



Online Appendix

**This appendix was part of the submitted manuscript and has been peer reviewed.
It is posted as supplied by the authors.**

Appendix to: Gelbart B, Vidmar S, Stephens D, et al. Characteristics and outcomes of children receiving intensive care therapy within 12 hours following a medical emergency team event. *Crit Care Resusc* 2021; 23: 254-61.
<https://doi.org/10.51893/2021.3.OA2>

Supplementary appendix – Hospital and MET procedure and MET documentation tool

Hospital and MET Procedure

Ward inpatients remain under the primary care of their admitting unit and are nursed with a 1:4 nurse to patient ratio or 1:2 for limited higher acuity patients. MET criteria include age specific cut offs for vital sign parameters as well as staff concern and are outlined by a hospital procedure:

https://www.rch.org.au/clinicalguide/guideline_index/MET_Criteria_Call_777_for_help/

Electronic Medical Record MET documentation tool

Step 1 - MET Summary ↑ ↓

Time taken: 15:02 9/12/2020 Values By Show: Row Info Last Filed All Choices

MET Documentation

▼ MET

Time of MET

Name of Doctor

Name of Nurse

Who called the met? Doctor Nurse Parent Other

Duration of Rapid Response (minutes) 5 10 15 20 25 30 35 40 45 50 55 60 >...

Reason for MET Staff concerned Airway threat Desaturations Tachypnoea Tachycardia
 Bradycardia Hypotension Seizures Reduced consciou... Cardiac arrest
 Respiratory arrest Other (specify with...)

MET Diagnosis Airway compromise Respiratory compromise Circulatory compromise
 Reduced consciousness Other (specify with comment)

MET Interventions Critical Care advice Bag valve mask ventil... CPAP/BIPAP Low flow O2
 HFNPO2 Oropharyngeal airway Intubation CPR
 Adrenaline nebulisation IV vasoactive medica... Naloxone/Flumazenil Procedure
 Intraosseous fluids Fluid bolus Defibrillation Other (specify with c...

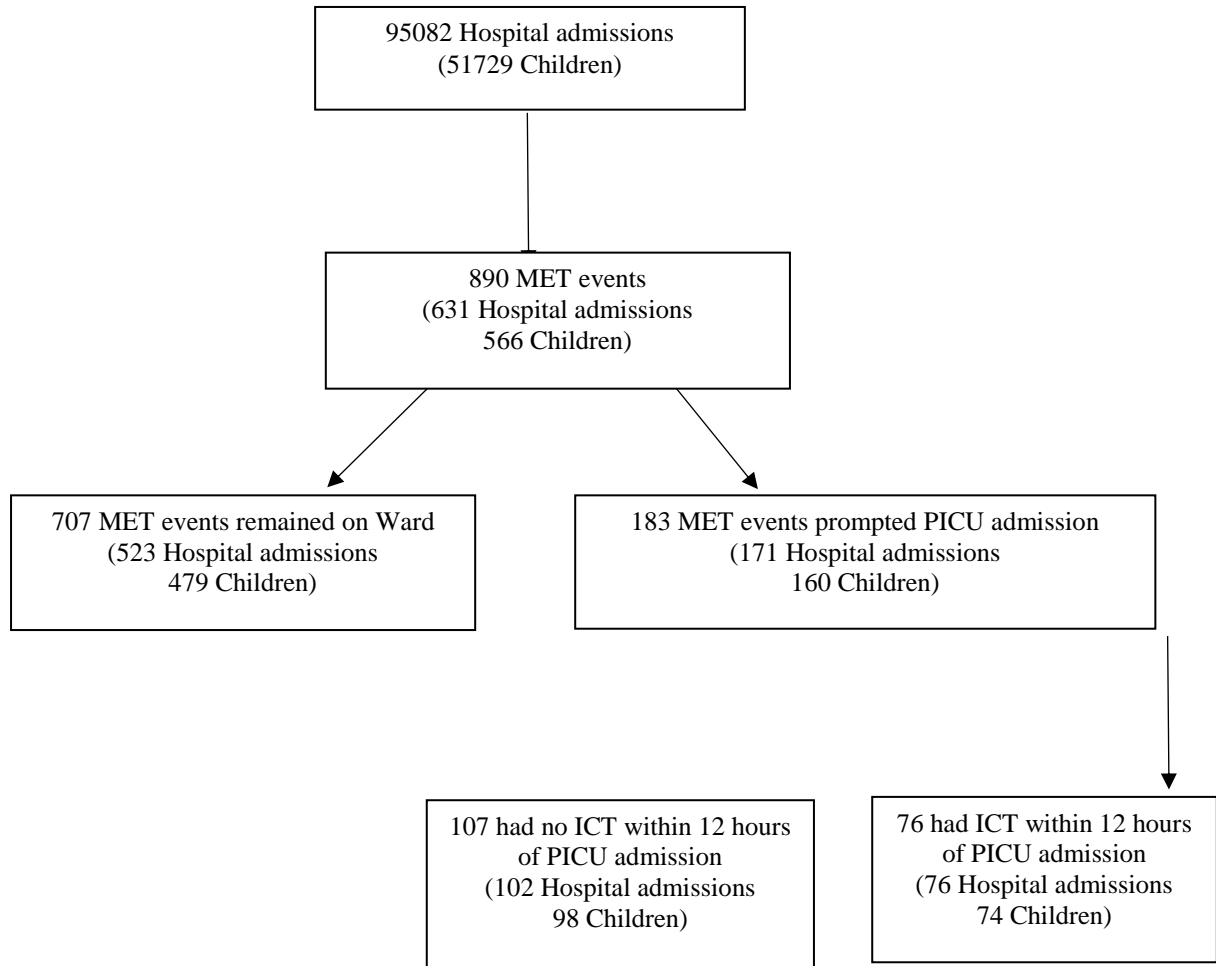
MET Outcomes Admit to PICU Remained in existing location Transfer to other internal location
 Transfer to OT Transfer to ED Transfer to external location

MET Follow Up None Unit doctor to review ED to review PICU Outreach to review

Supplementary table 1 Demographic and clinical characteristics of all hospital admissions during the study period

Number of admissions (patients)	95082 (51729)
Sex (male) n (%)	53794 (57)
Age n (%)	
Birth to 5 years	42892 (45)
5 to 10 years	22238 (23)
10 to 15 years	17781 (19)
15 to 20 years	11608 (12)
>20 years	563 (1)
Diagnoses (n)	
Oncology	5358
Respiratory conditions	
Asthma	2454
Bronchiolitis	1249
Croup	1505
Head injury	1349
Allergy	3711
OSA	2414
Inflammatory bowel disease	1249
Mortality n (%)	152 (0.2)

Supplementary figure 1 Flow diagram of hospital admissions, number of children and MET outcome



Supplementary table 2. Number of MET events per hospital admission per patient (n=631)

Number of admissions per patient	Number of MET events per admission	Frequency of admissions (n)
1 Hospital admission	1	416
	2	63
	3	21
	4 or greater	14
2 Hospital admissions	1	53
	2	17
	3	5
	4 or greater	9
3 Hospital admissions or more	1	22
	2	7
	3	2
	4 or greater	2

Supplementary table 3. Frequency of critical event types by MET outcome

Critical event	Ward	PICU no ICT within 12 hours	PICU ICT within 12 hours
Number of MET events	N=707	N=107	N=76
BSL <2 mmol/L in prior 12 hours	3 (0.4%)	0 (0.0%)	0 (0.0%)
Bag valve mask ventilation	34 (4.8%)	9 (8.4%)	12 (15.8%)
Cardiac arrest	4 (0.6%)	0 (0.0%)	3 (3.9%)
Fluid resuscitation >40ml/kg	2 (0.3%)	0 (0.0%)	1 (1.3%)
Intubation	4 (0.6%)	0 (0.0%)	4 (5.3%)
Reversal of opiates	6 (0.8%)	0 (0.0%)	0 (0.0%)
Reversal of sedation	2 (0.3%)	0 (0.0%)	0 (0.0%)
pH < 7.1 BD 10	2 (0.3%)	0 (0.0%)	2 (2.6%)
Other	3 (0.4%)	1 (0.9%)	3 (3.9%)

PICU Paediatric intensive care unit; ICT Intensive care therapy

Supplementary table 4. Paediatric Intensive Care Unit admission diagnoses (n=183)

PICU principal diagnoses n (%)	PICU no ICT within 12 hours n=107	PICU ICT within 12 hours n=76
Injury	0 (0)	1 (1)
Cardiovascular	25 (23)	13 (17)
Neurological	18 (17)	1 (1)
Respiratory	48 (45)	44 (58)
Gastrointestinal/Renal	3 (3)	0 (0)
Miscellaneous	11 (10)	15 (20)
Post-operative non cardiac	2 (1)	2 (3)

PICU Paediatric intensive care unit; ICT intensive care therapy

Supplementary table 5. Number (%) of vitals recorded in the 6 hours prior to the MET, overall and by MET outcome

a. Overall (n=833 MET events)

Vital Sign	0	1	2	3	4	5+
Systolic blood pressure	167 (20%)	163 (20%)	152 (18%)	130 (16%)	58 (7.0%)	163 (20%)
Heart Rate	33 (4.0%)	53 (6.4%)	75 (9.0%)	79 (9.5%)	59 (7.1%)	534 (64%)
Oxygen saturation	35 (4.2%)	51 (6.1%)	82 (9.8%)	68 (8.2%)	64 (7.7%)	533 (64%)
Respiratory rate	36 (4.3%)	61 (7.3%)	88 (11%)	81 (9.7%)	56 (6.7%)	511 (61%)
Temperature	64 (7.7%)	207 (25%)	242 (29%)	138 (17%)	76 (9.1%)	106 (13%)
Level of consciousness	58 (7.0%)	90 (11%)	123 (15%)	100 (12%)	98 (12%)	364 (44%)

b. Remained on ward (n=678 METs)

Vital Sign	0	1	2	3	4	5+
Systolic blood pressure	128 (19%)	133 (20%)	122 (18%)	114 (17%)	49 (7.2%)	132 (19%)
Heart Rate	28 (4.1%)	48 (7.1%)	63 (9.3%)	71 (10%)	48 (7.1%)	420 (62%)
Oxygen saturation	30 (4.4%)	47 (6.9%)	70 (10%)	60 (8.8%)	55 (8.1%)	416 (61%)
Respiratory rate	31 (4.6%)	56 (8.3%)	77 (11%)	70 (10%)	44 (6.5%)	400 (59%)
Temperature	51 (7.5%)	167 (25%)	204 (30%)	112 (17%)	62 (9.1%)	82 (12%)
Level of consciousness	51 (7.5%)	74 (11%)	101 (15%)	83 (12%)	79 (12%)	290 (43%)

c. Admitted to the PICU and did not receive ICT within 12 hours (n=88 METs)

Vital Sign	0	1	2	3	4	5+
Systolic blood pressure	23 (26%)	15 (17%)	16 (18%)	9 (10%)	5 (5.7%)	20 (23%)
Heart Rate	2 (2.3%)	5 (5.7%)	10 (11%)	4 (4.5%)	7 (8.0%)	60 (68%)
Oxygen saturation	2 (2.3%)	3 (3.4%)	11 (13%)	6 (6.8%)	6 (6.8%)	60 (68%)
Respiratory rate	2 (2.3%)	5 (5.7%)	8 (9.1%)	8 (9.1%)	5 (5.7%)	60 (68%)
Temperature	9 (10%)	21 (24%)	24 (27%)	15 (17%)	6 (6.8%)	13 (15%)
Level of consciousness	5 (5.7%)	7 (8.0%)	13 (15%)	10 (11%)	10 (11%)	43 (49%)

d. Admitted to the PICU and received ICT within 12 hours (n=67 METs)

Vital Sign	0	1	2	3	4	5+
Systolic blood pressure	16 (24%)	15 (22%)	14 (21%)	7 (10%)	4 (6.0%)	11 (16%)
Heart Rate	3 (4.5%)	0 (0.0%)	2 (3.0%)	4 (6.0%)	4 (6.0%)	54 (81%)
Oxygen saturation	3 (4.5%)	1 (1.5%)	1 (1.5%)	2 (3.0%)	3 (4.5%)	57 (85%)
Respiratory rate	3 (4.5%)	0 (0.0%)	3 (4.5%)	3 (4.5%)	7 (10%)	51 (76%)
Temperature	4 (6.0%)	19 (28%)	14 (21%)	11 (16%)	8 (12%)	11 (16%)
Level of consciousness	2 (3.0%)	9 (13%)	9 (13%)	7 (10%)	9 (13%)	31 (46%)

Supplementary table 6. Number (%) of abnormal vital signs in the 6 hours prior to the MET, overall and by MET outcome

a. Overall

Vital Sign	0	1	2+
Systolic blood pressure (n=666)	463 (70%)	112 (17%)	91 (14%)
Heart rate (n=800)	550 (69%)	102 (13%)	148 (19%)
Oxygen saturation (n=798)	542 (68%)	112 (14%)	144 (18%)
Respiratory rate (n=797)	591 (74%)	68 (8.5%)	138 (17%)
Temperature (n=769)	433 (56%)	191 (25%)	145 (19%)
Level of consciousness (n=775)	719 (93%)	32 (4.1%)	24 3.1%)

b. Remained on ward

Vital Sign	0	1	2+
Systolic blood pressure (n=550)	378 (69%)	98 (18%)	74 (13%)
Heart rate (n=650)	442 (68%)	82 (13%)	126 (19%)
Oxygen saturation (n=648)	449 (69%)	88 (14%)	111 (17%)
Respiratory rate (n=647)	496 (77%)	49 (7.6%)	102 (16%)
Temperature (n=627)	347 (55%)	158 (25%)	122 (19%)
Level of consciousness (n=627)	579 (92%)	27 (4.3%)	21 3.3%)

c. Admitted to the PICU and did not receive ICT within 12 hours

Vital Sign	0	1	2+
Systolic blood pressure (n=65)	49 (75%)	5 (7.7%)	11 (17%)
Heart rate (n=86)	61 (71%)	11 (13%)	14 (16%)
Oxygen saturation (n=86)	58 (67%)	11 (13%)	17 (20%)
Respiratory rate (n=86)	56 (65%)	12 (14%)	18 (21%)
Temperature (n=79)	47 (59%)	19 (24%)	13 (16%)
Level of consciousness (n=83)	76 (92%)	4 (4.8%)	3 (3.6%)

d. Admitted to the PICU and received ICT within 12 hours

Vital Sign	0	1	2+
Systolic blood pressure (n=51)	36 (71%)	9 (18%)	6 (12%)
Heart rate (n=64)	47 (73%)	9 (14%)	8 (13%)
Oxygen saturation (n=64)	35 (55%)	13 (20%)	16 (25%)
Respiratory rate (n=64)	39 (61%)	7 (11%)	18 (28%)
Temperature (n=63)	39 (62%)	14 (22%)	10 (16%)
Level of consciousness (n=65)	64 (98%)	1 (1.5%)	0 (0.0%)