiopulmonary resuscitation decisions.
- A new approach to do not attempt cardiopulmonary resuscitation conversation training has demonstrated increased confidence for clinicians in initiating timely conversations.

Serious Illness Care Programme, being trialled in a number of centres in the USA (Bernacki et al, 2015), is aimed at developing a shorter more structured education approach in supporting conversations with seriously ill patients and may prove to be more replicable in a wide range of settings.

Conclusions

Given the inevitability of death for all at some point, the need to talk about dying and giving patients the opportunity to plan for death is paramount. Rapid response system teams are in a unique position to support patients and clinicians in facing the challenges involved. It is not ideal to be dealing with the first end of life care or do not attempt cardiopulmonary resuscitation conversation at the point of a clinical crisis, and so rapid response system teams should take the lead: consider how rapid response system teams can best share their skills and effectively support ward teams in having the confidence to walk towards a do not attempt cardiopulmonary resuscitation conversation rather than to turn and avoid. Talking DNACPR is an excellent example of how this can be achieved. **BJHM**

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Conflict of interest: Ms J Hartin is co-chair of the Talking DNACPR project management board and a member of the Talking DNACPR Faculty; Ms J Walker is programme director for the Talking DNACPR programme, a member of the Talking DNACPR Faculty and Consultant with North and East London Commissioning Support Unit.

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