Summary of the meeting 'Exploring a national Early Warning System' held on 9th December 2014

Introduction

This meeting aimed to bring together a small group of experts in the field to discuss the prospect of a national Paediatric Early Warning System (PEWS) to deliver improvements in the recognition and response to deterioration in neonates, infants, children and young people. Two brief presentations aimed to act as a springboard for the discussion, which is briefly summarised here.

The list of participants and also those who were unable to attend but asked to remain involved/ updated following the meeting is contained in Appendix One.

Agenda

Welcome – Suzette Woodward

PEWS, the story so far and what's happening now – Damian Roland

Caroline Haines was unable to attend at the last minute and was due to present an overview of the recently published 'High Dependency Care for Children – Time to Move on' document and its relevance to a national PEWS.

Linda Clerihew was also unable to attend at the last minute and was due to present the national PEWS picture from the Scottish perspective, having recently agreed a national PEWS.

Qualities of risk tools; the evidence base – Frances Healey

The above presentations and other resources referred to during the meeting will be detailed in Appendix Two (and attached with the notes where possible). These notes and resources will be made available on the deterioration platform of the Patient Safety First website as soon as possible.

Facilitated group discussion

Summary of the main points of discussion

It was quickly acknowledged and agreed by all that the PEWS was a system and not a score; that it was about spotting the deteriorating child + escalation + clinical response and skills and including aspects of human factors.

These aspects – and not what scores were being used – became the focus for discussions. However in a brief show of hands to a questions from the chair one third of the group said they thought a single national PEWS was the way forward, one third voted for a single PEWS but setting specific (e.g. ED, general ward, primary care etc) and one third didn't vote for either.

Challenges with PEWS were noted; children over triggering or under triggering for escalation, lots of time may be taken in completing the scores, observations not completed or added up. Also perhaps a bias towards respiratory conditions and maybe not sensitive to sepsis – but it was acknowledged that PEWS is not expected to be a diagnostic tool (comments also that perhaps it is a predictive tool or perhaps a risk estimate?).

Some PEW systems have added elements of decision support such as 'could this be sepsis?'

Some drivers might include having a standard score/ communication structure for critical care and transport teams who receive referrals for children from many different hospitals (all with their own PEW scores and systems).

One way forward was suggested as creating/ listing the core principles of a PEWS to capture how we observe and monitor children in hospital and how we observe and monitor children as they come into ED or are admitted. Is diagnosis criteria for triage required when children first arrive - which may be different for different environments?

It was agreed that the group/ way forward would need an initial focus on what it is that we want to achieve – zero preventable cardiac arrests, never events, reduced mortality and morbidity, preventable significant events; such as sepsis, asthma events, unplanned escalations of care, crash calls. Finding a definition for avoidable harm including complaints and serious incidents may be useful?

Process measures may be helpful, such as completed charts and if the expected escalation has been carried out, as well as the outcome measures above. Some have developed learning and improvement methods by reviewing the PEWS details within their investigations for each 'missed event'. Others by collecting and understanding the data on children who are picked up and managed well.

The group then considered a common driver diagram to include: the overarching outcome to be achieved, primary drivers and secondary drivers, needed to achieve the primary drivers. One already developed around PEWS was then shown and agreed that would be a valuable starting point (see Appendix Two).

Other common aspects might include the structured communication for escalation and education on certain aspects of the system, especially useful perhaps for junior staff and those who move around as the changes these staff have to understand and incorporate into their practice on every change of ward, department or organisation creates additional risk. Many have also developed a focus point on the PEWS for parental concerns.

There was discussion around work that might provide an understanding of the difference between the different PEW charts so that the scores and variables might be easily and quickly compared to one another for transport teams and critical care for children in need of transfer (see Appendix Two). This was extended to a piece of work that might seek to understand the commonalities between different charts/ systems and factors that might help or hinder such as when observations are taken and whether they are mandated. There was also a brief discussion around the individualisation of charts in some organisations for each patient according to their know condition and current treatment.

It was acknowledged that there is currently no evidence on the observations required on the chart, their parameters and weighted scores and the collection of a bundle of these to produce a total score that would enable the accurate identification of a child at the point of deterioration. However there is research planned to support improved evidence (such as the National Institute of Health Research funded PUMA project) and improved patient safety culture underpinning the whole system

(such as the Health Foundation funded SAFE project). The MiST collaborative (and the PIPSQC collaborative), an alliance of children's hospitals and acute services working together to reduce adverse events, and the Neonatal Track and Trigger Tool, developed recently by BAPM are also connected programmes that might provide support to this agenda. For further information on all these pieces of work see Appendix Two.

There was recognition that there was no primary care or GP representation in the room to consider the links and work required in this setting. There was also acknowledgement that progress was also required in undergraduate education. There were links in the room to other useful contacts such as the Advanced Life Support working group.

There was a strong sense that a national PEW system was something that should be worked on, that this may not (immediately?) be an absolute single score or system, that human factors, system design and chart design matters, that more evidence may be available in the next 18-24 months and that the people in the room were interested and knew of others who would be, including Colleges and significant groups. However it is a large piece of work with many unknowns and no one organisation currently taking a lead or listing this as a priority piece of work to be done.

Conclusions of discussions

The group agreed they had consensus that work on developing a national PEW system (rather than a PEW score in isolation) was feasible, desirable and worthwhile. To take the work forward, essential aspects would be:

- Forming of a national steering group with an agreed clear outcome/outputs, parameters and terms of reference; though detailed membership would need working up, the key members of that group were all in the room today
- Potentially the agreed outcome of a national steering group would be to "develop core principles of a PEW system" and a driver diagram would also be helpful to frame the model
- To inform the work of any national steering group, it would be necessary to:
    - Explore the work coming from Scotland, Ireland and the US (primarily Cincinnati Children's Hospital) on PEWS
    - Map out any other past or current research or improvement work that would inform this
    - Investigate and summarise what happening locally in terms of commonalities between PEW scores and systems, evaluations of process and outcome measures and what makes the system work

Discussion did not reach consensus on whether the actions above were feasible without funding

The group also felt more discussion was needed under whose 'umbrella' the work would go forward, both in terms of initiating it, validating/evaluating whether draft/pilot versions perform as expected in clinical practice, and endorsing the final product

Actions for all

Consider what resource (if any) their organisation could commit to this (whether in time, venues, expertise or funds) to developing a national PEW system

Consider what resource they believe is required overall to have a realistic chance of successful delivery

Consider whether the role of their organisation would, in isolation or in partnership with others, be an appropriate fit for any or all of the following:

- Initiating this (if there is actually a need for any single organisation to initiate it given the consensus reached)
- Coordinating the 'working' rather than 'steering' aspects of delivery
- Validating/evaluating whether draft/pilot versions perform as expected in clinical practice
- Endorsing the final product

Please respond on these points to Jayne Wheway and Clare Smith by 30 January 2015. You may wish to use Appendix Three.

Next steps

JW and CS to organise teleconference when feedback above received

Appendix One – participants

Participants

Name	Contact
Jayne Wheway Head of Patient Safety for Children and Young People NHS England	
Michele Upton, Patient Safety Lead for Maternity and Newborns NHS England	
Mike Surkitt-Parr Head of Patient Safety NHS England	
Fiona Smith Adviser in Children and Young People's Nursing Royal College of Nursing	
Carol Ewing Vice President for Health Policy RCPCH	
Damian Roland Consultant and Lecturer in Paediatric Emergency Medicine	
Stephanie McHale and Nicky Taylor Paediatric Critical Care Outreach Leads Nottingham Children's Hospital	
Lauren Filby Consultant Paediatrician from Ipswich Hospital	
Robert Yates Consultant Paediatric Intensivist Royal Manchester Children's Hospital	
Jeremy Tong Consultant in Paediatric Intensive Care Leicester UK Sepsis Trust	
Mary Montgomery Clinical Lead Kids Intensive Care & Decision Support	
Stephanie Smith Consultant Emergency Paediatrician Head of Service Nottingham Children's Hospital and member of the Advanced Life Support Working group	
Sebastian Yuen Consultant Paediatrician, George Eliot Hospital	
Heather Duncan Consultant in Paediatric Intensive Care, Birmingham Children's Hospital	
Darren Cooper S.A.F.E Programme Manager Research and Policy Division RCPCH	

Zoe Rooney, S.A.F.E local clinical leads, General Paediatric Consultant, Royal London	
Clare Smith Academic paediatric trainee and clinical fellow to Celia Ingham-Clark (NHS England Domain 1 Director)	
Ashley Reece Paediatrician, Watford Becky Platt, matron	

Invited participants – apologies

Name	**Contact**
Linda Clerihew Consultant Paediatrician National Clinical Lead for Paediatric workstrand of McQIC (Maternity and Children's Quality Improvement Collaborative)	
Caroline Haines, Paed Intensive care Consultant Nurse Bristol Royal Hospital for Children Peter Davis, Consultant Paediatric Intensivist, Bristol Royal Hospital for Children	
Lorraine Major Paediatric Advanced Nurse Practitioner Hampshire Hospitals NHS Foundation Trust	
Angela Horsley Senior Nurse for Children and Young People, NHS England	
Miranda Witchell Practice Development Matron for quality, risk and safety Nottingham Children's Hospital	
Melanie Clements Clinical Director Maternity, Newborn, Children and Young People Strategic Clinical Network Strategic Clinical Networks – East Anglia	
Jayne Haley SCN Manager EoE maternity newborn, children and young people SCN	
Sarah Newcombe Clinical Site Practitioner GOSH	
Liesje Andre GOSH	
Gerri Sefton Advanced Nurse Practitioner in Critical Care Alder Hey	
Julie Flaherty, nurse consultant, (led on developing a greater Manchester PEWS score)	

Sue Chapman Independent nurse consultant and director Special advisor (paediatrics) CQC Honorary Nurse Consultant, GOS	
Peter Lachman Deputy Medical Director (Patient Safety and Quality) Great Ormond Street Hospital	
Joanne Hughes Patient and Public Voice rep, ICYP Patient Safety Expert Group, NHS England	
Susan Bracefield Assistant Director of Nursing (Quality Assurance) Devon, Cornwall & Isles of Scilly Area Team NHS England	
Finola Munir Regional Quality Assurance Manager Medical Directorate (Midlands and East) NHS England	
Caron Eyre Deputy Chief Nurse at Birmingham Children's Hospital NHS Foundation Trust	
Dr Maggie Steggall Consultant Paediatrician Royal Manchester Children's Hospital	
Dr Sarah Neill Associate Professor Children's Nursing University of Northampton Professor Monica Lakhanpaul Professor of Integrated Community Child Health Programme Director, Children, Young People and Maternal Health UCL Partners. Population, Policy and Practice UCL Institute of Child Health	
Rachel Rowlands Paediatric ED consultant, Leicester	
Lyn Sinitsky, a Paediatric ST6 trainee Michelle Jacobs, Consultant in Paediatric Emergency medicine	

Contacts suggested following the meeting

Balazs Fule, PIC research fellow, Birmingham Children's Hospital	

Appendix Two

Item Details	Link/ attachment
Paediatric Early Warning Scores – An individual's issue; A national problem. Presentation by Damian Roland at the meeting Webinar on PEWS with some detail of this presentation is also available	Attachment (3) http://bit.ly/1xj2YAX
High Dependency Care for Children – Time to Move On. Presentation by Caroline Haines, prepared for the meeting (we may be able to organise a future webinar on this for the group) The related websites with the full documents area	Attached (4) http://www.rcpch.ac.uk/news/new-three-tier-hierarchy-care-needed-critically-ill-children-says-new-report http://www.rcpch.ac.uk/high-dependency-care
Paediatrics – PEWS and Deteriorating Patients. Presentation by Linda Clerihew from the Scottish Patient Safety Programme, prepared for the meeting (we may be able to organise a future webinar on this for the group) Maternity & Children Quality Improvement Collaborative (MCQIC),, Scottish Patient Safety Programme website	Attachment (5) http://www.scottishpatientsafetyprogramme.scot.nhs.uk/programmes/mcqic
Qualities of risk tools; the evidence base (for PEWS discussions). Paper by Frances Healey, Head of Patient Safety Insight, NHS England	Attachment (6)
PEWS Project PDSA Cycles Driver Diagram by Sebastian Yuen	Attachment (7)
PEWS comparator designed by Dr Balazs Fule, Birmingham Children's PIC Fellow. It seeks to easily and quickly compare referring organisations PEWS scores to one another for transport teams and critical care for children in need of transfer	Attachment (8)
PUMA – Paediatric early warning system Utilisation and Mortality Avoidance (funded by the National Institute of Health Research); looking at the utility of PEWS and the whole system around the implementation and delivery of a Paediatric Early Warning system in inpatient paediatric units.	http://www.nets.nihr.ac.uk/projects/hsdr/1217817
SAFE (Situation Awareness for Everyone) project (funded by the Health Foundation, Closing the Gap programme)	http://www.rcpch.ac.uk/safe
The MiST (Making it Safer Together) collaborative, an alliance of children's hospitals and acute services working together to reduce adverse events. One of the patient safety metrics being explored is PEWS. *PIPSQC (Paediatric Patient Safety and Quality Community)* is an informal, international collaborative of professionals who share a passion for patient safety and quality in paediatrics.	http://www.mistuk.org/ http://www.pipsqc.org/
Newborn Early Warning Trigger and Track (NEWTT), developed	http://www.bapm.org/pu

recently by the British Association of Perinatal Medicine (BAPM). Consultation document is on the BAPM website	blications/
Irish Rapid systematic literature review on PEWs, to develop a national clinical guideline	http://health.gov.ie/patient-safety/ncec/guidelines-in-development/
PASQ (European Union network for patient safety and quality of care), repository of resources regarding PEWS, many from the UK	http://www.pasq.eu/Wiki/SCP/WorkPackage5ToolBoxes/PaediatricEarlyWarningScores(PEWS).aspx

Please let us know if you have any resources that you would be willing to share or work of which you're aware that should be known to the group:

Name and organisation	Brief description of resource	Other comments

Appendix Three (9)

Please let us know what resource you or/ and your organisation could commit to this (whether in time, venues, expertise or funds) to developing a national PEW system:

Name and organisation		
What resource (if any) could you or/ and your organisation commit to this (whether in time, venues, expertise or funds) to developing a national PEW system		
What resource do you believe is required overall to have a realistic chance of successful delivery		
Would your organisation, in isolation or in partnership with others, be an appropriate fit for any or all of the following: • Initiating this (if there is actually a need for any single organisation to initiate it given the consensus reached) • Coordinating the 'working' rather than 'steering' aspects of delivery • Validating/evaluating whether draft/pilot versions perform as expected in clinical practice • Endorsing the final product		