Pharmacy Staffing Standards for Neonatal Services

About us

The Neonatal and Paediatric Pharmacists group (NPPG) was formed in 1994, with an aim to improve the care of neonates, infants and children by advancing the personal development of pharmacists and the provision of quality pharmacy services in relation to practice, research & audit, education & training, communication and advice. The NPPG are affiliate partners of the Royal Pharmaceutical Society (RPS) and advise them in areas relating to paediatric and neonatal pharmacy, and also sit as a specialty sub group affiliated to the Royal College of Paediatrics and Child Health (RCPCH).

The Chief Paediatric Pharmacists Group (CPPG) works with NPPG to collectively ensure that the needs of paediatric patients are recognised and accommodated as part of the national pharmacy agenda.

Background

Pharmacists are key members of the neonatal multidisciplinary team (MDT). The 2009 Department of Health *Toolkit for High Quality Services* states that all neonatal units should have access to a pharmacist whose job plan contains identified, protected capacity for providing advice and support in neonatal pharmacy[1]. A pharmacist's in-depth understanding and interpretation of altered and rapidly shifting physiological, pharmacokinetic and pharmacodynamic processes in neonates and critical care patients more generally is essential to safe and effective medicines use in this patient group[2]. In addition, altered routes of medicine administration in critical care require careful consideration.

As well as reviewing prescriptions for individual patients to ensure appropriateness, efficacy and safety, pharmacists also provide support and advice on a unit-wide strategic basis. This support includes[3]:

- Ensuring the development of safe and effective guidelines for medicines use, which is particularly important in the neonatal population due to a high degree of unlicensed and off-label medicines use[4].
- Assessing suitability of individual medicines for use within the neonatal population.
- Developing systems to prevent medication errors and responding to such events when they do occur.
- Ensuring that electronic systems such as electronic prescribing and medicines administration systems (EPMA) and intravenous drug pump libraries are safe and effective in use.
- Provision of training and support to the neonatal MDT on prescribing and administration of medicines.
- Supporting the safe and effective use of neonatal parenteral nutrition.
- Provision of advice on medication initiation, monitoring and review in multidisciplinary ward rounds.
- Educating parents and family members on how to use medicines.
- Ensuring safe and effective supply of medicines on the ward and at discharge.
- Advising on therapeutic drug monitoring and monitoring for adverse effects.

Reducing harm from medication use is the key aim of the WHO Global Patient Safety Challenge *Medication Without Harm*[5]. Availability of specialist neonatal pharmacists has been shown to reduce harm from medication and improve patient outcomes[3]. In addition to a reduction in medication errors, evidence from adult critical care demonstrates that inclusion of pharmacists within the core MDT improves outcomes: reducing mortality, lowering length of stay, preventing adverse drug events, identifying drug-drug interactions and reducing costs[6-13]. Routine pharmacist attendance at the multidisciplinary ward round is essential to realising these benefits[14]. Pharmacists working on critical care units with higher staffing levels made more clinically significant interactions than those working on units with less pharmacist support[15]. Experienced, specialist pharmacists were noted to make contributions with higher clinical impact than more junior staff[16].

Lord Carter's 2016 report highlighted unwarranted variations in care between different NHS organisations[17] Pharmacists are pivotal to the standardisation of medication use both within and between centres[2]. Variations in clinical pharmacy service provision at weekends and the need to develop seven day services have also been identified as a priority by NHS England[18]. Data from UK adult critical care services indicates that where weekend services were provided, the weekend intervention rate was double that of weekdays and in its absence, contribution rates were significantly higher on Mondays compared to other weekdays[15].

Staffing Recommendations:

To help commissioners and NHS providers ensure the right level of provision, we recommend the following standards in relation to pharmacy staffing and pharmacy service provision for neonatal care in the UK.

These recommendations are intended to describe the resource required solely for the neonatal service within a single centre. Additional pharmacy staffing resource is required to support neonatal transport services and Operational Delivery Networks where they exist.

1. Clinical pharmacists are essential practitioners within the neonatal MDT and are vital to the routine delivery of medicines optimisation in critical care. Every centre providing neonatal care must have access to a senior pharmacist practising in neonatology and, where necessary, with experience in the provision of parenteral nutrition.
2. In centres with neonatal ICU or HDU cots, the lead senior pharmacist time should be funded at Agenda for Change (AFC) Band 8a or equivalent as a minimum. Clinical pharmacist cover can, however, be provided by a Band 7 or equivalent with support from the senior neonatal pharmacist. In centres with only SCBU cots, the lead pharmacist time should be funded at a minimum of AFC Band 7 or equivalent, with appropriate support from a more senior pharmacist as required. In terms of funded time:
    - The neonatal pharmacist must have sufficient time allocated to fulfil their specialist role. In practice, a team of individuals is usually required to deliver the clinical pharmacy service to the neonatal service. There should be a minimum of **0.12** whole time equivalent (WTE) pharmacist for a 5 day service (and 0.168 WTE for a 7 day service) **for each funded Intensive Care cot, for every two funded High Dependency cots and for every four funded Special Care cots. (**Appendix 1 summarises the rationale for these values).
    - This staffing resource is required to allow sufficient "non-patient-facing" time to support the full range of clinical pharmacist activities, including (but not limited to) guideline development, medicines governance, multidisciplinary education and training, development and maintenance of electronic prescribing and administration systems, as well as audit and quality improvement work.
    - Where the staffing resource falls short of the recommended level, direct patient care will be prioritised over other activities.
    - A team-based approach helps to ensure service resilience, succession planning and provide the necessary educational and professional support.
    - The specified WTEs include a 20% uplift to enable service continuation during planned and unplanned leave.
3. The pharmacist must attend daily multidisciplinary ward rounds.
4. Pharmacists working in neonatal care should be encouraged to be active independent prescribers.
5. Alongside pharmacist provision, neonatal units need suitable levels of pharmacy assistant and technician time to ensure access to medicines via the hospital dispensary 7 days a week, with regular stock top ups in accordance with demand, but no less than once a week.
6. There should also be a minimum of 5 day access to an aseptic and CIVA service where this is needed to provide bespoke parenteral nutrition or where there is substantial use of high risk intravenous medications.
7. Ward-based pharmacy technicians can provide a valuable supportive role, assisting with activities such as medicines reconciliation, medicines management and expenditure reporting. This can release more time for medicines optimisation activities by clinical pharmacists. There is currently no benchmarking data to support a recommendation for ward-based technician staffing levels and therefore this should be assessed locally depending on the number of cots and the tasks that the technician would undertake
8. In addition to considering staffing levels within individual centres, it is strongly recommended that dedicated network pharmacist posts are created. This will support standardisation of practice across a region, seamless transfer of care, co-ordination of implementation of recommendations from national reports regarding pharmacy and medicines use, development and review of network guidelines, as well as regional audits of practice.

Qualifications and Competencies:

The Royal Pharmaceutical Society (RPS) has published competency frameworks for both foundation[19] and advanced level[20] practice. The foundation framework covers the initial post-registration years of practice: the competencies are typically attained via a 2-3 year AFC Band 6 non-specialist pharmacist role. The advanced practice framework (APF) describes three levels of advanced practice: Advanced Stage I, Advanced Stage II and Mastery.

Relevant specialist competencies are set out by the RPS Faculty and the NPPG in the Neonatal and Paediatric Care Expert Professional Practice Curriculum[21.]

Pharmacists delivering care to SCBU cots should be practicing at a minimum of Advanced Stage 1 of the APF, pharmacists delivering care to HDU cots at a minimum of Advanced Stage 1 (but ideally at or working towards Advanced Stage 2 or Mastery) and those working in ICU should be practicing at a minimum of Advanced Stage 2 (but ideally at or working towards Mastery).

The Faculty of the RPS provides an independent recognition process for the credentialing of an individual's stage of practice. To date, participation is voluntary and it remains the responsibility of Chief Pharmacists (or equivalent) to ensure that pharmacists are competent for their role.

Pharmacists working within neonatal services should develop their knowledge in line with the APF[20] and relevant sections of the NPPG / RPS Neonates and Paediatric Expert Professional Practice curriculum[21].

General Pharmaceutical Council (GPhC) revalidation requires pharmacists to demonstrate ongoing minimum competence to maintain registration through continuing professional development, including peer discussion, though this is not designed to identify and annotate advanced practice.

Pharmacists practising in neonatology and paediatrics should be members of the NPPG (http://www.nppg.org.uk) to enable shared working, and peer support for lone neonatal pharmacists.

Pharmacist roles in providing professional support to Neonatal services:

When resourced to the staffing levels stated above, the following support should be provided, drawing on other pharmacist colleagues (such as those working in procurement and finance, Medicines Information and Medicines Safety) as required:

- Development and maintenance of medication-related guidelines.
- Review of all clinical guidelines mentioning use of medication.
- Education and training of members of the neonatal MDT and the wider pharmacy department.
- Contingency planning for drug shortages.
- Introducing new medicinal products and associated formulary requests.
- Advice on high cost, high risk or restricted medications.
- Advice and co-ordination of parenteral nutrition.
- Cost saving measures.
- Quality improvement and audit.
- Review of medication errors.
- Governance and methods of managing medication-related errors, including attendance at relevant Governance meetings.
- Prescribing (where the pharmacist is a qualified independent prescriber).
- Day to day support for transport teams (note that strategic support for transport services and neonatal networks should be funded separately).
- Support for advancing technologies designed to support safer prescribing and administration, including the maintenance of Smart Pump drug libraries and ensuring that electronic prescribing systems are suitable for use within neonatal units.
- Pharmacy staff should be aware of the neonatal unit research strategy and have the opportunity to develop skills to promote, support, and deliver research. Additional funded time is likely to be necessary to facilitate significant pharmacist-led research.

Where the recommended staffing levels are not met, it will not be possible to provide all of the support listed above: the priority will be direct patient-facing clinical activity.

Professional support for pharmacists:

A neonatal pharmacist in a district general hospital is likely to be a lone worker. As such peer support, often from outside of the individual's own organisation, is critical to ensuring competency.

Access to pharmacists practising in neonatal care for support should be available through professional bodies such as NPPG, or via a neonatal network.

Neonatal pharmacists should undergo an independent, recognised process to verify competence level. Senior neonatal pharmacist support should, preferably, be provided within the organisation but may be provided via a neonatal network or on a regional basis.

Consultant Neonatal Pharmacists are also available in some centres and provide expert pharmacy knowledge and leadership in neonatal practice, education and research. Development of network pharmacist posts should utilise the availability and skills of these Consultant Pharmacists.

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Appendix 1: Rationale for Recommended Pharmacist Staffing Whole Time Equivalents (WTEs)

The GPICS standards published by the Faculty of Intensive Care Medicine (https://www.ficm.ac.uk/sites/default/files/gpics-v2.pdf) recommend:

- A pharmacist staffing level of 0.1 WTE for each Level 3 bed and for every two Level 2 beds to deliver a 5-day service.
- A further uplift of 20% on these values to allow for maintenance of the service during planned and unplanned leave.

Overall, for a **5 day** service, this equates to:

0.1 WTE x 1.2 (for leave)

= 0.12 WTE (equivalent to 0.024WTE per day).

The **7-day** requirement (inclusive of the 20% uplift to cover leave) is therefore:

0.024 WTE per day x 7 days

= 0.168 WTE.