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. One model of care for deteriorating patients is the rapid response team (RRT), often led by intensive care unit registrars. 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). In about 10% of all RRT calls, there is implementation of a new LOMT after the RRT call concludes. 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. In addition, RRT calls occurring after 1 week of hospitalisation are about 50% more likely to be associated with EOLC problems. Despite these factors, about half of patients with EOLC RRT calls survive to hospital discharge and about one-fifth return home.

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. Importantly, RRT calls are mostly managed by ICU registrars, with infrequent consultant involvement or oversight, and often occur out of hours. ICU involvement in RRT calls promotes discussions about appropriate levels of intervention, 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, 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). 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

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**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 premorbid 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
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

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

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. 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 premorbid 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, 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 performed 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.

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