

Paediatric Critical Care and Specialised Surgery in Children Review

Webinar - paediatric intensive care and extracorporeal
membrane oxygenation

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About this webinar

- Webinar participants will be able to see slides and hear presenters as we progress through
- Can all webinar participants please place their phones on mute until the Q&A to prevent background noise
- Participants can use the text box on the right hand side of the screen to ask questions or communicate with the facilitator throughout the webinar. Use the drop down box to select who sees the message
- During the Q&A section, participants will be able to signal they wish to ask a question by clicking the 'raise your hand' button on their screen. The chair will un-mute them and invite them to ask their question. Please remember to 'put your hand down' afterwards
- We will check with people joining by phone only so that they also are able to ask questions

Why are we doing this review now?

What are the key issues we are addressing?

What we would like to achieve

Questions

Why are we doing this Review?

The NHS *Five Year Forward View* committed to a three-year 'rolling review' of specialised services. Paediatric critical care and specialised surgery in children were initially identified as a priorities for review by NHS England earlier in 2016.

Since then, the *Independent Review of Children's Cardiac Services in Bristol* reinforced that decision by recommending that NHS England should commission a review of paediatric intensive care (PIC) services across the country. There is also a need to consider the interdependencies between the recommendations from other initiatives and Reviews and the future provision and location of critical care services. The review will consider:

- I. Paediatric Critical Care (PCC)
- II. Paediatric Specialised surgery
- III. Extracorporeal membrane oxygenation (ECMO)
- IV. Paediatric transport

The Review is looking at all of these services at once given the interdependencies that exist between services and the need to look at children's specialist services in an integrated manner.

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The predominant concerns for the Review are increasing pressure on services and variation in care

Increasing pressure on services

- The number of admissions to PIC over the last few years has remained relatively stable – however, the changing nature of work on PICUs and increasing average length of stay place the service under considerable strain. A small number of children now use a large proportion of resources.
- There has been a year on year increase in the number of children’s surgical procedures carried out in specialist hospitals – we need to better understand reasons for this.
- Workforce pressures face both critical care and specialised surgical services. This can add additional pressure on already strained services.

Variation in care

- The volume of children with specialist conditions is small and there are numerous challenges involved in the planning of children’s specialised services which can lead to variable provision across the country.
- There is variation in the way care is delivered for PIC, children’s specialist surgery, transport and ECMO. This includes:
 - variation in admission rates for PIC;
 - variation in where a child requiring surgery is cared for;
 - variation in service provided by transport teams; and
 - reported inequity of access to respiratory ECMO.

A main focus of the Review is to create a sustainable solution that takes into account interdependencies

There is seasonal variation in admissions in paediatric critical care

Though admissions to paediatric critical care have remained stable over the last 3 years, the changing nature of the population, increasing length of stay, seasonal pressures and workforce challenges are putting services under increasing pressure

Admissions per day



The Review aims to address key challenges in each of the four areas

Paediatric Critical Care

- Significant seasonal pressures present every winter
- Balancing emergency/elective demand
- Variable admissions criteria in PICUs across country (reflected by variation in rates of invasive ventilation)
- Morbidity in children surviving has increased significantly
- Provision of level 2 care is variable across the country
- A small number of children are using a high level of resources in PICUs
- Staffing critical care units to levels recommended by the Paediatric Intensive Care Society (PICS) often proves to be challenging

Paediatric Specialist Surgery

- Number of children undergoing specialised surgery has increased yearly from 2008/09
- Spend on paediatric specialised surgical procedures has risen
- The number of children operated on in district general hospitals for non-specialised surgery has reduced with a corresponding increase in the number who are operated on in specialist hospitals
- Fewer adult surgeons and anaesthetists train in, or have enough exposure to children's surgery to carry out these procedures in district general hospitals than previously

ECMO

- Reported concerns include apparent inequity of access to respiratory ECMO and a need to transfer patients a significant distance to receive care
- Local networks have been established on an ad hoc basis and there is variation in referral arrangements
- ECMO services are affected by seasonal demand

Paediatric Transport

- All critical care transport services transport critically ill children to PICU, some are additionally commissioned to provide repatriation after intensive care, but this varies
- Funding and commissioning models vary by regions
- Repatriation is currently performed by local ambulance services and can be deemed a low priority -this can lead to delayed discharges from PICUs

Challenges for paediatric critical care

The number of admissions to PICUs has remained largely stable over the last 3 years, however the changing nature of work on PICUs, increasing average length of stay and workforce pressures place the service under considerable strain. These pressures are compounded over the winter months when respiratory infections across the acute paediatric service peak.

Demand and Capacity pressures

- There is an increase in pressure on PIC beds each winter, largely due to a spike respiratory disease. This pattern presents a challenge when demand often exceeds capacity resulting at times in children being transferred out of region.
- In 2015, 10 (29%) PICUs met the recommended nursing establishment levels, which was an increase from 5 units in the previous year. In addition to well documented shortfalls in the nursing profession it can be difficult to ensure an appropriate skill mix on units, which also affects recruitment to paediatric critical care transport teams.

Critical Care Level 2 issues

- There is a widely perceived need for high dependency care in paediatrics both in support of regional PICUs and district general hospitals to promote efficient use of PICU beds.
- There is considerable inequity across the UK in how a critically ill child who requires High Dependency Care (HDC) is managed.
- Historically there has been a much greater focus on PICU expansion than the HDC element of the pathway.

Changing nature of the population

- The number of admissions to PICUs has remained relatively stable over the last 3 years; however average length of stay on PICUs has increased.
- An increasing number of children are surviving with complex, long-term conditions who may require more frequent treatment on PICU, at times due to lack of alternative provision.

Challenges for paediatric ECMO services

NHS England commissions paediatric respiratory ECMO services from five centres in England: Alder Hey Children's Hospital, Birmingham Children's Hospital, Great Ormond Street Hospital, The Newcastle upon Tyne Hospitals, and University Hospitals of Leicester. In line with the published service specification for paediatric respiratory ECMO services, all of the centres are co-located with children's cardiac surgery centres

- Clinical opinion suggests that it is necessary to consider the appropriateness of the different commissioning arrangements and models of provision for respiratory and cardiac ECMO services. Variation in access to respiratory ECMO across the country and the need to transfer critically ill children requiring this service a considerable distance have been cited by units as cause for concern.
- Demand for ECMO services increases in winter due to peaks in respiratory illness, although data demonstrates that surges in demand are not always limited to winter months.
- Local networks have been established on an ad hoc basis and there is variation in referral arrangements.
- All L1 paediatric cardiac centres are required to offer paediatric cardiac ECMO, but activity levels and local experience varies between centres.
- Currently there are no common clinical standards setting out requirements for medical and nursing staff undertaking ECMO.

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We hope that the review will bring about the following benefits, linked to NHS England's triple aim for health outlined in the *NHS Five Year Forward View*



Improving population health

- Improved **sustainability** of services and equity of access across the country to critical care services (including ECMO and swift transfer to critical care) and specialised surgery in children
- Delivery of more joined-up services for children with different levels of need, involving greater professional collaboration and possible network style working



Improving the quality of care

- **Reductions in variation of care** currently experienced – such as different admission criteria for paediatric intensive care, and reduction in variation experienced by children undergoing surgery
- Treating children **closer to home** wherever possible and improving patient and family experience of care






Improving value for money

- **Improved value for money** through preventing, where possible, children from requiring intensive care services in the first place as a result of greater support at lower levels of critical care
- Providing care in an appropriate setting and location for the child, thereby optimising use of the highest level of critical care and specialised surgery in children

We propose 3 principles to underpin any future service

Our vision for the future of paediatric critical care and specialised surgical services is simple: services should be high quality, sustainable and equitable across the country. To achieve this, we think the following 3 principles need to underpin any future service:

- 1 Right Place** 
 - The right children should be treated in the right place, at the right time, and close to home where possible.
- 2 Greater collaboration between services** 
 - There should be greater collaboration between services to ensure that children receive consistent and excellent care.
 - This will involve collaboration between commissioners, providers of different services, and patients and families.
- 3 Family involvement** 
 - Families should be consistently involved in their children's care, and care should focus on the whole child.

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1. Have we correctly identified the pressing issues that paediatric critical care and ECMO are facing?
2. Are we missing any major issues?
3. Are there some issues that are more pressing than others?
4. Are these the right aims and principles?
5. What actions should be prioritised to realise the aims of the Review?