

Responding to Medical Emergencies at a Private Hospital

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BACKGROUND

- MET implemented in 2003 for resuscitation of critically ill deteriorating patients.
- Criteria based on consensus and literature
- No review conducted since inception
- No Australian private hospital data published for comparison despite different models of medical care

AIMS

- To evaluate 2007-2008 MET calls
- To analyse MET call activation criteria
- To determine the frequency & duration of delayed MET calls
- To determine patient outcomes

METHOD

Design

- Retrospective medical record audit

Setting

- Not-for-profit, 400+ bed, Catholic private hospital offering comprehensive care including ICU and CCU.

Sample

- 15 months of registered inpatient MET calls

METHOD

Instruments

- Patient progress notes (MR065)
- Observation charts (MR177).
- MET call Registry & evaluation form
- General demographic data

Procedure

- CHREC- Low risk
- Cross-referenced MET call evaluation forms with registration books
- Retrospective analysis of medical records

Data Analysis

- Descriptive and inferential statistics

Outcome Measures

- Reason for call
- Pre-event history & activation criteria
- Duration of MET call
- Patient outcome
 - Patient status following MET call
 - Transfers to ICU/CCU
 - Change to NFR implemented
 - Code Blue calls
 - Mortality

RESULTS

Patient demographics (n=276)

- Age 72.6 (SD 17.2yrs)
- Females 141 (51.1%)
- Males 135 (48.9%)
- Median LOS 10 days
IQR 5-22 days

- Reason for Admission
 - 65 (23.6%) Cardiac
 - 62 (22.5%) Cancer
 - 37 (13.4%) Respiratory
 - 33 (12.0%) GIT
 - 16 (5.8%) Orthopaedics
 - 12 (4.4%) CNS
 - 12 (4.4%) Obstetric
 - 39 (14.1%) Other

MET Calls (n=295)

- Multiple MET calls for same patient =17 (5.8%)
- Multiple MET calls for same patient within 48 hours =14 (4.8%)
- Mean Duration = 23.6 minutes (SD 1.1 minutes)

Time of MET Calls (n=295)

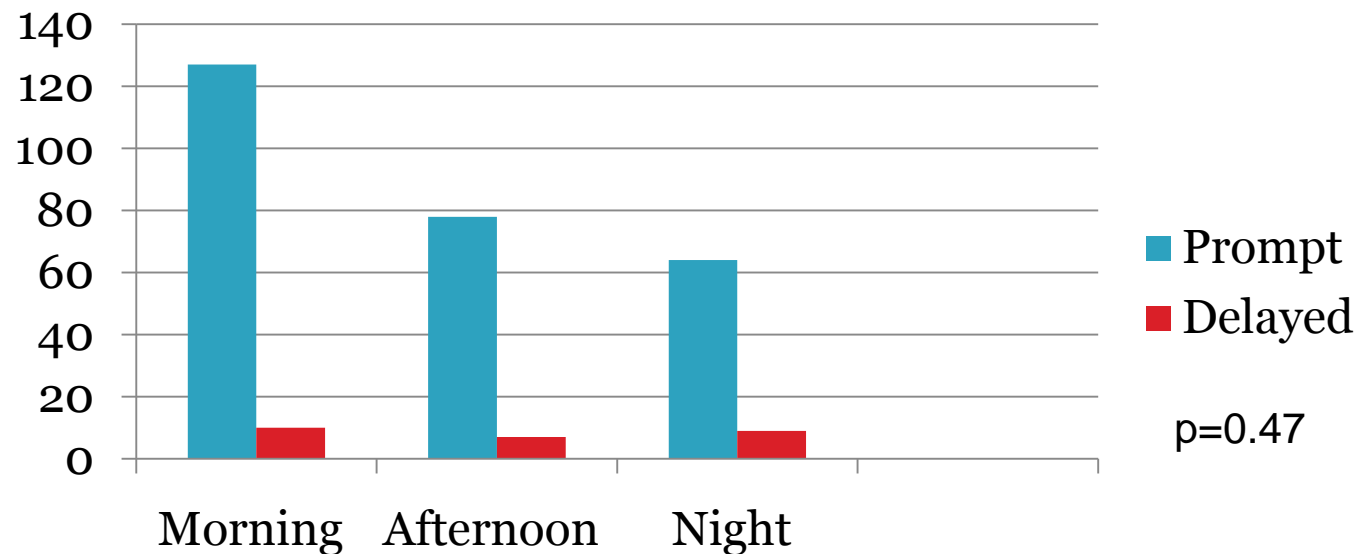
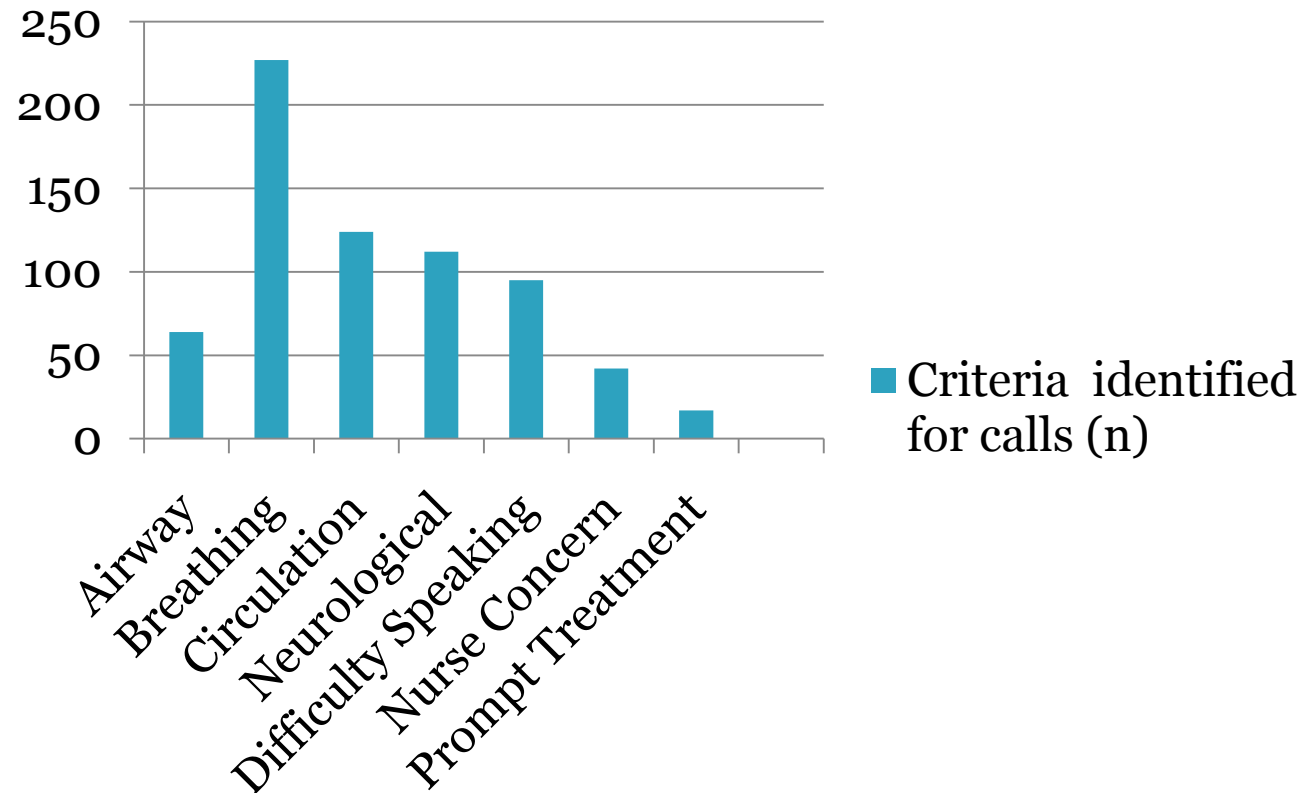


Table 3: MET call criteria for delayed and non-delayed MET calls, n (%).

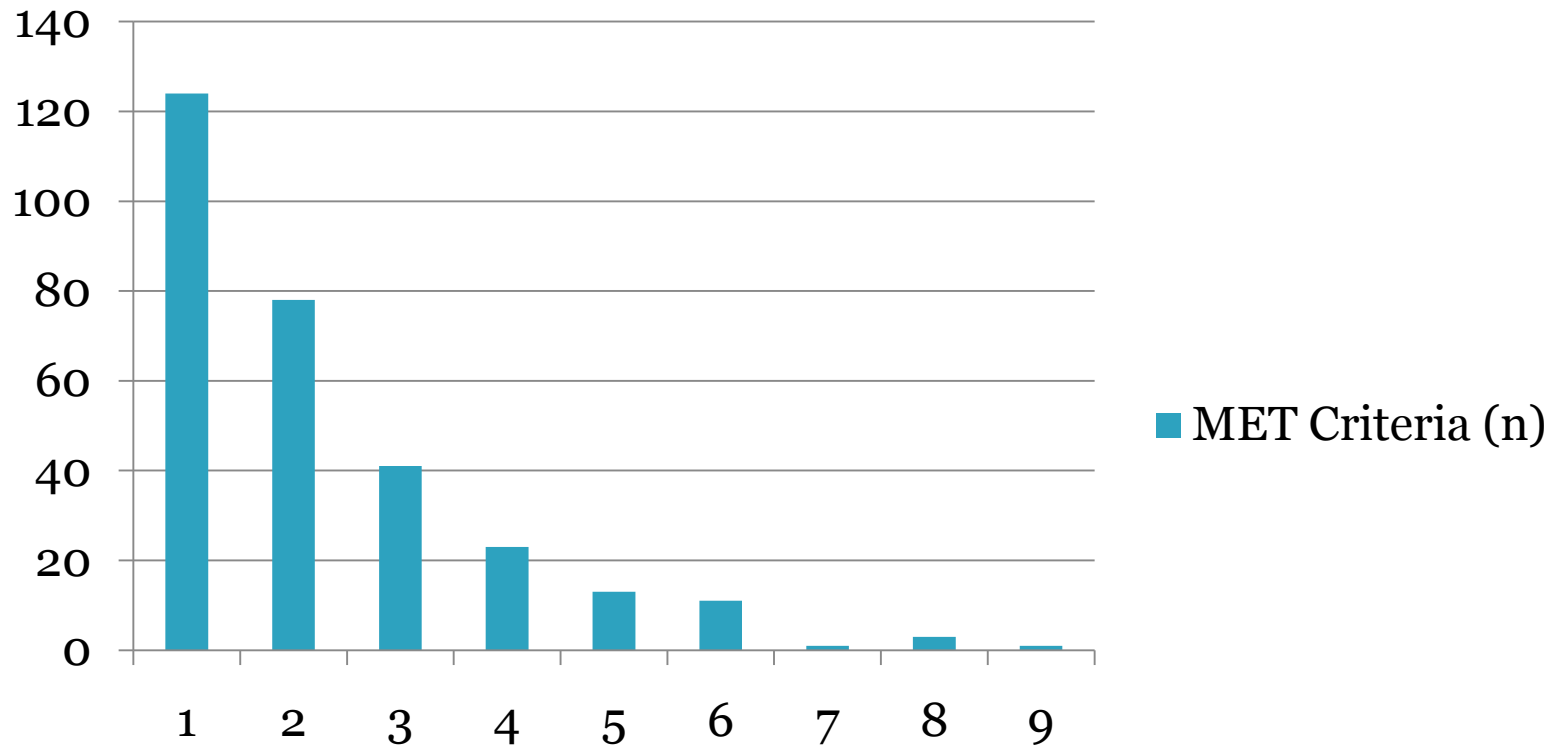
Reason for Call (n=295)

Criteria	Delayed (n=26)	Non-delayed (n=269)	Total (n=295)
Threatened airway	12 (46.2)	52 (19.3)	64 (21.7)
Nurse initiated concerns	11 (42.3)	31 (11.5)	42 (14.2)
Respiratory rate <6/min	11 (42.3)	71 (26.4)	82 (27.8)
Respiratory distress	10 (38.5)	70 (26.0)	80 (27.1)
Heart rate >130/min	10 (38.5)	99 (36.8)	109 (36.9)
Respiratory rate >30/min	6 (23.1)	30 (11.2)	36 (12.2)
Difficulty speaking	6 (23.1)	89 (33.1)	95 (32.2)
Loss of consciousness	6 (23.1)	87 (32.3)	93 (31.5)
Need for treatment and prompt help	3 (11.5)	14 (5.2)	17 (5.8)
SpO ₂ <90%	3 (11.5)	26 (9.7)	29 (9.8)
Seizure	2 (7.7)	17 (6.3)	19 (6.4)
Systolic BP <90mmHg despite treatment	0 (0.0)	15 (5.6)	15 (5.1)

Reason for calls (n=295)



MET criteria fulfilled (n=295)



Frequency of MET criteria fulfilled

Number of criteria	Delayed (n=26)	Non-delayed (n=269)	Total (n=295)
≤ 2	11 (42.3)	186 (69.1)	197 (66.7)
3 or 4	9 (34.6)	62 (23.0)	71 (24.1)
≥ 5	6 (23.1)	21 (7.7)	27 (9.2)

p=0.007

Outcomes of MET (n=295)

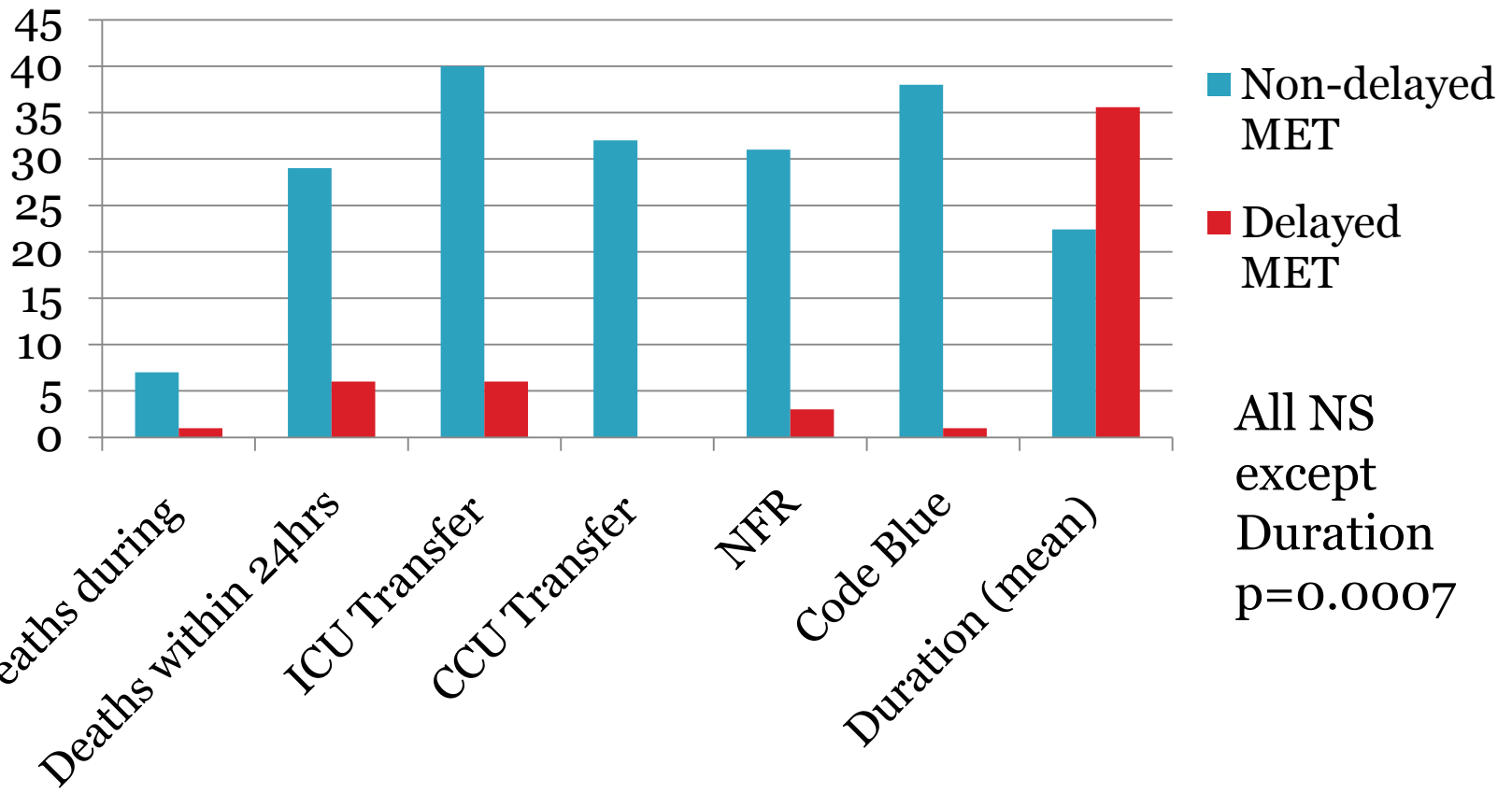
- 1.74 METs/1000 bed days
- Deaths
 - during MET 8 (2.7%)
 - within 24hrs MET 35 (11.9%)
- Transfers to:
 - CCU 32 (10.9%)
 - ICU 46 (15.6%)
- Declared NFR during or after MET call: 34 (11.5%)
- MET upgraded to Code Blue: 39 (13.2%)

Delayed MET calls (n=26)

Delayed MET call:

- a period of >30 mins between the time the MET criteria first documented and the time the MET call made
- **26 (13.4%)** delayed MET calls in **25** patients
- Median delay **170** minutes (IQR 84 - 225 mins)
- **80.8%** had more than one calling criteria
- Delay associated with increased criteria
 - **OR=1.34 (95% CI 1.06 to 1.61)**

Comparing Non-delayed MET to Delayed MET



Comparative Data 1 year on...

2007-2008 (N=295)

- Delayed MET 26
- Transfer to ICU 46
- Transfer to CCU 32
- NFR 34
- Death during MET 8
- Code Blue 39

All NS except Code Blue

2008-2009 (N=412)

- Delayed MET 31
- Transfer to ICU 61
- Transfer to CCU 34
- NFR 40
- Death during MET 9
- Code Blue 19

$p < 0.005$

Other results

- Audit 1.74 MET calls/ 1000 bed days
- Point prevalence n=201; 4.45% (Bucknall et al, 2010)
- Incidence of missed MET calls on discharge n=570; 14.9% (Guinane et al, 2010)

CONCLUSIONS & IMPLICATIONS

- Delayed MET calls 7.5-8.8% vs 24-45% in public (Downey et al, 2008;Quach et al, 2008)
- NFR after MET 9.5-11.5% vs 13-29% in public (Downey et al, 2008;Quach et al, 2008)
- Different model of medical care in private sector
- 77% had respiratory criteria prior to MET call- low recognition of importance by nurses

CONCLUSIONS & IMPLICATIONS

- Need to understand what influences nurses' decisions (afferent limb) to make calls!
- Need to tackle problem not just put bandaids in place!

Thank You

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