
Dietitian Staffing on Neonatal Units

Neonatal Sub-Group Recommendations for Commissioning

Foreword

The last 20 years have seen a huge number of research studies on the nutritional needs and methods of critically ill infants. The importance of avoiding nutritional deficits by early effective feeding using parenteral nutrition and mother's own milk cannot be underestimated. During prolonged periods of critical care, optimised nutrition is the key to recovery and long-term outcomes for all organ systems. Neonatal doctors and nurses cannot be expert in every area of care. Nutrition is one area where the nutrition team needs to be supported by expert dietitians as a critical member of the team. The BDA has been very supportive of the development of specialist dietetic practice and this excellent document reflects this. All neonatal services should ensure that they support and provide such a service.

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Background

The main dietetic goal in critical illness is “to prevent the deterioration in nutritional status associated with the stress response” where poor nutrition will add to mortality and morbidity.^[1]

In neonatal intensive care units (NICUs) nutrient requirements are difficult to achieve and exacerbated by premature delivery at a time of massive nutrient accretion, low nutrient reserves and a decreased capacity to handle nutrition. The need for optimum nutritional support is paramount as evidence points to short and long term consequences of poor nutrient intake and growth.^[2, 3]

The National Audit Office report 'Caring for Vulnerable Babies' highlights improved nutrition as one of the improvements that has led to the increased survival rate of preterm infants.^[4]

The dietitian can have a significant impact on the care of sick and premature babies providing, as part of the neonatal team, consistent nutritional care to each infant and designing nutrition practice protocols and monitoring tools. By enhancing clinical effectiveness and avoiding clinical complications the role can lead to a reduced length of hospital stay with associated cost saving implications.^[5, 6] Introduction of dietitian led protocols can lead to large cost savings through reduced use of parenteral nutrition.^[5] NICU's with dietetic input are more likely to frequently monitor growth and use early optimum nutrition practices for VLBW infants. A study by Olsen demonstrated a 20% difference in the nutrition score between NICU's who employed a dietitian and those who employed none.^[7]

Competencies

In 2016 a working group of neonatal dietitians developed Core Competencies required for a dietitian to practice as a neonatal dietetic specialist.^[8] In 2010 a Master's level course was developed by an experienced group of neonatal dietitians to address the need for training in this specialty. Every year this course is oversubscribed with no other formal training for neonatal dietetic practitioners.

Recommended Service Levels

A number of estimates of dietetic whole-time equivalents exist for the provision of neonatal services:

- Mayfield et al: one clinical Dietitian per 30 in-patients in an NICU setting. ^[9]
- Groh-Wargo et al: service should depend on the size, activity levels and needs of the unit. In units of 30 or more beds the neonatal dietitian is likely to devote 40 or more hours a week to NICU related activities. ^[10]

In 2002 an Allied Health Professionals (AHP) advisory group provided staffing guidance for adult critical care to the NHS Modernisation Agency. Their recommendation of 0.05 – 0.1 WTE AHP at a senior level (at least AfC band 7) per HDU / ICU bed, is equivalent to 1.5 – 3 WTE per 30 beds for comparison with the studies mentioned above. ^[11] When considering workforce requirements factors to consider are case mix, case complexity, bed occupancy and ongoing need for intensive care. Education, training, supervision and appraisal must be included in such a post. ^[11]

When extrapolating this report to consider neonatal intensive care, the wide variation in specific nutritional needs of the sick newborn infant must be considered. These considerations would likely add to the service level required as poor nutrient intake and growth throughout the patient journey have major effects on short term morbidity and mortality, as well as medium and long term morbidity, including permanent effects on neurodevelopmental outcomes and later metabolic disease. ^[12]

More recent guidance is available following publication in 2009 of the Department of Health’s ‘Toolkit for a High Quality Neonatal Service’. ^[13] Specific workforce figures were not permitted in the submission, however a section on the need for dietitians on NICUs can be found in Appendix C, Principles 2 & 5. In 2010 the updated BAPM (British Association of Perinatal Medicine) Service Standards for Hospitals Providing Neonatal Services were published. A dietetic section including workforce figures based on the Critical Care Taskforce can be found in Section 6.1. ^[14]

The above recommended service levels can be useful for commissioning a dietetic service. However, they should only be used as a guide. Dietetic input per patient in a NICU might be expected to be greater than that required in a SCBU and if so then the figures recommended by the critical care task force would only apply to infants requiring full intensive care. Most units provide more than one level of care making use of these figures more complex.

The nursing model of 1:1 for intensive care, with 1:2 for high dependency and 1:4 for special care could be applied to neonatal dietitians. There is debate around the relatively large dietetic input needed for some babies on special care but on balance it is felt that it is appropriate to allocate more time to babies on intensive care.

Using the critical care task force recommendations as a basis and a factor of 1 for each ICC, 1:2 for each HDC and 1:3 for each SCC, rather than 1:4 as suggested for nursing, a more realistic estimate is shown in the table below:

Level of Care	Factor	Whole Time Equivalents (wte) per cot
Intensive Care Cots (ICC)	1	0.05 – 0.1 ^[11]
High Dependency Cots (HDC)	1/2	0.025 – 0.05
Special Care Cots (SCC)	1/3	0.017 - 0.033

It is essential when planning dietetic services to a specific neonatal unit to look at the unit as part of the relevant locally managed Network. Workforce figures should include an **additional** time allocation for a clinical lead/advisor on nutrition for the Network. Many units have no dietetic provision at all, and those that do have only “emergency” or very limited dietetic cover.

A ‘Network’ post would involve individual complex patient support (especially surgical), travel to local units and on-going support and education of unit dietitians over and above that provided at unit level, but wouldn’t provide a clinical service where none is funded. The post would always be placed in a NICU and likely to be the lead unit.

Workforce requirement will depend on the size of the Network and the amount of dietetic time and expertise in other units; however, 0.1wte band 8a Specialist Neonatal Dietitian for every 10,000 births would be a justifiable recommendation.” See Appendix 1 ‘Framework for Network Dietitian’.

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Authors

This is an update of the original version written by the same authors in 2014 available by download from our webpages previously hosted at BAPM. This version along with the Competencies will be available to download at https://www.bda.uk.com/regiongroups/groups/paediatric/neonatal/neonatal_dietitian_staffing_recommendations

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Appendix 1

Framework for a Neonatal Network Dietitian

Time allocated to a Network Dietetic post should be in addition to that devoted to clinical services within the network, though might be carried out by a dietitian who is already providing a clinical service to neonatal intensive care units, giving the benefit of ongoing clinical experience.

Essential Elements of Person Specification:

- Minimum 0.1wte dietitian per 10,000 births.
- Grade 8a paediatric dietitian with expertise in neonatal nutrition to Master's level or the equivalent knowledge and skills
- Experience of neonatal intensive care dietetics preferably with surgical neonatal experience
- Proven experience of leading and implementing service developments
- Proven experience of the entire audit process
- Proven experience of the delivery and evaluation of multidisciplinary education
- Evidence of extensive CPD in area of neonatal nutrition

General Requirements of Job Description:

- Facilitate and lead (or co-lead) a Multidisciplinary Network Nutrition Group.

Through this group:

- Lead on the development, implementation and review of network nutrition policy and any other network wide nutritional project work identified by the Network Management Team.
- Coordinate and deliver regular unit-based training (medical, nursing, dietetic) based on network policy.
- Develop Network website nutrition pages and web-based training packages where identified in the Network work stream plan.
- Lead on multi-unit nutrition audit on behalf of Network governance teams.
- Through locally provided dietetic resource (or identified nutrition link personnel where there is no dietitian) provide ongoing point of reference for teams for complex nutritional advice.
- Champion the development of dietetic services at network units.
- Where dietetic services do not exist use nutrition link medical/nursing staff to champion nutrition and act as on-site support for establishing a focus within the team for nutrition responsibility and tracking of nutritional parameters.
- Represent Network and neonatal dietetics on a national level e.g. through involvement in national specialist groups and formal organisations such as NICE working groups or as members of regional Maternity and Newborn Strategic Clinical Network Steering groups.
- Coordination of network involvement in nutrition research.

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