Editorial

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The Medical Emergency Team and prevention of sudden cardiac death: where is the data?

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Traditionally, cardiopulmonary resuscitation (CPR) has been the main tool for treating victims of cardiac arrest. This therapeutic modality has been known for millennia, and despite its widespread use for the last five decades, it has had only few modifications. The popular belief that CPR is an effective approach for patients with cardiopulmonary arrest has been supported by television medical drama series that always show CPR as a medical icon. (1) However, even when CPR is performed by trained providers, the outcomes remain quite poor, with most patients who require in-hospital CPR dying before hospital discharge, with survival to discharge rates that range from 1 to 20%. (2) With this dismal prognosis, most hospitals have implemented "code teams" that respond to cardiopulmonary arrest scenarios. Less attention has been directed to the events that lead to the cardiopulmonary arrest in the hospital setting. Several retrospective studies have shown that there is a critical period of about 6 to 8 hours before the cardiac arrest occurs, in which the vital signs and other physiological markers start to show deterioration (ie., metabolic, electrocardiographic, respiratory and hemodynamic changes). (3,4)

Key words: Rapid response teams, medical emergency team, outcomes, cardiopulmonary arrest, cardiopulmonary resuscitation, pediatrics, adults.

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The medical emergency teams (METs) are groups of healthcare professionals that can be called and assembled whenever a critically ill patient requires an aggressive and emergent multidisciplinary treatment. These teams are typically formed by a physician, a nurse and a respiratory therapist, and are available 24 hours a day and 7 days a week in the hospital. Their primary purpose is to respond effectively to "inpatient crises", and act before the patient deteriorates into a cardiopulmonary arrest. These teams respond in the same fashion as the traditional code teams, following pager or "code" activation. When the MET is called quickly, and the system works efficiently, it is possible that there will be a reduction in the number of cardiopulmonary arrests. (5,6)

The proper timing and appropriate call to the MET requires several criteria. To date, however, there is no consensus on the specific criteria, and most of the activation of the MET team is dependent upon each institution. (5,7,4)

The use of the MET has also created some controversy. In a recently-published meta-analysis, MET activation showed a 33.8% reduction in rates of cardiopulmonary arrest outside the intensive care unit in adults and 37.7% in children, however, there was no effect on hospital mortality reduction. (8) Another study showed that the transition from a traditional code team to a MET focused on children population, decreased the incidence of respiratory arrests in 73% and consistent to most of the available studies, but showed no changes in the incidence of cardiopulmonary arrests. (9) METs have been implemented in ICU patients, out of ICU patients and post-surgical patients showing similar results, and only some studies have shown decrease the incidence of cardiopulmonary arrests. (10)

In this issue of *Critical Care and Shock*, Medina-Rivera and associates show interesting data of a trial conducted at the Veterans Administration Caribbean Healthcare System, that showed no changes on unexpected death or survival after

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