Impact of PICANet
National Paediatric Critical Care Audit

NATIONAL
How the project provides evidence of quality and outcomes of care nationally

The impact of our **healthcare improvement goal** of **reducing rates and variation in unplanned extubations** is being evidenced in the Data Dashboard and the National Paediatric Critical Care Audit State of the Nation Report. The 2023 report showed that **the target was clearly met overall for each year of admission from 2020-2022** with 17/30 (57%) PICUs meeting the NHS England target of an **unplanned extubation rate below 5.0 per 1000 ventilated days** in 2022.

The *Transport of critically ill children to paediatric intensive care units in the UK and Ireland: 2013–2022* paper was published in August 2024 on behalf of the Paediatric Critical Care Society Acute Transport Group using PICANet data. The paper explores the trends and changes in the transport of children to PICU and demonstrates an increased use of specialist paediatric transport services and changes in the PICU population over time.

PICANet's Senior Research Statistician, Hannah Buckley, presented the ***Increasing demand on paediatric intensive care due to increasing length of stay in the United Kingdom and Republic of Ireland over 20 years*** abstract at the European Society of Paediatric and Neonatal Intensive Care (**ESPNIC**) 2024 conference in June. This links to wider work supporting the **healthcare improvement goal** of **understanding variation and predictors of length of stay and time of discharge**.

PUBLIC
How the project is used by the public and the demand for it

🎉 In June 2024 **former PICANet Co-PI, Elizabeth Draper**, Emeritus Professor of Perinatal and Paediatric Epidemiology, was **recognised in the King's Birthday Honours list with an MBE** for services to healthcare. This will be presented in December 2024. 🎊

PICANet **Co-PI Sarah Seaton**, Associate Professor in Perinatal and Paediatric Research, has contributed to the **House of Lords** Preterm Birth Committee's report, *Preterm birth: reducing risks and improving lives* with her work using PICANet data. A summary of the Committee's findings is available.

PICANet have been **privileged** to continue **to collaborate** with **children and young people** in one of GenerationR Alliance's Young People's Advisory Groups. We spent an evening **developing an infographic to explain the PICU journey**. This is **coming soon** in 2025!
We also received some tips on how to improve the existing infographic which accompanies the State of the Nation Reports. We are putting these into practice.

National Paediatric Critical Care Audit's National Recommendations

National recommendations made in our State of the Nation Reports support the big questions that many working in paediatric critical care (PCC) have. ***Those in our 2023 Report*** have encouraged and supported the following developments.

Investigate reasons for higher PICU admission rates among Asian and Black children and those from the most deprived areas of the UK.
In March 2024, the National Institute for Health and Care Research (NIHR) and the Royal College of Paediatrics and Child Health (RCPCH) jointly issued a funding call to address some of the most challenging issues in children's health and care, the scope includes health inequalities with a 'CORE20' and 'PLUS' approach which means that the there is a focus on the most deprived 20% of the national population and ethnic minority communities.

Using PICANet data, PCC colleague Dr Hannah Mitchell published and presented the following important work:
- A publication exploring the *Contribution of ethnicity, area level deprivation and air pollution to paediatric intensive care unit admissions in the United Kingdom 2008–2021*
- An award winning presentation of the abstract, *Impact of child poverty on Paediatric Intensive Care outcomes in the United Kingdom 2008-2021* at the Paediatric Critical Care Society and European Society for Paediatric and Neonatal Intensive Care (ESPNIC) conferences in 2024.

Develop a strategy to optimise compliance with Paediatric Critical Care Society Quality Standard, "Departure of team from base or re-tasking within 30 minutes of decision that a critical care transport is required".
PICANet, with support from Dr Scarlet-Daisy Prior, are contributing to this by undertaking a project to answer the question, what are the reasons for variation in specialised transport team mobilisation times and access to PICU? This project also links directly to the **healthcare improvement goal of reducing variation in specialised transport mobilisation times and access to PICU**. Outputs coming in 2025!

PICANet will continue to recommend that this important work is on the agendas of national bodies.

The PICANet website https://www.picanet.org.uk/ is viewed globally and website traffic is increasing. After our homepage, the most viewed pages are the Reports and Data Dashboard, closely followed by those with the data collection resources. This year we have seen over 5,400 new users visit the site.

The **PICANet Data Dashboard** is **interactive** and provides an **overview of PICU activity and performance** against PICANet's clinically agreed key metrics. As of this year, now **updated monthly**, the Data Dashboard is an excellent starting point for anyone interested in paediatric critical care.

Data are provided to HQIP's **National Clinical Audit Benchmarking** (NCAB) **public portal** of benchmarked results. **PICUs in England** are then compared to the national picture and standards.

PICU teams are **responsive to** PICANet's quarterly resetting sequential probability ratio test (RSPRT) plot **status notifications and suggested actions.** This often includes **a review of data and any changes** in policies or practice. In turn, **this leads to improved local data** thanks to awareness raised **and can identify if there is any good clinical practice to be shared with other units to improve outcomes for children and young people admitted to PICU**.

Impact of PICANet
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PICANet | **HQIP** Healthcare Quality Improvement Partnership

Main Healthcare Improvement Goals for 2022 – 2025 and beyond

1. Supporting organisations to understand factors associated with emergency readmission to inform local quality improvement initiatives in order to reduce such events
2. Reducing variation in specialised transport mobilisation times and access to PICU
3. Reducing rates and variation in unplanned extubations
4. Understanding and reducing variation of healthcare-associated infection in PICU
5. Understanding variation and predictors of length of stay and time of discharge

LOCAL
How the project stimulates quality improvement

All eligible PICUs in the United Kingdom and Republic of Ireland and the **Specialist Paediatric Critical Care Transport Services** that transfer children to them **participate** in the audit.

We provide a suite of **Quality Improvement Resources** for participating organisations and assist with the navigation of **data downloads** to **enable local reviews and projects**.

PICANet **supports the paediatric critical care community in PICU audit and research**. We assist with applications for data and have updated the guidance that we provide applicants, making the process easier to navigate on our new look Data Request webpage.

The KIDS specialist paediatric critical care transport team in the West Midlands use 'Time to mobilisation' on the **PICANet Data Dashboard** to spur a local quality improvement project. This reminds everyone, at induction and in morning meetings of the need to depart asap.

PICANet Research Nurse, Dr Lyn Palmer, presented the abstract of *A Twenty-Year Review of Extra Corporeal Membrane Oxygenation use in the United Kingdom and Republic of Ireland* at the European Society of Paediatric and Neonatal Intensive Care (**ESPNIC**) 2024 conference in June.

The upcoming paper will **provide a baseline for the number of children admitted to PICU for ECMO** per year, **supporting the local and wider** development of the **ECMO Referral and Admissions audit** in the UK and ROI. This is an exemplar of the **harmonisation of paediatric critical care audit activity**.

SYSTEM
How the project supports policy development & system management

There are **565,302** [480,208 English NHS] **PICU admission, referral and transport events reported in the PICANet database** from participating organisations in the United Kingdom and Republic of Ireland up to 20 November 2024.

PICANet **Key Metrics** are reported to the **CQC** annually to **inform inspection planning**.

With their **knowledge and expertise** of conducting the National Paediatric Critical Care Audit, **PICANet's Co-Principal Investigators** are **members of** the following **national and international paediatric critical care groups**:

- The **National Casemix Office's Expert Working Group for Paediatric Critical Care**. Contributing to the understanding how and the why of care provided can differ to support healthcare funding mechanisms

- The **National Child Mortality Database's (NCMD) Professional Advisory Group**. The purpose of NCMD is to drive improvements in the quality of health and social care for children in England and reduce child mortality.

- The **task and finish group** for the development of the Getting It Right First Time (**GIRFT**) **paediatric critical care service descriptors/ indicators**. The **aim** is that where there is significant variation among these, **services can be supported to improve** which will ultimately result in improvements in clinical outcomes, family experience and efficient use of resources.

- The following **Paediatric Critical Care Society** (PCCS) groups:

The **Acute Transport Group** which is a forum to **provide advice** on current and future direction for the Paediatric Intensive Care Transport Services and **maximise opportunities** for partnerships, networking and information sharing.

The **Study Group** which aims to **facilitate research** into critical illness in children.

Co-PI Sarah Seaton is:
- Research lead for the PCCS special interest group for children with complex critical illness. A group aiming to **share good practice and develop new approaches to the care of children living with medical complexity**.

- **Advisor** to the National Institute for Health and Care Research **(NIHR) supported Paediatric Critical Care Incubator** which provides **high-level career development support for researchers.**

- **Member** of the new British Association of Perinatal Medicine **(BAPM) working group** to develop a Framework for Practice on the **Transition of care from Neonates to Paediatrics**. The group was **established based on** work using **PICANet data**.