ICU
MANAGEMENT & PRACTICE

ICU Volume 5 - Issue 2 - Summer 2005 - Cover Story:Outreach

Managing Implementation of Medical Emergency Teams in Australia

Authors

Nancy Santiano, *RN MClinNsg*

Simpson Centre for Health Services Research

New South Wales

Australia

Jeff Murphy, *RN, ICUCert, ICU*

Campbelltown Hospital

NSW, Australia

Michelle Cretikos, *MBBS, MPH*

Ken Hillman, *FRCA, FANZCA, FJFICM*

Simpson Centre for Health Services Research

New South Wales, Australia

University of New South Wales, Sydney

NSW, Australia

Correspondance

nancy.santiano@swsahs.nsw.gov.au

Nancy Santiano and colleagues explain the objectives of Medical Emergency Teams and experiences towards successful implementation and management of this new concept throughout a health service area in Australia.

Introduction

Critical Care Outreach Teams (CCOT) have the following objectives: to prevent ICU admissions and/or ensure that admissions to ICU are timely, to support recovery of patients post discharge from ICU, to share critical care skills with staff on the general wards, and enhance training and skills thereby improving critical care services (UK Department of Health 2000). This article describes the Medical Emergency Team (MET) system, our experiences in developing the initiative and how the MET meets the objectives of the CCOT.

The MET System

The MET was designed to identify seriously ill patients and provide a rapid response before the patient suffers a serious complication, such as a cardiorespiratory arrest or death (Hillman et al. 2001). The MET system provides emergency medical care 24 hours a day in all hospitals of the South Western Sydney Area Health Service (SWSAHS), which serves a population of over 700,000 people (Australian Bureau of Statistics 2000).

The Criteria

A clear and simple set of calling criteria are used by staff to identify physiological changes in a patient's condition (Hourihan et al. 1995). Clinical and non-clinical staff members are able to activate the MET, and may call if they are seriously worried about a patient, or if one of the physiological criteria is observed. The MET calling criteria are displayed prominently throughout the hospital, and are also attached to staff badges (table 1).

MET Response

The MET responds from either the Intensive Care Unit (ICU) or the Emergency Department (ED). The number and composition of the team vary depending on the size and needs of the hospital, but usually includes at least a doctor and a nurse (see table 2). MET members perform their normal duties in addition to responding to medical emergencies. The MET is fully equipped with an emergency pack with drugs and equipment (see figure 1). The MET manages and stabilises the patient during the period of acute deterioration and then formulates a plan of care with the admitting team (Cretikos and Hillman 2003).

Education

Team

It is imperative that at least one of the members of the MET is trained in advanced resuscitation. The Advanced Resuscitation Course (ARC) ensures that there are appropriately trained personnel within the area health service 24 hours a day (SWSAHS 2003). The ARC is a 6-month self-directed course with criterion-based assessments.

Clinical and Non Clinical Staff

Staff are educated on how and when to call the MET. The MET system is one of the key sessions in all hospital orientation and annual mandatory training programs. Ward staff are encouraged to participate during the medical emergency to facilitate acquisition of knowledge and skills. Educational sessions are conducted on early warning signs and other physiological parameters, as well as specific cases identified by the MET coordinator during the surveillance process.

Evaluation and Monitoring System

A fundamental component of any health system is the collection of data. Clinical outcome indicators were developed to monitor and evaluate the MET system. Data is collected on MET utilisation, unexpected deaths, cardiorespiratory arrests and unplanned ICU admissions. Patients with "Do not resuscitate" orders are excluded (Cretikos and Hillman 2003; Hillman et al. 2000; Hillman et al. 2001; SWSAHS 1999).

Challenges

Although the MET system was developed at Liverpool Hospital in 1990, overall implementation throughout SWSAHS was only partially successful. Prior to 2004, maintenance of the MET system was problematic. Due largely to insufficient resources, MET system roles were only carried out if other duties allowed sufficient time. Our experience suggests that effective implementation of the MET system requires consistent monitoring, follow up, feedback, reinforcement and nurturing in order to facilitate cultural change. The system should become part of the hospital's patient safety and quality framework.

The MET Coordinator Role for Patient Safety

Following enquiries into allegations of suboptimal care leading to adverse events at two hospitals, the SWSAHS decided to focus attention on mechanisms to ensure patient safety. Funds were allocated to provide appropriate support and resources for the MET system. A MET Coordinator (senior critical care registered nurse) was appointed in each of the hospitals to coordinate and implement a strategic plan, on a full- or part-time basis depending upon the size of the hospital.

The MET coordinator role became the lynch pin in the hospital's patient safety and quality system. The MET coordinator provides surveillance of the MET outcome indicators including a daily death screening and review process. The MET data is collected and reported to everyone who has a stake in patient safety. These individuals take ownership of the data and are able to implement and facilitate improvements in practice.

Perceived Barriers to MET Utilisation

Nurses play a critical role in the MET system, as they initiate up to 90% of the MET calls. For this reason, nurses were the focus of an evaluation after the MET re-implementation process. Questionnaires and focus groups were used to explore perceived barriers and factors that may have improved effective MET utilisation.

The Following Barriers were Identified:

Nurses may experience anxiety when calling due to uncertainty about the patient's severity of illness; Nurses have difficulty in interpreting

unclear withdrawal of treatment orders such as “Not for resuscitation, but still for MET”; Nurses in specialised units (maternity, paediatric and operating theatres) were less likely to call the MET, because they believed that they should be able to manage specialty-specific emergencies themselves; The MET system may place further strain on under resourced ICUs or EDs; Negative attitudes from the MET members directed at ward staff during the call; Lack of experienced MET members skilled in resuscitation; Insufficient follow through of education about the MET system and its effectiveness; Shortages of staff and insufficient equipment possibly delaying monitoring of vital signs; Inadequate ongoing management of patients who were left on the ward after the MET call; A low prevalence of medical staff had received MET education. Results demonstrated that calling a MET is complex and may require a collaborative and collective approach to decision making (Cioffi 2000).

Benefits of the MET System

The MET has been shown to significantly reduce the incidence of mortality from unexpected cardiac arrest in hospital (Bellomo et al. 2003; Buist et al. 2002), surgical length of stay (Bellomo et al. 2004), cardiac arrest and overall in-hospital mortality (Bellomo et al. 2003).

In addition, the MET has less tangible benefits to staff and the organisation. The nurses viewed the MET system as an effective way to initiate intervention for patients they were concerned about. The MET system provides room for staff to display initiative and become pro-active when confronted by seriously ill patients. Nurses believe it is “their system” to use. It also provides a sense of support and security for the junior medical and nursing staff (Cretikos and Hillman 2003). The MET system incorporates a basis for clinical governance by providing information and feedback, and provides a framework for the continuous monitoring of hospital quality and patient safety (Hillman et al. 2000). The employment of the MET coordinators throughout SWSAHS improved MET utilisation, data collection, surveillance and monitoring of outcome indicators, communication and camaraderie between hospitals.

Conclusion

The MET System meets the objectives of CCOT, providing early interventions for patients at risk of clinical deterioration and ensuring optimal management of the patient during the emergency. The employment of a MET coordinator in all hospitals has improved education of staff, data collection, monitoring and feedback. Timely reporting has provided an avenue for regular dialogue between critical care units and general ward areas. Implementing a MET should be viewed as a complex system intervention, which requires attention to education and awareness, culture change and continuous monitoring and support from a dedicated MET co-ordinator.

Published on : Wed, 20 Jul 2011