Paediatric Rapid Reviews:

Do they enable timely patient review and appropriate escalation in a Tertiary Paediatric Hospital?

Background

Rapid reviews (RRs) were introduced in **Bristol Royal Hospital for Children (BRHC)** in 2017 as part of a Trust-wide patient safety initiative. RRs were based on a two-level emergency call system in place at Starship Hospital, Auckland. A similar system was developed and introduced at BRHC in October 2017. Rapid reviews aim to **improve the rapid assessment and expectant management of unwell patients**, and prevent unrecognised deterioration on the wards at the request of a ward team.

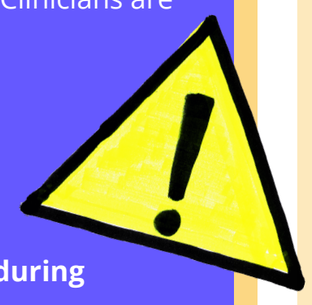
The national **Paediatric Early Warning Score** system currently being developed has been based on the recognised need for a standardised escalation system and may look to include a 15 minute review call similar to our RRs - highlighting the relevance of our project within the national picture (1,2). Hospital wide data was collected in both 2018 and 2019 looking in detail at RR calls made, and any effect of these measures on unplanned admissions to Paediatric Intensive Care Unit (PICU).

What is a *Rapid Review?*

RRs gather an experienced team of clinicians together at the bedside of a child felt to be deteriorating or at risk of deterioration if not reviewed urgently. PEWS scores are one trigger for a RR but anyone (including parents) can trigger one due to clinical concern. This includes patients attending acutely to the paediatric emergency department.
RRs are made by dialling 2222 via switchboard. Clinicians are required to attend within 15 minutes of a call.

RRs are attended by:

- **Paediatric High Dependency Registrar**
- **Paediatric Intensive Care Registrar**
- **Critical Care Outreach Nurse**
- **Paediatric High Dependency Consultant during daytime hours (on site 0800 – 2000)**



An ongoing plan must be agreed upon by the team, and documented in the rapid review paperwork following clinical assessment. A high dependency or PICU consultant is informed about every RR. An incident report should be submitted on the Datix system for every RR call made.

Methods and Limitations

All RR calls in 2018 and 2019 were identified using hospital Switchboard and Datix submission data.

Switchboard data informed the overall trends, number, timings and location of calls in both years, but cannot be directly linked to patient hospital numbers.

Datix data enabled us to identify specific patients from each call and review electronic patient notes: examining more closely the outcome and any need for escalation of care as a result. These calls were audited against the Trust RR Standard Operating Procedure – specifically: completion of the RR paperwork and submission of a Datix report.

In parallel, all **unplanned admissions to the Paediatric Intensive Care Unit** were identified through the **PICANet** database, and reviewed looking at eventual outcome and whether there had been a RR or emergency calls prior to admission.

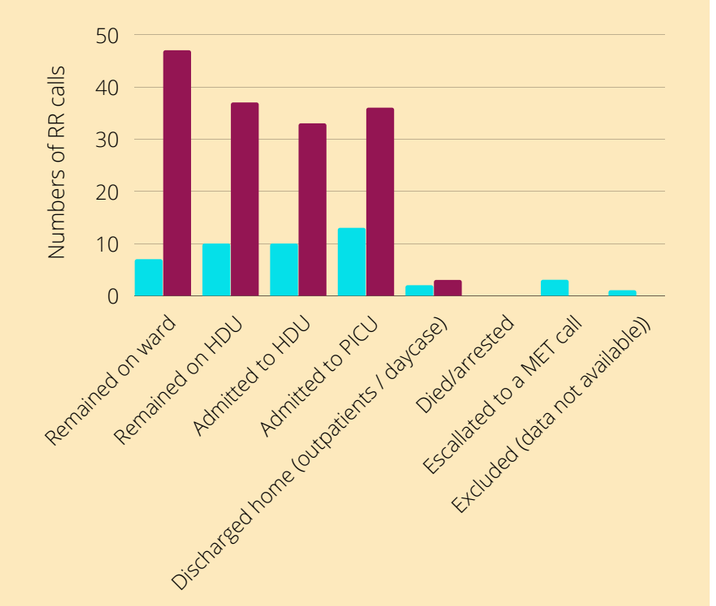
Datix data was limited by the reliance on ward teams submitting a report for calls made. Only 48.7% of the total calls in 2019 were captured to be further reviewed (but overall numbers were still reflected accurately by switchboard data).

Results

- 2018: **187** RR calls, 2019: **329** RR calls
- 75.9% **increase in call numbers** over a year period
- 24.5% had **Datix reports completed** in 2018, increasing to 48.9% in 2019

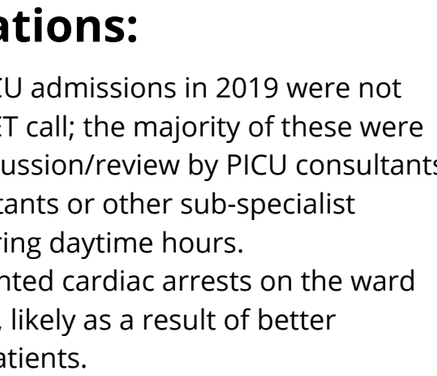
Month of RR calls

- Peak of calls was in November in both years
- As expected – the majority of RR calls were made out of hours across all datasets - 59.4% in 2019.



Ward of RR call 2018 v 2019

- Greater proportion of calls from **Paeds ED** in 2019 (24.6% vs 7.4%)
- Highest number of calls came from **wards**
- Similar absolute numbers from **HDU areas across both years**



Outcome of RR call

Larger proportion of RR calls in 2019 remained on the ward compared with 2018 – suggesting improved awareness of their early use in recognising deterioration and preventing emergency PICU/HDU admissions.

Further observations:

- 51.9% of unplanned PICU admissions in 2019 were not preceded by a RR or MET call; the majority of these were as a result of direct discussion/review by PICU consultants with either HDU consultants or other sub-specialist consultants, usually during daytime hours.
- There were no documented cardiac arrests on the ward outside of PICU in 2019, likely as a result of better recognition of unwell patients.
- Documentation of RR calls improved between 2018 and 2019 after presentation of findings locally in 2018 and improved awareness of RR paperwork. However, location of the RR was often poorly documented, and plans were often unable to fit onto the paperwork.
- There was poor documentation of PEWS scores in the notes prior to unplanned PIC admissions.

BRHC Rapid Review paperwork

Updates as a result of this project included:

- Outcome box with clear documentation of escalation plan inc. location of care
- Increased from 2 to 4 page booklet
- Prompt to record location of RR call

SCAN ME

Conclusions & Outcomes

- Since introduction, RR calls have become ingrained within hospital culture, improving early recognition of unwell patients, and awareness of their use has risen with increased numbers of calls.
- Improvements to RR paperwork and documentation have been made and approved by the Paediatric Resus Group as a QI outcome from this project. Please scan the QR code above to access the updated paperwork.
- We recommend ongoing audit of RR activity to continue to assess their impact on patient care and associated rates of unplanned PICU admissions within the hospital.
- There is a plan for a Rapid Review 'relaunch" within the hospital to continue to improve awareness of appropriate use.

Key Messages:

- ***Majority of RR calls are made out of hours as expected with peaks of RR activity in winter months***
- ***Better awareness of RR calls has increased their appropriate use, enabling more children to continue to be safely supported in the referring ward or HDU***
- ***Not all patients with unplanned PIC admissions had a RR preceding their admission - the majority had consultant to consultant discussion after recognition of potential deterioration in hours. The presence of a HDU consultant on the wards until 8pm enables this.***

S.Henderson (1), A.Baines (1), D.Wasala (1), K.Mahoney (2), P.Davis (3).

Bristol Royal Hospital For Children

Author affiliations
1 - Paediatric Registrar, Bristol Royal Hospital for Children, Bristol UK
2 - Specialist Critical Care Outreach Nurse, Bristol Royal Hospital for Children, Bristol, UK.
3 - Paediatric Intensive Care & HDU Consultant, Bristol Royal Hospital for Children, Bristol UK.

Special thanks to: Jo Westlake, Caroline Haines, QI / PICU teams, BRHC

References:
1- Roland D, Stilwell PA, Fortune P, et al. Case for change: a standardised inpatient paediatric early warning system in England. Archives of Disease in Childhood Published Online First: 08 January 2021. doi: 10.1136/archdischild-2020-320466
2 - RCPCH. NHS SPOT Programme Update: January 2021. Last accessed online 20th May 2021 - https://qicentral.rcpch.ac.uk/news/nhs-spot-programme-update-january-2021/

NHS University Hospitals Bristol and Weston NHS Foundation Trust

RCPCH Royal College of Paediatrics and Child Health *Leading the way in Children's Health*

Royal College of Paediatrics & Child Health Conference Online 15th - 17th June 2021