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South Thames Paediatric Network

Staffing Model for Paediatric Critical Care Level 2

Please note this is intended for acute areas with SPOKE Level 2 commissioned inpatient beds located within District General Hospitals (DGH). Children and young people move between critical care levels and therefore staffing ratios and escalation will be based on clinical need, skill mix and resources. **Clinical experience** and **professional judgement** should **always** be used.

Introduction

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 (PCCS 2021). All staff involved in caring for children within Level 1 and Level 2 Paediatric Critical Care Units (PCCU) are responsible for achieving and maintaining relevant knowledge and skills relating to care of the critically ill child. Each member of staff should plan their Continuous Professional Development (CPD) as part of their annual appraisal/personal development plan (RCPCH 2014). This includes all disciplines within a District General Hospital involved in the care of children and not just the paediatric team. This should comprise of at least annual updates (PCCS 2021).

The Level 2 beds should always be co-located within existing paediatric services in order to maintain patient safety at all times as well as supporting the training and development of staff.

Time needs to be allocated to enable staff working within designated Level 2 units to complete and take part in audits, data collection, governance, quality improvement and shared learning with the Paediatric Critical Care Operational Delivery Network (ODN). The Paediatric Critical Care Minimum Dataset (PCCMDS) should be recorded for all admissions and submitted to the national PICANET audit database (PCCS 2021) when established for Level 2.

Critical Care Leads

All Paediatric Critical Care (PCC) teams should have a named lead consultant and lead nurse with dedicated time in their job plans for critical care oversight, including responsibilities for staffing, training, guidelines, governance and liaising with other services. They should both undertake regular clinical work in the PCC service for which they are responsible (PCCS 2021) and work closely with both their aligned Level 3 Paediatric Critical Care Unit and other specialist referral centres. There should be regular PCC multi-disciplinary review and learning that's shared with the entire PCC workforce. There should also be a named trust lead for Children and Young people including PCC.

Educators

There should be allocated time given to a medical and nursing PCC education lead (these may be the same as the PCC leads) to support with PCC education (PCCS 2021). They should work with other departments in the hospital and across sites to enable shared learning and experience in relation to paediatric critical care across the MDT. They are responsible for the organisation and delivery of PCC training (PCCS 2021). Training and education will be supported by the South Thames Paediatric Network (STPN) PCC education programme. The South Thames retrieval service (STRS) will support Level 3 and stabilisation education. They should engage with national education and resources.

PDNs and clinical educators should have some knowledge and experience of critical care in order to support the staff's professional development in order to look after children requiring critical care.

Educators should hold a relevant paediatric life support course for their clinical role and relevant competencies in Critical Care.

Medical Overview

Optimal care of the critically ill child in a regional hospital relies on close working across a number of disciplines, including anaesthesia, general/adult ICU and emergency medicine. Specialists from these areas will also require support for their educational and training needs, and should plan relevant Continuous Professional Development (CPD) as part of their annual appraisal/personal development plan (RCPCH 2014).

All Paediatric Consultants, Anaesthetic Consultants and Middle grade staff working at ST4 and above should hold a relevant up to date Advanced Paediatric Life Support course or equivalent (APLS/EPALS). Junior doctors working below ST4 (RCPCH) should hold an intermediate life support course as a minimum unless working on the Middle grade rota where it is essential they hold an advanced paediatric life support course or equivalent.

Anaesthetists and General Paediatricians should work in partnership in providing care to paediatric patients and should be involved in joint training opportunities and shared learning.

Those that have completed previous critical care experience, including those completed in a different country, must have a local induction and competence assessed for their expected role to determine what, if any, further training or competence required.

Paediatric Consultants

There should be a dedicated paediatric consultant available 24/7 who is able to attend the hospital within 30 minutes and should not be responsible for other hospital sites (PCCS 2021). Careful consideration needs to be given to the number of acute areas including Emergency departments,

Inpatient wards and Neonatal areas one consultant is responsible for both in and out of hours to ensure patient safety is maintained. Rotas and establishment should be developed to allow consultant on-site cover for a minimum of 12 hours a day 7 days a week (PCCS 2021).

Any consultant responsible for the Level 2 beds should undergo up to date and relevant CPD related to paediatric critical care including Long term ventilation. The named Consultant for the service should have completed a PCC Specialist interest module (SPIN). or relevant training and competencies meeting the learning outcomes set out in the PCC SPIN.

For consultants new to post, prior to taking up a consultant post in a Level 2 PCCU, an individual should have completed a period of either six months working in PICU as well as six months working in a hospital with a Level 2 PCCU (Tertiary or DGH) or 12 months in a PICU and completed relevant competencies, or equivalent that meet the learning outcomes set out in the PCC SPIN Module curriculum for Paediatric high dependency care (RCPCH 2022).

For consultants already in post that have not completed the above training, no further training is suggested, however completion of relevant competencies and CPD is recommended as decided by the named consultant in collaboration with STPN as required.

Consultants should continue to participate in CPD including simulations to maintain critical care skills throughout the year as well as attending one STRS local update as a minimum.

Consideration should also be given to maintaining neonatal skills and working with neonatal colleagues for joint training and shared learning.

There should be at least 2 consultant ward rounds a day for Level 2 patients, one per each change of responsibility (PCCS 2021). A ward round with the night team is also recommended (this may be virtual).

All new admissions should be reviewed by a Senior Clinician within an hour of admission and must be discussed with a Consultant. Timeline of this discussion will depend on competence and expertise of senior clinician but should occur with Consultant on duty at time of admission before change of responsibility, this discussion may be virtual however all patient must be reviewed by a consultant within 14 hours (PCCS2021).

There must also be at least 2 Consultant-led clinical hand overs every 24 hours (PCCS 2021).

Consideration should be given to the maximum length of time on continuous duty to maintain both patient and staff safety and staff wellbeing (PCCS 2021).

Middle grade clinicians (ST4 and above or equivalent competencies)

There should be at least 1 middle grade clinician (or equivalent) 24/7 for a Level 2 unit who **has achieved all Level 2 RCPCH competencies or equivalent**.(PCCS 2021, GIRFT 2022) immediately available at all times. Where local staffing does not allow for this, middle grade staff responsible for these areas should hold APLS/EPALS or equivalent assessments of knowledge and skills, have attended one Long term ventilation course or training program and one course in Paediatric Critical Care relevant to their practice or hold relevant competencies. Equivalent staff for this cover could be provided by Advanced Nurse practitioners.

The lead Consultant for the service should specify relevant training supported by South Thames Paediatric Network as required.

All middle grade clinicians should have immediate access to a consultant with relevant experience (this can be remotely).

The middle grade cover recommended will depend on the amount of Level 2 beds as well as the quantity of all inpatient beds and clinical areas these staff cover.

Junior doctors (ST3 or below)

To note, Junior doctors may have a wide variety of skills and experience related to PCC and the lead consultant is responsible for reviewing competence of the team and identifying any gaps in knowledge and training.

24/7 Junior doctor cover with CPD being undertaken whilst within the paediatric department related to PCC including LTV

A robust induction and training plan in place.

Anaesthetists

There should be a nominated lead Consultant for Paediatric Critical Care with time allocated in their job plan.

There should be 24/7 access to onsite anaesthesia for neonates, children and young people (including competencies to intubate, establish adequate vascular access and transfer) (HLP 2016). A Consultant Anaesthetist with up-to-date APLS/EPALS or equivalent assessments of knowledge and skills must be available 24/7 to attend within 30 minutes (PCCS 2021).

It is recommended for all Anaesthetists covering Acute Paediatrics to also hold an up to date advanced paediatric life support course or equivalent. However, it is **essential** to have an up to date Paediatric Intermediate life support course or equivalent and ongoing CPD in paediatric critical care, including multidisciplinary team simulation training if responsible for paediatric patients. It is desirable also for Anaesthetists with specific training in paediatrics to be recommended in new recruitments to enable further paediatric specific skills development within the Anaesthetic body.

Consultant and middle grade Anaesthetists covering acute paediatrics out of hours should all have Paediatric experience, including neonates, or an agreed and robust pathway of who will intubate and manage the airway of children and young people of all ages. Training to be defined by the individual trust and can take the model of rotational experience, study days, simulations, time on a paediatric theatre list as examples. STPN can assist with training and resources. This is not in isolation to Level 2 units due to the nature of the current paediatric population attending acute services.

Anaesthetists should be familiar with environments where level 2 patients are cared for along with equipment including transport ventilators and medications for those patients that deteriorate to

maintain patient safety, reduce human factors and minimise inappropriate movement of critical ill CYP.

To support Paediatric team with acute pain management if no dedicated Pain team.

To participate in any debriefs, learning from events in collaboration with the Paediatric Team.

ENT

Must have 24/7 access to ENT Services. We recommend that they are co-located; where this is not possible there must be a robust SOP detailing a suitable solution (PCCS 2021).

Imaging

24/7 access to CT Imaging and an agreed pathway in hours for Ultrasound and MRI. Process for in hours reporting available by paediatric radiologist when required.

Nursing

A minimum of 2 registered children's nurses allocated on shift to each area, consideration must be given to layout of Level 2 beds within the unit.

Supernumerary Nurse in Charge to cover PCC (they may also cover other ward areas depending on unit size).

There should be, as a minimum, 1 nurse per shift holding an advanced paediatric resuscitation course such as APLS/EPALS or equivalent assessments of knowledge and skills.

All nurses should hold Paediatric intermediate resuscitation course.

A ratio of 1:2 for all Level 2 patients is recommended as a minimum, however will be influenced by a number of factors, including patient diagnosis and complexity, severity of illness, nursing skill-mix and seniority and location of bed.

2.59* WTE nurse per bed as a minimum to include Annual leave and CPD (Shelford Group 2018).

A Minimum of 1 Nurse per shift (PCCS 2021), should hold a completed PCC competency document including tracheostomy care and management (they may not be allocated the level 2 beds but can support staff working towards completing competencies).

70% of staff should hold a relevant accredited Level 2 critical care qualification and completed competencies (PCCS 2021). Due to the current workforce challenges a robust training and development plan should be in place to work to achieve this. Whilst this plan is in place **80%** of nursing staff are to have completed an introduction to critical care course or in-house equivalent and all Level 1 competencies. Nursing staff who have not completed their competency and/or attended a level 2 course to be supported by a senior nurse with these qualifications and competencies.

The National Nursing Competencies: Caring for Babies, Children and young people in hospital are recommended for use to support and standardise training. All nurses looking after level 2 patients should have completed relevant competencies within 12 months and should be working towards them with support during completion.

All staff should participate in regular CPD related to PCC, including simulations and MDT learning. All staff working in this area should attend at least one STPN and/or STRS regional training per annum (this could include webinars however face to face training is essential as decided by local educators.

There should be Tracheostomy train the trainers within the nursing team

New Starters (Nursing and Non-registered)

There must be allocated supernumerary time for all new staff without prior PCC experience where a structured induction programme should be undertaken (PCCS 2021) of supervised practice. The minimum supernumerary time is 75 hours (PCCS 2021). This may be undertaken in combination with induction to all services but requires careful consideration and is at local discretion.

Newly qualified staff will require assessment of competence to plan induction related to critical care and should only working within Level 2 with adequate support and guidance.

If staff have previous critical care experience, including those completed in a different country, an induction and review of their competence should be completed for their expected role (PCCS 2021) to determine what, if any, further training or competence required.

Support workers and Nursing Associates

All support workers involved in clinical care should hold a basic paediatric life support course as a minimum but dependent on role PILS may be more appropriate.

They must hold relevant competencies for the care they are providing, including Tracheostomy, NG feeding and observations; this list is not exhaustive and will be dictated by the individual trust's patient population. There must be a clearly designated registered nurse with L2 competencies allocated to support workers looking after Level 2 patients at all times.

There may be times where Support workers and Nursing associates can be appropriately included in staffing numbers including for level 2 critical care patients particularly with the LTV cohort but relevant competencies are essential, with a clear process for escalation and support identified.

They should participate in regular CPD including simulations

Local arrangement may include carers for some known patients, please refer to relevant local and Network guidelines as appropriate.

Staffing ratio should not fall below 85:15 registered to non-registered within PCC (PCCS 2021).

MDT Bank, Agency and Locum

Robust local induction and review of competence for expected role to be completed prior to starting within the service (PCCS 2021). Evidence of competence should be held by the provider.

Emergency departments and Assessment units -Multidisciplinary

Please refer to relevant sections above dependent on profession however in addition staff working within Emergency departments and Paediatric Assessment units should be accessing PCC training and resources and working closely with the inpatient areas.

There should be shared learning from PCC events and attendance of at one STRS simulation or feedback audit per annum for key team members to share with wider team.

In house simulation and training including PCC should be built into annual staff training plan. All staff that may be involved with PCC are encouraged to take part in at least one STRS simulation or feedback audit every two years.

Relevant PCC training and competencies should be held related to patient population but should include LTV and tracheostomies as a minimum.

Operating Department Practitioners

Must complete **basic paediatric life support training**, but PILS is recommended.

Maintain CPD related to the critically ill child.

ODPS should be familiar with environments where level 2 patients are cared for along with equipment including transport ventilators and medications for those patients that deteriorate to minimise inappropriate movement of critical ill CYP.

Resuscitation team

All members should hold a valid PILS course and resus leads should hold an advanced paediatric life support qualification, or equivalent assessments of knowledge and skills (PCCS 2021). They should be familiar in tracheostomies and ideally hold tracheostomy competencies.

There must be a robust arrangement for advanced airway management of children and young people of all ages as this may be provided by different professions or people within the multidisciplinary team (PCCS 2021). Careful consideration for airway management of neonates must be carried out.

Allied Health Professionals

Physiotherapists

There should be a named paediatric lead and a minimum of 5 days a week cover with specific time allocated to PCC unit activity.

24/7 access to a physiotherapist with paediatric respiratory competencies who is available to attend the bedside if required. (GIRFT 2022).

Be able to support staff training as required by the PCC unit to develop agreed skills within the MDT.

Dietetics

There should be a named paediatric lead and a minimum of 5 days a week cover with specific time allocated to PCC unit activity. There should be clear plans in place for dietetic plans for admissions that occur out of hours and at weekends (PCCS 2021).

Speech and Language Therapists (SALT) and Occupational Therapists (OT)

Pathway for access to SALT and OT services in place (PCCS 2021).

Pharmacy

At least 5 days a week with specific time allocated to unit activity and holds paediatric competencies (PCCS 2021). Should have the ability to support and deliver Total parenteral nutrition (TPN) in normal working hours.

24/7 advice from a pharmacist with knowledge of paediatric prescribing (GIRFT 2022).

Play Specialists

One lead Play specialist with relevant qualification to provide play, advice and guidance to all staff who provide play, distraction and mental stimulation to all patients.

Access in hours 7 days a week to a play specialist (or equivalent) to provide play, distraction and mental stimulation for CYP. Access to resources for patients at all times as required.

Discharge coordinators

Access to a discharge coordinator for all children is recommended particularly for those with complex needs (PCCS 2021). However, priority should be given to Level 2 beds to maintain patient flow. Dependent on unit size and activity this may be a role allocated within already established roles.

Psychological support

Access to psychological support to include staff as well as patients and families (PCCS 2021).

Mental Health Support

Dedicated Paediatric Mental health workers also covering PCC.

All Staff to have a minimum of Mental health first aid training or equivalent.

Bereavement support

Identified bereavement lead and time allocated to support Staff, families (including siblings) and carers following a bereavement.

Administrative, Clerical and Data Collection Support

As a minimum should cover the busiest periods of activity over a 24-hour period as defined by individual unit to maintain patient safety and also to enable accurate and timely data collection. (GIRFT 2022).

Clinical staff should not be spending significant time on clerical tasks at the expense of clinical duties (PCCS 2021).

Informatics

If informatic systems aren't already in place, careful consideration should be made to incorporate Paediatric Critical Care (PCC) requirements into hospital systems being developed. There should be an identified clinical lead to lead deployment and governance of informatics systems within PCC (PCCS 2021).

Staffing Considerations:

These are things that will need to be considered in the context of individual clinical areas. This list is not exhaustive and a local assessment needs to take place.

- Layout and Size of unit
- L2 beds location within unit
- Ward round patterns
- Seniority of medical and nursing staff within your team overall and per shift
- PCC experience within the team

- Access to AHPs
- Availability of clinical nurse specialists
- Location of Nursing, Medical, and AHP station
- Presence of central monitoring
- Visibility of bed spaces by staff when completing other tasks, accessing Point of Care Testing or Sluice for example

Recommendations

These are additional considerations to have when completing your gap analysis and implementation plan.

- Frequency and attendance of in-house Simulations per year, to include LTV and tracheostomies. STPN are currently building resources to support local teams to utilise as required.
- Consideration of allocated time for CPD built into the establishment in order to maintain patient safety and staff wellbeing
- Ongoing MDT training plan to maintain competencies
- Evidence of CPD related to critical care, this may include LTV, deterioration of the CYP to be held or accessed by trust
- Use of National Nursing Competencies: Caring for Babies, Children and young people in hospital
- Audit and quality improvement related to PCC
- Multidisciplinary review and learning for PCC including Level 2
- Participation with the network for audits, data collection, governance and quality improvement and to attend and engage in L2 network events for shared learning
- Staff wellbeing considered as a priority including debriefs after significant events including the wider team as well as sustained lengths of intense workloads
- Break areas and access to wellbeing initiatives and resources for staff
- Mental Health training for all staff, what this program looks like should be driven by local population and clinical need
- Consideration of placements within other PCC areas including in-house neonatal units as part of the 75 hours of supervised practice
- Informatics development plan

References

GIRFT (2021) Paediatric Critical Care GIRFT Programme National Specialty Report

Healthy London partnership (2016) Paediatric critical care standards for London Level 1 and 2

PCCS (2021) Paediatric Critical Care Society Quality Standards 6th Edition

RCPCH (2014) High Dependency Care for Children - Time To Move On

Shelford group (2018) Safer Nursing Care Tool Children's & Young People's In-patient Wards Implementation Resource Pack