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Rapid response teams, do not resuscitate orders, and potential opportunities to improve end-of-life care: a multicentre retrospective study☆,☆☆

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Abstract

Purpose: Rapid response teams (RRTs) were created to stabilize acutely ill patients on the ward, but recent studies suggest that RRTs may improve end-of-life care (EOLC). To learn more about the role of the RRT in EOLC at our institutions, we conducted a retrospective review.

Methods: Retrospective review of 300 RRT consultations at 3 academic hospitals in Toronto, Canada.

Results: The typical consultation was for an elderly patient with chronic illness. More than 90% had a "full resuscitation" order at the time of consultation. One third were admitted to the intensive care unit within 48 hours of the RRT consultation, and 24.7% ultimately died. Twenty-seven (9.3%) had a patient/family conference on the ward within 48h of the RRT consultation, 24 (8.3%) of whom changed their resuscitation order as a result. Among those who changed their resuscitation order, fewer than 20% were referred to the palliative care or spiritual care service, or prescribed comfort medications as needed

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(*pro re nata*), within 48h of the RRT consultation; 2 patients died without receiving any common EOLC orders, and 15 (63%) died before discharge.
Conclusions: RRT consultation is an important milestone for many patients approaching EOL. RRTs frequently participate in EOL discussions and decision-making, but they may miss opportunities to facilitate EOLC.

1. Introduction

Critical care rapid response teams (RRTs) were originally created to improve the medical status of acutely ill patients on the ward [1]. These teams can improve morbidity and mortality by performing timely interventions. Although some studies have questioned the effectiveness of RRTs for improving mortality and reducing cardiac arrests [2,3], many have found that RRTs play an important role in communicating with patients and family about resuscitation status [4-6]. Recent studies have even suggested a beneficial effect on end-of-life care (EOLC) by increasing the use of comfort medications and chaplaincy [7,8].

Hospitals in Ontario, Canada, began using RRTs in 2005 following a mandate from the Ministry of Health and Long-Term Care. Among other things, the mandate specified that RRTs should improve EOLC by mitigating "avoidable, or inappropriate intensive care unit (ICU) admissions" [9]. In order to learn more about the role that RRTs play in communication and EOLC at our institution, and the outcomes of patients whose goals of care changed following an RRT consultation, we conducted a retrospective review of RRT consultation.

2. Methods

We conducted a retrospective review of 100 consecutive new referrals to the RRT at each of three tertiary academic hospitals in Toronto, Canada, starting April 1, 2010. In our institutions, RRTs are led by a critical care nurse, with an in-house attending or subspecialty critical care resident or fellow participating in consultations as needed. RRT physicians would typically participate in any patient/family conference. Any member of the healthcare team (physician, nurse or allied health) can initiate an RRT consultation. Criteria for activating the RRT at the participating hospitals are: excessive airway secretions or airway obstruction; respiratory rate >30 or <8, oxygen saturation <90%, or respiratory distress; systolic blood pressure <90 or >200 mmHg or change >60mmHg, or a heart rate >130 or <40 per minute; and decreased level of consciousness or seizures. In Canada, patients are typically "full resuscitation" by default unless a "do not resuscitate" (DNR) order is written. Decisions to admit a patient to the ICU or change the resuscitation order (to "do not resuscitate") are ultimately medical decisions, but regulatory and hospital policies

Table 1 Demographic and clinical information for patients receiving RRT consultation

Demographic	Value (SD)
Mean age (SD)	69.7(16.7)
Gender	
Male	46.7%
Female	53.3%
Mean Charlson Comorbidity Score	2.7 ± 2.3
Admitting service	
Medical	48.1 %
Surgical	51.9%
Comorbidities	
Diabetes	34.6%
Moderate/severe renal disease	32.3%
Solid tumour	20.6%
Chronic pulmonary disease	20.5%
Congestive heart failure	15.8%
Myocardial infarction	13.1%
Metastatic solid tumour	9.3%
Dementia	6.2%
Peripheral vascular disease	5.5%
Mild liver disease	5.1%
Connective tissue disease	3.4%
Ulcer disease	2.7%
Lymphoma	0.3%
Moderate/severe liver disease	0.0%
Cerebrovascular accident	0.0%
Leukemia	0.0%
Length of stay (d)	
Mean (SD)	25.1 (29.4)
25th Percentile	8
50th Percentile	15
75th Percentile	30
Mean days to RRT consult (SD)	6.3 (10.9)
RRT call triggers	
Airway	0.7%
Breathing	24.1%
Circulation	43.3%
Disability	21.0%
Other	10.7%
Resuscitation status at time of RRT consult	
Full code (FC)	91.1%
DNR	8.2%
Comfort measures only	0.7%
ICU Admission within 48 h of RRT consult	33.3%
Disposition at discharge	
Home	44.7%
Other medical facility	30.6%
Death	24.7%