

Hospital Rapid Response Systems



Role, Model, Composition, Interventions, and Measures of Effectiveness

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KEYWORDS

- Rapid response systems • Hospitalist • Clinical deterioration • At-risk patient
- Early warning scores

HOSPITAL MEDICINE CLINICS CHECKLIST

1. Rapid Response Systems (RRSs) have been widely implemented for early recognition of at-risk ward patients combined with prompt mobilization of a response team to prevent failure to rescue.
2. Effective criteria and methods for early identification of deteriorating ward patients remain the subject of much debate and research.
3. RRSs have been shown to reduce rates of cardiopulmonary arrest and in some cases mortality outside of the intensive care unit, although further studies are needed to determine the extent that this is true and additional impact on patient outcomes.
4. Hospitalists are having an increasing role in hospitalized patients and should play an integral role in hospitals' RRS.

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BACKGROUND

In-hospital rapid response systems (RRS) were first developed in Australia and subsequently implemented in modernized countries worldwide.¹ Ideally, RRSs focus on prompt identification of at-risk hospitalized patients with mobilization of an identified set of responders trained in best practice interventions, followed by ongoing evaluation of system performance and related hospital processes of care.²

Mortality for in-hospital general ward circulatory arrest is as high as 80%.³ Delay in recognizing and reacting to a patient's clinical deterioration increases morbidity and mortality and constitutes failure to rescue.² Thus, RRSs are designed to be the safety net for general ward patients, reducing preventable adverse events by promptly reversing clinical deterioration on the wards and/or stabilization with early transfer to a higher level of care.

In 2005, the Institute for Healthcare Improvement (IHI) 100,000 Lives Campaign encouraged the implementation of a system to aid the bedside provider's response to their deteriorating patients on general hospital wards.⁴ The driver of their recommendation was to improve the quality of care on the general wards by reducing failure to rescue and its associated morbidity and mortality. By 2008, the Joint Commission fully recommended implementation of RRS as part of their National Patient Safety goals to improve the identification of and response to clinical deterioration in hospitalized patients, prompting hospitals nationwide to rapidly institute RRS.⁵

Hospitalists are now more than ever at the forefront of medical care in the inpatient hospital setting and often care for the bulk of ward patients. They are the fastest growing medical specialty, and this growth will likely continue for the foreseeable future.⁶ Their scope of practice has been expanding beyond acute general medical inpatient care into perioperative care, intensive care, emergency care, and nonclinical arenas.⁷ Thus, the Hospitalist is well positioned to have an active role in their hospital's RRS.

What is the role of the Hospitalist in the rapid response system?

Today, most hospitalized patients, at some point in their care, are primarily managed by a hospitalist. Although this varies between institutions and regions, it is safe to say that hospitalists have or are becoming the primary physician of many if not most inpatients. Hospitalists are more familiar with the inpatient hospital setting and more readily available to hospitalized patients than most other primary physicians, particularly when acute problems arise. In addition, their delivery of care to a large volume of older complex patients provides a great deal of experience and expertise with the very sick.⁶ For these reasons, hospitalists should be an integral part of their hospital's RRS whether it is as an RRT responder or in a leadership role.

Depending on the institution and/or region, there have been numerous RRS models developed. Mostly RRSs have allocated the majority of resources toward the Rapid Response Team (RRT) or "efferent arm." This team frequently consists of intensive care unit (ICU) trained personnel who can quickly evaluate deteriorating ward patients.⁸ Terms to describe these response teams include critical care outreach teams, medical emergency teams (MET), and RRTs. Each team may have differences, but overall, they possess many common features. More recently, there have been efforts to focus resources on a more comprehensive system.

An effective mature RRS generally has 4 of the following arms²:

- *Afferent Arm*: The bedside nurse, arguably the most important component of early event detection. This individual needs to be empowered through education

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