WM QRS West Midlands Quality Review Service

NHS

West Midlands Paediatric Critical Care Network

Care of Critically Ill & Critically Injured Children Quality Review Visit

University Hospitals Coventry and Warwickshire NHS Trust

Visit Date: 11th September 2018 Report Date: November 2018

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UKAS INSPECTION 8831

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INTRODUCTION

This short report presents the findings of the review of Critically Ill and Critically Injured Children that took place on 11th September 2018. The review visit was commissioned by the West Midlands Paediatric Critical Care Network (WMPCCN), on behalf of commissioners and NHS England who have responsibility for making recommendations on future provision for the delivery of paediatric critical care. This review programme links to both a National Paediatric Critical Care Review; and a West Midlands Paediatric Critical Care CQUIN. The CQUIN outlined a requirement for all West Midlands children's services to be assessed against the WMQRS /Paediatric Intensive Care Society (2016) Standards for the Care of Critically Ill Children (v.5) by July 2017.

The purpose of the visit was to validate the self-assessments made by the acute Trust, and to review the pathway for critically ill children attending the Emergency Department and Children's assessment unit through to inpatient and high dependency inpatient areas where applicable. As part of the WMPCCN programme, information was also gathered about existing capacity to provide paediatric high dependency care at a local level, and the plans that may be required to deliver a higher level of paediatric critical care nearer to the patient's home in the future. Only a select number of Quality Standards were reviewed during this visit. The Quality Standards identified were agreed by the WMPCCN as being important to provide the information required to inform commissioners as part of the National CQUIN for 2017/18. The review visit consisted of a half-day visit, during which reviewers looked at evidence against the self-assessment submitted, met with the lead team for children's services and viewed facilities. This review programme was therefore not as in-depth as the Critically Ill and Critically Injured Children peer review programmes undertaken across the West Midlands in previous years but was designed to provide specific assurances.

The aim of the standards and the review programme is to help providers and commissioners of services to improve clinical outcomes and service users' and carers' experiences by improving the quality of services. The report also gives external assurance of the care, which can be used as part of the organisations' Quality Accounts. For commissioners, the report gives assurance of the quality of services commissioned and identifies areas where developments may be needed.

The report reflects the situation at the time of the visit. The text of this report identifies the main issues raised during the course of the visit. Any immediate risks identified include the Trust's response and WMQRS's response to any actions taken to mitigate the risk. Appendix 1 lists the visiting team that reviewed the services at University Hospitals Coventry and Warwickshire NHS Trust. Appendix 2 contains the details of compliance with each of the standards and the percentage of standards met.

This report describes services provided or commissioned by the following organisations:

- University Hospitals Coventry and Warwickshire NHS Trust
- NHS Coventry and Rugby Clinical Commissioning Group

Most of the issues identified by quality reviews can be resolved by providers' and commissioners' own governance arrangements. Many can be tackled by the use of appropriate service improvement approaches; some require commissioner input. Individual organisations are responsible for taking action and monitoring this through their usual governance mechanisms. The lead commissioner for the service concerned is responsible for ensuring action plans are in place and monitoring their implementation, liaising, as appropriate, with other commissioners, including commissioners of primary care. The lead commissioner in relation to this report is NHS Coventry and Rugby Clinical Commissioning Group.

About West Midlands Quality Review Service

WMQRS is a collaborative venture between NHS organisations in the West Midlands to help improve the quality of health services by developing evidence-based Quality Standards, carrying out developmental and supportive quality reviews (often through peer review visits), producing comparative information on the quality of services and providing development and learning for all involved.

Expected outcomes are better quality, safety and clinical outcomes, better patient and carer experience, organisations with better information about the quality of clinical services, and organisations with more confidence and competence in reviewing the quality of clinical services. More detail about the work of WMQRS is available on www.wmqrs.nhs.uk

Acknowledgments

West Midlands Quality Review Service and the West Midlands Paediatric Critical Care Network would like to thank the staff and service users and carers of University Hospitals Coventry and Warwickshire NHS Trust for their hard work in preparing for the review and for their kindness and helpfulness during the course of the visit. Thanks are also due to the visiting team and their employing organisations for the time and expertise they contributed to this review.

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CARE OF CRITICALLY ILL AND CRITICALLY INJURED CHILDREN

TRUST-WIDE

General Comments and Achievements

Good team working within and between services was evident throughout the review. Many of the issues identified in the last report from 2013 had been addressed.

Arrangements were in place to receive children from the assessment unit at George Eliot Hospital NHS Trust directly into the ward, following a revised protocol that ensured a senior paediatric clinical review at George Eliot Hospital prior to transfer. Children arriving from other entry routes were assessed on arrival at the Emergency Department. If children were admitted directly to the ward, then they were assessed by a paediatrician.

Patients who were designated as requiring High Dependency Unit (HDU) care were admitted to the HDU and assessed immediately by a member of the HDU nursing staff.

Leads from across all areas of Children's services took part in a brief safety huddle every morning; these huddles were well attended and used a Huddle Board for visual management and communication. Once a week there was also a Grand Huddle, which focused on learning and development across the multidisciplinary team.

Some comments in this Trust-wide section of the report apply to more than one service and so are not duplicated in other areas of the report.

Good Practice

1. **Operating Department Practitioner as part of resuscitation team**

   An Operating Department Practitioner (ODP) was called as part of the Trust resuscitation team for trauma and was based in the ED. The ODP attended all resuscitations in the Emergency Department and children's wards. Staff had found the involvement of an ODP particularly helpful in the management of paediatric resuscitations.

2. **Resuscitation equipment and grab bags**

   The Trust policy and governance arrangements for checking and auditing resuscitation equipment were very thorough and robust. Reviewers were also impressed that the Trust had identified which areas across the Trust required an adult and which required a paediatric resuscitation trolley. Depending on which trolley was deemed most appropriate, the Trust then provided either an adult or a paediatric grab bag to ensure that a full range of appropriate emergency equipment was available.

Immediate Risks: None

Concerns

1. **Consultant paediatrician workload**

   Reviewers were told that consultants, although rostered until 10pm, would often work until the early hours of the following morning. The issue with consultant workload had been reported within the Trust and was documented on the Trust risk register. Some actions had been taken to mitigate the risk, by ensuring that consultant staff did not have clinical commitments the following morning, but reviewers were concerned that this level of workload was not acceptable or sustainable.

2. **Middle grade staffing out of hours**

   Reviewers were concerned that out of normal working hours there was only one middle grade clinician covering the children's emergency department and all ward areas including the HDU. This was of particular concern because of the number of areas covered out of hours and because, depending on the allocation from the West Midlands Deanery, the allocated middle grade clinician might not be an ST6 or have the level 2

RCPCH competences for caring for children with high dependency needs. This issue would have been rated as a serious concern if support had not been available from the on-call neonatal and anaesthetic middle grade clinicians.

Further Consideration

1. In view of the difficulty in providing middle grade clinician cover to all paediatric areas, reviewers suggested that the Trust may wish to consider the development and extension of roles for non-medical grades of staff.
2. The paediatric resuscitation policy would benefit from review to reflect practice. The Trust policy was not clear about who would be called to attend the resuscitation. In practice, staff were very clear about the process and that the lead for the resuscitation would be the most senior medical member of staff attending.

CHILDREN'S EMERGENCY DEPARTMENT (CED)

General Comments and Achievements

Children attending the CED were triaged and then streamed to the most appropriate level of service. An escalation process was also in place if a child could not be assessed with 15 minutes of arrival. The CED had a middle grade clinician on duty between the hours of 9am and 5pm daily. At times when it was known that there was likely to be increased activity, two middle grade medical staff would be available.

Good Practice

1. An emergency consultant was on site at all times (24/7).
2. All band 6 and band 7 nurses had completed Advanced Paediatric Life Support (APLS) training.
3. The 'Children in Crisis Checklist' was used for the quick assessment of children and young people who may be attending with behavioural issues, and was very good and easy to follow.
4. A good paediatric nurse competency framework was in place for emergency department staff, and identified competencies for all registered and non-registered staff working within the department.
5. See Trust-wide section of the report (under Good Practice).

Immediate Risks: None

Concerns

1. **Paediatric middle grade staffing out of hours:** see Trust-wide section of the report.

Further Consideration

1. Reviewers were told that the number of admissions to the ED had increased by 10,000 within the last 10 years. There was very little space in the reception area of the CED, and at busy times there was insufficient space for children and their families and carers. Reviewers considered that action would be required to ensure that the facilities appropriately met the needs of those using the service if referral numbers were to continue to rise.
2. See Trust-wide section of the report (under Further Consideration).

INPATIENT WARDS AND HIGH DEPENDENCY UNIT

General Comments and Achievements

Good team-working was clearly evident, with support from a strong leadership team. The staff who met with the reviewers had a clear vision about future developments across all areas.

The paediatric unit consisted of a paediatric medical day unit, and three wards with a total of 61 beds. All consultant medical and middle grade staff had safeguarding and advanced paediatric resuscitation and life support

training. The service had one advanced nurse practitioner and was looking at developing the non-medical staff provision in terms of providing support to the middle grade clinician roles.

The HDU had six beds commissioned, with the ability to flex to eight beds at times of peak activity during winter months. Clear acceptance criteria were in place for admission to the HDU. Nurse staffing was sufficient to manage capacity within the HDU, and staff had completed either APLS training or the European Paediatric Advanced Life Support (EPALS) course. If a young person over the age of 16 required admission to the adult critical care unit, shared care arrangements were put in place, including a daily clinical review by both a consultant and a nurse member of the paediatric team.

Good Practice

1. Access to play support specialists for children across all paediatric areas was available until 8.30pm, seven days per week. One play specialist carried a bleep so that if any area needed extra support the play specialist could be bleeped. As well as development projects in the various ward areas, each play specialist had areas of specialist interest, for example caring for children and young people living with cystic fibrosis.
2. Reviewers were impressed with the guideline covering *Debriefing following a Traumatic/Stressful Incident within the Paediatric Department.* The guideline covered duties and responsibilities for all levels of staff, the debriefing process, incident reporting and compliance monitoring.
3. **Care Closer to Home**

   The children's services at University Hospitals Coventry and Warwickshire NHS Trust were proactive in working to provide care and support to enable children to be cared for closer to home. A CQUIN had been agreed with the CCG for the care of children on long-term ventilation (LTV), and this had resulted in the formalising of funded equipment and training for staff at the Trust to care for children on LTV who would otherwise require admission to a paediatric intensive care unit PICU elsewhere in the region. Staff who spoke to the reviewers reported that an evaluation of the service and the data collected had shown that the number of transfers to Birmingham Women's and Children's Hospital NHS Foundation Trust had been reduced and that feedback from parents and carers on the care they had received had been extremely positive.
4. **Nurse Competency Framework**

   a. The Paediatric Unit core PHDU Registered Nurse Clinical Competence framework was very comprehensive and clearly written and formatted. The framework was based on the Royal College of Paediatrics and Child Health *'High Dependency Care for Children, Time to Move on'* recommendations, and had been amended for use locally. Each member of staff had a bespoke competence passport which required completion within six months and was then reviewed annually or when the staff member moved to another area of the department.

   b. Reviewers were also impressed that the same format for competences had been adopted for all other non-nursing and nursing staff roles, including for their 'flexi-staff' posts, which covered the ward and the HDU, and for staff working in the emergency department.
5. **Education and Training**

   In addition to the competence framework, access to nurse education and training was very good.

   a. Five of the 12 HDU staff had completed the health assessment modules run by Coventry University, and four staff had completed a Paediatric Intensive Care module run by Birmingham City University or Birmingham Women's and Children's NHS Foundation Trust. The service had plans for all staff working in the HDU to have completed HDU modules within 12 months.

   b. A number of other ward staff had been trained and had appropriate competences to provide level 2 care when the additional HDU beds were in use.

c. In-house HDU and mentoring and assessing courses were in place for staff.

d. A training plan was developed each year and identified the number of APLS and BWC HDU courses that were required to ensure that the wards had sufficient staff with appropriate competences on duty. Senior staff were extremely proactive in accessing external funding so that staff could attend.

e. Managing Actual and Potential Aggression (MAPA): All band 6 staff and above had completed MAPA training. Some staff had also completed the MAPA 'train the trainer' training so that this course could be delivered locally.

6. Multidisciplinary working was very good, and included the involvement of physiotherapists in HDU training.

7. Data submitted against the Paediatric Critical Care Minimum data set were linked to the patient management system, which ensured that the data submitted were accurate and timely. The data were submitted electronically through the Secondary User System (SUS).

8. See Trust-wide section of the report (under Good Practice).

Immediate Risks: None

Concerns: See Trust-wide section of the report (under Concerns).

Further Considerations: See Trust-wide section of the report (under Further Consideration).

EXISTING HDU CARE AND PLANS FOR THE FUTURE

As part of the visit, the WMPCCN was keen to hear from staff about their views on the future delivery of critical care for children across the region. The lead team for children's services was keen to consider the position in relation to delivering more complex level 2 care, and therefore used the visit process to self-assess against Critically Ill and Critically Injured Children Quality Standards for level 2 high dependency care to ascertain their existing and future capabilities to provide level 2 HDU care. Reviewers were told that there was universal support across the Trust for the development of a designated level 2 care hub, and some planning had been included in the annual women's and children's strategy with executive level support.

At the time of the visit, HDU care could be provided for children with a stable tracheostomy and for those who required continuous positive airway pressure (CPAP) ventilation. Good support was available from the Trust's ENT team for children with tracheostomies. Support was also in place for some children who were on LTV (see Inpatient Wards and High Dependency Unit section of the report, under Good Practice). The service also had plans for the next six months to ensure all medical staff had appropriate competences in non-invasive ventilation (NIV). Children with chest drains were cared for on the HDU, but children with empyema were transferred to a respiratory unit.

Children requiring acute bilevel positive airway pressure (BiPAP) ventilation were not admitted to the HDU, although children 'stepping down' from level 3 HDU care who were clinically stable on BiPAP would be considered on a case by case basis, depending on the type of ventilation equipment used.

The Trust team and reviewers identified several areas for consideration by both the Trust and WMPCCN in the future designation and provision of level 2 HDU care across the West Midlands.

1. Medical staffing for the HDU would need to be increased, and reviewers suggested that a consultant lead would need to be in place whose primary function was HDU care. This would be particularly important if the Trust HDU were receiving children and young people from other areas.

2. The WMPCCN should work with all providers to develop medical and nursing competences for caring for patients on acute BiPAP.

3. Discussion with West Midlands Deanery would need to take place about appropriate middle grade clinician cover at ST6 level being allocated to designated level 2 units, or the ability to provide training and supervision for ST4 & 5 middle grade clinicians.

4. There should be region-wide discussion about the number of different models of ventilator that are in use. Ensuring that sufficient staff have the confidence and competence to care for children requiring ventilation closer to home is problematic for local HDUs if too many different models of ventilator are in use across the region.

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APPENDIX 1 MEMBERSHIP OF VISITING TEAM

Visiting Team		
Dr John Alexander	Clinical Director, PICU	University Hospitals of North Midlands NHS Trust
Ally Davies	Network Lead/BWC Transformation Manager	Birmingham Women's and Children's NHS Foundation Trust
Joanne Pugh	Advanced Paediatric Nurse Practitioner	The Shrewsbury & Telford Hospital NHS Trust
Dominic St Louis	General Manager – Urgent and Critical Care	Birmingham Women's and Children's NHS Foundation Trust

WMQRS Team		
Sarah Broomhead	Assistant Director	West Midlands Quality Review Service

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APPENDIX 2 COMPLIANCE WITH THE QUALITY STANDARDS

Analyses of percentage compliance with the Quality Standards should be viewed with caution as they give the same weight to each of the Quality Standards. Also, the number of Quality Standards applicable to each service varies depending on the nature of the service provided. Percentage compliance also takes no account of 'working towards' a particular Quality Standard. Reviewers often comment that it is better to have a 'No, but', where there is real commitment to achieving a particular standard, than a 'Yes, but' where a 'box has been ticked' but the commitment to implementation is lacking. With these caveats, table 1 summarises the percentage compliance for each of the services reviewed.

Table 1 - Percentage of Quality Standards met

Details of compliance with individual Quality Standards can be found in a separate document.

Service	Number of applicable QS	Number of QS met	% met
Hospital-wide	10	8	80
Emergency Dept	21	20	95
In-patients	22	21	95
Level 1 PCCU	26	25	96
Level 2 PCCU	27	25	93
Health Economy	**106**	**99**	**93**

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HOSPITAL-WIDE

Ref	Standard	Met?	Reviewer's comments
HW-201	**Board-Level Lead for Children** A Board-level lead for children's services should be identified.	Y	
HW-202	**Clinical Leads** The Board-level lead for children's services should ensure that the following leads for the care of children have been identified: a. Lead consultants and nurses for each of the areas where children may be critically ill (QS **-201) b. Lead consultant for paediatric critical care c. Lead consultant for surgery in children (if applicable) d. Lead consultant for trauma in children (if applicable) e. Lead anaesthetist for children (QS A-201) f. Lead anaesthetist for paediatric critical care (QS A-202) g. Lead GICU consultant for children (QS A-203) (if applicable) h. Lead consultant/s and lead nurse/s for the Specialist Paediatric Transport Service (QS T-201) (if applicable) i. Lead consultant and lead nurse and for safeguarding children j. Lead allied health professional for the care of critically ill children	Y	
HW-203	**Hospital Wide Group** Hospitals providing hospital services for children should have a single group responsible for the coordination and development of care of critically ill and critically injured children. The membership of this group should include all nominated leads (QS HW-202) and the Resuscitation Officer with lead responsibility for children. The accountability of the group should include the Hospital Lead for children's services (QS HW-201). The relationship of the group to the Trust's mechanisms for safeguarding children and clinical governance issues relating to children should be clear.	N	The Trust-wide Strategic Committee for Children and Young People was in the process of being re-launched. A new term of reference had been agreed. The first meeting was due to be held following the review visit. It was not clear from list of members that representation from safeguarding had been included.

Ref	Standard	Met?	Reviewer's comments
HW-204	**Paediatric Resuscitation Team** A paediatric resuscitation team should be immediately available at all times, comprising at least three people: a. A Team Leader with up to date advanced paediatric resuscitation and life support knowledge and competences and at least Level 1 RCPCH (or equivalent) competences (QS PM-203) b. A second registered healthcare professional with up to date advanced paediatric resuscitation and life support competences An anaesthetist, or other practitioner, with up to date competences in advanced paediatric resuscitation and life support and advanced airway management	Y	
HW-205	**Consultant Anaesthetist 24 Hour Cover** A consultant anaesthetist with up to date competences in advanced paediatric resuscitation and life support and advanced paediatric airway management who is able to attend the hospital within 30 minutes and does not have responsibilities to other hospital sites should be available 24/7.	Y	
HW-206	**Other Clinical Areas** Staff in other clinical areas where children may be critically ill, such as imaging and paediatric out-patient departments, should have basic paediatric resuscitation and life support training.	Y	In practice all children from the CED PHDU who were deemed to be 'critically ill were accompanied when visiting imaging etc by an anaesthetist, paediatrician and a Paediatric High Dependency Nurse.
HW-401	**Paediatric Resuscitation Team – Equipment** The paediatric resuscitation team should have immediate access to appropriate drugs and equipment which are checked in accordance with local policy.	Y	All resuscitation equipment and drugs were checked daily and signed for in accordance with the Trust policy.
HW-501	**Resuscitation and Stabilisation** Protocols should be in use covering resuscitation and stabilisation, including: a. Alerting the paediatric resuscitation team b. Arrangements for accessing support for difficult airway management c. Stabilisation and ongoing care d. Care of parents during the resuscitation of a child	N	The Trust policy was not clear about who would be called to attend the resuscitation. In practice staff were very clear about the process and that the lead for the resuscitation would be the most senior medical member of staff attending. The policy would benefit from being reviewed and including more detail around the care of parents during the resuscitation of a child (d).

Ref	Standard	Met?	Reviewer's comments
HW-598	**Trust-Wide Guidelines** The following Trust-Wide guidelines should be in use: a. Consent b. Organ and tissue donation c. Palliative care d. Bereavement e. Staff acting outside their area of competence covering: f. Exceptional circumstances when this may occur g. Staff responsibilities h. Reporting of event as an untoward clinical incident i. Support for staff	Y	Staff acting outside their area of competence was covered by the Trust indemnity policy and policy for 'Debriefing following a Traumatic/Stressful Incident within the Paediatric Department'
HW-602	**Paediatric Critical Care Operational Delivery Network Involvement** At least one representative from the Trust should attend each meeting of the Paediatric Critical Care Operational Delivery Network. Information about the work of the network should be disseminated to all staff involved in the provision of critical care for children	Y	

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EMERGENCY DEPARTMENT

Ref	Standard	Met?	Reviewer's comments
ED-201	**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.	Y	
ED-202	**Consultant Staffing** a. A consultant who is able to attend the hospital within 30 minutes and who does not have responsibilities to other hospital sites should be available 24/7 b. All consultants should have up to date advanced paediatric resuscitation and life support competences and should undertake CPD of relevance to their work with critically ill and critically injured children	Y	All Emergency Department consultants had advanced paediatric resuscitation and life support competences.
ED-203	**'Middle Grade' Clinician** A 'middle grade' clinician with the following competences should be immediately available at all times: a. Advanced paediatric resuscitation and life support b. Assessment of the ill child and recognition of serious illness and injury c. Initiation of appropriate immediate treatment d. Prescribing and administering resuscitation and other appropriate drugs e. Provision of appropriate pain management f. Effective communication with children and their families g. Effective communication with other members of the multi-disciplinary team, including the on-duty consultant A clinician with at least Level 1 RCPCH (or equivalent) competences and experience should be immediately available. Doctors in training should normally be Specialist Trainee 4 (ST4) or above. Larger hospitals with several wards or departments caring for children will require more than one clinician with these competences on site 24/7.	Y	There was a middle grade clinician in CED from 09.00-22.00 hrs, seven days a week. After 22.00 hours cover was provided from the ward.

Ref	Standard	Met?	Reviewer's comments
ED-206	**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: a. 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 ED-208) and expected input to the paediatric resuscitation team (QS HW-204) b. Care and rehabilitation of children with trauma (if applicable) c. Care of children needing surgery (if applicable) d. Use of equipment as expected for their role e. Care of children with acute mental health problems	Y	A good competency framework was in place staff. Band 6 and above had advanced paediatric resuscitation and life support competences all other staff had completed paediatric immediate life support training. 3.0WTE Paediatric Emergency Nurse Practitioners covered the emergency department. All relevant staff were competent to triage using the Manchester Triage Tool. All nursing staff has completed MAPA training.
ED-207	**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 and the lay-out of the unit. An escalation C12policy 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: a. At least one nurse with up to date advanced paediatric resuscitation and life support competences on each shift b. At least one registered children's nurses on duty at all times in each area	Y	

Ref	Standard	Met?	Reviewer's comments
ED-209	**Other Staffing** The following staff should be available: a. Appropriately qualified staff to provide support for play, mental stimulation and distraction during procedures (7/7) b. On-call access to pharmacy and physiotherapy services able to support the care of children (24/7) c. Access to dietetic service (at least 5/7) d. Access to a liaison health worker for children with mental health needs (7/7) e. Access to staff with competences in psychological support (at least 5/7)	Y	
ED-211	**ED Liaison Paediatrician** A nominated paediatric consultant should be responsible for liaison with the nominated Emergency Department consultant (QS ED-201).	Y	
ED-212	**ED Sub-speciality Trained Consultant** Emergency Departments seeing 16,000 or more child attendances per year should have a consultant with sub-specialty training in paediatric emergency medicine.	Y	
ED-301	**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.	Y	
ED-401	**Resuscitation Equipment** An appropriately designed and equipped area, or adequate mobile equipment, for resuscitation and stabilisation of critically ill children of all ages should be available. Drugs and equipment should be checked in accordance with local policy.	Y	
ED-402	**Grab Bag'** Appropriate drugs and equipment for in-hospital and time-critical transfers should be immediately available and checked in accordance with local policy.	Y	

Ref	Standard	Met?	Reviewer's comments
ED-501	**Initial Assessment** A protocol should be in use which ensures a brief clinical assessment within 15 minutes of arrival, including a pain score (where appropriate), and a system of prioritisation for full assessment if waiting times for full assessment exceed 15 minutes.	Y	All children and young people presenting to CED were triaged in accordance with the Manchester Triage tool.
ED-502	**Paediatric Early Warning System** A system to provide early warning of deterioration of children should be in use. The system should cover observation, monitoring and escalation of care.	Y	Children were assessed initially using Paediatric Observation Priority Score. Children would only have a PEWS assessment if they were going to be admitted.
ED-503	**Resuscitation and Stabilisation** Hospital-Wide protocols for resuscitation and stabilisation should be in use, including: a. Alerting the paediatric resuscitation team b. Arrangements for accessing support for difficult airway management c. Stabilisation and ongoing care d. Care of parents during the resuscitation of a child	N	As Hospital wide QS HW-501
ED-504	**Paediatric Advice** Guidelines on accessing advice from the local paediatric service and local paediatric critical care service should be in use in units where children are not under the care of a paediatrician.	Y	
ED-505	**Clinical Guidelines** The following clinical guidelines should be in use: a. Treatment of all major conditions, including: i. acute respiratory failure (including bronchiolitis and asthma) ii. sepsis (including septic shock and meningococcal infection) iii. management of diabetic ketoacidosis iv. seizures and status epilepticus v. trauma, including traumatic brain injury, spinal injury and rehabilitation of children following trauma (if applicable) vi. burns and scalds vii. cardiac arrhythmia viii. upper airway obstruction b. Management of acutely distressed children, including use of restraint c. Drug administration and medicines management d. Pain management e. Procedural sedation and analgesia f. Infection control and antibiotic prescribing g. Tissue viability, including extravasation	Y	

Ref	Standard	Met?	Reviewer's comments
ED-506	**PCC Transfer Guidelines** Guidelines on referral to a Specialist Paediatric Transport Service should be in use, covering at least: a. Accessing advice from a Specialist Paediatric Transport Service and providing full clinical information b. Ensuring decisions on whether a child needs to be transferred are taken by the appropriate local consultant together with the Specialist Paediatric Transport Service c. Local guidelines on the maintenance of paediatric critical care until the child's condition improves or the SPTP arrives. These guidelines should stipulate the location/s in which children may be maintained	Y	
ED-507	**In-hospital Transfer Guidelines** Guidelines on transfer of seriously ill children within the hospital (for example, to or from imaging or theatre) should be in use. The guidelines should specify the escort arrangements and equipment required.	Y	
ED-508	**Inter-hospital Transfer Guidelines** Guidelines on transfer of children between hospitals or between hospital sites should be in use covering at least: a. Types of patients transferred b. Composition and expected competences of the escort team c. Drugs and equipment required d. Restraint of children, equipment and staff during transfer e. Monitoring during transfer	Y	

Ref	Standard	Met?	Reviewer's comments
ED-509	**Time-Critical Transfer Guidelines** Guidelines should be in place for situations where emergency transfer is time-critical and waiting for the SPTS 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: a. Securing advice from the Specialist Paediatric Transport Service (QS ED-506) b. 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 c. Indemnity for escort team d. Availability of drugs and equipment, checked in accordance with local policy (QS ED-402) e. Arrangements for emergency transport with a local ambulance service and the air ambulance f. Arrangements for ensuring restraint of children, equipment and staff during transfer	Y	
ED-798	**Review and Learning** The service should have appropriate multi-disciplinary arrangements for review of, and implementing learning from, positive feedback, complaints, morbidity, mortality, transfers and clinical incidents and 'near misses'.	Y	

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IN-PATIENT WARD

Ref	Standard	Met?	Reviewer's comments
IP-201	**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.	Y	
IP-202	**Consultant Staffing** a. A consultant who is able to attend the hospital within 30 minutes and who does not have responsibilities to other hospital sites should be available 24/7 b. All consultants should have up to date advanced paediatric resuscitation and life support competences and should undertake CPD of relevance to their work with critically ill and critically injured children	Y	All paediatric consultants had up to date advanced paediatric resuscitation and life support competences.
IP-203	**'Middle Grade' Clinician** A 'middle grade' clinician with the following competences should be immediately available at all times: a. Advanced paediatric resuscitation and life support b. Assessment of the ill child and recognition of serious illness and injury c. Initiation of appropriate immediate treatment d. Prescribing and administering resuscitation and other appropriate drugs e. Provision of appropriate pain management f. Effective communication with children and their families g. Effective communication with other members of the multi-disciplinary team, including the on-duty consultant A clinician with at least Level 1 RCPCH (or equivalent) competences and experience should be immediately available. Doctors in training should normally be ST4 or above. Larger hospitals with several wards or departments caring for children will require more than one clinician with these competences on site 24/7.	Y	However, after 22.00hrs the middle grade clinician covered all wards and the CED. At times of peak demand support would be available from the neonatal and anaesthetic middle grade clinicians
IP-205	**Medical Staff: Continuity of Care** Consultant rotas should be organised to give reasonable continuity of care.	Y	

Ref	Standard	Met?	Reviewer's comments
IP-206	**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: a. 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 CA-208) and expected input to the paediatric resuscitation team (QS HW-204) b. Care and rehabilitation of children with trauma (if applicable) c. Care of children needing surgery (if applicable) d. Use of equipment as expected for their role e. Care of children with acute mental health problems	Y	A good competency framework was in place. Band 6 nurses and above had advanced paediatric resuscitation and life support competences and were MAPA competent. All other staff had completed paediatric immediate life support training.
IP-207	**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 and 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: a. At least one nurse with up to date advanced paediatric resuscitation and life support competences on each shift b. At least two registered children's nurses on duty at all times in each area	Y	

Ref	Standard	Met?	Reviewer's comments
IP-209	**Other Staffing** The following staff should be available: a. Appropriately qualified staff to provide support for play, mental stimulation and distraction during procedures (7/7) b. Access to a liaison health worker for children with mental health needs (7/7) c. Access to staff with competences in psychological support (at least 5/7) d. Pharmacist with paediatric competences (with time allocated at least 5/7 for work on the unit) e. Physiotherapist with paediatric competences (with time allocated at least 5/7 for work on the unit) f. On-call access to pharmacy and physiotherapy services able to support the care of children (24/7) g. Access to dietetic service (at least 5/7) h. Access to an educator for the training, education and continuing professional development of staff	Y	
IP-301	**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.	Y	
IP-401	**Resuscitation Equipment** An appropriately designed and equipped area, or adequate mobile equipment, for resuscitation and stabilisation of critically ill children of all ages should be available. Drugs and equipment should be checked in accordance with local policy.	Y	
IP-402	**'Grab Bag'** Appropriate drugs and equipment for in-hospital and time-critical transfers should be immediately available and checked in accordance with local policy.	Y	
IP-501	**Initial Assessment** A protocol should be in use which ensures a brief clinical assessment within 15 minutes of arrival, including a pain score (where appropriate), and a system of prioritisation for full assessment if waiting times for full assessment exceed 15 minutes.	Y	

Ref	Standard	Met?	Reviewer's comments
IP-502	**Paediatric Early Warning System** A system to provide early warning of deterioration of children should be in use. The system should cover observation, monitoring and escalation of care.	Y	
IP-503	**Resuscitation and Stabilisation** Hospital-Wide protocols for resuscitation and stabilisation should be in use, including: a. Alerting the paediatric resuscitation team b. Arrangements for accessing support for difficult airway management c. Stabilisation and ongoing care d. Care of parents during the resuscitation of a child	N	As Hospital wide QS HW-501
IP-504	**Paediatric Advice** Guidelines on accessing advice from the local paediatric service and local paediatric critical care service should be in use in units where children are not under the care of a paediatrician.	Y	
IP-505	**Clinical Guidelines** The following clinical guidelines should be in use: **All:** a. Treatment of all major conditions, including: i. acute respiratory failure (including bronchiolitis and asthma) ii. sepsis (including septic shock and meningococcal infection) iii. management of diabetic ketoacidosis iv. seizures and status epilepticus v. trauma, including traumatic brain injury, spinal injury and rehabilitation of children following trauma (if applicable) vi. burns and scalds vii. cardiac arrhythmia viii. upper airway obstruction b. Management of acutely distressed children, including use of restraint c. Drug administration and medicines management d. Pain management e. Procedural sedation and analgesia f. Infection control and antibiotic prescribing g. Tissue viability, including extravasation h. Nasal high flow therapy (if used) i. Management of children undergoing surgery (if applicable) j. Rehabilitation after critical illness (if applicable)	Y	

Ref	Standard	Met?	Reviewer's comments
IP-506	**PCC Transfer Guidelines** Guidelines on referral to a Specialist Paediatric Transport Service should be in use, covering at least: a. Accessing advice from a Specialist Paediatric Transport Service and providing full clinical information b. Ensuring decisions on whether a child needs to be transferred are taken by the appropriate local consultant together with the Specialist Paediatric Transport Service c. Local guidelines on the maintenance of paediatric critical care until the child's condition improves or the SPTP arrives. These guidelines should stipulate the location/s in which children may be maintained	Y	
IP-507	**In-hospital Transfer Guidelines** Guidelines on transfer of seriously ill children within the hospital (for example, to or from imaging or theatre) should be in use. The guidelines should specify the escort arrangements and equipment required.	Y	
IP-508	**Inter-hospital Transfer Guidelines** Guidelines on transfer of children between hospitals or between hospital sites should be in use covering at least: a. Types of patients transferred b. Composition and expected competences of the escort team c. Drugs and equipment required d. Restraint of children, equipment and staff during transfer e. Monitoring during transfer	Y	

Ref	Standard	Met?	Reviewer's comments
IP-509	**Time-Critical Transfer Guidelines** Guidelines should be in place for situations where emergency transfer is time-critical and waiting for the SPTS 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: a. Securing advice from the Specialist Paediatric Transport Service (QS CA-506) b. 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 c. Indemnity for escort team d. Availability of drugs and equipment, checked in accordance with local policy (QS CA-402) e. Arrangements for emergency transport with a local ambulance service and the air ambulance f. Arrangements for ensuring restraint of children, equipment and staff during transfer	Y	

Ref	Standard	Met?	Reviewer's comments
IP-601	**Operational Policy** The service should have an operational policy covering at least: a. Individualised management plans are accessible for children who have priority access to the service (where applicable) b. Informing the child's GP of their attendance / admission c. Level of staff authorised to discharge children d. Arrangements for consultant presence during 'times of peak activity' (7/7) e. Servicing and maintaining equipment, including 24 hour call out where appropriate f. Arrangements for a consultant-led rapid access service which can see children within 24 hours of referral g. Arrangements for admission within four hours of the decision to admit h. Types of patient admitted i. Review by a senior clinician within four hours of admission j. Review by a consultant within 14 hours of admission and at least two consultant-led clinical handovers every 24 hours k. Handover of patients at each change of responsible consultant, non-consultant medical staff, nursing staff and other staff l. Discussion with a senior clinician prior to discharge	Y	
IP-704	**Audit and Quality Improvement** The service should have a rolling programme of audit, including at least: a. Audit of implementation of evidence based guidelines (QS CA-500s) b. Participation in agreed national and network-wide audits c. Use of the 'Urgent and Emergency Care Clinical Audit Toolkit' to review individual clinical consultations	Y	
IP-798	**Key Performance Indicators** Key performance indicators should be reviewed regularly with Hospital (or equivalent) management and with commissioners.	Y	

LEVEL 1 PAEDIATRIC CRITICAL CARE UNIT

Ref	Standard	Met?	Reviewer's comments
L1-201	**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.	Y	
L1-202	**Consultant Staffing** a. A consultant who is able to attend the hospital within 30 minutes and who does not have responsibilities to other hospital sites should be available 24/7 b. All consultants should have up to date advanced paediatric resuscitation and life support competences and should undertake CPD of relevance to their work with critically ill and critically injured children	Y	All paediatric consultants had up to date APLS
L1-203	**'Middle Grade' Clinician** A 'middle grade' clinician with the following competences should be immediately available at all times: a. Advanced paediatric resuscitation and life support b. Assessment of the ill child and recognition of serious illness and injury c. Initiation of appropriate immediate treatment d. Prescribing and administering resuscitation and other appropriate drugs e. Provision of appropriate pain management f. Effective communication with children and their families g. Effective communication with other members of the multi-disciplinary team, including the on-duty consultant A clinician with at least Level 1 RCPCH (or equivalent) competences and experience should be immediately available. Doctors in training should normally be ST4 or above. Larger hospitals with several wards or departments caring for children will require more than one clinician with these competences on site 24/7.	Y	However, after 22.00hrs the middle grade clinician covered all wards and the CED. At times of peak demand support would be available from the neonatal and anaesthetic middle grade clinicians
L1-205	**Medical Staff: Continuity of Care** Consultant rotas should be organised to give reasonable continuity of care.	Y	

Ref	Standard	Met?	Reviewer's comments
L1-206	**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: a. 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 L1-208) and expected input to the paediatric resuscitation team (QS HW-204) b. Care and rehabilitation of children with trauma (if applicable) c. Care of children needing surgery (if applicable) d. Use of equipment as expected for their role e. Care of children with acute mental health problems f. Appropriate level paediatric critical care competences: 70% of nursing staff working on the PCC Units should have appropriate level competences in paediatric critical care.	Y	Band 6 and above had advanced paediatric resuscitation and life support competences and were MAPA competent and all other staff had completed paediatric immediate life support training. A good competency framework was in place for all grades of registered and non -registered staff and each grade of staff had bespoke competencies included relevant to area e.g. Paediatric Oncology, mental health modules, UNICEF
L1-207	**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 and 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: a. At least one nurse with up to date advanced paediatric resuscitation and life support competences on each shift b. At least two registered children's nurses on duty at all times in each area c. At least one nurse per shift with appropriate level competences in paediatric critical care d. One nurse with appropriate level competences in paediatric critical care for every two children needing Level 1 critical care	Y	

Ref	Standard	Met?	Reviewer's comments
L1-208	**New Starters** Nurses and non-registered health care staff without previous paediatric critical care experience should undertake: a. A structured, competency-based induction programme including a minimum of 75 hours of supervised practice in the PCC Unit (or in a higher level unit) b. A programme of theoretical and bedside education and training ensuring a defined level of competency is achieved within 12 months Nurses and non-registered health care staff with previous paediatric critical care experience should complete local induction and a review of competence for their expected role.	Y	Newly qualified nursing staff were not usually recruited into work in the PHDU. A structured competency-based framework was in use and the Practice Educators provided Flexi-Nurse HDU training specific to Level 1 Critical Care .
L1-209	**Other Staffing** The following staff should be available: a. Appropriately qualified staff to provide support for play, mental stimulation and distraction during procedures (7/7) b. Access to a liaison health worker for children with mental health needs (7/7) c. Access to staff with competences in psychological support (at least 5/7) d. Pharmacist with paediatric competences (with time allocated at least 5/7 for work on the unit) e. Physiotherapist with paediatric competences (with time allocated at least 5/7 for work on the unit) f. On-call access to pharmacy and physiotherapy services able to support the care of children (24/7) g. Access to dietetic service (at least 5/7) h. Access to an educator for the training, education and continuing professional development of staff	Y	
L1-301	**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.	Y	

Ref	Standard	Met?	Reviewer's comments
L1-401	**Resuscitation Equipment** An appropriately designed and equipped area, or adequate mobile equipment, for resuscitation and stabilisation of critically ill children of all ages should be available. Drugs and equipment should be checked in accordance with local policy.	Y	
L1-402	**'Grab Bag'** Appropriate drugs and equipment for in-hospital and time-critical transfers should be immediately available and checked in accordance with local policy.	Y	
L1-404	**Facilities** Paediatric critical care should be provided in a designated area, distinct from children needing general paediatric care.	Y	
L1-405 L2-405	**Equipment** Equipment, including disposables, should be appropriate for the usual number and age of children and the critical care interventions provided. Equipment should be checked in accordance with local policy. **Level 2 only** As a minimum, each bed space should have the capacity for: a. ECG, respiration, pulse-oximetry and non-invasive blood pressure monitoring b. Transducing two pressure traces c. Temperature monitoring at two sitesThese monitors should be available in a modular unit capable of integration with monitors used in the Emergency Department, theatres and portable monitoring systems	Y	
L1-502	**Paediatric Early Warning System** A system to provide early warning of deterioration of children should be in use. The system should cover observation, monitoring and escalation of care.	Y	
L1-503	**Resuscitation and Stabilisation** Hospital-wide protocols for resuscitation and stabilisation should be in use, including: a. Alerting the paediatric resuscitation team b. Arrangements for accessing support for difficult airway management c. Stabilisation and ongoing care d. Care of parents during the resuscitation of a child	N	As Hospital wide QS HW-501 - see query

Ref	Standard	Met?	Reviewer's comments
L1-504	**Paediatric Advice** Guidelines on accessing advice from the local paediatric service and local paediatric critical care service should be in use in units where children are not under the care of a paediatrician.	Y	
L1-505	**Clinical Guidelines** The following clinical guidelines should be in use: **All:** a. Treatment of all major conditions, including: i. acute respiratory failure (including bronchiolitis and asthma) ii. sepsis (including septic shock and meningococcal infection) iii. management of diabetic ketoacidosis iv. seizures and status epilepticus v. trauma, including traumatic brain injury, spinal injury and rehabilitation of children following trauma (if applicable) vi. burns and scalds vii. cardiac arrhythmia viii. upper airway obstruction b. Management of acutely distressed children, including use of restraint c. Drug administration and medicines management d. Pain management e. Procedural sedation and analgesia f. Infection control and antibiotic prescribing g. Tissue viability, including extravasation h. Nasal high flow therapy (if used) i. Management of children undergoing surgery (if applicable) j. Rehabilitation after critical illness (if applicable)	Y	
L1-506	**PCC Transfer Guidelines** Guidelines on referral to a Specialist Paediatric Transport Service should be in use, covering at least: a. Accessing advice from a Specialist Paediatric Transport Service and providing full clinical information b. Ensuring decisions on whether a child needs to be transferred are taken by the appropriate local consultant together with the Specialist Paediatric Transport Service c. Local guidelines on the maintenance of paediatric critical care until the child's condition improves or the SPTP arrives. These guidelines should stipulate the location/s in which children may be maintained	Y	

Ref	Standard	Met?	Reviewer's comments
L1-507	**In-hospital Transfer Guidelines** Guidelines on transfer of seriously ill children within the hospital (for example, to or from imaging or theatre) should be in use. The guidelines should specify the escort arrangements and equipment required.	Y	
L1-508	**Inter-hospital Transfer Guidelines** Guidelines on transfer of children between hospitals or between hospital sites should be in use covering at least: a. Types of patients transferred b. Composition and expected competences of the escort team c. Drugs and equipment required d. Restraint of children, equipment and staff during transfer e. Monitoring during transfer	Y	
L1-509	**Time-Critical Transfer Guidelines** Guidelines should be in place for situations where emergency transfer is time-critical and waiting for the SPTS 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: a. Securing advice from the Specialist Paediatric Transport Service (QS L1-506) b. 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 c. Indemnity for escort team d. Availability of drugs and equipment, checked in accordance with local policy (QS L1-402) e. Arrangements for emergency transport with a local ambulance service and the air ambulance f. Arrangements for ensuring restraint of children, equipment and staff during transfer	Y	

Ref	Standard	Met?	Reviewer's comments
L1-601	**Operational Policy** **All:** The service should have an operational policy covering at least: a. Individualised management plans are accessible for children who have priority access to the service (where applicable) b. Informing the child's GP of their attendance / admission c. Level of staff authorised to discharge children d. Arrangements for consultant presence during 'times of peak activity' (7/7) e. Servicing and maintaining equipment, including 24 hour call out where appropriate f. Arrangements for admission within four hours of the decision to admit g. Types of patient admitted h. Review by a senior clinician within four hours of admission i. Discussion with a consultant within four hours of admission j. Review by a consultant within 14 hours of admission and at least two consultant-led clinical handovers every 24 hours k. Handover of patients at each change of responsible consultant, non-consultant medical staff, nursing staff and other staff l. Discussion with a senior clinician prior to discharge	Y	
L1-702	**Data Collection** The service should collect: a. Paediatric Intensive Care Audit Network (PICANet) data b. Paediatric Critical Care Minimum Data Set for submission to Secondary Uses Service (SUS) c. 'Quality Dashboard' data as recommended by the PCC Clinical Reference Group (CRG)	Y	
L1-703	**Audit and Quality Improvement** The service should have a rolling programme of audit, including at least: a. Audit of implementation of evidence based guidelines (QS L1-500s) b. Participation in agreed national and network-wide audits c. Use of the 'Urgent and Emergency Care Clinical Audit Toolkit' to review individual clinical consultations	Y	
L1-704	**Key Performance Indicators** Key performance indicators should be reviewed regularly with Hospital (or equivalent) management and with commissioners.	Y	

Ref	Standard	Met?	Reviewer's comments
L1-798	**Review and Learning** The service should have appropriate multi-disciplinary arrangements for review of, and implementing learning from, positive feedback, complaints, morbidity, mortality, transfers and clinical incidents and 'near misses'.	Y	

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LEVEL 2 PAEDIATRIC CRITICAL CARE UNIT

Ref	Standard	Met?	Reviewer's comments
L2-201	**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.	Y	
L2-202	**Consultant Staffing** a. A consultant who has undertaken relevant training in paediatric critical care, who is able to attend the hospital within 30 minutes and who does not have responsibilities to other hospital sites should be available 24/7. If the consultant providing cover for the L2 PCC Unit is not a paediatrician, 24 hour cover by a consultant paediatrician who is able to attend the hospital within 30 minutes and who does not have responsibilities to other hospital sites is also required b. New appointments to consultant posts in L2 PCCUs should have completed the RCPCH 'Framework of Competences for a Special Study Model in Paediatric Critical Care' (or equivalent) and should have worked for at least six months in a Level 2 and for at least six months in a Level 3 PCCU (or equivalent) c. All consultants should have up to date advanced paediatric resuscitation and life support competences and should undertake CPD of relevance to their work with critically ill and critically injured children	Y	All paediatric consultants had up to date advanced paediatric resuscitation and life support competences.

Ref	Standard	Met?	Reviewer's comments
L2-203	**'Middle Grade' Clinician** A 'middle grade' clinician with the following competences should be immediately available at all times: a. Advanced paediatric resuscitation and life support b. Assessment of the ill child and recognition of serious illness and injury c. Initiation of appropriate immediate treatment d. Prescribing and administering resuscitation and other appropriate drugs e. Provision of appropriate pain management f. Effective communication with children and their families g. 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. A paediatric trainee with at least Level 2 RCPCH (or equivalent) competences. Doctors in training should normally be ST6 or above, OR b. A paediatric trainee (at any RCPCH level) who has completed at least 6 months working in a Level 3 Unit, OR c. An anaesthetic specialty trainee, OR d. An advanced nurse practitioner or Hospital / Specialty Doctor with equivalent competences, OR e. A consultant (QS L2-202) Larger hospitals with several wards or departments caring for children will require more than one clinician with these competences on site 24/7.	N	The middle grade clinician in training may not always be level ST 6 . The middle grade also covered all wards and the CED
L2-205	**Medical Staff: Continuity of Care** Consultant rotas should be organised to give reasonable continuity of care.	Y	

Ref	Standard	Met?	Reviewer's comments
L2-206	**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: a. 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 L2-208) and expected input to the paediatric resuscitation team (QS HW-204) b. Care and rehabilitation of children with trauma (if applicable) c. Care of children needing surgery (if applicable) d. Use of equipment as expected for their role e. Appropriate level paediatric critical care competences: 70% of nursing staff working on the PCC Units should have appropriate level competences in paediatric critical care f. Care of children with tracheostomies g. Care of children needing acute and chronic non-invasive ventilation, and tracheostomy ventilation	Y	Staff had completed specific competences for the level 2 care accepted by the unit e.g. care of children with a stable tracheostomy and stable long term non- invasive ventilation. Band 6 and above had advanced paediatric resuscitation and life support competences and were MAPA competent and all other staff had completed paediatric immediate life support training.

Ref	Standard	Met?	Reviewer's comments
L2-207	**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 and 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: a. At least one nurse with up to date advanced paediatric resuscitation and life support competences on each shift b. At least two registered children's nurses on duty at all times in each area c. At least one nurse per shift with appropriate level competences in paediatric critical care d. One nurse with appropriate level competences in paediatric critical care for every two children needing Level 1 or Level 2 critical care e. At least one nurse per shift with competences in care of children with tracheostomies and those requiring non-invasive or tracheostomy ventilation	Y	All PHDU staff had completed advanced paediatric resuscitation and life support training. Nurse staffing supported the 1:2 ratio. All PHDU staff were competency assessed for working in the Unit - see also good practice section of the report. All PHDU staff are Level 1 Critical Care skills trained and had completed accredited courses. A very flexible system was in place which enabled the Trust to meet this Quality Standard. Staff from the ward with competences in high dependency care were used at times of peak demand.
L2-208	**New Starters** Nurses and non-registered health care staff without previous paediatric critical care experience should undertake: a. A structured, competency-based induction programme including a minimum of 75 hours of supervised practice in the PCC Unit (or in a higher level unit) b. A programme of theoretical and bedside education and training ensuring a defined level of competency is achieved within 12 months Nurses and non-registered health care staff with previous paediatric critical care experience should complete local induction and a review of competence for their expected role.	Y	Newly qualified nursing staff were not usually recruited into work in the PHDU. A structured competency-based framework was in use and the Practice Educators provided Flexi-Nurse HDU training.

Ref	Standard	Met?	Reviewer's comments
L2-209	**Other Staffing** The following staff should be available: a. Appropriately qualified staff to provide support for play, mental stimulation and distraction during procedures (7/7) b. Pharmacist with paediatric competences (with time allocated at least 5/7 for work on the unit) c. Physiotherapist with paediatric competences (with time allocated at least 5/7 for work on the unit) d. Access to an educator for the training, education and continuing professional development of staff e. A discharge coordinator responsible for managing the discharge of children with complex care needs f. An educator for the training, education and continuing professional development of staff g. Pharmacist with competences in paediatric critical care (with time allocated at least 5/7 for work on the unit) h. Physiotherapist with competences in paediatric critical care (with time allocated at least 5/7 for work on the unit) i. On-call access to pharmacy and physiotherapy services able to support the care of children (24/7) j. Dietetic staff (with time allocated 5/7 for work on the unit) k. Staff with competences in psychological support with time allocated in their job plan for work with: i. families ii. staff	Y	
L2-301	**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.	Y	
L2-302	**Co-located Services** L2 PCC Units should be co-located with ENT services for the support of children with tracheostomies	Y	

Ref	Standard	Met?	Reviewer's comments
L2-401	**Resuscitation Equipment** An appropriately designed and equipped area, or adequate mobile equipment, for resuscitation and stabilisation of critically ill children of all ages should be available. Drugs and equipment should be checked in accordance with local policy.	Y	
L2-402	**'Grab Bag'** Appropriate drugs and equipment for in-hospital and time-critical transfers should be immediately available and checked in accordance with local policy.	Y	
L2-404	**Facilities** Paediatric critical care should be provided in a designated area, distinct from children needing general paediatric care.	Y	
L2-405	**Equipment** Equipment, including disposables, should be appropriate for the usual number and age of children and the critical care interventions provided. Equipment should be checked in accordance with local policy. As a minimum, each bed space should have the capacity for: a. ECG, respiration, pulse-oximetry and non-invasive blood pressure monitoring b. Transducing two pressure traces c. Temperature monitoring at two sitesThese monitors should be available in a modular unit capable of integration with monitors used in the Emergency Department, theatres and portable monitoring systems	Y	
L2-406	**'Point of Care' Testing** 'Point of care' testing for blood gases, glucose, electrolytes and lactate should be easily available.	Y	
L2-502	**Paediatric Early Warning System** A system to provide early warning of deterioration of children should be in use. The system should cover observation, monitoring and escalation of care.	Y	
L2-503	**Resuscitation and Stabilisation** Hospital-Wide protocols for resuscitation and stabilisation should be in use, including: a. Alerting the paediatric resuscitation team b. Arrangements for accessing support for difficult airway management c. Stabilisation and ongoing care d. Care of parents during the resuscitation of a child	N	As Hospital wide QS HW-501

Ref	Standard	Met?	Reviewer's comments
L2-504	**Paediatric Advice** Guidelines on accessing advice from the local paediatric service and local paediatric critical care service should be in use in units where children are not under the care of a paediatrician.	Y	
L2-505	**Clinical Guidelines** The following clinical guidelines should be in use: a. Treatment of all major conditions, including: i. acute respiratory failure (including bronchiolitis and asthma) ii. sepsis (including septic shock and meningococcal infection) iii. management of diabetic ketoacidosis iv. seizures and status epilepticus v. trauma, including traumatic brain injury, spinal injury and rehabilitation of children following trauma (if applicable) vi. burns and scalds vii. cardiac arrhythmia viii. upper airway obstruction b. Management of acutely distressed children, including use of restraint c. Drug administration and medicines management d. Pain management e. Procedural sedation and analgesia f. Infection control and antibiotic prescribing g. Tissue viability, including extravasation h. Nasal high flow therapy (if used) i. Management of children undergoing surgery (if applicable) j. Rehabilitation after critical illness (if applicable) k. Acute non-invasive ventilation (CPAP and BiPAP) l. Tracheostomy care, including management of a tracheostomy emergency m. Care of children on long-term ventilation (tracheostomy and mask)	Y	'I and m' were not applicable as the unit did not care for children requiring this level of HDU support. Guidance was in place for caring for children with a stable tracheostomy. Some children were cared for in the community with stable long-term non-invasive ventilation could be admitted to the unit but this would be dependent on whether this had been agreed as part of the child's plan of care.

Ref	Standard	Met?	Reviewer's comments
L2-506	**PCC Transfer Guidelines** Guidelines on referral to a Specialist Paediatric Transport Service should be in use, covering at least: a. Accessing advice from a Specialist Paediatric Transport Service and providing full clinical information b. Ensuring decisions on whether a child needs to be transferred are taken by the appropriate local consultant together with the Specialist Paediatric Transport Service c. Local guidelines on the maintenance of paediatric critical care until the child's condition improves or the SPTP arrives. These guidelines should stipulate the location/s in which children may be maintained	Y	
L2-507	**In-hospital Transfer Guidelines** Guidelines on transfer of seriously ill children within the hospital (for example, to or from imaging or theatre) should be in use. The guidelines should specify the escort arrangements and equipment required.	Y	
L2-508	**Inter-hospital Transfer Guidelines** Guidelines on transfer of children between hospitals or between hospital sites should be in use covering at least: a. Types of patients transferred b. Composition and expected competences of the escort team c. Drugs and equipment required d. Restraint of children, equipment and staff during transfer e. Monitoring during transfer	Y	

Ref	Standard	Met?	Reviewer's comments
L2-509	**Time-Critical Transfer Guidelines** Guidelines should be in place for situations where emergency transfer is time-critical and waiting for the SPTS 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: a. Securing advice from the Specialist Paediatric Transport Service (QS L2-506) b. 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 c. Indemnity for escort team d. Availability of drugs and equipment, checked in accordance with local policy (QS L2-402) e. Arrangements for emergency transport with a local ambulance service and the air ambulance f. Arrangements for ensuring restraint of children, equipment and staff during transfer	Y	

Ref	Standard	Met?	Reviewer's comments
L2-601	**Operational Policy** The service should have an operational policy covering at least: a. Individualised management plans are accessible for children who have priority access to the service (where applicable) b. Informing the child's GP of their attendance / admission c. Level of staff authorised to discharge children d. Arrangements for consultant presence during 'times of peak activity' (7/7) e. Servicing and maintaining equipment, including 24 hour call out where appropriate f. Arrangements for admission within four hours of the decision to admit g. Types of patient admitted h. Review by a senior clinician within four hours of admission i. Discussion with a consultant within four hours of admission j. Review by a consultant within 14 hours of admission and at least two consultant-led clinical handovers every 24 hours k. Handover of patients at each change of responsible consultant, non-consultant medical staff, nursing staff and other staff l. Discussion with a senior clinician prior to discharge m. Arrangements for discharge within four hours of the decision to discharge n. Arrangements for critical care 'outreach' to other wards within the hospital o. Discharge of children with tracheostomies: i. Suitability for discharge ii. Staffing and monitoring facilities that should be in place prior to discharge iii. Process for planning and agreement of discharge p. Discharge of children on long-term ventilation q. Agreed contribution to the network-wide training and CPD programme (QS N-206)	Y	

Ref	Standard	Met?	Reviewer's comments
L2-702	**Data Collection** The service should collect and submit: a. Paediatric Intensive Care Audit Network (PICANet) data for submission to PICANet as soon as possible and no later than three months after discharge from the PCC Unit b. Paediatric Critical Care Minimum Data Set for submission to PICANet and SUS c. 'Quality Dashboard' data as recommended by the PCC CRG	Y	
L2-704	**Key Performance Indicators** Key performance indicators should be reviewed regularly with Hospital (or equivalent) management and with commissioners, including 'Quality Dashboard' data as recommended by the PCC CRG.	Y	
L2-798	**Review and Learning** The service should have appropriate multi-disciplinary arrangements for: a. Review of, and implementing learning from, positive feedback, complaints, morbidity, mortality, transfers and clinical incidents and 'near misses' b. Review and dissemination of published scientific evidence relating to paediatric critical care	Y	

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