

Explanation of Paediatric Critical Care Levels:

Time to Move on definition ([Link](#))

- **Level 1 CC** describes activities which should be delivered in any hospital which admits acutely ill children and will focus on the commoner acute presentations and clinical scenarios that require an enhanced level of observation, monitoring and intervention than can be safely delivered on a normal ward. Note: short-stay units or observation units, providing daytime care only, are not expected to deliver Level 1 CC.
- **Level 2 CC** describes more complex activities and interventions which are undertaken less frequently, to children with a higher level of critical illness, and demand the supervision by competent medical and nursing staff who have undergone additional training.
- **Level 3 CC** describes activities that should only be undertaken within PICUs

PICS Standards 2015 ([Link](#))

Critically ill and critically injured children may present in Emergency Departments (ED), Children's Assessment Services (CAS) or become critically ill whilst in in-patient (IP) children's services. Those needing an enhanced level of observation, monitoring or intervention will need to be taken to a Paediatric Critical Care Unit (PCCU).

Three levels of critical care are recognised in which Levels 1 and 2 map to high dependency care and Level 3 relates to intensive care.

In the Paediatric Critical Care (PCC) Healthcare Resource Group (HRG) classification Levels 1, 2 and 3 paediatric critical care are also known as follows:

- [Level 1 \(L1\) critical care: Basic Critical Care](#)
- [Level 2 \(L2\) critical care: Intermediate Critical Care](#)
- [Level 3 \(L3\) critical care: Advanced Critical Care](#)

Interventions mapped to level One and Two care as defined in current PICS Standards:

LEVEL 1: BASIC CRITICAL CARE

Airway:

Upper airway obstruction requiring nebulised adrenaline

Breathing:

- Apnoea – recurrent
- Oxygen therapy plus continuous pulse oximetry plus ECG monitoring
- Nasal high flow therapy

Circulation:

- Arrhythmia requiring IV anti-arrhythmic therapy

Diagnosis:

- Severe asthma (IV bronchodilator / continuous nebulisers)
- Diabetic ketoacidosis requiring continuous insulin infusion

Other:

- Reduced level of consciousness (GCS 12 or below) and hourly (or more frequent) GCS monitoring

LEVEL 2: INTERMEDIATE CRITICAL CARE**Airway:**

- Nasopharyngeal airway
- Care of tracheostomy (first seven days of episode only)

Breathing:

- Non-invasive ventilation (including CPAP and BiPAP)

NB describes use of CPAP in some level one centres as supported by the local Paediatric Critical Care Network.

“A number of L1 Units may be designated by their network to deliver CPAP to certain patient groups, for example, patients with bronchiolitis.” Pages 126,130

- Long-term ventilation via a tracheostomy

Circulation:

- >80 ml/kg volume boluses
- Vasoactive infusion (including inotropes and prostaglandin)
- Temporary external pacing
- Cardiopulmonary resuscitation in the last 24 hours

Diagnosis:

- Acute renal failure requiring dialysis or haemofiltration
- Status epilepticus requiring treatment with continuous IV infusion

Monitoring:

- Invasive arterial monitoring
- Central venous pressure monitoring
- Intracranial monitoring / external ventricular drain

Other:

- Exchange transfusion
- Intravenous thrombolysis
- Extracorporeal liver support (MARS)
- Plasmafiltration
- Epidural infusion

LEVEL 3: ADVANCED CRITICAL CARE

Please see PICS Standards for details of all interventions, however, Level 3 relates to children needing to be cared for in a Paediatric Intensive Care Unit requiring:

- Invasive Mechanical Ventilation or
- Advanced Respiratory Support (Jet Ventilation or HFOV) **PLUS one or more of the following:**
- Haemofiltration Haemodialysis
- Peritoneal dialysis
- Burns 50-79% BSA
- Extracorporeal liver Support (MARS)
- Exchange transfusion
- iNO Surfactant
- Plasmfiltration