Starting Out in the Paediatric Intensive Care Unit

Insights for paediatric dietitians

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In parts one and two of this paediatric intensive care unit (PICU) series, we explored the evolving role of the paediatric intensive care dietitian and the critical importance of nutrition in supporting recovery and improving outcomes for critically ill children. These articles highlighted the dietitian as a vital member of the multi-disciplinary team (MDT), advocating for patients and ensuring their nutritional needs are met through evidence-based, compassionate care.

Building on that foundation, this third instalment shifts focus to the realities of working in the PICU. While the dietitian's impact is clear, the environment presents unique challenges, including inadequate staffing levels, barriers to nutrition provision and emotional stressors, that can make the role both complex and demanding.

This raises an important question for those considering the specialty: *Is paediatric intensive care the right path for me?*

To help answer this question, this article offers a deeper look into the PICU setting, the competencies required for dietetic practice, the challenges dietitians may face, and practical advice for those starting out. It aims to support dietitians in understanding what to expect, and how to thrive in this high-pressure but deeply rewarding field.

Understanding the PICU environment

Understanding the structure of PICU and its levels of critical care helps set expectations for the dietitian's role.

The PICU is classified as an advanced critical care unit under the Paediatric Critical Care Society (PCCS) Quality Standards for Critically Ill and Injured Children.[1]

These standards aim to enhance the quality of care and classify paediatric critical care into three levels:

- **Level 1:** Basic Critical Care (ward level) • **Level 2:** Intermediate Critical Care (HDU) • **Level 3:** Advanced Critical Care (PICU).

PICU offers interventions at all three levels of paediatric critical care. Life-saving interventions in PICU may include invasive mechanical ventilation, advanced respiratory support, renal replacement therapy, extracorporeal support, plasma filtration and vasoactive infusions.[1] These patients receive specialised care, continuous monitoring and observation, and support from the MDT.

The MDT includes doctors, nurses and allied health professionals with expertise in paediatric critical care.[2, 3] The dietitian is a core member of the MDT, and having well established working relationships with other members of the MDT supports achieving the best outcomes for patients. A key example is the collaborative relationship with speech and language therapy (SLT), which is vital for managing feeding and swallowing issues.

Developing dietetic expertise in PICU

In the UK, there is currently no formal training pathway to become a paediatric critical care dietitian. Instead, practitioners typically develop the necessary skills through on-the-job experience, shadowing opportunities within PICU, and participation in relevant professional development activities – such as conferences and the British Dietetic Association (BDA) Paediatric modules, particularly Modules 2 and 3 (https://bit.ly/48hjxp8).

In 2019, the BDA published a competency framework for paediatric dietitians working in PICU.[4] While this framework is currently due for review, it remains a valuable resource for understanding the skills and knowledge required to deliver expert dietetic care in this setting.

A strong foundation in paediatric nutrition and physiology, from infancy through to adolescence, is essential. This includes an understanding of how clinical status, disease pathophysiology and organ involvement affect nutritional needs and interventions.

Table 1 summarises the core competencies for dietitians working in advanced critical care (PICU).[4]

While these competencies provide a framework for delivering high-quality dietetic care in PICU, the reality of working in this environment presents unique challenges. From staffing limitations to clinical barriers and emotional strain, dietitians must navigate a complex landscape to advocate for optimal nutrition in critically ill children.

Table 1: Summary of core competencies[4]

	Competencies
Clinical understanding	• Knowledge of complex medical backgrounds affecting nutritional status • Understanding of disease pathophysiology and interventions (e.g. ECMO, CVVH, dialysis, HFOV) • Familiarity with congenital abnormalities (cardiac, GI tract, lungs, liver, kidneys, brain)
Nutritional assessment	• Skilled in interpreting neonatal and disease-specific growth charts • Understanding of clinical growth parameters • Interpretation of biochemical markers (electrolytes, liver/renal function, bone profile) • Awareness of medication impacts on GI tolerance (e.g. high-output stomas)
Nutritional requirements	• Knowledge of GI function and effects of resections • Understanding of illness phases and medical interventions on nutritional needs • Management of conditions like chylothorax and lymphangiectasia • Expertise in enteral and parenteral macronutrient/micronutrient requirements
Enteral nutrition (EN)	• Extensive knowledge of infant formulas and specialist feeds • Support for breastfeeding and lactation in critical illness • Understanding of post-surgical feeding and high-risk abdomen considerations • Management of feed intolerance and complications • MDT collaboration to support oral skills and feeding progression
Parenteral nutrition (PN)	• Understanding of PN indications and risks • Knowledge of standardised and individualised PN composition • PN monitoring and complication management • Ability to order PN independently or with pharmacist support • Leadership in nutrition MDT for PN guidance
Oral feeding	• Understanding of SLT's role in PICU • Promotion of strategies to prevent oral aversion (e.g. non-nutritive sucking)
MDT	• Active participation in ward rounds and MDT meetings • Leadership and support within nutrition MDT
Quality improvement (QI)	• Development of nutritional guidelines • Leadership in audits, research and QI initiatives • Education for staff and dietitians (local/national) • Supervision of junior PICU dietitians
Post PICU support	• Co-ordination of dietetic care transitions (ward, local services, home) • Communication with relevant dietetic teams

Challenges faced by PICU dietitians

Dietetic staffing

Although most UK PICUs have funded dietetic positions, only 14% meet the recommended staffing ratio of one dietitian per 10 beds, as outlined by the Paediatric Critical Care Society (PCCS).[3] Combined with the fact that 25% of units lack feeding protocols, this shortfall increases the nutritional risk for paediatric patients admitted to PICU.[3, 5] Part of the role of the dietitian on PICU is the development of feeding protocols or guidelines, which may help to overcome the negative impact of staffing challenges and improve nutrition provision for patients admitted to PICU.[6]

Barriers to nutrition provision

Barriers to initiating or advancing EN and PN can hinder the achievement of nutritional goals and, as a result, contribute to worse nutritional outcomes for patients admitted to PICU.

These barriers may include the following:

- **Fluid restriction**, limiting the volume available for nutrition
- **Feed interruptions** for procedures or interventions such as surgery, extubation, or imaging
- **Prolonged fasting times**
- **Perceived feed intolerances**, such as high gastric residual volumes, vomiting, diarrhoea, or abdominal distension
- **Haemodynamic instability**, resulting in withholding enteral feeding due to concerns about gut perfusion
- **Underlying clinical status**.

While some of these challenges are unavoidable, others may be mitigated through proactive strategies. This may include development and implementation of evidence-based feeding, nutrition education for the MDT, and collaboration and communication with teams to agree on strategies for overcoming barriers (fluid restrictions, feed intolerances).[5, 6]

Ultimately, the dietitian plays a key role in advocating for nutrition as a therapeutic priority. By identifying barriers early and working collaboratively to address them, dietitians help ensure that critically ill children receive the nutritional support they need to recover and thrive.

Emotional challenges

Working in the PICU demands not only clinical expertise but emotional resilience. Dietitians in this setting are regularly exposed to medical complexities and the realities of child mortality. While the mortality rate in UK PICUs was reported at 3.7% in 2023, each loss is deeply felt by the MDT, which is especially challenging when one has been closely involved in a child's nutritional care.[6, 7]

The emotional weight of caring for critically ill children, many of whom have life-limiting conditions, can be profound. Dietitians may witness rapid deterioration, prolonged suffering, or unexpected complications, all of which contribute to the emotional intensity of the role. In some cases, they may be involved in end-of-life care planning, including decisions around comfort feeding or the withdrawal of nutrition support. These moments can be ethically complex and emotionally challenging, particularly when balancing clinical guidelines with family wishes.

Family-centred care is a cornerstone of PICU practice, and dietitians often play a key role in supporting parents and caregivers. This may involve explaining feeding plans, addressing concerns about feed tolerance, or simply being present during difficult conversations. Navigating these interactions with empathy and clarity is essential but can also be emotionally draining, especially when families are grieving or overwhelmed. In addition to patient and family interactions, dietitians may experience moral distress when clinical decisions conflict with their professional judgment or values. For example, when nutrition goals are deprioritised due to medical instability.

The emotional climate of the PICU itself can affect staff wellbeing. Working in a high-pressure environment with acutely unwell children and emotionally charged families can lead to compassion fatigue or burnout. Peer support, debriefing sessions and access to psychological resources are vital tools for maintaining emotional health and professional sustainability.[8-12]

Despite these challenges, many dietitians find PICU work deeply rewarding. The opportunity to make a meaningful impact on a child's recovery, to advocate for nutrition in critical care, and to collaborate with a skilled MDT offers a sense of purpose and professional growth that is unique to this specialty.

Starting out as a PICU dietitian

Beginning your journey as a dietitian in PICU can feel daunting. The medical complexity of patients, rapid turnover of admissions, and frequent barriers to nutrition provision may initially seem overwhelming. However, with time, support and a clear understanding of the environment, the transition becomes more manageable and rewarding.

Patient complexity varies depending on the level of critical care and the nature of the admission. You may encounter children with bronchiolitis requiring invasive ventilation, sepsis managed with extracorporeal membrane oxygenation (ECMO), or post-operative care following cardiac surgery. Familiarising yourself with the types of interventions your PICU offers, and understanding their nutritional implications, will help build confidence and competence in your role.[1]

Joining the PCCS Nutrition Interest Group is a valuable step for new and experienced dietitians alike. With members from across the UK and Ireland, the group offers a supportive platform to share resources, guidelines and literature. It also provides opportunities to seek advice, discuss complex cases, and stay updated on best practices in paediatric critical care nutrition.[13]

Conclusion

Working as a dietitian in the PICU is both a challenge and a privilege. It demands a high level of clinical knowledge, emotional resilience and the ability to adapt quickly in a fast-paced environment. From navigating complex medical conditions and nutritional barriers to supporting families and collaborating with the MDT, the role is as dynamic as it is impactful.

While the learning curve can be steep, the opportunity to contribute meaningfully to the care of critically ill children is deeply rewarding. With time, support and continued professional development, dietitians can grow into confident, valued members of the PICU team. Whether you're just starting out or considering this path, understanding what to expect and embracing the challenges with curiosity and compassion, can help you thrive in this vital and inspiring specialty.

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