



A Primer for NICU Lactation Success

While it's well-known that mother's own milk provides optimal nutrition for babies in the NICU, the reality is that making enough milk can feel "easier said than done" for many families.

The number one reason mothers stop pumping is low supply.^{1,2} The question for NICU clinicians becomes: what interventions can we use to reliably promote milk supply?

One answer is **timing**. Studies have shown a clear relationship between how early breastfeeding is initiated and how much milk a mother makes long term.^{3,4,5} Ensuring pumping sessions occur soon after birth and then at frequent intervals is an evidence-based recipe for establishing an adequate milk supply.

A second answer is **logging**. Multiple lactation experts have asserted that successful breastfeeding support in the NICU setting relies on parents documenting their pumping frequency while healthcare workers monitor these data to provide informed support.^{2,6,7}

To effectively support NICU mothers, healthcare workers must therefore help parents pump early, pump often, and log these pumping sessions in a meaningful way. Having the right technology can make the latter part of this equation possible.

PUMPING EARLY & FREQUENTLY

Parents of NICU babies face a constellation of challenges that can interfere with milk production. These barriers include babies too premature or too ill to nurse at the breast, parent-baby separation, parental stress and anxiety, parental discomfort in the hospital setting, and inconsistent breastfeeding advice.^{7,8} Mothers who experience preterm and/or medically complicated births are also at risk for delayed lactogenesis II (the onset of copious milk production).^{9,10,11}

To overcome these physiological, emotional, and logistical challenges, a proactive and time-sensitive approach is necessary. Lactation expert Diane Spatz, PhD, RN-BC, FAAN and team have summed up their approach with this advice: "**pump early, pump often.**"¹

Several studies have explored connections between pumping initiation and breastfeeding success. A randomized controlled trial that compared mothers of very low birth weight infants found that those who

started expressing milk within 1 hour of delivery had higher milk volume and decreased time to lactogenesis II compared to mothers who started expressing milk 6 hours after delivery.³ Similarly, a prospective cohort study found that the sooner mothers of premature infants initiated pumping after birth, the longer they were able to continue breastfeeding.⁴ The first days of lactation seem particularly impactful, as another study has shown the degree to which milk supply is established at day four (4) postpartum indicates how much milk parents will make long-term.⁵

In line with those studies, the Academy of Breastfeeding Medicine emphasizes that milk expression (by hand or pump) should begin within one hour of birth to help develop milk supply.¹² While one hour may not be clinically feasible in all births, promoting a hospital culture of initiating milk expression as soon as possible can be impactful.¹

After initiating milk expression early, pumping frequently is another critical step for making enough milk. At least 8 pumping sessions per 24 hours is a widely recognized goal for pump-dependent parents to help sufficiently stimulate milk production. This regimen stimulates hormones that are required to establish robust milk supply, like prolactin, just like mothers would experience if they had a term or non-ill baby nursing at the breast. Encouraging NICU parents to pump is particularly important in the first two weeks postpartum, during which the body is “programmed” for lactation and producing higher milk volumes.²

THE IMPORTANCE OF LOGGING PUMPING SESSIONS

For NICU parents, pumping can feel like a full-time job. Even for mothers who are motivated to breastfeed, it can be hard to meet pumping goals. One survey found that in mothers who knew the benefits of human milk and felt well-supported by hospital lactation staff, only 4% were meeting the recommended 8 pumping sessions per 24 hours, with the majority pumping 4 or 5 times daily instead.⁸ Other researchers have observed the same disparity.¹

While healthcare workers cannot alleviate all of the pumping’s challenges, we can provide parents with informed, timely support as they pump. Encouraging mothers to log their pumping sessions helps them visualize their behavioral patterns and actively participate in the lactation care plan. These logs also provide clinicians with valuable insight to best support parents - data points like pumping session length, interval between session, volume collected, and perhaps even qualitative notes, like stress levels or pumping location.

Several articles have highlighted the important combination of mothers logging pumping sessions and healthcare workers reviewing these logs. In their guide for supporting lactation in dyads who experienced preterm birth, Meier et al included user-friendly pumping volume diaries as a key clinical strategy.²

Similarly, Lucas et al advised that healthcare workers need to monitor parents’ pumping trends in order to provide “educated encouragement that anticipates breastfeeding challenges, especially when the mother is pumping for an extended period of time while their infant is maturing in the NICU.”⁷

In that same vein, Blatz and colleagues counseled that “NICU and TCU staff need to examine and establish approaches to actively involve mothers in monitoring the establishment and maintenance of an adequate supply of breast milk to improve neonatal health outcomes.”⁶

These experts all show us that to optimally support pump-dependent NICU mothers, there’s an interactive quality to logging milk. Not only do parents need to track pumping sessions, but clinicians need to be able to monitor this data and proactively counsel accordingly.

LEVERAGING TECHNOLOGY TO SUPPORT PUMPING PARENTS

A vast majority of today’s new moms are Millennials (and increasingly, Gen Z) - and healthcare teams must be able to engage moms in a way that’s intuitive and accessible these generations. In an age where most mothers are equipped with a smartphone, it’s an obvious choice to leverage technology for breastfeeding support.

Researchers have acknowledged that technology is a popular and potentially powerful tool for breastfeeding support.^{13,14} Websites and apps can promote lactation by providing features such as:

- tools to log pumping sessions and track production
- educational resources & knowledge self-assessments
- connection to lactation and infant feeding experts for 1:1 support
- online discussion forums for peer-to-peer support
- locations of nearby safe places to breastfeed or pump

Logging pumping sessions (including both frequency and volume) in a mobile app is a way to marry evidence-based recommendations for enhancing milk production with the convenience of modern technology. When a mother's care team has access to these logs, they can then support her with timely, tailored lactation counseling. Apps that can provide vetted educational resources and secure communication with staff provide further support.

To initiate and maintain a milk supply, NICU mothers need educated encouragement, and the right app can facilitate this connection. Apps that empower parents to log milk - and then allow their clinical care teams to securely monitor these trends - present a significant opportunity for improving breastfeeding outcomes.



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