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NEWS and the NHS

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The identification of an acutely ill patient is not always easy. Unless the patient has collapsed, clinicians traditionally use a standardised approach by taking a history, examining the patient and doing various investigations to make a diagnosis. Students are taught to present patients using this model. However, this doesn't easily lend itself to enabling rapid, succinct communication that is sometimes needed to identify an acutely unwell patient and effect their transfer to an appropriate place of care or prompt assessment by a more experienced clinician.

The physical signs that are particularly relevant to identifying an acutely unwell patient include heart rate, blood pressure, respiratory rate and temperature, linked to overall clinical impression and the presence or absence of certain specific diagnostic signs, such as a non-blanching rash suggesting meningitis or FAST (face, arms, speech and time) signs suggesting a stroke.

Various early warning scores based on those generic physical signs and oxygen saturation have been developed over time in different hospitals to provide a way to communicate information about an acutely unwell patient rapidly, succinctly and with a degree of objectivity, and to enable an appropriate rapid response. However, most of these have not been validated elsewhere, and they are not standardised.

When I worked as a surgeon, I always found the Glasgow coma scale (GCS) to be a sensible and logical approach to assessing the severity of patients' head injuries. It helped me make referrals effectively from peripheral hospitals to neurosurgical centres (and helped me deal effectively with referrals when I worked in a neurosurgical centre myself). I was reassured and impressed that the GCS had been endorsed by the neurosurgical community.

I first learned about the National Early Warning Score (NEWS) when I was working as executive medical director in an acute trust in 2012.[1] I immediately saw it as an opportunity to have a similar standardised approach for acute deterioration, as already existed for head injury patients. I could see its potential value in identifying inpatients who needed rapid assessment by the critical care outreach team or by a senior doctor in the relevant specialty. As a surgeon, I was particularly interested in the use of NEWS to identify patients who were acutely unwell with possible sepsis, since this was such an important and treatable condition among inpatients. I could also see its value when my colleagues were referring patients as emergencies onto the specialist centre: if both hospitals were using NEWS, then there should be a shared understanding of the severity of the patient's condition.

A few years later, I was working as interim national director for patient safety at NHS England. In this role, I chaired the cross-system sepsis board. We learned from the Royal College of Physicians (RCP) that more work had been done to update and validate NEWS and that the RCP was promoting NEWS2 as the standardised way to identify and escalate acutely unwell adult patients in the NHS. I was keen to support this approach having heard of patient safety incidents relating to miscommunication between hospitals due to the use of differing early warning score scales and thresholds in different places: basically clinicians in different hospitals were effectively speaking to each other in different languages when talking about sick patients. In April 2018, NHS England and NHS Improvement issued a *Patient Safety Alert* to support the safe adoption of the revised NEWS2.[2]

I saw the opportunity to use the patient safety collaboratives, supported by academic health science networks, to roll out NEWS2 across the NHS as the RCP proposed. We took this forward and monitored the uptake over time. In 2017–2019, we were also able to develop and implement a Commissioning for Quality and Innovation (CQUIN) as an incentive to acute trusts to implement the use of NEWS2 when assessing emergency patients for sepsis.[3] This led to an increase in the reported use of NEWS in emergency departments from just over 50% in 2016 to nearly 80% in 2018. As is commonly the case, the implementation followed the theory of innovation, so that many trusts took this forward once they realised that others were doing it too. We actively promoted case studies where local trusts or systems reported that they found it helpful and had improved patient safety. I also wrote to congratulate high-performing trusts via their chief executive officers. By 2019, over 70% of acute trusts and 100% of ambulance trusts were using NEWS2. The inclusion of NEWS2 continued in the 2020–2021 CQUIN scheme, which included a NEWS2 indicator, focused on the recording of the NEWS2 score, escalation and response times for unplanned critical care admissions. From April 2022, the national deterioration CQUIN will incentivise the accurate recording of NEWS2 scores, escalation and response times for acute ward deteriorations in hospitals in England.

Continued quality improvement (QI) support through the patient safety team and the CQUIN helped support trusts to nearly 100%

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adoption nationally (98.4% acute trusts and 100% ambulance trusts). We have been gratified to find the use of NEWS2 spread to mental health trusts and to the health and justice system quite readily.

As NEWS was seen to be of value, this raised interest in whether something similar could be developed for children and for maternity care. We worked with the Royal College of Paediatrics and Child Health (RCPCH) and a group of stakeholders to establish the principles that could support a valid and useful early warning score for children (PEWS). This was a significant challenge because children at different ages have different ranges of normal vital signs; children often maintain relatively normal vital signs until they are extremely unwell and then deteriorate rapidly; and there was no pre-existing evidence-based framework to develop a paediatric early warning system. Nevertheless, this challenge was taken up and addressed under the leadership of the national clinical director, Simon Kenny.

A delivery board came together in June 2018 with representation from NHS England and NHS Improvement, the RCPCH and the Royal College of Nursing (RCN) to review the need for an English national PEWS. In 2020, the programme was renamed System-wide Paediatric Observations Tracking (SPOT) to recognise that deterioration may occur from primary and community care, through ambulance services, emergency departments and into hospitals. Since March 2021, a cohort of 35 inpatient hospital sites have been working with the SPOT board, supported by the 15 patient safety collaboratives across England, to coordinate local testing teams; review local processes for deterioration identification, escalation and response; inform finalisation of national PEWS charts for testing; and developing training and education to support implementation.

Early test audit data consistently highlighted incomplete observations in blood pressure, lower reporting and action on patient/family reported concern, and approximately 70% of patients scoring in the lowest deterioration category (1–4). While this has been a change to local PEWS for some sites, appropriate application of escalation criteria has limited initial over-escalation concerns. Further amendments to the national charts will have been completed by September 2022 once all learning has been consolidated.

Interaction with NEWS2 and national PEWS is only expected in two ways: in emergency and out-of-hospital settings where NEWS2 will currently be the standard, while additional development and testing of application of national PEWS in these settings is undertaken over the coming years; and where a child is cared for in a hospital ward outside of a paediatric setting due to care planning or age, and where NEWS2 is the safest approach to deterioration management.

Work is also underway to develop a new national Maternity Early Warning Score (MEWS) tool over the last 18 months. The ambition is that it will be spread to all services across England over the next 2 years. The tool will be used to care for women from conception until 4 weeks post-birth. The tool has been developed using published population-based data to define the limits of normality/abnormality (for the first time). As well as being used across all maternity care settings, the tool has been developed to follow the woman no matter where she is cared for within a hospital setting. This will allow for the pregnant woman's physiology to be reflected in the assessment of any potential deterioration, which NEWS2 is not designed to do. Following birth, there is a shift back to non-pregnant physiology, but this does not require a move back to using NEWS2 until 4 weeks after birth.

The use of NEWS2 as an isolated clinical decision-support tool remains to be validated in general practice, however, studies in patients referred as emergencies to hospital showed a clear relationship between increasing scores and mortality risk above clinical judgement alone.[4]

The Royal College of General Practitioners guidance recommends the use of physiological measurements when assessing patients at risk of deterioration in primary care as an adjunct to (not as a replacement for) clinical judgement and recommends further research on the use of NEWS2 in this setting.[5]

Clinical staff working in different contexts view NEWS2 as a useful adjunct to clinical decision making and communication.[7] This is particularly true in care homes, where nearly 80% are now utilising soft signs of deterioration care escalation tools that include NEWS2.[7,8]

As we move further into 2022, work on acute deterioration will focus on enabling patients, family members, carers and healthcare professions to better identify, understand, communicate and escalate worry and concern about a patient's care.

Patients need to feel empowered to exercise autonomy and be able to input into their care, thus shifting healthcare professionals from delivering paternalistic care to patient-centred care. One of the underlying drivers for addressing 'worry and concern' is the absence of a reliable mechanism for patients (or those closest to them) to escalate past the primary team when standard care is not meeting their needs, with evidence suggesting that a lack of means by which to escalate in a timely manner can have adverse effects. The 2021 NHS England and NHS Improvement *Framework for involving patients in patient safety* states that 'Patients should be supported to monitor their symptoms … staff will monitor physiological signs to identify a patient's deterioration, but these signs can be missed, interpreted incorrectly or inappropriately acted on. Patients and their relatives know best what is normal for them and can pick up subtle signs of deterioration before staff'.[9]

Throughout my career, I have seen significant progress in this area, most of which is due to hard work, commitment and collaboration with partners from across health and care. And, while there are signs that together we are improving quality of care and saving lives, it is clear there is still more to do. ■

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