

## APPENDIX A. SEARCH STRATEGIES

PubMed searched 1/23/2013 & 1/30/2013

Search	Key Question	Concept	Search Terms
A	All	Early Warning Scoring Systems (general) <i>EWSS – EWSS General</i>	((track and trigger{Title/Abstract})) OR (((((((“Hospital Information Systems”{Mesh}) OR “Risk Assessment/methods”{Mesh}) OR “Point-of-Care Systems”{Mesh}) OR “Monitoring, Physiologic/methods”{Mesh}))) OR ((clinical deterioration{Title/Abstract}) OR risk assessment report{Title/Abstract})) OR (((“early warning”{Title/Abstract}) OR “warning system*”{Title/Abstract}) OR “warning scoring”{Title/Abstract}))
B	All	Named Systems <i>EWSS – EWSS Named</i>	((((((((((bispebjerg{Title/Abstract})) OR (physiological scoring system{Title/Abstract})) OR ((vital sign{Title/Abstract}) AND score{Title/Abstract})) OR (worthing{Title/Abstract})) OR (vialpac{Title/Abstract})) OR (sbar{Title/Abstract})) OR (situation background assessment recommendation{Title/Abstract})) OR (mews{Title/Abstract})) OR (manchester triage system{Title/Abstract})) OR (biosign{Title/Abstract}))
C	All	Either of the Above	A OR B
D	KQ1	Predictive Value <i>EWSS - Predictive Value</i>	((((((((((((C statistic*{Title/Abstract})) OR (Likelihood ratio{Title/Abstract})) OR (expected to observed{Title/Abstract})) OR (calibration{Title/Abstract})) OR (“Calibration”{Mesh})) OR (area under curve{Title/Abstract})) OR (“Area Under Curve”{Mesh})) OR (((PPV{Title/Abstract}) OR positive predictive value{Title/Abstract}) OR NPV{Title/Abstract})) OR (negative predictive value{Title/Abstract})) OR (“Predictive Value of Tests”{Mesh})) OR (((Receiver Operating{Title/Abstract}) OR Receiver Operator{Title/Abstract}) OR ROC{Title/Abstract})) OR (“ROC Curve”{Mesh})) OR (discriminative function{Title/Abstract}))
E	KQ2	Mortality <i>EWSS - Mortality</i>	((mortality{Title/Abstract})) OR (“Hospital Mortality”{Mesh})
F	KQ2	Length of Stay <i>EWSS - LOS</i>	((“length of stay”{Title/Abstract})) OR (“Length of Stay”{Mesh})
G	KQ2	Coronary Outcomes <i>EWSS - Coronary</i>	(((((cardiac arrest{Title/Abstract}) OR cardiogenic shock{Title/Abstract}) OR ACS{Title/Abstract}) OR acute coronary syndrome{Title/Abstract})) OR ((“Shock, Cardiogenic”{Mesh}) OR “Acute Coronary Syndrome”{Mesh})

Search	Key Question	Concept	Search Terms
H	KQ2	Respiratory Failure <i>EWSS - Resp</i>	((("Respiratory Insufficiency"{Mesh})) OR (respiratory failure{Title/Abstract}))
I	KQ2	Sepsis <i>EWSS - Sepsis</i>	((("Sepsis"{Mesh}) OR "Shock, Septic"{Mesh})) OR ((sepsis{Title/Abstract}) OR septic{Title/Abstract}))
J	KQ2a	ICU admissions <i>EWSS - ICU</i>	(((((ICU{Title/Abstract}) OR intensive care unit{Title/Abstract})) AND ((admission{Title/Abstract}) OR admissions{Title/Abstract}))) OR (("Patient Transfer"{Mesh}) OR "Intensive Care Units/ utilization"{Mesh}))
K	KQ2a	Use of rapid response teams <i>EWSS - RRT</i>	(((((medical emergency team{Title/Abstract}) OR rapid response team{Title/Abstract}) OR RRT{Title/Abstract}) OR critical care outreach team{Title/Abstract}) OR patient at risk team{Title/Abstract})) OR (("Patient Care Team"{Mesh}) OR "Hospital Rapid Response Team"{Mesh}))
X		Animals	Other Animals
Y		Children	Child: birth-18 years
Z		Labor and Fetal Monitoring <i>EWSS - Fetal</i>	("Fetal Monitoring"{Mesh}) OR "Labor, Obstetric"{Mesh}

Key Question	Search
KQ 1	Predictive Value (C AND D) Not (X,Y OR Z)
KQ2	Mortality (C AND E) Not (X,Y OR Z)
	Length of Stay (C AND F) Not (X,Y OR Z)
	Coronary outcomes (C AND G) Not (X,Y OR Z)
	Respiratory Failure (C AND H) Not (X,Y OR Z)
	Sepsis (C AND I)
KQ2a	ICU Admissions (C AND J) Not (X,Y OR Z)
	Rapid Response Teams (C AND K) Not (X,Y OR Z)

CINAHL searched 3/15/13

KQ	Concept	Search Terms
All	Early Warning Scoring Systems (general)	(MH "Hospital Information Systems") OR (MH "Risk Assessment/MT") OR "point of care systems" OR (M H "Monitoring, Physiologic/MT") OR "t rack and trigger" OR "clinical deterioration" OR "risk assessment report" OR "early warning" OR "warning system*" OR "warning scoring"
	Named Systems	(TI vital sign AND TI score) OR TI bispebjerg OR TI physiological scoring system OR TI worthing OR TI vialpac OR TI sbar OR TI situation background assessment recommendation OR TI mews OR TI manchester triage system OR TI biosign
Either or the above		
KQ1	Predictive value	(M H "Calibration") OR (MH "ROC Curve") OR (MH "Predictive Value of Tests") OR TI C statistic* OR TI likelihood ratio OR TI expected to observed OR TI calibration OR TI area under curve OR TI ppv OR TI positive predictive value OR TI NPV OR TI negative predictive value OR TI receiver operating OR TI receiver operator OR TI ROC OR TI discriminative function
KQ2	Mortality	(MH "Hospital Mortality") OR TI mortality
	Length of Stay	(MH "Length of Stay") OR "length of stay"
	Coronary outcomes	(M H "Shock, Cardiogenic") OR "cardiogenic shock" OR "ac cute coronary syndrome" OR (MH "Acute Coronary Syndrome") OR "cardiac arrest" OR TI ACS
	Respiratory failure	(M H "Respiratory Failure") OR "respiratory failure"
	Sepsis	"sepsis" OR (MH "Shock, Septic") OR (MH "Sepsis") OR "septic"
KQ2a	Icu admit	((TI ICU OR TI Intensive care unit ) AND (TI Admission OR TI Admission)) OR "patient transfer" OR (M H "Intensive Care Units/UT")
	Use of rapid response teams	TI Medical emergency team OR "patient care team" OR "rapid response team" OR TI critical care outreach team OR TI RRT OR TI patient at risk team
All	Children	Limit: all child
	Labor and fetal monitoring	(MH "Fetal Monitoring") OR (MH "Labor")

KQ	All concepts below are ANDed with the search for early warning scoring systems and have fetal monitoring, labor and children NOTed out	
KQ1	Predictive value	
KQ2	Mortality	
	Length of Stay	
	Coronary outcomes	
	Respiratory failure	
	Sepsis	
KQ2a	ICU admissions	
	Use of rapid response teams	
All above searches de-duplicated against each other for a total of:		

## Search Strategy for Cochrane Central Register of Controlled Trials (OVID) April 5, 2013

#	Searches
1	hospital information systems.mp. or exp Hospital Information Systems/
2	exp Risk Assessment/
3	exp Point-of-Care Systems/
4	exp Monitoring, Physiologic/
5	(track and trigger).mp. {mp=title, original title, abstract, mesh headings, heading words, keyword}
6	clinical deterioration.mp. {mp=title, original title, abstract, mesh headings, heading words, keyword}
7	risk assessment report.mp. {mp=title, original title, abstract, mesh headings, heading words, keyword}
8	early warning.mp. {mp=title, original title, abstract, mesh headings, heading words, keyword}
9	warning system*.mp. {mp=title, original title, abstract, mesh headings, heading words, keyword}
10	warning scoring.mp. {mp=title, original title, abstract, mesh headings, heading words, keyword}
11	1 or 2 or 3 or 4 or 5 or 6 or 7 or 8 or 9 or 10
12	vital sign.mp. {mp=title, original title, abstract, mesh headings, heading words, keyword}
13	score.mp. {mp=title, original title, abstract, mesh headings, heading words, keyword}
14	12 and 13
15	bispebjerg.mp. {mp=title, original title, abstract, mesh headings, heading words, keyword}
16	physiological scoring system.mp. {mp=title, original title, abstract, mesh headings, heading words, keyword}
17	worthing.mp. {mp=title, original title, abstract, mesh headings, heading words, keyword}
18	vialpac.mp. {mp=title, original title, abstract, mesh headings, heading words, keyword}
19	sbar.mp. {mp=title, original title, abstract, mesh headings, heading words, keyword}
20	situation background assessment recommendation.mp. {mp=title, original title, abstract, mesh headings, heading words, keyword}
21	mews.mp. {mp=title, original title, abstract, mesh headings, heading words, keyword}
22	manchester triage system.mp. {mp=title, original title, abstract, mesh headings, heading words, keyword}
23	biosign.mp. {mp=title, original title, abstract, mesh headings, heading words, keyword}
24	14 or 15 or 16 or 17 or 18 or 19 or 20 or 21 or 22 or 23
25	11 or 24
26	calibration.mp. or exp Calibration/
27	area under curve.mp. or exp Area Under Curve/
28	predictive value of tests.mp. or exp "Predictive Value of Tests"/
29	roc curve.mp. or exp ROC Curve/
30	c statistic*.mp. {mp=title, original title, abstract, mesh headings, heading words, keyword}
31	likelihood ratio.mp. {mp=title, original title, abstract, mesh headings, heading words, keyword}
32	expected to observed.mp. {mp=title, original title, abstract, mesh headings, heading words, keyword}
33	calibration.mp. {mp=title, original title, abstract, mesh headings, heading words, keyword}
34	area under curve.mp. {mp=title, original title, abstract, mesh headings, heading words, keyword}
35	ppv.mp. {mp=title, original title, abstract, mesh headings, heading words, keyword}
36	positive predictive value.mp. {mp=title, original title, abstract, mesh headings, heading words, keyword}
37	npv.mp. {mp=title, original title, abstract, mesh headings, heading words, keyword}
38	negative predictive value.mp. {mp=title, original title, abstract, mesh headings, heading words, keyword}
39	receiver operating.mp. {mp=title, original title, abstract, mesh headings, heading words, keyword}

40	reciever operator.mp. {mp=title, original title, abstract, mesh headings, heading words, keyword}
41	roc.mp. {mp=title, original title, abstract, mesh headings, heading words, keyword}
42	discriminative function.mp. {mp=title, original title, abstract, mesh headings, heading words, keyword}
43	26 or 27 or 28 or 29 or 30 or 31 or 32 or 33 or 34 or 35 or 36 or 37 or 38 or 39 or 40 or 41 or 42
44	25 and 43

## KQ1 predictive value

#	Searches
45	mortality.mp. or exp Hospital Mortality/
46	length of stay.mp. or exp "Length of Stay"/
47	cardiogenic shock.mp. or exp Shock, Cardiogenic/
48	acute coronary syndrome.mp. or exp Acute Coronary Syndrome/
49	cardiac arrest.mp. or exp Heart Arrest/
50	acs.mp.
51	47 or 48 or 49 or 50
52	respiratory failure.mp. or exp Respiratory Insufficiency/
53	sepsis.mp. or exp Sepsis/
54	exp Shock, Septic/ or septic.mp.
55	45 or 46 or 51 or 52 or 54
56	25 and 55

## KQ2 patient outcomes

## Search Strategy:

#	Searches
57	icu.mp.
58	intensive care unit.mp.
59	57 or 58
60	admission.mp.
61	admissions.mp.
62	60 or 61
63	59 and 62
64	exp Patient Transfer/
65	exp Intensive Care Units/
66	63 or 64 or 65
67	exp Patient Care Team/
68	exp Hospital Rapid Response Team/
69	medical emergency team.mp.
70	rapid response team.mp.
71	rrt.m_titl.
72	critical care outreach team.m_titl.
73	patient at risk team.m_titl.
74	67 or 68 or 69 or 70 or 71 or 72 or 73
75	66 or 74
76	25 and 75

## APPENDIX B. INCLUSION/EXCLUSION CRITERIA

Code	Definition	Exclusion criteria/notes	KQ1 – Predictive value	KQ2 –Patient health outcomes and resource utilization
X1	Non-English language			
X2	Not relevant to topic			
X3	Intervention not in scope	Exclude if the risk factors examined, methods of risk factor/exposure measurement, or early warning systems studied are not in scope.	<b>Included interventions:</b> any Early Warning Systems (EWS) or other established scoring system designed to identify deteriorating patients on general hospital wards. Potential interventions include but are not limited to the following: Modified Early Warnings Systems (MEWS), Patient at Risk (PAR) score, Physiological Scoring Systems (PSS), Vital Sign Score (VSS), Manchester Triage System, BioSign, VialPAC Earl Warning Score (ViEWS), and Physiological Observation Track and Trigger System (POTTTS).	Same interventions as KQ1
X4	Study population or setting not in scope	Excluded populations: obstetric, fetal, or pediatric patients; Excluded settings: emergency department, ICU, outpatient.	Admitted patients on general medicine or surgical wards.	Same populations/settings as KQ1
X5	No primary data or study design not in scope	Excluded study designs: non-systematic or narrative reviews, opinions, case series	English language validity studies: include if the article is an observational study that reports measures of predictive ability (e.g., discriminative factor, concordance statistic, sensitivity, specificity, likelihood ratios, positive predictive value, and/or negative predictive value) and validates the predictive model.	Controlled studies: randomized controlled trials, controlled clinical trials, before and after studies, and interrupted-time-series designs. Also include: English language systematic reviews of controlled studies.

Code	Definition	Exclusion criteria/notes	KQ1 – Predictive value	KQ2 –Patient health outcomes and resource utilization
X7	Outcomes that are not in scope		Patient health outcomes occurring within 72 hours of EWSS data collection/analysis: <ul style="list-style-type: none"> <li>• short-term mortality (all cause or disease specific)</li> <li>• cardiac arrest</li> <li>• pulmonary arrest</li> </ul>	Outcomes for KQ2 generally apply to in-hospital stay: <ul style="list-style-type: none"> <li>• mortality (in-hospital or mortality up to 30-days; all cause or disease-specific)</li> <li>• in-hospital cardiovascular events (cardiac arrest, acute coronary syndrome, cardiogenic shock)</li> <li>• use of pressors</li> <li>• number of ventilator (or ventilator-free) days</li> <li>• respiratory failure</li> <li>• length of hospital stay</li> <li>• resource utilization outcomes including ICU admission and use of rapid response teams</li> </ul>
X8	Other reason: specify	Add comments or keywords as needed.		
X99	Full text not accessible			
B	Background	Add to any of the above X codes (e.g., X6–B) if the article contains information that may be useful for the introduction, discussion, limitations, future research, or other contextual purposes. Add comments or keywords as needed.		
I-1 I-2			Validity studies that address: KQ1a: What is the predictive value in using EWS scores for predicting patient health outcomes? KQ1b: Which factors contribute to the predictive ability of EWS scores? KQ1c: Does predictive ability of EWS scores vary with specific subgroups of patients?	Controlled studies that address: KQ2a: What are the effects of EWS on health outcomes including mortality, morbidity, cardiac arrest, and pulmonary arrest? KQ2b: What is the impact of EWS on resource utilization (e.g., ICU admissions, length of hospital stay, use of Rapid Response Teams) and provider/nurse satisfaction?
I-SR	Include – systematic review		Systematic review or meta-analysis that addresses either KQ1 or KQ2.	

## APPENDIX C. PEER REVIEW COMMENTS AND RESPONSES

	Reviewer	Comment	Response
<b>Question 1: Are the objectives, scope, and methods for this review clearly described?</b>			
1.	1	Yes	
2.	2	Yes	
3.	3	Yes	
4.	4	Yes	
<b>2. Is there any indication of bias in our synthesis of the evidence?</b>			
5.	1	No	
6.	2	No	
7.	3	No	
8.	4	No	
<b>3. Are there any <u>published</u> or <u>unpublished</u> studies that we may have overlooked?</b>			
9.	1	No	
10.	1	Very thorough.	
11.	2	Yes	
12.	2	Chan, P. et. al. (2010). Rapid Response Teams: A systematic review and analysis. Archives of internal med. 170(1), 18-26.	Although we did look at the impact of RRT's as it applied to the implementation of an EWS, we did not consider the use of rapid response teams in isolation of the EWS. The use of RRT's is not a direct indication of patient benefit.
13.	2	Winters, B. et. al. (2013). Rapid response systems as a patient safety strategy. A systematic review. Annals of Internal Medicine. 158(5) part 2, 417-42. (this one may have been published in May of 2013 and may have missed your date range)	As above, the direct use of rapid response teams is not the primary objective of this report.
14.	3	No	
15.	4	Yes	
16.	4	<a href="#">Resuscitation</a> . 2013 Sep 20. pii: S0300-9572(13)00737-5. doi: 10.1016/j.resuscitation.2013.08.277. [Epub ahead of print] <b>CREWS: Improving specificity whilst maintaining sensitivity of the National Early Warning Score in patients with chronic hypoxaemia.</b> <a href="#">Eccles SR</a> , <a href="#">Subbe C</a> , <a href="#">Hancock D</a> , <a href="#">Thomson N</a> . <b>Source</b> Wrexham Maelor Hospital, Croesnewydd Road, Wrexham LL13 7TD, UK. Electronic address: sinaneccles@gmail.com.	Thank you for directing us to these additional resources. The CREW study was outside of our scope given that it was in a population of patients with chronic hypoxaemia rather than the general ward population.

	Reviewer	Comment	Response
	4 (cont.)	<p><b>Abstract</b></p> <p><b>BACKGROUND:</b> The National Early Warning Score (NEWS) is being introduced across the UK, but there are concerns about its specificity in patients with chronic hypoxaemia, such as some patients with COPD. This could lead to frequent clinically insignificant triggers and alarm fatigue.</p> <p><b>AIMS OF STUDY:</b> To investigate whether patients with chronic hypoxaemia trigger excessively with NEWS, and to design a simple variant of NEWS for patients with chronic hypoxaemia: a Chronic Respiratory Early Warning Score (CREWS).</p> <p><b>METHODS:</b> Data was collected from respiratory wards at 2 hospitals in North Wales. Components of NEWS and frequency of trigger thresholds being reached were recorded. CREWS was applied retrospectively to patients' observations.</p> <p><b>RESULTS:</b> 196 admissions were analysed, including 78 for patients with chronic hypoxaemia. Patients with chronic hypoxaemia frequently exceeded trigger thresholds using NEWS during periods of stability/at discharge. Using CREWS, triggers during stability/at discharge were reduced from 32% of observations to 14% using a trigger threshold of a score greater than 6, and from 50% to 18% using a score greater than 5. All patients with chronic hypoxaemia who died within 30 days still reached CREWS trigger thresholds, and the area under receiver operated curves for NEWS and CREWS was comparable.</p> <p><b>CONCLUSION:</b> CREWS is a simple variant of NEWS for patients with chronic hypoxaemia that could reduce clinically insignificant triggers and alarm fatigue, whilst still identifying the sickest patients. Copyright © 2013 Elsevier Ireland Ltd. All rights reserved.</p> <p><b>KEYWORDS:</b> COPD, Death, Early Warning Score, Hypoxia, NEWS, Pulmonary fibrosis *****</p> <p><a href="#">Resuscitation</a>. 2013 Aug 17. pii: S0300-9572(13)00421-8. doi: 10.1016/j.resuscitation.2013.08.006</p>	

	Reviewer	Comment	Response
17.	4 (cont.)	<p><a href="#">PLoS One</a>. 2013 Jul 26;8(7):e70068. doi: 10.1371/journal.pone.0070068. Print 2013.  <b>Imperfect implementation of an early warning scoring system in a Danish teaching hospital: a cross-sectional study. (might not meet criteria for inclusion)</b>  <a href="#">Niegsch M</a>, <a href="#">Fabritius ML</a>, <a href="#">Anhøj J</a>.  <b>Source</b>  Anaesthesiology Department Z, Bispebjerg Hospital, Copenhagen, Denmark. mark@niegsch.dk  <b>Abstract</b>  <b>BACKGROUND:</b>  In 2007, the initiation of a patient safety campaign led to the introduction of Ward Observational Charts (WOC) and Medical Early Warning Score (MEWS) at Naestved Regional Hospital. This included systematic measuring of vital signs of all patients in order to prevent patient deterioration and assure timely and correct initiation of treatment. The aim of this study was to assess to what degree WOC guidelines being followed by ward staff.  <b>DESIGN AND SETTING:</b>  A 7-day prospective, observational, randomised, cross-sectional, point prevalence study of WOC guideline compliance in hospitalised patients on twelve wards at Naestved Hospital.  <b>RESULTS:</b>  The study included 132 patients. Of these, 58% had been observed and managed correctly according to WOC guidelines. 77% had all MEWS elements recorded by staff. One patient had no MEWS elements recorded. Only 38% of patients with abnormal MEWS were correctly escalated by nursing staff. Staff was aware of the abnormal MEWS observed by investigator in 60% of the patients. Each element of WOC was on average recorded by staff in 90% of the patients.  <b>CONCLUSION:</b>  At the time of our study, the long-term implementation of WOC guidelines has not been completed satisfactorily. The lacking component in the implementation of MEWS and WOC is the documentation of action taken upon finding an abnormal value. Unsuccessful implementation could result in incorrect results from evaluation of an early warning system. We suggest a redesign of the training programme to educate staff in recognising and caring for critically ill patients at Naestved Hospital.  PMID:  23922906  [PubMed - in process]  PMCID:  PMC3724921</p>	<p>This study does not meet our inclusion criteria given that the outcome measured was compliancy rather than utilization of nursing resources.</p>

	Reviewer	Comment	Response
18.	4 (cont.)	<p><a href="#">Resuscitation</a>. 2010 Jun;81(6):658-66. doi: 10.1016/j.resuscitation.2010.03.001. Epub 2010 Apr 7.</p> <p><b>A prospective controlled trial of the effect of a multi-faceted intervention on early recognition and intervention in deteriorating hospital patients.</b></p> <p><a href="#">Mitchell IA</a>, <a href="#">McKay H</a>, <a href="#">Van Leuvan C</a>, <a href="#">Berry R</a>, <a href="#">McCutcheon C</a>, <a href="#">Avard B</a>, <a href="#">Slater N</a>, <a href="#">Neeman T</a>, <a href="#">Lamberth P</a>.</p> <p><b>Source</b> The Canberra Hospital, Department of Intensive Care, Yamba Drive, Canberra, Garran, Australian Capital Territory, Australia. Imogen.mitchell@act.gov.au</p> <p><b>Abstract</b> <b>AIM:</b> To determine whether the introduction of a multi-faceted intervention (newly designed ward observation chart, a track and trigger system and an associated education program, COMPASS) to detect clinical deterioration in patients would decrease the rate of predefined adverse outcomes.</p> <p><b>METHODS:</b> A prospective, controlled before-and-after intervention of trial was conducted in all consecutive adult patients admitted to 4 medical and surgical wards during a 4 month period, 1157 and 985, respectively. A sub-group of patients underwent vital sign and medical review analysis pre-intervention (427) and post-intervention (320). The outcome measures included: number of unplanned admissions to the intensive care unit (ICU), Medical Emergency Team (MET) reviews and unexpected hospital deaths, vital sign documentation frequency and incidence of a medical review following clinical deterioration. This study is registered, ACTRN12609000808246.</p> <p><b>RESULTS:</b> Reductions were seen in unplanned admissions to ICU (21/1157 [1.8%] vs 5/985 [0.5%], p=0.006) and unexpected hospital deaths (11/1157 [1.0%] vs 2/985 [0.2%], p=0.03) during the intervention period. Medical reviews for patients with significant clinical instability (58/133 [43.6%] vs 55/79 [69.6%] p&lt;0.001) and number of patients receiving a MET review increased (25/1157 [2.2%] vs 38/985 [3.9%] p=0.03) during the intervention period. Mean daily frequency of documentation of all vital signs increased during the intervention period (3.4 [SE 0.22] vs 4.5 [SE 0.17], p=0.001).</p> <p><b>CONCLUSION:</b> The introduction of a multi-faceted intervention to detect clinical deterioration may benefit patients through increased monitoring of vital signs and the triggering of a medical review following an episode of clinical instability.</p> <p>Crown Copyright 2010. Published by Elsevier Ireland Ltd. All rights reserved</p>	Have reviewed this paper and will include the outcome of length of hospital stay.

	Reviewer	Comment	Response
19.	4 (cont.)	<p><a href="#">Lancet</a>. 2005 Jun 18-24;365(9477):2091-7.  <b>Introduction of the medical emergency team (MET) system: a cluster-randomised controlled trial.</b>  <a href="#">Hillman K, Chen J, Cretikos M, Bellomo R, Brown D, Doig G, Finfer S, Flabouris A; MERIT study investigators.</a>  <b>Erratum in</b></p> <ul style="list-style-type: none"> <li>Lancet. 2005 Oct 1;366(9492):1164.</li> </ul> <p><b>Abstract</b>  <b>BACKGROUND:</b>                      Patients with cardiac arrests or who die in general wards have often received delayed or inadequate care. We investigated whether the medical emergency team (MET) system could reduce the incidence of cardiac arrests, unplanned admissions to intensive care units (ICU), and deaths.  <b>METHODS:</b>                      We randomised 23 hospitals in Australia to continue functioning as usual (n=11) or to introduce a MET system (n=12). The primary outcome was the composite of cardiac arrest, unexpected death, or unplanned ICU admission during the 6-month study period after MET activation. Analysis was by intention to treat.  <b>FINDINGS:</b>                      Introduction of the MET increased the overall calling incidence for an emergency team (3.1 vs 8.7 per 1000 admissions, p=0.0001). The MET was called to 30% of patients who fulfilled the calling criteria and who were subsequently admitted to the ICU. During the study, we recorded similar incidence of the composite primary outcome in the control and MET hospitals (5.86 vs 5.31 per 1000 admissions, p=0.640), as well as of the individual secondary outcomes (cardiac arrests, 1.64 vs 1.31, p=0.736; unplanned ICU admissions, 4.68 vs 4.19, p=0.599; and unexpected deaths, 1.18 vs 1.06, p=0.752). A reduction in the rate of cardiac arrests (p=0.003) and unexpected deaths (p=0.01) was seen from baseline to the study period for both groups combined.  <b>INTERPRETATION:</b>                      The MET system greatly increases emergency team calling, but does not substantially affect the incidence of cardiac arrest, unplanned ICU admissions, or unexpected death.</p>	<p>This study was outside of our inclusion criteria as it applies to the use of medical emergency teams rather than an early warning scoring system.</p>
<p><b>4. Please write additional suggestions or comments below. If applicable, please indicate the page and line numbers from the draft report.</b></p>			
20.	1	<p>I noted in table 1 that the parameters listed sometimes described the variation (for example, decreased urine output) but other times did not (Mental Status). Could this be made clearer across all the labels?</p>	<p>Thank you – changes made to the tables.</p>
21.	4	<p>I think this was a carefully written review avoiding any claims that EWS do not work and should not be used, although I anticipate that someone at least will use your review to claim that rapid response teams should not be continued across the country.</p>	