

1. Context

7 Day services programme

The Government's Mandate to the NHS for 2016/17 sets a priority deliverable to:

“Roll out 4 priority clinical standards in all relevant specialties to 25% of the population in 2016/17; by 2020 roll out 7 day hospital services to 100% of the population (with progress also made on the other six standards identified by the NHS Services, Seven Days a Week Forum), so that patients receive the same standards of care in hospitals, seven days a week.”

[NHS Services, Seven Days a Week Forum - Summary of Initial Findings, December 2013](#)

The 4 priority clinical standards are:

- **Standard 2 - Time to consultant review**

All emergency admissions must be seen and have a thorough clinical assessment by a suitable consultant as soon as possible but at the latest within 14 hours of admission to hospital. Although the December 2013 document stipulated that the standard was to be measured 'from time of arrival' this has now been changed to reflect the original source document for this standard (Royal College of Physicians acute care toolkit number 4).

- **Standard 5 - Access to diagnostics**

Hospital inpatients must have scheduled seven-day access to diagnostic services such as x-ray, ultrasound, computerised tomography (CT), magnetic resonance imaging (MRI), echocardiography, endoscopy, bronchoscopy and pathology. Consultant-directed diagnostic tests and their reporting will be available seven days a week:

- within 1 hour for critical patients;
- within 12 hours for urgent patients; and
- within 24 hours for non-urgent patients

- **Standard 6 - Access to consultant-directed interventions**

Hospital inpatients must have timely 24 hour access, seven days a week, to consultant-directed interventions that meet the relevant specialty guidelines, either on-site or through formally agreed networked arrangements with clear protocols, such as:

- critical care;
- interventional radiology;
- interventional endoscopy; and
- emergency general surgery.

- **Standard 8 - On-going review in high dependency areas**

All patients on the AMU, SAU, ICU and other high dependency areas must be seen and reviewed by a consultant twice daily, including all acutely ill patients directly transferred, or others who deteriorate. To maximise continuity of care consultants should be working multiple day blocks. Once transferred from the acute area of the hospital to a general ward patients should be reviewed during a consultant-delivered ward round at least once every 24 hours, seven days a week, unless it has been determined that this would not affect the patient's care pathway.

NHS England and NHS Improvement have joint responsibility for delivery, working with other organisations, to achieve this. To achieve the ambition of 25% of the population having access to 7 day hospital services by March 2017, a number of trusts have been identified to be early implementers. They are being supported to achieve the four priority clinical standards from the Sustainable Improvement Team. In response to clinical feedback, NHS Improvement has clarified the guidance on the four priority clinical standards for providers completing the self-assessment survey.

[Seven-day services: clarification of the four priority clinical standards](#)

Urgent and Emergency Care Review and the 5 urgent network specialist services

The U&EC Review aims to ensure that by 1st November 2017, 100% of five urgent network specialist services provide urgent care that meets the 4 prioritised 7DS clinical standards. These services are: major heart attack centres, paediatric intensive care units, major trauma centres, hyperacute stroke units and vascular surgery centres. The 23 U&EC Networks will have a key role in ensuring the services progress towards said achievement, and will be supported by the 4 regional U&EC PMOs.

Urgent and Emergency Care (UEC) Review and the 5 urgent network specialist services

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2. Service-specific context

NHS England specialised commissioning is responsible for commissioning PICU and has developed a comprehensive service specification, incorporating Paediatric Intensive Care Society (PICS) guidelines which apply to level 3 care. It should be noted that there are not level 2 critical care units outside of children's hospitals (except in the South West where they were funded historically) and there is no consistent transport for level 2 care nationally. The standards for level 2 care are also included in this document.

There is an ongoing national paediatric intensive care review which may make changes to the future provision of paediatric intensive care (and paediatric surgery including congenital heart surgery). This document has been reviewed extensively and reflects the current guidance and standards, it will be reviewed and refreshed following the review.

3. Guidance

3.1 NHS England Guidance including specialised commissioning

[Service Specification Paediatric Critical Care \(PCC\)](#)

Paediatric critical care (level 3) is commissioned through specialised commissioning and has a service specification, some key parts of which have been copied below:

The aim of the PCC level 3 service is to provide care for the critically ill or injured child conforming to agreed guidelines and standards. These children include those recovering from elective surgery as well as those critically ill with appendices. These national standards set out the optimal requirements for the care of critically ill children and their families and identify specific medical, nursing, technical and emotional needs that are best provided by a specialist Paediatric Intensive Care multidisciplinary team in a PCC level 3 unit.

The PCC level 3 service will deliver care in line with the national standards.

Key Service Principles are:

- PCC level 3 is provided as part of a pathway of care and co-located with other specialist children's services and facilities.

- PCC level 3 will not normally be provided outside of a level 3 centre with the exception of short term care until the arrival of the PCC retrieval team. PCC level 3 care should only be provided in adult Intensive care units as part of a local agreement with the lead centre and in line with agreed network pathways.
- PCC level 3 units must provide or have access to a 24 hour Retrieval Service.
- PIC must be provided by appropriately trained staff in equipped facilities. Families should be able to participate fully in decisions about the care of their child and wherever possible, in giving this care.
- Appropriate support services to children and families during the child's critical illness and, if necessary, through bereavement must be provided.
- There must be active support to the care of critically ill children in referring hospitals, including through advice, training and audit delivered through a network.

Children will access level 3 PCC through several different routes including:

- Inpatient children's services within the same hospital
- Operating theatres
- Neonatal units and occasionally labour wards
- Emergency Departments

PCC Transport Services (as per Service Specification E07/S/d) will facilitate many of the admissions from level 1 and 2 PCC units into level 3 PCC units and protocols for transfer will apply as per the PCC Transport Service Specification. Level 3 PCC units must ensure that comprehensive referral pathways and mechanisms are in place, and that similar pathways are in place to support egress from the service. Paediatric critical care services must be available and fully operational 24 hours per day, 365 days per year. The level 3 PCC, working as part of a Network will be responsible for the development of appropriate referral and care pathways with other level 2 and 1 PCC providers within its catchment area.

Not all level 3 PCC units offer all levels of care. Some PICUs act as Lead Centres with a fuller range of paediatric intensive care services and capabilities whereas other units offer more limited levels of care in consultation with a Lead Centre. Children may require cardiovascular or renal support, intracranial pressure monitoring or other advanced interventions, or may need to be nursed separately in a cubicle. The complexity of nursing and medical support for these aspects of care necessitates a high staff to patient ratio.

In most cases, patients undertake a "step-down" pathway to level 2 or level 1 PCC and/or regular paediatric wards (often to a hospital closer to the patient's home) prior to discharge home. The standards and commissioning responsibilities for level 2 PCC services are outlined in a [separate service specification](#). (Ref:E07/S/b) – this specification is only for level 2 within a children's hospital or where attached to a level 3 not for a District General Hospital level 2.

Patients may require care in a PCC unit if they are in the process of transitioning to alternative permanent long-term ventilation (LTV) facilities (possibly requiring home adaptations), or to palliative care placements. However, once a patient has been medically stable (see LTV service specification for definition of medical stability) on LTV for 90 days, commissioning responsibility and charges pass to local Clinical Commissioning Group. Further information on LTV services is available in the separate [Long Term Ventilation service specification](#). (Ref: E07/S/C)

PCC units which are co-located with paediatric cardiac surgery centres are occasionally required to undertake extracorporeal membrane oxygenation (ECMO). Further information on cardiac ECMO services is available in the paediatric cardiac surgery specification. (Ref: E05/S/a) There should be arrangements for the transfer of children requiring specialised

intensive care (including for specialist burns care, respiratory ECMO, organ transplant etc.) not available at the admitting unit.

Level 3 PCC units will need to maintain excellent working relationships and undertake frequent liaison with appropriate areas/bodies according to the needs of the child as per The Paediatric Intensive Care Society (PICS) standards. Complex discharge planning may need to involve external agencies such as continuing health care teams, social services, education and housing authorities.

Children up to the age of 16 are normally cared for in a PCC environment.

PCC services shall be available to all critically ill children at the point of discharge from maternity or a neonatal unit until their 16th birthday. In addition, on rare occasions a PCC unit may be deemed to be the most clinically appropriate place to provide critical care to young adults between the ages of 16-24 years (up to but not including the 24th birthday). Examples could include care as part of a long-term pathway managed by a paediatric team or due to the stage of physical or emotional development of the patient. Young people who have not completed transition to adult services will usually be cared for in a PIC unless they, or their carers, express a different preference. Therefore, any patient between the ages of 0-24 years cared for in a designated level 3 PCC or transferred to or from a level 3 PCC unit by a commissioned paediatric critical care transport service, will be considered to be accessing PCC.

Ensuring equity of access to any specialised service can present challenges, particularly in areas with a large geographical area and sparse population. There is a balance to be found in ensuring that a PCC unit has sufficient activity to maintain clinical competence and safety, but allowing access to as much of the population being served as possible within a limited travelling distance.

It is important that all level 3 PCC units are supported by PCC Transport Services, and that level 3 PCC units have systems in place to ensure that capacity is optimally managed with sufficient flexibility to enable beds to be available as required, both for emergency admissions and to support any complex elective or non-elective surgery. Further information on paediatric critical care transport services is available in the PCC Transport specification. Level 3 PCC units will agree region-wide policies with referring hospitals and paediatric critical care transport services for the management of time critical referrals. These referrals would include spinal or head trauma cases who may need to be transferred directly to a neurosurgical centre for emergency surgery. Paediatric critical care transport which supports the paediatric critical care networks is also commissioned by specialised commissioning and the below service specification is of note due to this interdependency.

[Service Specification Paediatric Critical Care Transport](#)

The service outlined in this specification is for patients ordinarily resident in England*; or who otherwise are the commissioning responsibility of the NHS in England (as defined in *Who Pays?: Establishing the responsible commissioner* and other Department of Health guidance relating to a patient's entitlement to NHS care or exemption from charges).

*Note: for the purposes of commissioning health services, this EXCLUDES patients who, whilst resident in England, are registered with a GP Practice in Wales, but INCLUDES patients resident in Wales who are registered with a GP Practice in England.

3.2 National Clinical Guidance e.g. Royal Colleges and Specialist Associations

PICS – Quality Standards – Care of critically ill and critically injured children - 2015

These are extremely comprehensive and cover all aspects of care and service specification. Some of the key standards have been reproduced below from the section on level 3 care (page 93-108)

Lead Consultant and Lead Nurse

A nominated lead consultant and lead nurse should be responsible for staffing, training, guidelines and protocols, governance and for liaison with other services. The lead nurse should be a senior children's nurse. The lead consultant and lead nurse should undertake regular clinical work within the service for which they are responsible.

Consultant Staffing

- A consultant should be available to attend the hospital within 30 minutes 24/7 and not have any simultaneous responsibilities to any other hospital sites.
- All consultants should have up to date advanced paediatric resuscitation, life support competences and should undertake continued professional development relevant to their work with critically ill and injured children.
- A consultant providing 24/7 cover should have undertaken relevant training in paediatric intensive care medicine as described by the Paediatric Intensive Care Medicine Specialty Advisory Committee (PICM ISAC) or an equivalent national organisation, including at least two years of Level 3 PCC unit training and a period of anaesthesia training (paediatric trainees) or paediatric training (anaesthesia trainees). When on duty for the L3 PCC unit consultants should not have clinical responsibilities elsewhere. The following consultant staffing should be available:
 - i. **'Normal working hours'**: At least one consultant for up to 12 beds for children needing Level 3 critical care and for each subsequent 12 beds.
 - ii. **Outside 'normal working hours'**: At least one consultant for up to 20 critical care beds and for each subsequent 20 beds. All consultants should have regular day-time commitments on the unit.

'Middle Grade' Clinician

A 'middle grade' clinician with the following competences should be immediately available at all times:

- Advanced paediatric resuscitation and life support
- Ability to carry out assessment of the ill child and recognition of serious illness and injury
- Ability to initiate the appropriate immediate treatment
- Prescribing and administering resuscitation and other appropriate drugs
- Provision of appropriate pain management
- Effective communication with children and their families
- Effective communication with other members of the multi-disciplinary team, including the on-duty consultant

At least one clinician should be immediately available who is either:

- A paediatric trainee with at least Level 2 RCPCH (or equivalent) competences. Doctors in training should normally be ST6 or above, OR
- A paediatric trainee (at any RCPCH level) who has completed at least 6 months working in a Level 3 Unit, OR
- An anaesthetic specialty trainee, OR
- An advanced nurse practitioner or Hospital / Specialty Doctor with equivalent competences, OR
- A consultant (QS L3-202)

Staffing levels should be:

- i. During normal working hours: one clinician for every five beds
- ii. Outside normal working hours: one clinician for every eight beds

Consultants with Lead Responsibility

The lead consultant should be supported by consultants with lead responsibility for the following areas:

- Clinical governance
- Organ donation
- Research
- Medical education and training
- Care of children needing long-term respiratory support

Competence Framework and Training Plan – Staff Providing Bedside Care

A competence framework and training plan should ensure that all staff providing bedside care have or are working towards, and maintain, competences appropriate for their role in the service including:

- Paediatric resuscitation: All staff should have basic paediatric resuscitation and life support competences and the service should have sufficient staff with advanced paediatric resuscitation and life support competences to achieve at least the minimum staffing levels (QS L3-208) **and** expected input to the paediatric resuscitation team (QS HW-204)
- Care and rehabilitation of children with trauma (if applicable)
- Care of children needing surgery (if applicable)
- Use of equipment as expected for their role
- Appropriate level paediatric critical care competences: 70% of nursing staff working on the PCC Units should have appropriate level competences in PCC
- Care of children with tracheostomies
- Care of children needing acute and chronic non-invasive ventilation, and tracheostomy ventilation
- Care of the intubated child, invasive mechanical ventilation, blood gas interpretation, monitoring and management of analgesia and sedation, haemodynamic monitoring and inotropic support, and care of arterial and central venous lines

Staffing Levels: Bedside Care

Nursing and non-registered health care staffing levels should be appropriate for the number, dependency and case-mix of children normally cared for by the service. Staffing levels should also take account of the lay-out of the unit. An escalation policy should show how staffing levels will respond to fluctuations in the number and dependency of patients. If staffing levels are achieved through flexible use of staff (rather than rostering), achievement of expected staffing levels should have been audited. Before starting work in the service, local induction and a review of competence for their expected role should be completed for all agency, bank and locum staff.

The following minimum nurse staffing levels should be achieved:

- At least one nurse with up to date advanced paediatric resuscitation and life support competences on each shift
- At least two registered children's nurses on duty at all times in each area
- At least one nurse per shift with appropriate level competences in PCC
- One nurse with appropriate level competences in PCC for every two children needing Level 1 or Level 2 critical care
- At least one nurse per shift with competences in care of children with tracheostomies and those requiring non-invasive or tracheostomy ventilation

- One nurse with appropriate level competences in PCC for every child needing Level 3 critical care
- Supernumerary shift leader for every eight to ten beds for children needing Level 3 care

Other Staffing

The following staff should be available:

- Appropriately qualified staff to provide support for play, mental stimulation and distraction during procedures (7/7)
- A discharge coordinator responsible for managing the discharge of children with complex care needs
- An educator for the training, education and continuing professional development of staff
- Pharmacist with competences in paediatric critical care (with time allocated at least 5/7 for work on the unit)
- Physiotherapist with competences in paediatric critical care (with time allocated at least 5/7 for work on the unit)
- On-call access to pharmacy and physiotherapy services able to support the care of children (24/7)
- Dietetic staff (with time allocated 5/7 for work on the unit)
- Staff with competences in psychological support with time allocated in their job plan for work with families and staff
- At least one whole time equivalent (WTE) educator for each 50 nurses, non-registered health care staff and allied health professionals within the L3 PCCU
- An educator for families of children with complex and / or equipment needs who are going home
- Health care scientist or other technical support arrangements for the management of equipment
- Operating Department Practitioners (or equivalent staff) with competences in assisting with advanced airway interventions (24/7)

Imaging Services

24 hour on site access to imaging services should be available including ultrasound and CT scanning, with reporting available within one hour. Arrangements for access to MRI should be in place. If staff with competences in reporting imaging of children are not available 24/7 then the hospital should have arrangements for review of imaging by a paediatric radiologist.

Co-located Services

Level 3 PCC Units should be co-located with the following services:

- ENT (Airway)
- Specialised paediatric surgery
- Specialised paediatric anaesthesia

Level 3 PCC Units should be co-located or work as an 'integrated clinical service' with the following paediatric services:

- Clinical haematology
- Respiratory medicine
- Cardiology
- Congenital cardiac surgery
- Neuro-surgery

Time-Critical Transfer Guidelines

Guidelines should be in place for situations where emergency transfer is time-critical and waiting for the PCC Transport Services to arrive may introduce unsafe delay, for example, severe head injury, intracranial bleeding, severe thoracic vascular trauma, burns and some

intra-abdominal emergencies. The guidelines should include:

- Securing advice from the PCC Transport Services (QS L3-506)
- Escort team of at least two clinical staff with appropriate training and experience. The referring consultant and senior nurse on duty should judge the appropriateness of the escorts who would normally be senior clinicians with experience and / or training in a) care of the critically ill child, b) emergency transfer and c) advanced airway management
- Indemnity for escort team
- Availability of drugs and equipment, checked in accordance with local policy (QS L3-402)
- Arrangements for emergency transport with a local ambulance service and the air ambulance
- Arrangements for ensuring restraint of children, equipment and staff during transfer

Paediatric critical care operational delivery networks

This section covers operational delivery of paediatric critical care across a network of hospitals with at least one Level 3 PCC unit and at least one PCC Transport Services. Integrating the operational delivery of urgent care, trauma care, neonatal care and other children's services (including cardiac, neurosciences and surgery) will be undertaken by other networks and is not covered here. Paediatric Critical Care Operational Delivery Networks will, of course, need to work in liaison with these networks. A typical paediatric critical care network will comprise a large number of Level 1 PCC units (at least one in each hospital with in-patient paediatrics), a smaller number of Level 2 PCC units (in larger or more geographically isolated hospitals), one or more Level 3 PCC Units, and one Specialist Paediatric Transport Service.

Network Establishment and Operational Policy

Organisations participating in the network should have agreed the membership, roles, responsibilities and accountability of the network. The network operational policy should cover:

- Agreed terms of reference
- Defined host organisation for the network
- Organisations who are part of the network including all PCC Units and the PCC Transport Services
- Involvement of anaesthetic and general (adult) critical care services of the network
- Involvement of patients and carers in the work of the network
- Mechanism for reporting, dealing with and learning from critical incidents involving more than one service within the network
- Mechanisms for linking with the work of other relevant networks

Network Service Configuration

The network should agree advice to commissioners on:

- Configuration of PCC units across the network
- Interventions offered by each Level 1 and Level 2 PCC unit
- Names to be used for each type of PCC unit within the network
- Network PCC Transport Services

4. Relevant data and intelligence including national audits

[Paediatric Intensive Care Audit Network \(PICANet\)](#)

5. Key areas of required attention

Level 3 paediatric intensive care is commissioned by specialised commissioning – however an identified area of attention is around level 2 care and the transport of level 2 patients. The ongoing national review into paediatric intensive care will have relevance to this and may change how level 3 care is provided. This guidance will be reviewed and refreshed as necessary when any recommendations are made by the review.