

# THE DETERIORATING PATIENT IN THE SUB-ACUTE SETTING

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HEALTHY COMMUNITIES AND  
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# Conflict of Interest and affiliations

No conflicts of interest regarding this topic.

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- Nurse Educator, ALS educator (BH) for Loddon Mallee Region
- Member of National Australian Resuscitation Council
- Member of Australian College of Nursing
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## Medical emergency response in a sub-acute hospital: improving the model of care for deteriorating patients

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## Multisite analysis of the timing and outcomes of unplanned transfers from subacute to acute care

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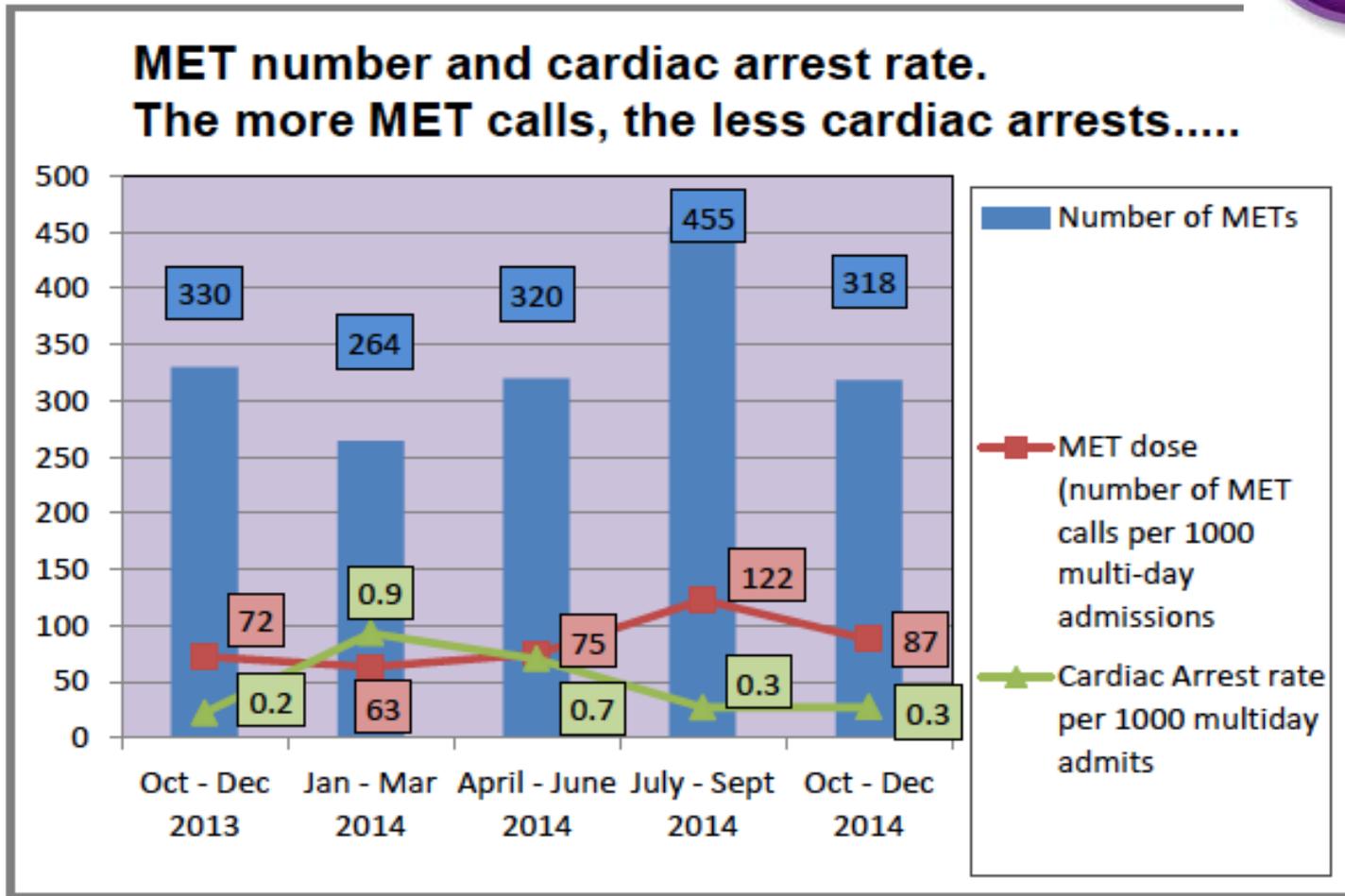
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# Standard 9



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*“The research agenda to decrease mortality rates by early recognition and response to clinical deterioration has been largely limited to the context of inpatient wards in acute care settings”*

(Considine, 2013, pg 187)



# Why is this becoming an issue?

*“The sub-acute hospital setting has traditionally been used for patients with lower medical acuity. However, changing models of care in these areas have meant that there is an increased need to manage unwell patients”*

*(Visser 2014, pg 170)*

# How big of an issue is it?

Nationally, almost 19,000 (5%) of episodes of sub acute care result in transfer to another hospital for treatment of deterioration (Considine, 2015) .

In America this rate is 10.91% (Faulk, 2013)

European statistics not comparable due to average length of stay in acute longer (Morandi, 2013).

Increased costs associated with stay. \$494 per day in rehab compared to \$626 per day for acute bed, \$4,139 per day for ICU bed (Vic Govt, 2015)

# What are the demographics?

- One third within the first 24 hours of admission to sub-acute
- More than 80% within first 72 hours of admission to sub-acute
- Median age: 81 (+/- 8 years)
- No obvious difference between gender.
- Original acute admission being for general surgery
- Polypharmacy (4 fold increased risk)
- Significant functional decline (3 fold increased risk)
- Length of stay in acute  $\geq$  13 days (2 fold increased risk)
- More likely with clinical instability on admission to sub-acute (81% greater risk)
- More likely for patients with delirium
- Patients admitted to sub acute after 4pm

MET trigger	Visser (n=141)		Bendigo Health (n=103)	
Change in conscious state	(38/141)	27%	(13/103)	12%
O2 Sat <90% or >8lpm O2 required	(20/141)	14.2%	(20/103)	19%
Systolic BP <90mmHg	(20/141)	14.2%	(33/103)	32%
RR <8 or >25 per min	(16/141L)	11.3%	(14/103)	13%
Chest Pain	(11/141)	7.8%	Not specified in data	
HR <40 or >110	(10/141)	7.1%	(12/103)	11%
Active bleeding	(9/141)	6.4%	Not specified in data	
Seizure	(8/141)	5.7%	Not specified in data	
Staff worried / other	(7/141)	5.0%	(38/103)	36%
Cannot be roused	(2/141)	1.4%	Not specified in data	
UO <50ml over 4 hours	Not specified in data		(8/103)	7%

# What are reasons for unplanned transfers?

1. Respiratory (SOB, aspiration)
2. Cardiac (chest pain, arrhythmias)
3. Neurological (altered conscious state, confusion, stroke)
4. Gastrointestinal (abdominal pain, vomiting, GI bleeding)
5. Genitourinary (haematuria, urinary retention, renal failure)
6. Febrile illness or sepsis (fever, wound infection)
7. Fall or injury
8. Musculoskeletal (joint pain, back pain, limb pain)
9. Wound management issues
10. Other (hyper/hypo glycaemia, electrolyte imbalance, medication error requiring medical review, medication toxicity and epistaxis)

# What are the outcomes?

Those who died had more physiological abnormalities in the 24hrs preceding transfer

More likely to be discharged in a frail or poor condition

Less likely to return to pre hospital functional status

Mortality rates between 15 and 28%



# Why are outcomes so poor?

“Post hospital syndrome”

In the 24 hrs preceding the transfer – 92.6% had 1 or more physiological abnormalities

Recognition of deterioration delayed due to the variability in the frequency and completeness of physiological assessments

Acute and subacute care facilities are often on different sites

Lower nurse patient ratio in sub acute settings

Time of day – fatigue, handover, access to information, increased medication errors, increased length of stay

## The significance of altered physiological signs in those 24 hrs

Vital sign	5% mortality	10% mortality	20% mortality
Systolic BP low	80 to <85	65 to <70	55 to <60
Diastolic BP low	20 to <30		
Diastolic BP high	120 to >130		
Mean arterial Pressure high	40 to <50		
Heart rate high	120 to <130	140 to <150	150 to <160
Temperature low	34.4 to <35	33.9 to <34.4	
Temperature high	38.9 to <39.4	39.4 to <40	
Respiratory rate high	24 to 28	28 to 32	36 to 40
Respiratory rate low	10 to 12	4 to 8	
Oxygen saturation %	90 to <91	81 to <82	
Level of consciousness (GCS)	Not alert 14	Sedated 13	No response

(Bleyer, 2011, pg 1388)

# What should be done?

Improved documentation of escalation of care

Physiological observations are measured at least once per 8 hr shift in sub acute settings

Monitoring for primary diagnosis and for other active/developing medical problems

Pre-emptive documentation of Advanced Care Directives / Limitation of medical treatment orders – including transfer information

Identify those patients with reversible pathology and therefore likely to benefit from transfer and those who will not and are appropriate for palliation

# Thank you



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