STANDARDS FOR EDUCATION IN PAEDIATRIC CRITICAL CARE SPECIALIST NURSING

Background

These Standards are additional to Care of Critically Ill Children (Paediatric Intensive Care Society, 2015) and relate to directly to the recommendations for nationally consistent Level 3 Paediatric Critical Care Unit (PCCU) specialist nurse education (Paediatric Intensive Care Society UK – Nurse Educators Subgroup (PICS-E), 2015). This is third iteration of this work.

When used for self-assessment or peer review, the Standards in this section should be reviewed separately for each area that is separately managed or staffed.

The learning environment and culture meets the learner's needs and ensures they have an excellent experience.

Ref.	Quality Standard
LEARNING OUTCOMES	
code BI Visit MP&S CNR Doc	At the end of the programme the student is expected to: • Be an expert PIC nurse able to manage patients in a level 3 PCCU (RCPCH, 2014; PICS, 2015), with the ability and insight to seek appropriate support • Lead and deliver safe, evidence-based care to the child and their family in critical care • Communicate effectively with the patient, family and wider health care team • Understand the organisational and political context of paediatric critical care
ENTRY REQUIREMENTS	
code BI Visit MP&S CNR Doc	• Have current clinical experience working in an appropriate level paediatric critical care unit (PCCU), for example a Level 3 unit for a level 3 course. • Have successfully completed a Level 3 PCCU nursing orientation/development programme [PICS-E Standards for PICU Nursing Orientation Programmes]. • Be working in a clinical capacity on a Level 3 PCCU for the duration of the programme.

Ref.	Quality Standard
PROGRAMME STRUCTURE	
code BI Visit MP&S CNR Doc	Education should be delivered in a safe and open environment for patients, staff and learners to ensure provision of high quality care and experience for service users (DH, 2013; HEE Quality Framework, 2016/2017; NHS HEE) • Content and assessment at a minimum academic level 6, with a level 7 option if accredited through HEI • Can be credit bearing and quality controlled through a higher education institution and/or validated through PICS-E EQA Group • Have clear links/opportunities to progress onto relevant pathways such as leadership, research, advanced practice, thus linking education to succession planning. The course must: • Meet the relevant PICS standards (for Nurse Orientation/ Foundation Programmes or Specialist Nurse Education Programmes) • Be mapped against Bloom's Reviewed Taxonomy of Learning Domains (Anderson et al, 2001) • Comply with the Quality Standards within the Heath Education England (HEE) Quality Framework 2016/17 • Comply with the HEE Quality Strategy 2016 – 2020 • Meet the standards of the Higher Education Academy UK Professional Framework for Teaching and Supporting Learning in Higher Education Education programme must be inclusive, particularly for learners with disabilities or a learning difficulty and arrangements to support such learners much be in place, evidenced by an Equality Impact Assessment. Leaners must be supported in practice by use of such methods as mentorship, by someone who has successfully completed a recognised critical care education programme and who has completed a mentorship in practice programme as recommended by the Nursing and Midwifery Council.
code BI Visit MP&S CNR Doc	**Theoretical Content** Should encompass the following areas - physiology and care and management:
code BI Visit MP&S CNR Doc	**Assessment of the child:** Advanced clinical assessment of the critically ill infant/child (CYP)

Ref.	Quality Standard
code BI Visit MP&S CNR Doc	**Respiratory:** • Basic airway care clearance, manoeuvres and management • Advanced airway management, including Intubation • Tracheostomy care and emergency Tracheostomy Algorithm • Difficult airway management • Respiratory anatomy & altered physiology leading to critical illness • Respiratory distress leading to respiratory failure • Principles and management strategies for mechanical ventilation and weaning • Arterial blood gas (ABG) analysis • Hand ventilation and the theory of manual ventilation devices • Common respiratory pathology seen in the PICU • Advanced respiratory therapies, e.g. High Frequency Oscillatory Ventilation (HFOV), Extracorporeal membrane oxygenation (ECMO) and nitric oxide • CXR interpretation • Non-invasive ventilation (NIV) • Long term ventilation • Care of pleural drains and associated conditions
code BI Visit MP&S CNR Doc	**Cardiovascular monitoring and therapies:** • Cardiovascular anatomy and physiology • Haemodynamic monitoring • Non-invasive and invasive pressure monitoring • Care of children following cardiac surgery, including cardiac tamponade, care of drains • ECG interpretation • Arrhythmia, dysrhythmia and pacing • Congenital heart disease, including duct dependant lesions • Shock, low cardiac output state • DIC If working in a cardiac surgical centre all should be covered in more detail including post-operative surgical management and ECPR / ECLS
code BI Visit MP&S CNR Doc	**Pharmacology:** • PICU related pharmacology o Including inotropes, vasodilators, analgesics, sedatives and muscle relaxants • The impact of age and critical illness on pharmacodynamics and pharmacokinetics, including the effects of renal replacement therapies

Ref.	Quality Standard

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	Infection & Sepsis:
	• Infection and Sepsis (Paediatric Sepsis 6)
	• Septic shock
	• Systemic Inflammatory Response Syndrome (SIRS)
	    o Including pathology, therapies, nursing care and infection control.
	    o Antimicrobial stewardship

code BI Visit MP&S CNR Doc	**Gastrointestinal aspects:** • Gastrointestinal conditions • Hepatic failure • Nutrition and feeding strategies, to include enteral and parenteral routes Liver centres: care of acute liver failure, chronic hepatic conditions and post-operative transplant management
code BI Visit MP&S CNR Doc	**Trauma:** • Traumatic brain injury • Burns • Poisoning • Near drowning • Non-accidental injuries • Massive Haemorrhage • C Spine injury • TARN, Trauma Rehabilitation
code BI Visit MP&S CNR Doc	**Neurological aspects:** • Neurological anatomy and physiology • Neurological assessment and coma scoring • Common pathology • Raised ICP o Monitoring, management and treatment • Paediatric brain stem death and testing • Organ donor management • Status epilepticus • Care of external ventricular drains • CFAM
code BI Visit MP&S CNR Doc	**Advanced Life Support Skills:** • Advanced Life support if individuals do not hold a formal certificate

Ref.	Quality Standard
code BI Visit MP&S CNR Doc	**Renal:** • Acute Kidney Injury and Renal failure • Fluid and electrolyte physiology • Fluid management • Renal pathology, • Renal replacement therapies • See also pharmacology
code BI Visit MP&S CNR Doc	**Retrieval and transport of the critically ill child:** • In-hospital transfer o E.g. transfers to MRI, CT and between ward areas, ED • Stabilisation of the critically ill child • Principles of Retrieval
code BI Visit MP&S CNR Doc	**Pain & sedation management:** • Utilisation of tools • Drug withdrawal treatment and management • Evidence base for treatments • Delirium prevention, recognition and management
code BI Visit MP&S CNR Doc	**Evidence based practice in paediatric critical care:** • Reviewing and analysing the evidence base for PICU nursing care and multi-disciplinary therapies. • Use of research and audit • PICANet

Ref.	Quality Standard
code BI Visit MP&S CNR Doc	**Professional, ethical & psychosocial issues:** • Communication with professionals and service users • Communication with families under stress • Non-technical skills, team working • Legal and clinical governance • Professional development, to include advanced practice, extending roles, research. • The political context of PICU • Organisation (centralisation and funding), leadership and managerial awareness ○ Time management, reflection, self-awareness • Safe guarding • Ethics • Safety and quality • Care of child with learning disabilities, communication with non-verbal patients • End of life care • Spiritual care • Compassion fatigue • Human Factors, Situation Awareness, Risk Management • The political context of critical care delivery
code BI Visit MP&S CNR Doc	**Other key topics to be addressed:** • Revision of all aspects of essential nursing care • Metabolic and endocrine emergencies, for example inborn errors of metabolism, adrenal insufficiency and DKA • Specialist needs of the preterm neonate and the neonate in paediatric intensive care • Oncology and Haematology • Long-term ventilation and transitional care.

Ref.	Quality Standard
TEACHING AND LEARNING STRATEGIES	

Ref.	Quality Standard
code BI Visit MP&S CNR Doc	Curricula and programmes are developed and implemented so that learners are enabled to demonstrate and achieve the learning outcomes required for course completion and professional standards. The content should be responsive to changes in treatments, technologies and care delivery models and are reflective of strategic transformation plans across health and care systems. The providers and learners should proactively engage with patients, service users, carers, citizens to shape curricula, assessments and course content to support an ethos of patient partnership within the learning environment (DH, 2013; HEE Quality Framework 2016/2017; NHS HEE). A range of teaching & learning strategies is encouraged to meet varying learning needs. Teaching & Learning strategies must reflect current clinical practice, be realistic and emphasise reflection upon and learning from the practice environment. Module leaders should hold or be working towards a qualification in education which should allow the module leader to register as a Nurse Teacher with the Nursing Midwifery Council (NMC). Education qualifications gained prior to publication of these standards are acceptable. One whole time equivalent educator to 50 nurses within PICU is a recommended standard (Australian College of Critical Care Nurses Advisory Panel, 2003; PICS, 2015). Educators should receive support, resources and time to meet their educational and research responsibilities (HEE Quality Framework 2016/2017, NHS HEE). Organisations must be supportive to facilitate modules and students to attend learning events. This enables the right care to be provided to patients by those with the right knowledge and skills and evidenced based knowledge which underpins safety and high quality care.
ASSESSMENT STRATEGIES	

Ref.	Quality Standard
code BI Visit MP&S CNR Doc	Assessment strategies should reflect both theoretical and practice learning in relation to paediatric intensive care and be directly linked to the learning outcomes. Assessments must be: • Fair, reliable and valid permitting educators to judge that learners have achieved the necessary learning outcomes. • Mapped to the curriculum or training programme and appropriately sequenced to match progression through the education and training pathway. • Lead by someone with appropriate expertise in the area being assessed, and who has been appropriately selected, supported and appraised. They are responsible for honestly and effectively assessing the learner's performance and being able to justify decisions. Assessments could be both summative and formative and include the following examples : • Competencies • Learning Packages • Skills passport • Essays /written work/ Reflections • Viva/OSCE • Presentations Learners should have two attempts permitted to meet the criteria for a pass.
	GOVERNANCE

EVALUATION OF THE PROGRAMMES

Ref.	Quality Standard
code BI Visit MP&S CNR Doc	There should be an evaluation strategy to ensure the programme remains responsive to quality assurance and workforce succession planning. If required the strategy will meet higher education benchmarks. • 90% of students will pass the programme • Participant feedback and monitoring change • Positive staff retention through development • Local workforce succession planning successes • Nursing Care Quality Indicators or equivalent • Safety thermometer or equivalent • Meeting PICS standards for staffing and staff education, monitored by annual PICANet returns • Learning from clinical incidents and near misses *HEE Quality Framework: Quality 6- Developing a Suitable Workforce)

QUALITY ASSURANCE

code BI Visit MP&S CNR Doc	Once approved a course should be reapproved every five years or more frequently if required. Please see partner document Standard Operating Procedure for Quality Assurance of Post Registration Education in Paediatric Critical Care Units

DOCUMENTS

code BI Visit MP&S CNR Doc	All course validation and documentation would be housed on the PICS website for members only. There would be a sharing agreement between all centres. Intellectual Property (IP) would be owned by the local organisations. Institutions are encouraged to house their documents on the PICS website for sharing with other centres.

References

Anderson, L.W., Krathwohl, D.R., Airasian, P.W., Cruikshank, K.A., Mayer, R.E., Pintrich, P.R., Rathe, J., Wittrock, M.C., (2001) *A Taxonomy for Learning, Teaching, and Assessing: A Revision of Bloom's Taxonomy of Educational Objectives.* New York: Pearson, Allyn & Bacon

Department of Health (2013) *Education Outcomes Framework*   Retrieved 10th November 2013 from https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/175546/Education_outcomes_framework.pdf

Health Education England (2016) *HEE Quality Framework 2016/ 17.* Retrieved 18th November, 2016 from https://hee.nhs.uk/sites/default/files/documents/HEE_J000584_QualityFramework_FINAL_WEB.pdf

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