

RECOMMENDATIONS FOR NATIONALLY CONSISTENT LEVEL 3 PAEDIATRIC CRITICAL CARE UNIT (PCCU) SPECIALIST NURSE EDUCATION

PICS-E

The Paediatric Intensive Care Society – Educators group (PICS-E) was informally established as a subgroup of PICS in 2000. It became a formal subgroup of PICS in Sept 2004. Key objectives of the group are to:

- Promote the highest standards of education in paediatric critical care units
- Develop and maintain nationally agreed standards for PIC education
- Share and develop innovation in education and evaluate outcomes

BACKGROUND

The paediatric critical care workforce is required to adapt to changes in relation to NHS commissioning and the need to provide high quality care (Francis, 2013; NHS England, 2014; DH, 2015). The challenge for PIC educators is to enable a more junior workforce to provide safe and effective care. For new recruits to become safe and competent practitioners a robust training and educational programme is required, enabling educators to assess knowledge, skills and competence of the workforce.

The changing medical education system and European Working Time Directive has led to a reduction in the experience of medical doctors working within PIC, hence the roles and responsibilities of the PIC nursing team are continuing to change. This might include deployment of nurses to Advanced Practice roles and use of supervised support workers at the bedside.

These standards have been reviewed by the PICS- E group and aim to be realistic in a backdrop of financial pressure and national nurse shortages (NHS England, 2014).

PICS-E RECOMMENDATIONS FOR THE PIC EDUCATION PROGRAMME

At the end of the programme (unit specific) the student is expected to:

- Be an expert PIC nurse able to manage patients in a level 3 PCCU (RCPCH, 2014), with the ability and insight to seek appropriate support
- Lead and deliver safe, evidence-based care to the child and their family
- Communicate effectively with the patient, family and wider health care team
- Understand the organisational and political context of paediatric critical care

The programme of education should link to the Core dimensions of the Knowledge and Skills Framework (KSF) of communication, quality, personal, equality and diversity, health and safety. The specific dimensions of the KSF they will develop to a higher level are:

- Assessing and addressing health needs
- Communication of information & knowledge
- Biomedical investigation & reporting
- Measuring, monitoring and treating physiological conditions through the application of specific technologies
- Partnership
- Leadership and Management
- Research & development

Specific PIC related skills that should be developed include:

- Advanced resuscitation skills
- Advanced patient assessment skills
- Interpersonal and communication skills with both professionals and service users
- Clinical decision making
- Holistic family centred care

ENTRY REQUIREMENTS

Registered nurses intending to develop a career in Paediatric Critical Care looking to access specialist education must:

- Have a minimum of 9-months full-time current clinical experience working on a Level 3 PCCU [pro-rata if part time].
- 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.

EDUCATION PROGRAMME STRUCTURE

Specialist PIC Education Programmes should:

- Be at a minimum academic level 6 with a level 7 option available
- Be credit bearing and quality controlled through a higher education institution
- Have clear links/opportunities to progress onto relevant academic pathways such as leadership and advanced practice modules, thus linking education to succession planning.

SUGGESTED THEORETICAL CONTENT

Assessment aspects:

- Advanced clinical assessment of the critically ill child

Respiratory aspects:

- Respiratory anatomy & physiology
- Respiratory distress leading to failure
- Principles and management strategies for mechanical ventilation and weaning
- Arterial blood gas (ABG) analysis
- Hand ventilation
- 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
- Airway clearance manoeuvres
- Non-invasive ventilation (NIV)
- Tracheostomy care

Cardiovascular monitoring and therapies:

- Cardiovascular anatomy and physiology
- Haemodynamic monitoring
 - Non-invasive and invasive pressure monitoring
- Care of chest drains and cardiac tamponade
- Paediatric ECG interpretation
- Arrhythmias and pacing
- Congenital heart disease
- Shock, low cardiac output and duct dependant lesions

If working in a cardiac surgical centre all should be covered in more detail including post-operative surgical management.

Pharmacology:

- PICU related pharmacology
 - Including inotropes, vasodilators, analgesics, sedatives and muscle relaxants
- The impact of age and critical illness on pharmacodynamics and pharmacokinetics.

Infection & Sepsis:

- Infection and Sepsis
- Septic shock
- Systemic Inflammatory Response Syndrome (SIRS)
 - Including pathology, therapies, nursing care and infection control.

Gastrointestinal aspects:

- Gastrointestinal conditions
- Hepatic failure
- Nutrition and feeding strategies, to include enteral and parenteral routes

Trauma:

- Road Traffic Collisions (RTC'S)
- Burns
- Poisoning
- Near drowning
- Non-accidental injuries
- Massive Haemorrhage

Neurological aspects:

- Neurological anatomy and physiology
- Neurological assessment and coma scoring
- Common pathology
- Raised ICP
 - Monitoring, management and treatment
- Paediatric brain stem death and testing
- Organ donor management
- Status epilepticus
- Care of external ventricular drains
- CFAM

Advanced Life Support Skills:

- Advanced Life support if individuals do not hold a formal certificate

Retrieval and transport of the critically ill child:

- Inter-hospital transfer
 - E.g. transfers to MRI, CT and between ward areas
- Stabilisation of the critically ill child

Renal aspects:

- Acute Kidney Injury and Renal failure
- Fluid and electrolyte physiology
- Fluid management
- Renal pathology,
- Renal replacement therapies to include nursing care

Pain & sedation management:

- Utilisation of tools
- Drug withdrawal treatment and management
- Evidence base for treatments

Evidence based practice in paediatric critical care:

- Reviewing and analysing the evidence base for PICU nursing care and multi-disciplinary therapies.
- Use of research.

Professional, ethical & psychosocial issues:

- Communication with professionals and service users
- Non-technical skills and team working
- Legal and clinical governance
- Professional development, to include advanced practice and extended roles.
- 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

Other key topics to be addressed:

- Revision of all aspects of essential/basic nursing care
- Metabolic and endocrine emergencies, to include in born errors of metabolism, adrenal insufficiency and DKA
- Specialist needs of the neonate in paediatric intensive care
- Oncology and Haematology, to include clotting disorders.
- Long-term ventilation and transitional care.

This recommended content for paediatric critical care nursing education programmes is consistent with key organisations internationally (Australian College of Critical care Nurses 2003 & World Federation of Intensive & Critical Care Nurses, 2005)

TEACHING & LEARNING STRATEGIES

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).

The level of competency and skills expected should be clearly worded to minimise variation of interpretation by mentors.

ASSESSMENT STRATEGIES

Assessment strategies should reflect both theoretical and practice learning in relation to paediatric intensive care and be directly linked to the learning outcomes.

EVALUATION OF THE PROGRAMMES

There should be an evaluation strategy to ensure the programme remains responsive to quality assurance and workforce succession planning, meeting higher education benchmarks.

REFERENCES:

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