Australian Critical Care 29 (2016) 46–49

Contents lists available at ScienceDirect

Australian Critical Care

journal homepage: www.elsevier.com/locate/aucc

Discussion

# Features of an Intensive Care based Medical Emergency Team nurse training program in a University Teaching Hospital

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ARTICLE INFORMATION

*Article history:*
Received 24 September 2014
Received in revised form 1 March 2015
Accepted 2 March 2015

*Keywords:*
Education
ICU
MET
Nurse
Program
Training

ABSTRACT

*Background:* Medical Emergency Teams (METs) involve specialist staff who respond to acutely deteriorating ward patients. There is little literature describing the scope of practice and training of MET responders.
*Purpose:* To describe and discuss an education and training program for Intensive Care Unit (ICU) nurses who function in a high capability teaching hospital MET.
*Findings:* The program is overseen and coordinated by four senior nurses. Applicants require at least three years experience working as an ICU nurse in a level 3 tertiary ICU. Each program participant is allocated a mentor and must complete the program within six months. Induction involves attending lectures outlining expected roles, responsibilities and appropriate conduct during MET calls. A course handbook outlines a series of competencies including checking of the MET trolley, assisting endo-tracheal intubation, commencement of non-invasive ventilation and high flow oxygen. Each participant attends the first five MET calls under supervision. A series of case scenarios are discussed and reviewed and an oral examination on two such cases is undertaken prior to completion of the program. Throughout, candidates are trained in their expected roles and responsibilities during MET calls, follow-up of at-risk and deteriorating patients, emergency calls in the mental health precinct, and assisting with procedures outside of the ICU. Emphasis is placed on both technical and non-technical skills.
*Conclusions:* We have provided a framework for the development of a MET nurse training program. The applicability of this program to other settings and effects of this program on patient outcomes remain unknown.


## 1. Introduction

Rapid Response Teams (RRTs also known locally as MET) have been introduced into hospitals worldwide to improve the identification and timely management of deteriorating ward patients.[1] Australia was an early adopter of this model of care as METs, which is now a mandatory requirement for all acute hospitals.[2] Intensive Care Unit (ICU) nurses[3] and ICU liaison nurses[3,4] are frequent participants in METs, and many hospitals are now seeing more than 450 calls annually.[5]

Despite this, there is relatively little research describing the role of ICU nurses within the predominant Australian model of

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http://dx.doi.org/10.1016/j.aucc.2015.03.001
1036-7314/

physician-led METs. In addition, there are no published guidelines to describe the necessary skill set, reasonable scope of practice or training requirements for nurses who participate in the MET.

The recent 2014 Australian and New Zealand Intensive Care Society (ANZICS) conference on the role of Intensive Care with RRTs provided data and narrative from MET experiences, with considerable interest surrounding the education of nurses involved. The purpose of this communication is to provide a brief description of the pre-requisites for application, expected roles, responsibilities and methods of training and assessment for ICU nurses wishing to participate in the MET within our ICU. We hope that this will promote discussion and contribute to the development of guidelines and educational material in this area and a new body of knowledge.

## 2. Hospital setting and details and emergency response systems

Austin Health is a tertiary level teaching hospital in the north of Melbourne, Australia. It has a total of 980 beds, including more than 500 acute care beds and is a statewide referral centre for spinal cord injuries, chronic ventilatory failure, and liver transplant medicine. There is also a co-located mental health precinct as well as separate campuses for low risk elective surgery and rehabilitation. Navigation to the co-located Olivia Newton John Cancer and Wellness Centre (ONJCWC) takes approximately 10 min. There are approximately 33,000 multi-day admissions per year, and 2200 ICU and high dependency unit (HDU) admissions to the 20 bed closed ICU.

The physician-led MET has been described elsewhere.[6,7] The team consists of an ICU registrar and a nurse, and where possible a medical registrar and medical staff from the patient's home unit. On some occasions the MET registrar may be a relatively junior ICU registrar or can be a rotating general medical or anaesthetic registrar. The MET takes a well stocked and organised trolley to the call which contains all equipments and medications needed for intubation and commencement of vasoactive agents on the ward (Fig. 1[1]). The MET responds to between 2200 and 2400 calls annually.

A Respond Blue call is activated when a patient has an immediate life-threatening emergency such as cardiac or respiratory arrest, or compromised airway. This call triggers the attendance of an anaesthetist or senior anaesthetic trainee and a Coronary Care nurse, in addition to MET personnel.

The Mental Health Precinct has a different emergency response call termed an Emergency Medical Review (EMR). Thresholds for EMR activation are deliberately set lower than that for the MET, and the ICU MET nurses attend these calls on their own. Due to remoteness from the acute ward beds, an ambulance is also called to assist in transportation of patients who infrequently require transfer to an acute medical or surgical bed within the main hospital building.

A nurse is rostered on the MET for each shift. The MET ICU registrar has a dual role prescribing treatment for a six bed area in the ICU. There is presently no dedicated Intensive Care Consultant for the MET. At the time of submission, there were 75 MET accredited ICU nurses from a total pool of 230 nurses. All ICU medical staff and the ICU MET nurse carry portable phones with internal extensions to permit rapid and efficient communication about staff location, workload, patient status, treatment needs, requirement for senior assistance, and clarification of logistics when ICU admission is required.

## 3. Overview of MET nurse training

The Austin ICU implemented our first MET program in 2007 which was coordinated by the Nurse Unit Manager (NUM) and a number of Clinical Nurse Specialists. This resulted in approximately 50 current staff being accredited. A re-launch of the program provided by a "MET panel" of four senior ICU nurses commenced in September 2011 to provide greater governance and a more supportive training focus for the program. The new course was introduced in response to a substantial increase in the number of MET calls at our hospital, and the need to evolve and develop the unique skill set for this sub-specialty of ICU nursing. An additional aim was to standardise the approach to education and oversight of MET nurse training, to minimise variations in such training, and to adequately prepare and support nurses during the training program. The role of the MET panel is to coordinate the MET program and to provide leadership, guidance, support and accountability for MET nurses. They work closely with the ICU NUM, the medical director of critical care outreach, and the ICU liaison nurses to optimise the MET.


**Fig. 1.** Medical Emergency Team trolley containing equipment, medication, defibrillator and monitor required for management of critically ill patients on the hospital ward.

## 4. Expected roles and responsibilities of the MET nurse

The MET nurse is expected to carry out a variety of roles and responsibilities (Table 1). We included these skills as essential components of the MET nurse training program as we found them to be important elements in our first 10 years of running a Rapid

**Table 1**
Summary of roles and responsibilities of an ICU MET nurse at Austin Health.

| | |
|---|---|
| 1. | Attend all MET calls to participate in patient assessment and formulate a care plan |
| 2. | Attend Respond Blue calls in inpatient areas to participate in basic and advanced life support |
| 3. | Attend Emergency Medical Reviews in the Mental Health Precinct |
| 4. | Clinical review and assessment of at-risk patients, particularly out of hours |
| 5. | Assist ICU registrars with procedures conducted outside the ICU |
| 6. | Checking three MET trolleys and equipment at each shift |
| 7. | Education and support of ward staff |
| 8. | Completion of paper and or electronic documentation after patient review |
| 9. | Assisting with nursing care in the ICU when workload permits |

ICU, Intensive Care Unit; MET, Medical Emergency Team.

[1] Contents list available on request.