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Critical Care Across the World: Breaking Down Barriers

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# Understanding the use of the National Early Warning Score 2 (NEWS2)

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# Patient deterioration



- Global concern
- Patients die *unnecessarily* and *unexpectedly*
- Improvements – early warning scores, rapid response teams/critical care outreach, 24 hour service
- Yet, still a major concern

# Headlines

## **21-year-old Evan Smith died in 2019 after dialling 999 from his hospital bed**

Doctor claims he prescribed oxygen and 'impressed' on nurses it should be provided to **Evan Smith** to treat his sickle cell crisis. Hospital 'failure' led to sepsis patient's death

## **A south London hospital has apologised to the family of a 22-year-old man who died following a routine operation.**

A post-mortem examination revealed **Kane Gorny**, 22, of Tooting, **died of dehydration** at St George's Hospital on 29 May 2009.

## **Prevalence, severity, and nature of preventable patient harm across medical care settings: systematic review and meta-analysis**

*BMJ* 2019; 366 doi: <https://doi.org/10.1136/bmj.14185>

Conclusions: Around one in 20 patients are exposed to preventable harm in medical care.

## **Doctors' basic errors are killing 1,000 patients a month**

Biggest ever study of errors in British hospitals finds one in ten patients affected

Friday 13 July 2012 12:28

Patient-Safety-Related Hospital Deaths in England: Thematic Analysis of Incidents Reported to a National Database, Donaldson et al., 2012.  
**Mismanagement of deterioration (35%).**

Persistent understaffing of NHS a serious risk to patient safety, warn MPs. 25 July 2022

# Inspiration for this research



**Dr Savita Halappanavar, died in 2012, aged 31**

There was a lack of recognition of the gravity of the situation and of the increasing risk to the mother which led to passive approaches and delays in aggressive treatment. This appears to have been either due to the way the law was interpreted in dealing with the case or the lack of appreciation of the increasing risk to the mother and the earlier need for delivery of the fetus.



**Martha Mills, died in 2021, aged 13**

Hospitals use a guide to help doctors and nurses decide when to raise concerns about child patients, called BPEWS - it stands for Bedside Paediatric **Early Warning Score** and involves heart rate, temperature, blood pressure and other measures. We later found out that on Wednesday Martha's BPEWS was six - a high score - and that there should have been a discussion about transfer to intensive care.

**Living with a child, they become a part of you: a year after her death, it's still so hard to break the lovely habit of her**

But Martha stayed on the ward and carried on bleeding. The medical notes say I was "very distressed", but all the doctors told me she'd "turn a corner", and of course I wanted to be reassured. A scan showed a small amount of fluid around her heart - another sign of sepsis, we later discovered. Action was delayed until after the bank holiday weekend and we were told nothing about it.

Martha, 13, likely to have survived if moved to intensive care, coroner rules.

# Case study

- There was a man in a bed opposite the nurse's station. Mid-afternoon RN went to assess his routine vital signs; it was rare for RNs to check observations, there was no HCA available.
- The man was only responding to attempts to rouse him with a grunt, no eye opening. BM stable.
- RN went to the NIC and relayed the situation.
- NIC's response was; he's elderly, so likely he's tired and advised to check his vital signs in another 4 hours and advised against calling CCOR for such a minor concern.

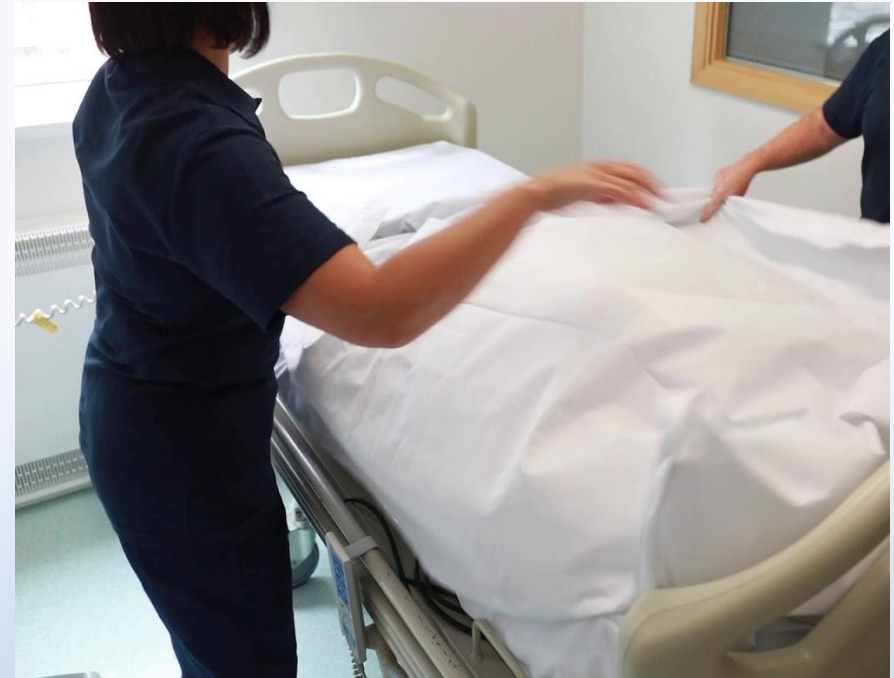


Chart 4: Clinical response to the NEWS trigger thresholds

NEWS score	Frequency of monitoring	Clinical response
0	Minimum 12 hourly	<ul style="list-style-type: none"> <li>Continue routine NEWS monitoring</li> </ul>
1	Minimum 8 hourly	<ul style="list-style-type: none"> <li>Inform registered nurse, who must assess the patient</li> <li>Registered nurse decides whether increased frequency of monitoring and/or escalation of care is required</li> </ul>
2	Minimum 4 hourly	<ul style="list-style-type: none"> <li>Inform registered nurse to inform medical team caring for the patient, who will review and decide whether escalation of care is necessary</li> </ul>
3	Minimum 2 hourly	<ul style="list-style-type: none"> <li>Inform registered nurse to immediately inform the medical team caring for the patient</li> <li>Registered nurse to request urgent assessment from a clinician or team with core competencies for the care of acutely ill patients</li> <li>Provide clinical care in an environment with monitoring facilities</li> </ul>
4	Minimum 1 hourly	<ul style="list-style-type: none"> <li>Inform registered nurse to immediately inform the medical team caring for the patient – this should be at least at specialist registrar level</li> <li>Request urgent assessment by a team with critical care competencies, including practitioner(s) with advanced airway management skills</li> </ul>
5	Minimum 30 minutes	<ul style="list-style-type: none"> <li>Consider transfer of care to a level 2 or 3 clinical care facility, ie higher-dependency unit or ICU</li> <li>Clinical care in an environment with monitoring facilities</li> </ul>

The score does not tell us a patient has deteriorated rather it shows the 'risk of deterioration'

NEWS key	FULL NAME	DATE OF BIRTH	DATE OF ADMISSION
0 1 2 3			
	DATE TIME	DATE TIME	DATE TIME
<b>A+B</b> Respirations Breaths/min	≥25 21-24 18-20 15-17 12-14 9-11 ≤8	3 2 1	≥25 21-24 18-20 15-17 12-14 9-11
<b>A+B</b> SpO <sub>2</sub> Scale 1 Oxygen saturation (%)	≥96 94-95 92-93 ≤91		
<b>SpO<sub>2</sub> Scale 2*</b> Oxygen saturation (%) Use Scale 2 if target range is 88-92% eg in hepatopulmonary syndrome ≥97 on O <sub>2</sub> 95-96 on O <sub>2</sub> 93-94 on O <sub>2</sub> ≥93 on air 88-92 86-87 84-85 ≤83%			
<b>Air or oxygen?</b>	A=Air O <sub>2</sub> L/min Device		
<b>C</b> Blood pressure mmHg Score uses systolic BP only	≥220 201-219 181-200 161-180 141-160 121-140 111-120 101-110 91-100 81-90 71-80 61-70 51-60 ≤50		
<b>C</b> Pulse Beats/min	≥131 121-130 111-120 101-110 91-100 81-90 71-80 61-70 51-60 41-50 31-40 ≤30		
<b>D</b> Consciousness Score for NEWS based on GCS (no score if drowsy)	Alert Confusion V P U	3 2 1	V P U
<b>E</b> Temperature °C	≥39.1° 38.1-39.0° 37.1-38.0° 36.1-37.0° 35.1-36.0° ≤35.0°	2 1 1 1 3	≥39.1° 38.1-39.0° 37.1-38.0° 36.1-37.0° 35.1-36.0° ≤35.0°
<b>NEWS TOTAL</b>			<b>TOTAL</b>
Monitoring frequency			Monitoring Escalation
Escalation of care Y/N			Initials
Initials			

National Early Warning Score 2 (NEWS2) © RCP



# Preliminary findings

- ❑ Used to confirm deterioration rather than risk of deterioration
- ❑ Tells you something is wrong but not what
- ❑ False reassurance
- ❑ Complexity - 'think sepsis'
- ❑ Uncertainty on SpO2 scales/consciousness/confusion
- ❑ Errors - Pulse taken on monitor, RR guesstimated
- ❑ Less patient contact time – role of technology
- ❑ Surviving not thriving
- ❑ Calling CCOR too late
- ❑ Constrained by environment – time, expertise, culture, routine



# Use of the NEWS2

Appreciation

Acceptance

Empowerment

Familiarity

Serious incidents

Tacit knowledge

Family concerns

Culture/teaching

Candidness

Equipment

Intentional rounding

CCOR/ICU visibility

Reflection/Role modelling

Time

Staffing/expertise/skill mix



# Contributors/References

Special thanks to Dr Mandy Odell and Dr Geoff Wong for their valuable contributions towards this research.

For the study protocol with reference list please scan the QR code.



Thank you for listening