

Brief Communication

Nurses' role in the rapid response team. *A hospital administrator's chance for investment*

Mariam A. Alansari, MD, FRCSI.

Hospital critical events such as death, unplanned ICU admissions, and cardiopulmonary arrests, are preceded by long periods of clinical instability. They reveal much about quality and safety of a health care system in any institute. The effective cardiopulmonary resuscitation makes the difference between life and death. On the other hand, rapid response systems (RRS) have evolved under the philosophy that critical events are preventable and that earlier recognition during their evolution can create windows of opportunity for their prevention. It represents critical care resources that are moved to support non-ICU patients in need wherever they are. Studies have shown that RRS implementation is associated with reductions in cardiac arrest rates, unplanned ICU admission, and in some cases, reduction in morbidity and mortality.

The costs of setting up and maintaining an RRS are not negligible. The perception of added works, and cost involved in having RRS service in hospitals is a barrier to its implementation and may stop discussion before accurate estimates of cost and benefit can be analyzed. In fact, an RRS comprise of a small number of experts who respond to all hospital emergencies, rather than widespread training for all staff in basic cardiopulmonary resuscitation. In this sense, RRS will save costs and improve care. Modified RRS benefits calculator originally created by William Ward estimated a cost savings of any RRS to be \$170,000 US.¹ Other studies have demonstrated a cost saving of approximately US \$9,000,000/year with the implementation of an RRS.² Cost saving for cardiac arrest patients alone is estimated to be \$3,000,000 US per year.³

All RRSs are made up of at least 4 essential components. An afferent limb, which consists of ward healthcare givers who would recognize a deteriorating patient, an efferent limb, which is the actual team, an administrative limb, and a quality improvement limb. The provision of a fully functional, effective afferent limb might seem simple. In this article, we sought to emphasize the need for continued support of this important limb of RRT as well as suggest ways to maintain its functionality. Reasons being that good evidence that failures in the individual components of

the afferent limb are common and can result in avoidable adverse clinical outcomes as well as total failure of RRS.⁴ Rapid response systems corner stone: the afferent limb. The time between situations where ward level cares and needs for intensive care in critically ill patient is often narrow. Moreover, physicians have been poor at recognizing when patients enter this narrow zone and how long a patient's physiologic reserve could help tolerate being sick.

On the other hand, the most common hospital personnel responsible for triggering an RRS and detecting early signs of critical illness have been nurses. Using a preset system of RRS that goes "around" usual hospital hierarchy of calling the most junior medical staff, and then having to wait for an action, nurses were enabled to exert their own independent judgment in calling for help whenever needed.⁵ Critical illness detection and RRS response trigger by the afferent limb is one of the most important components of the RRS. Failure to respond to a patient in crisis originates from the inability to manage deteriorating patients. A patient may deteriorate without rescue if he or she is not assessed. If assessed, the person doing the assessment does not recognize a critical state. If it is recognized, a call for help is not made the right time. Each step in this chain can be broken, all leading to the same outcome, failure to rescue. The success of any RRS is dependent on the ability of nurses and other staff in contact with patients to recognize patients in crisis and to call for appropriate help. The overall sensitivity and specificity of calling criteria have not been validated in large multi-center trials. The inclusion of subjective elements "gut feeling" suggests something is wrong with a patient "to the calling criteria empowers front line care providers to act upon conditions and call for RRS."⁶

Having said this, the afferent limb of RRS cannot be effective without support and leadership from senior medical and nursing staff. A key element to the success of this limb are intensive education throughout the hospital and among all staff and having a multidisciplinary committee to review individual cases,

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address opportunities for improvement, and updates a regular accessible report to all hospital staff. The need for involvement of a hospital administrator cannot be reemphasized. His role will be to communicate with the senior hospital leader in order for the information to be fed back to him on a regular basis in which problems related to implementation of RRT are discussed to have quicker solutions for better RRT utilization.

In conclusion, without the afferent limb, there would be no response to a crisis. Because of the many steps involved in RRS activation, the afferent limb of RRS is the most error-prone component of the RRT. Adequate education and commitment guarantees that RRS will work dramatically. Special effort by the hospital administrators is needed to maintain an effective afferent limb of RRS to help better utilization of RRS, if they are to save lives and money.

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From the Department of Adult Critical Care Medicine, King Faisal Specialist Hospital and Research Centre, Riyadh, Kingdom of Saudi Arabia. Address correspondence and reprint request to: Dr. Mariam A. Alansari, Department of Adult Critical Care Medicine (MBC 94), King Faisal Specialist Hospital and Research Centre, PO Box 3354, Riyadh 11211, Kingdom of Saudi Arabia. Tel. +966 (1) 4424731. Fax. +966 (1) 4424184. E-mail: icu_mariam@yahoo.com

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