



Bridging the Protein Gap: Navigating Variable Milk Composition and Delivery in High-Risk Neonates and Infants

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INTERPROFESSIONAL COLLABORATION

Meeting the protein needs of critically ill neonates and children is one of the most critical challenges in neonatal and pediatric critical care — and solving it requires a team approach. In the discussion that follows, 3 NICU clinicians explore the principles of interprofessional collaboration and how those principles translate directly into the coordinated, evidence-based nutritional care these patients require.

INTERPROFESSIONAL COLLABORATION: WHAT IS IT?

The 4 core competencies of interprofessional collaboration

1. Roles & responsibilities — Understanding your own scope and that of your colleagues to address patient and population health outcomes.
2. Values & ethics — Recognizing individual perspectives and diverse backgrounds to promote health equity and collaborative integrity.
3. Communication — Ensuring every team member has a voice, and that information flows clearly and compassionately.
4. Teams & teamwork — Applying the science of teamwork to reach collaborative decisions and hold one another accountable.

Frank: My role as both a lactation consultant and a dietitian gives me 2 distinct areas of expertise to contribute to the interprofessional team — I can speak to nutrition and to the lactation aspects of care. That dual perspective is a good illustration of how roles and responsibilities play out in practice.

Stansfield: Values and ethics are implicit to who we are and the expertise we bring to the team. Recognizing them allows us to value diversity, acknowledge cultural and background

differences, and collaborate with honesty and integrity — all in service of health equity and better outcomes.

Berroya: Great communication is the glue that holds everything else together. If we're not all on the same page, no protocol we implement is going to work. Every team member needs a seat at the table — and we need to approach both our colleagues and our patients with genuine respect and compassion.

Frank: Teams and teamwork bring the other 3 competencies together. It's about applying the principles of collaborative science to make group decisions, leveraging each other's expertise, and holding one another accountable for the care we deliver.

Collaboration in action: from concept to the NICU

Berroya: Without interprofessional collaboration, we risk a fragmented health system. When we work together, we build a more resilient workforce — one that leads to stronger collaborative practice, a healthier system, and ultimately, better outcomes for our patients.

Stansfield: Interdisciplinary bedside rounding is one of the clearest examples I can point to. As the physician, I incorporate perspectives from nurses, dietitians, respiratory therapists, social workers, and families. It allows us to build a thoughtful, comprehensive plan of care — and everyone leaves the bedside on the same page.

Frank: We round every day — dietitian, pharmacist, respiratory therapy, nursing, spiritual care, case management, social work. When families are present, we include them too. Everyone gets to share what they bring to the table right in that moment, and it absolutely optimizes the patient's care.

Berroya: Family presence during rounds is especially powerful. With so many specialists in the room, families get



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a full picture of the plan — and they have a natural opening to ask questions and understand why we're doing what we're doing for their baby.

A real-world example: updating feeding protocols

Stansfield: Neonatal nutrition is a prime example of where interprofessional care is essential. We're constantly navigating new evidence around feed initiation, supplements, fortifiers, and growth benchmarks — and translating that into unit-wide protocols requires clear communication across every discipline involved.

Frank: We recently formed a nutrition expert committee to overhaul our protocols — a dietitian, bedside nurses, nurse practitioners, and a neonatologist. We started with an audit of existing protocols, identified gaps, and then did a deeper dive into the current evidence. The result was more individualized protocols stratified by gestational age and weight class, earlier fortification, fewer days of trophic feeding, and faster - and safer - feeding advancement.

Berroya: Including the bedside nurse in those conversations is critical — and it's not always the first instinct. The nurse is often the gatekeeper: the person at the bedside most consistently. When nurses have a seat at the table, they can speak to workflow realities that others might miss. And when the rest of the unit knows nursing was part of the process, it helps ease any hesitation about implementing something new.

Frank: Some of the newer evidence calls for increasing feeding volumes more quickly and starting feeds earlier — changes that can feel uncomfortable at the bedside. Having nurses in the room to voice those concerns and then working through the literature together to address them made our process far more effective. Their input was invaluable.

Berroya: The 4 core competencies — roles and responsibilities, values and ethics, communication, and teams and teamwork — are deeply applicable in the NICU. But they're equally relevant across every healthcare setting. Wherever we're caring for patients, these principles help us optimize the care we provide.

CLINICAL REVIEW

Interprofessional care in the NICU and PICU

The roundtable discussion above illustrates what interprofessional collaboration looks and feels like from the clinician's perspective. But what does the evidence tell us about its impact — and what does it actually look like in day-to-day practice in the most demanding care environments? In the NICU and PICU, where patients are among the most vulnerable and clinical decisions the most consequential, the answer matters enormously.

Interprofessional collaboration in the NICU and PICU brings together physicians, nurses, dietitians, respiratory therapists, pharmacists, social workers, case managers, and families around a shared goal: coordinated, evidence-based, patient-centered care. Daily interdisciplinary bedside rounds are the most visible example of this model — a structured opportunity for each discipline to contribute expertise, communicate updates, and align on a unified care plan. When families are included, rounds serve an additional function: improving health literacy, supporting shared decision-making, and reinforcing trust between the care team and the people most invested in the patient's outcome.

The value of this model is perhaps most clearly demonstrated in managing the details and complexities of neonatal nutrition. As the panelists describe, updating a unit's feeding protocol is not simply a matter of reviewing new evidence and issuing revised guidelines. It requires a deliberate, inclusive process that accounts for both the science and the realities of bedside care. Bedside nurses - often the first to encounter the practical challenges of a new protocol - bring a critical perspective that must be integrated into new processes. Their involvement not only strengthens the protocol itself but also builds staff confidence, which determines whether change actually takes hold.

The outcomes of this collaborative approach are well supported. Interprofessional care in healthcare settings has been associated with improved communication across disciplines, more consistent application of evidence-based practice, stronger team cohesion, and — most importantly — better patient outcomes. These benefits are the direct result of teams that have invested in the competencies the panelists describe: clear roles, shared values, open communication, and a genuine commitment to working as one.¹⁻⁶

Within the context of neonatal nutrition challenges, the value of interprofessional collaboration becomes understood. Closing the protein gap — whether in the NICU or the PICU — is not a task for any single clinician. It is a team effort, and the quality of that team effort shapes the outcome.

Bridging the protein gap: key concepts for the NICU and PICU

Protein is essential for fetal and neonatal development, supporting energy provision, tissue growth, organ maturation, and immune function. Evidence shows that higher protein intake in preterm infants is strongly associated with improved growth outcomes, with each incremental increase in protein intake driving measurable gains in weight velocity.⁷ Current enteral nutrition guidelines for preterm infants recommend protein targets of 3.5 to 4.0 g/kg/day, and up to 4.5 g/kg/day in some cases.⁸



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In the NICU, a central challenge is the *protein gap* — human milk often fails to meet the high protein needs of preterm infants. Both mother's own milk (MOM) and donor human milk (DHM) frequently provide insufficient protein at standard feeding volumes, leading to cumulative deficits that impair growth. Contributing factors include variability in milk composition, declining protein content over lactation, and the limitations of DHM — including lower baseline protein, the effects of pasteurization, and potential labeling inaccuracies.^{9,10}

Standard fortification practices often fall short of protein targets, prompting the need for more effective strategies, including adjustable or targeted fortification, early initiation of fortifiers, increased feeding volumes, and protein-enriched milk recipes.¹¹⁻¹³ Evidence suggests that these approaches can improve growth outcomes without increasing complications — and as the panelists describe, implementing them well requires exactly the kind of coordinated, protocol-driven interprofessional care their teams have built.

In the PICU, protein needs are driven by the hypercatabolic state of critical illness, where rapid muscle breakdown

worsens outcomes. Achieving at least 60% of prescribed protein intake has been linked to a substantial reduction in mortality in mechanically ventilated children.¹⁴ Current enteral nutrition recommendations in the PICU emphasize:

- Avoiding reliance on standard dietary allowances to guide protein goals
- Targeting at least 1.5 g/kg/day to prevent negative nitrogen balance
- Targeting 2.5 to 3.0 g/kg/day in mechanically ventilated infants and young children⁹

Strategies to meet these needs include high-protein formulas, modular protein supplementation, and careful monitoring — with the goal of preserving lean body mass and improving overall outcomes. As with neonatal nutrition, translating these targets into consistent clinical practice depends on the same principles the panelists outlined: clear roles, shared values, open communication, and a team that functions as one.

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