

## Appendix 3

### SCHEDULE 2 – THE SERVICES

#### A. Service Specifications

Service Specification No.	E07/S/b
Service	Level 2 Paediatric Critical Care
Commissioner Lead	
Provider Lead	
Period	
Date of Review	

#### 1. Population Needs

##### 1.1 National/local context and evidence base

Paediatric Critical Care (PCC) is the provision of close observation, monitoring and therapies to children who are, or have a significant potential to be, physiologically unstable which is beyond the capability of a general paediatric ward.

Entry into PCC is governed by the degree of physiological instability as much as by diagnosis.

Three levels of PCC units are defined:

- Level 1 paediatric Critical Care Units (PCCUs) will be located in all hospitals providing inpatient care to children and will deliver level 1 PCC care. (provided in all district general hospitals which provide in-patient facilities and is not commissioned by NHS England)
- Level 2 PCCUs may be specialist or non-specialist and are provided in tertiary hospitals and a limited number of DGHs and will deliver level 1 & 2 care. These were formerly classified as HDUs. (commissioned by NHS England)
- Level 3 PCCUs (LEVEL 3 PCCUs) are usually located in tertiary centres or specialist

hospitals and can provide all 3 levels of PCC.(commissioned by NHS England)

This specification describes level 2 PCCUs

Children exit from Level 2 PCC either once their physiological condition stabilises to the point where they can be cared for on a general ward or their condition deteriorates and they require care on a Level 3 PCCU.

- Paediatric Critical Care is provided in an identified Paediatric CC setting: i.e. it is not provided on a general Paediatric Ward or an Adult HDU.

Level 2 PCC occurs in a number of locations:

- Within or alongside level 3 PCCUs, either as the highest level of care attained by some admissions or else as “step-up” or “step-down” care from an episode of Level 3 care.
- In defined Level 2 PCCUs, associated with other specialist services such as cardiology, burns or specialist surgery, usually in tertiary centres.
- In defined Level 2 PCCUs that are not associated with specialist services, usually outside tertiary centres.

Level 2 PCC will be provided in a manner in which it is under the clinical governance oversight arrangements of a designated Level 3 PCCU or through formal clinical network arrangements.

The Level 3 PCC service is under particular stress during the bronchiolitis season, which occurs November to January. During this period demand often exceeds capacity with the result that children are transferred long distances to access care. Adequate provision of Level 2 care will improve capacity in the system at this crucial time.

### 1.1.2. Evidence Base

National reference documents relating to the service standards for paediatric critical care services, and referenced in this specification are:

- Department of Health (2008) Commissioning Safe and Sustainable Paediatric Services: A Framework of Critical Interdependencies  
[http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH\\_088068](http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_088068)
- Department of Health (2006) Review of Commissioning Arrangements for Specialised Services (the Carter Review)  
[http://webarchive.nationalarchives.gov.uk/./+www.dh.gov.uk/en/Managingyourorganisation/Commissioning/Commissioningspecialisedservices/DH\\_4135174](http://webarchive.nationalarchives.gov.uk/./+www.dh.gov.uk/en/Managingyourorganisation/Commissioning/Commissioningspecialisedservices/DH_4135174)

- Department of Health (2006) The acutely or critically sick or injured child in the district general hospital  
[http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH\\_062668](http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_062668)
- Department of Health (2006) Critical Care Minimum Data Set (CCMDS)  
[http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH\\_116368](http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_116368)
- Department of Health (2003) Getting the Right Start: National Service Framework for Children; Standards for Hospital Services  
[http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH\\_4006182](http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_4006182)
- Department of Health (1997) A Bridge to the Future: nursing standards, education, workforce and planning in paediatric intensive care  
[http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH\\_4005506](http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_4005506)
- Department of Health/Health Services Directorate (1997) Paediatric Intensive Care: “A Framework for the Future”  
[http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH\\_4005760](http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_4005760)
- Healthcare Commission (2007) Improving Services for Children in Hospital  
[http://caredirectory.cqc.org.uk/db/documents/Improving\\_services\\_for\\_children\\_in\\_hospital.pdf](http://caredirectory.cqc.org.uk/db/documents/Improving_services_for_children_in_hospital.pdf)
- Paediatric Intensive Care Society (2010) Standards for the Care of Critically Ill Children (v.2, 4th ed.) [http://www.ukpics.org.uk/documents/PICS\\_standards.pdf](http://www.ukpics.org.uk/documents/PICS_standards.pdf)
- Royal College of Nursing (2011) Health care service standards in caring for neonates, children and young people  
[http://www.rcn.org.uk/\\_data/assets/pdf\\_file/0010/378091/003823.pdf](http://www.rcn.org.uk/_data/assets/pdf_file/0010/378091/003823.pdf)
- Safeguarding children and young people-roles and competencies for health care staff. Intercollegiate document, September 2010. <http://www.rcpch.ac.uk/safeguarding>
- Protecting children and young people: responsibilities of all doctors. GMC Sept 2012.  
[www.gmc-uk.org/guidance\\_](http://www.gmc-uk.org/guidance_)

## 2. Outcomes

## 2.1 NHS Outcomes Framework Domains & Indicators

Domain 1	Preventing people from dying prematurely	✓
Domain 2	Enhancing quality of life for people with long-term conditions	✓
Domain 3	Helping people to recover from episodes of ill-health or following injury	✓
Domain 4	Ensuring people have a positive experience of care	✓
Domain 5	Treating and caring for people in safe environment and protecting them from avoidable harm	✓

Currently there are no outcome measures specifically for level 2 PCC. Key Outcomes:

## 3. Scope

### 3.1 Aims and objectives of service

This Service aims to provide high quality Paediatric Critical Care which meets the standards set out in national guidance as close to home as possible for:

- Critically ill children whose severity of illness does not require acute invasive ventilation or specialist care.
- The care of long term ventilated children, either while waiting for discharge to the community or during treatment of episodes of inter-current illness.

The **Level 2 PCC** Service will achieve these aims by:

- Admitting children for care in designated Level 2 PCC beds aligned to the Level 3 PCCU service or in designated local services outside the Level 3 PCCU / regional critical care unit. These limited Level 2 PCC facilities will operate as part of a Paediatric Critical Care Clinical Network
- Facilitating both the avoidance of admission to Level 3 PCCU and rapid repatriation to a 'network' Level 2 PCC facility where that is safe and appropriate
- Avoiding unnecessary transfer for the child to a regional centre where appropriate care

can be delivered locally

- Reducing disruption and costs to parents of travel and support
- Enabling improved capacity at regional centres , therefore improving access for other critically ill children

### 3.2 Service description/care pathway

Level 2 PCCUs will work as part of a Network and will be responsible for the provision of level 2 care to their agreed catchment population.

The level of complexity of patients will vary as described in the table below:

PCC level	Provided in:	Description	Nurse dependency level	Nurse: patient ratio
1	Level 1,2 & 3 PCCU	Children requiring monitoring or interventions defined by PCCMDS HRG 1	High dependency care (basic)	0.5:1 (1:1 if in a cubicle)
2	Level 2 &3 PCCU	Children requiring monitoring or interventions defined by PCCMDS HRG 2	High dependency care (advanced)	
3	Level 3 PCCU	Children requiring ventilatory support or support of two or more organs systems. Children at level 3 are usually intubated to assist breathing. HRG 3&4	Intensive care	1: 1
		Children undergoing complex monitoring and/or therapeutic procedures, including advanced respiratory support. HRG 5&6	Advanced Intensive care	1.5 : 1
	Level 3 PCCU which supports cardiac surgery	Children receiving treatment by extra-corporeal membrane oxygenation (ECMO) HRG 7	Specialised intensive care	2 : 1

There are two requirements for Level 2 PCC capacity – in the care of critically ill children and in the care of the long-term ventilated (LTV) child.

#### 3.2.1 Critically Ill Children

Critically ill children present to all hospitals which admit children. At presentation they are assessed and stabilised. On-going care depends on the level of intervention required following stabilisation and on the hospital's capacity to provide it.

They may require:

- General ward care and Level 1 PCC which is provided in every DGH
- Level 2 PCC, which can be provided in tertiary paediatric centres, either within Level 3 PCCU or on Level 2 PCCs, or in larger DGHs on Level 2 PCCs.
- Advanced level critical care, which is usually provided in regional Level 3 PCCUs but can

occasionally occur in Adult Intensive Care Units.

General ward provision **and level 1 PCC** is outside the scope of this Service Specification.

### 3.2.2. Long Term Ventilation

The numbers of children requiring invasive Long Term Ventilation (LTV) are increasing by the year. Their care is initiated in a **Level 3 PCCU** or neonatal unit. Discharge to home is usually a protracted process, often requiring multi-agency involvement, adaptations to the home or rehousing and the recruitment and training of a care team. In many areas, care continues to be provided in the regional centre while this process is taking place. This involves persistent disruption and travel for the family, may incur substantial cost to the commissioner and may reduce critical care capacity in the central unit.

Provision of **level 2 PCC** facilities in some District General Hospitals (DGH's) will enable earlier discharge so care of these children will take place closer to home, will enhance the skills of the DGH staff and will enable staff and family to become familiar with each other. The child may then be admitted to their local hospital for the treatment of some inter-current illnesses.

A list of interventions to define Level 1 and 2 PCC were described within the Paediatric Critical Care Minimum Data Set (PCCMDS). Further work has shown these to be inadequate to describe the work and modification to PCCMDS have been requested. The definition is improved by adding four variables and combining some terms. The proposed definition is shown below:

Basic Level Paediatric Critical Care Definitions are attached in appendix 1.

### 3.3 Population covered

The service outlined in this specification is for patients ordinarily resident in England\*; or otherwise 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 patients entitled to NHS care or exempt from charges).

Specifically this service is for critically ill children whose care needs exceed the capacity of a general ward or **Level 1 PCCU** as defined by reaching PCCMDS level 2 **and** do not meet the criteria for **Level 3 PCCU** as defined in the PCCMDS level 3 and above.

In addition, there is a population of post-operative children admitted to PCCU in tertiary centres whose care needs are not included in PCCMDS, but for whom there is a local agreement that PCC care is appropriate.

Children up to the age of 16 are normally cared for in a Paediatric Critical Care environment, although the *National Service Framework for Children* (section 1.2 for link) states the age range for inclusion within paediatric care is 0-18 years (up to but not including the 19<sup>th</sup> birthday).

PCC services shall be available to all critically ill children from the point of discharge from maternity or a neonatal unit until their 16<sup>th</sup> 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) – for instance as part of a long-term pathway of care managed by a paediatric team or because of their stage of physical or emotional development.. Young people who have not completed transition to adult services will usually be cared for in a PICU unless they, or their carers, express a different preference.

Some providers have policies in which patients up to the 19<sup>th</sup> birthday are classified as children / young people. In the case of these providers LEVEL 2 PCC will accept patients up to their 19<sup>th</sup> birthday.

Children are also admitted to LEVEL 2 PCC directly from a neonatal unit.

\* 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.

### **3.4 Any acceptance and exclusion criteria and thresholds**

#### **3.4.1. Acceptance Criteria**

##### **Referrals:**

The service will accept referrals inward from secondary care clinicians. Children will be under the care of a consultant tertiary specialist and/or a paediatrician.

The service will accept referrals from providers within their Paediatric Critical Care Network, including general and specialist paediatric wards, emergency departments, children's assessment units, neonatal units and LEVEL 3 PCCUs.

The service will also accept referrals from other providers of Paediatric Critical Care Services, either to provide specialist care that is not available in the referring unit, or to enable care to be delivered closer to the patient's home.

#### **3.4.2. Criteria for referral**

The service will accept referrals for children who meet one of the following criteria:

- PCCMDS level 1 care that has persisted for more than 24 hours.
- PCCMDS level 2 care.
- Post-operative care of children, subject to local agreement.

Patients will be accepted subject to capacity. Where demand exceeds capacity a network-wide process of prioritisation will be required.

In addition, in order to qualify for provision of PHD service providers will:

- Meet the 'Core Standards' PICS Standards set out in Appendix 2.
- The RCPCH/PICS Level 2 PCC standards which are for publication in 2013 will be

recommended from 2014.

- Submit PCCMDS data to SUS
- Be a member in a Paediatric Critical Care Network
- Audit activity within their **LEVEL 2 PCC**

### 3.4.3 Exclusions

- Adults
- Infants who have not been discharged from a neonatal unit.
- Children for whom this level of care is deemed to be inappropriate as the result of an agreed end-of-life pathway or DNAR order.

### 3.5 Interdependencies with other services/providers

Interdependencies in **Level 2 PCC** depend on site and speciality.

For an Level 2 PCCU in a DGH General Paediatric, Anaesthetic and ENT services must be co-located i.e. available 24/7 on the same hospital site:

For Level 2 PCCU in a specialist or tertiary centre the dependencies are defined within the PICS standards document.

## 4. Applicable Service Standards

### 4.1 Applicable national standards e.g. NICE

Not applicable.

3.1.1 Core Standards	Providers will need to meet the general obligations for the provision of paediatric services as outlined in the National Service Framework <sup>5</sup> and “Commissioning safe and sustainable specialised paediatric services: a framework of critical inter-dependencies DoH 2008 <sup>6</sup> ”). Standards for the provision of Paediatric High Dependency Care have been published by the Paediatric Intensive Care Society (Paediatric Intensive Care Society - Standards 2008 <sup>7</sup> PICS) and are being update by a group convened with the Royal College of Paediatrics.
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References:

5. [http://www.dh.gov.uk/prod\\_consum\\_dh/groups/dh\\_digitalassets/@dh/@en/document\\_s/digitalasset/dh\\_4090552.pdf](http://www.dh.gov.uk/prod_consum_dh/groups/dh_digitalassets/@dh/@en/document_s/digitalasset/dh_4090552.pdf)
6. [http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH\\_088068](http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_088068)
7. [http://www.ukpics.org.uk/documents/PICS\\_standards.pdf](http://www.ukpics.org.uk/documents/PICS_standards.pdf)

#### 4.2 Applicable standards set out in Guidance and/or issued by a competent body (e.g. Royal Colleges)

3.1.1 Core Standards	Providers will need to meet the general obligations for the provision of paediatric services as outlined in the National Service Framework <sup>5</sup> and “Commissioning safe and sustainable specialised paediatric services: a framework of critical inter-dependencies DoH 2008 <sup>6</sup> ”). Standards for the provision of Paediatric High Dependency Care have been published by the Paediatric Intensive Care Society (Paediatric Intensive Care Society - Standards 2008 <sup>7</sup> PICS) and are being update by a group convened with the Royal College of Paediatrics. A compendium of the current standards is attached as appendix 2
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References:

5. [http://www.dh.gov.uk/prod\\_consum\\_dh/groups/dh\\_digitalassets/@dh/@en/document\\_s/digitalasset/dh\\_4090552.pdf](http://www.dh.gov.uk/prod_consum_dh/groups/dh_digitalassets/@dh/@en/document_s/digitalasset/dh_4090552.pdf)
6. [http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH\\_088068](http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_088068)
7. [http://www.ukpics.org.uk/documents/PICS\\_standards.pdf](http://www.ukpics.org.uk/documents/PICS_standards.pdf)

### 5. Applicable quality requirements and CQUIN goals

#### 5.1 Applicable quality requirements (See Schedule 4 Parts A-D)

Not applicable to Level 2 PCC at this time.

#### 5.2 Applicable CQUIN goals (See Schedule 4 Part E)

*Not applicable to level 2 PCC at this time.*

### 6. Location of Provider Premises

**The Provider's Premises are located at:**

Not applicable

**7. Individual Service User Placement**

Not applicable

14/15 Specification Draft - Stakeholder Testing Stage

## Appendix 1:

### Basic Level Paediatric Critical Care Definitions

#### Level 1 unit interventions (limited to those in PCCMDS and the four additional candidate items)

Oxygen therapy + pulse oximetry + ECG monitoring (NB includes high flow oxygen)

Arrhythmia requiring IV anti-arrhythmic

Diabetic Ketoacidosis requiring continuous infusion of insulin

Severe Asthma requiring IV bronchodilator therapy

Reduced conscious level (GCS 12 or below) AND hourly (or more frequent) GCS monitoring

Upper airway obstruction requiring nebulised adrenaline

Apnoea

#### Level 2 unit interventions

Any of the above where there is a failure to respond to treatment as expected or the requirement for intervention persists for > 24 hours

CPR in past 24 hours

Nasopharyngeal airway

Acute non-invasive ventilation, including CPAP

>80 mls/kg fluid bolus in 24 hours

\*Status epilepticus requiring treatment with continuous IV infusion (eg midazolam)

\*Arterial line

\*Central venous pressure monitoring

\*Epidural

\*Care of tracheostomy (first 7 days of admission)

\*Inotropic / vasopressor treatment

\*Acute cardiac pacing

\*IV thrombolysis

\*Acute renal replacement therapy (CVVH or HD or PD)

\*ICP monitoring or EVD

\*Exchange transfusion

\*Plasma exchange

\*MARS therapy

Invasive ventilation of the Long Term Ventilated Child (which is coded as an advanced critical care intervention)

Note: \* denotes those interventions that are almost always performed in a tertiary centre.

## Appendix 2:

Quality standards specific to the service using the following template:

Quality Requirement	Threshold	Method of Measurement	Consequence of breach
<b>Domain 1: Preventing people dying prematurely</b>			
Standardised mortality	remain within 99.9% confidence limits	To be agreed	Non compliance with contract General Conditions 8 & 9
<b>Domain 2: Enhancing the quality of life of people with long-term conditions</b>			
Ensure working within a Network of Care with the Level 3 PCC and other paediatric units as required	To be agreed	To be agreed	Non compliance with contract General Conditions 8 & 9
Effective and timely communication is supplied to receiving health care professionals following transfer / discharge from level 2 PCC	To be agreed	To be agreed	Non compliance with contract General Conditions 8 & 9
<b>Domain 3: Helping people to recover from episodes of ill-health or following injury</b>			
Facilitating both the avoidance of admission to Level 3 PCCU and rapid repatriation to a 'network' Level 2 PCC facility where that is safe and	To be agreed	To be agreed	Non compliance with contract General Conditions 8 & 9

Quality Requirement	Threshold	Method of Measurement	Consequence of breach
appropriate  Avoiding unnecessary transfer for the child to a regional centre where appropriate care can be delivered locally	To be agreed	To be agreed	Non compliance with contract General Conditions 8 & 9
<b>Domain 4: Ensuring that people have a positive experience of care</b>			
Ensure appropriate escalation to level 3 care is timely and repatriation from level 3 to level 2 is undertaken in a timely manner. Timely discharge documentation to facilitate smooth transition to home/other services.	To be agreed	To be agreed	Non compliance with contract General Conditions 8 & 9
<b>Domain 5: Treating and caring for people in a safe environment and protecting them from avoidable harm</b>			
Levels 2 PCC should work within a network and have agreed protocols with the Lead level 3 unit.	To be agreed	To be agreed	Non compliance with contract General Conditions 8 & 9