

A practical approach to end-of-life care rapid response team calls

K J Farley, Imogen Mitchell and Daryl Jones

There is increasing focus on the recognition and response to deteriorating hospital patients, particularly to avoid preventable morbidity and mortality.¹ One model of care for deteriorating patients is the rapid response team (RRT), often led by intensive care unit registrars.² However, it is now clear that many deteriorating hospital patients are not experiencing reversible deterioration, but are actually dying. We present here a summary of the features of RRT calls which are associated with end-of-life care (EOLC) issues, and suggest a pragmatic approach to their assessment and management.

What is known about EOLC RRT calls?

An accumulating volume of literature suggests that up to one-third of RRT calls involve patients with limitations of medical treatment (LOMTs).³⁻⁶ In about 10% of all RRT calls, there is implementation of a new LOMT after the RRT call concludes.³⁻⁵ Patients experiencing an RRT call with EOLC problems tend to be older, admitted for medical rather than surgical conditions, and are less likely to live independently.³ In addition, RRT calls occurring after 1 week of hospitalisation are about 50% more likely to be associated with EOLC problems.⁷ Despite these factors, about half of patients with EOLC RRT calls survive to hospital discharge and about one-fifth return home.³

Why are EOLC RRT calls relevant to the ICU community?

EOLC RRT calls are common. A systematic review of 35 studies revealed that EOLC discussions were more common than resuscitation efforts at RRT calls, and emphasised the need to train RRT members in such discussions.⁵ Importantly, RRT calls are mostly managed by ICU registrars, with infrequent consultant involvement or oversight,^{2,8} and often occur out of hours.³

ICU involvement in RRT calls promotes discussions about appropriate levels of intervention,⁹ potentially limiting the provision of non-beneficial ICU admission or cardiopulmonary resuscitation. In some instances, the treating team may not have recognised that the patient is dying,¹⁰ or may not have had sufficient time to initiate EOLC discussions with the patient or their next of kin (NOK). Staff from the ICU have significant experience to contribute to patient care in such scenarios. Early ICU review also facilitates timely ICU

admission in patients who may benefit from a trial of intensive care treatment.

Assessment of RRT calls for potential EOLC problems

Multiple variables have been shown to be associated with an increased risk of mortality during hospital admission (Table 1).^{11,12} In general, patients are less likely to respond to attempts at curative treatment if they have reduced physiological reserve, a condition which is severe or relatively irreversible at presentation, or if they have failed to respond to an appropriate duration of optimal ward-based treatment (Table 1).

Therefore, it is important during assessment and discussion to establish the patient's baseline functional status, and the patient's perceptions of acceptable function or independence. In addition, choice of the most appropriate treatment course should take into account the patient's treatment preferences and goals, the cause and natural history of clinical deterioration, and the likelihood of

Table 1. Factors associated with reduced likelihood of responding to curative treatment

- Patient's prior expressed desire not to have invasive life support or aggressive active care
- Reduced physiological reserve
 - Advanced comorbidity:
 - high Charlson comorbidity index score
 - end-stage dysfunction of vital organ(s)
 - advanced malignancy
 - Poor functional status or evidence of frailty (eg, Dalhousie frailty index)
 - Poor nutritional status (low pre-morbid serum albumin level)
 - Older age
- Details of admission diagnosis
 - Incurable or irreversible condition
 - Illness severity high
- Details of clinical deterioration
 - Increasing number of deranged vital signs or organ dysfunctions
 - Incurable or irreversible condition causing deterioration
 - Deterioration occurring later in hospital admission
 - Deterioration despite adequate duration of optimal ward-based therapy

POINT OF VIEW

responding to curative treatment. The proposed treatment plan should be developed in conjunction with the patient, their NOK and the most senior doctor available from the treating team, whenever possible.

An approach to assessment and management of EOLC RRT calls

Conceptually, RRT calls can be divided into three major categories: obviously an EOLC RRT call, obviously not an EOLC RRT call, and an uncertain call (Figure 1 and Table 2). In all situations, the aim is to deliver the right care in the right place, at the right time. In many respects, the simplest category is the RRT which is obviously *not* related to EOLC and when there are no LOMTs, as such patients receive full treatment with curative intent. In up to 25% of all RRT calls, patients will require admission to the ICU after an RRT call.¹³

The next simplest category is when the RRT obviously relates to EOLC

Figure 1. Triage and classification of rapid response team calls, based on end-of-life care issues.

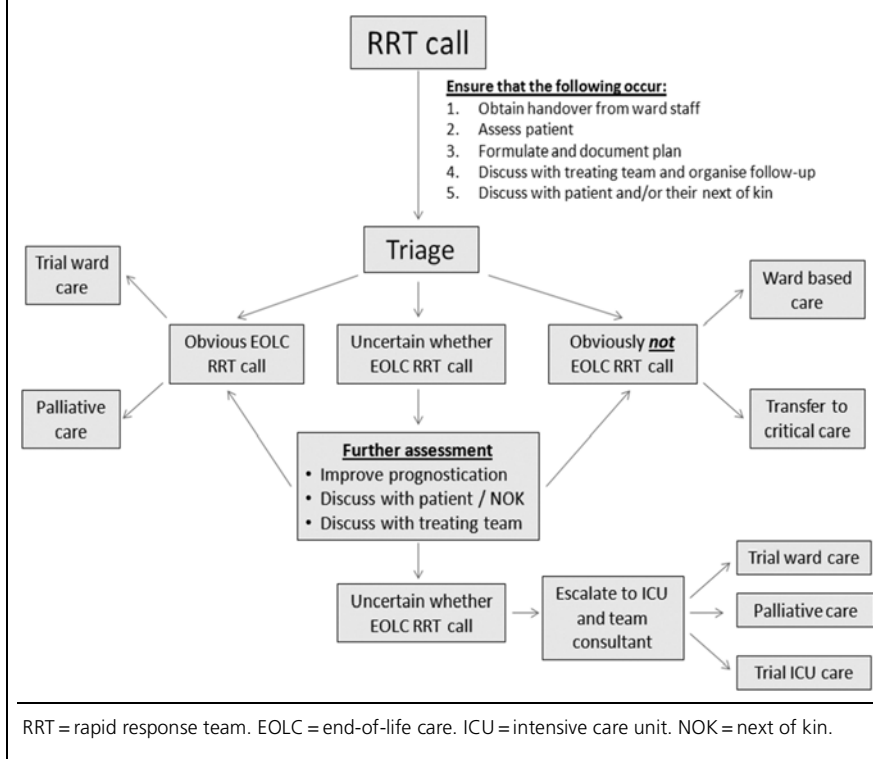


Table 2. Summary of features and interventions for different categories of rapid response team call

Patient characteristics, interventions	RRT call category		
	Clearly EOLC RRT call	Clearly not EOLC RRT call	Category uncertain
Patient features	LOMT order already present Frail, elderly, multiple and advanced comorbidity Assisted accommodation, poor functional state, poor self-perceived QOL	Patient for full care Younger, few comorbidities, independent living, good functional status and QOL	LOMT may not be documented Some comorbidity and assistance with daily living needed, but acceptable self-perceived QOL
Reversibility of clinical deterioration	Presenting condition and/or cause of deterioration unlikely to respond to attempts at curative care	Highly reversible	Prognostic uncertainty about diagnosis, stage of illness or likelihood of response to treatment
Aim of assessment	Ensure therapy is being administered to level of documented limits Ensure comfort care documented and consider palliative care referral	Identify cause/s of deterioration	Improve prognostication accuracy Explore perspectives of patient, NOK, and treating team Establish prior functional state and patient preferences for treatment
Focus of intervention	Continue trial of ward-based treatment if appropriate Ensure clear goals of care and comfort measures are documented Consider palliative care referral	Provide evidence-based care to avoid preventable morbidity and mortality Decide if patient is best managed in ward or ICU	Establish agreement on: • clear treatment goals and how to measure • limits and intensity of treatment Provide evidence-based care to avoid preventable morbidity and mortality Decide if patient is best managed in ward or ICU

RRT = rapid response team. EOLC = end of life care. LOMT = limitation of medical treatment. QOL = quality of life. NOK = next of kin. ICU = intensive care unit.

issues, for example if the patient already has clearly documented LOMTs, has markers of poor prognosis (Table 1) or has deteriorated despite timely provision of all appropriate ward treatments. In such cases, the patient will either continue to receive care with curative intent up to the specified treatment limits, or their treatment may be changed to comfort care, possibly in conjunction with palliative care services. The role of ICU staff in such calls may include providing moral support to junior staff out of hours, reminding them to notify the treating team of the deterioration, and ensuring that sufficient comfort care is documented. Strong consideration should be made for designating such patients “not for further RRT calls”.

The most challenging scenario, particularly when occurring out of hours, is the RRT call when LOMTs and goals of care are unclear. In such situations, doubt can be due to prognostic uncertainty if the diagnosis or stage of disease is unclear.¹⁰ Further uncertainty arises when there is disagreement between the patient, their NOK or the treating team about one or more of the following:

- the potential reversibility of the condition which precipitated deterioration
- the appropriateness of ongoing curative care in light of chronic comorbidities or functional impairments
- the appropriateness of curative therapies when the likelihood of a poor outcome is high.

Urgent treatment should be provided as medically necessary while decisions about possible LOMTs are in progress, as these treatments can be withdrawn later if LOMTs are imposed.

LOMT decision making may be assisted by acquiring a detailed knowledge of the current illness, comorbidities and pre-morbid functional state, as well as the patient's perceived quality of life and wishes for the future. It is often challenging to gather this information quickly at an RRT, and staff may not have met the patient or NOK before. We recently published a guide outlining 10 practical strategies for effective communication with relatives of ICU patients,¹⁴ many of which also apply in EOLC discussions during RRT calls. Early escalation to the on-duty ICU and parent unit consultants, with subsequent consultant-to-consultant discussions, may help resolve differences of opinion in a timely manner. Once a consensus decision about LOMT is reached, this should be promptly explained to the patient and family and clearly documented in the clinical history. Specific therapies that will and will not be offered should be clearly documented. In some cases it may be appropriate to admit the patient to the ICU for a limited trial of ICU therapy (Figure 1) with a clear plan to de-escalate if these treatments prove non-beneficial.

Summary

ICU registrars frequently encounter RRT calls associated with EOLC during their training. Interventions involving EOLC appear to be some of the commonest interventions per-

formed during RRT review. Therefore, training about the assessment and management of such calls should be provided to registrars who participate in RRT calls. The approach outlined here provides a framework for such training.

Competing interests

None declared.

Author details

K J Farley, Intensive Care Specialist¹

Imogen Mitchell, Intensive Care Specialist,² and Deputy Dean³

Daryl Jones, Intensive Care Specialist,⁴ Adjunct Senior Research Fellow and PhD Candidate,⁵ and Honorary Associate Professor⁶

¹ Western Health, Melbourne, VIC, Australia.

² The Canberra Hospital, Canberra, Australia.

³ Medical School, Australian National University, Canberra, Australia.

⁴ Austin Health, Melbourne, VIC, Australia.

⁵ Monash University, Melbourne, VIC, Australia.

⁶ Department of Surgery, University of Melbourne, Melbourne, VIC, Australia.

Correspondence: Daryl.Jones@austin.org.au

References

- 1 Australian Commission on Safety and Quality in Health Care. National consensus statement: essential elements for recognising and responding to clinical deterioration. Sydney: ACSQHC, 2010. http://www.safetyandquality.gov.au/wp-content/uploads/2012/01/national_consensus_statement.pdf (accessed Jul 2014).
- 2 The ANZICS-CORE MET dose investigators. Rapid response team composition, resourcing and calling criteria in Australia. *Resuscitation* 2012; 83: 563-7.
- 3 Jones DA, Bagshaw SM, Barrett J, et al. The role of the medical emergency team in end of life care: a multicenter, prospective, observational study. *Crit Care Med* 2012; 40: 98-103.
- 4 Jones D, Moran J, Winters B, Welch J. The rapid response system and end-of-life care. *Curr Opin Crit Care* 2013; 19: 616-23.
- 5 Tan LH, Delaney A. Medical emergency teams and end-of-life care: a systematic review. *Crit Care Resusc* 2014; 16: 62-8.
- 6 Jones D, McIntyre T, Baldwin I, et al. The medical emergency team and end-of-life care: a pilot study. *Crit Care Resusc* 2007; 9: 151-6.
- 7 Medical Emergency Team End-of-Life Care investigators. The timing of rapid response team activations: a multicentre international study. *Crit Care Resusc* 2013; 15: 15-20.
- 8 Jacques T, Harrison GA, McLaws ML. Attitudes towards and evaluation of medical emergency teams: a survey of trainees in intensive care medicine. *Anaesth Intensive Care* 2008; 36: 90-5.
- 9 Downar J, Barua R, Rodin D, et al. Changes in end of life care 5 years after the introduction of a rapid response team: a multicentre retrospective study. *Resuscitation* 2013; 84: 1339-44.
- 10 Hillman KM, Cardona-Morrell M. The ten barriers to appropriate management of patients at the end of their life. *Intensive Care Med* 2015 Mar 7 [Epub ahead of print].
- 11 Jones D, Mitchell I, Hillman K, Story D. Defining clinical deterioration. *Resuscitation* 2013; 84: 1029-34.
- 12 Cardona-Morrell M, Hillman K. Development of a tool for defining and identifying the dying patient in hospital: criteria for screening and triaging to appropriate alternative care (CRISTAL). *BMJ Support Palliat Care* 2015 Mar; 5: 78-90.
- 13 Jones D. The epidemiology of adult rapid response team patients in Australia. *Anaesth and Intensive Care* 2014; 42: 213-9.
- 14 Warrillow S, Farley KJ, Jones D. Ten practical strategies for effective communication with relatives of ICU patients. *Intensive Care Med* 2015 Apr 23 [Epub ahead of print]. □