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NICU scorecard:
an evidence-based guide to improving the use of human milk

This scorecard guides quality improvement initiatives by providing evidence-based indicators to allow the self-assessment of human milk and lactation care practices in the NICU.

Own mother's milk (OMM) significantly reduces potentially preventable morbidities and mortality in preterm and other vulnerable infants. Feeding OMM over formula is therefore a NICU priority.[1]

Since the NICU can present breastfeeding and breast milk feeding challenges, a different set of performance indicators for mother and infant are required to ensure that infants receive human milk through the hospital stay and beyond.[1–4]

Mother scorecard

Rate the NICU performance based on the following indicators (→)

Informed decision

→ Standardised information for NICU mothers is provided on the value of OMM and how to build an adequate milk supply.

Providing consistent information to NICU families enables them to make an informed decision and understand their alternative breastfeeding pathway. [3,5]

Time to first expression

→ Hospital protocols detail expression within 1–3 hours of birth.

→ Regular audits of performance are carried out.

Stimulating the breasts in the first hours via vacuum expression is important. This supports timely initiation and long-term milk production. [1, 6–9]

Frequent expression

→ Hospital protocols detail expressing 8 or more times per 24 hours.

→ Regular monitoring is performed.

Frequent expression is critical to achieving adequate volumes. [1, 7, 9] Double pumping (simultaneous expression) every 2–3 hours yields more milk in less time and results in higher prolactin concentrations. [10,11]

Time to milk 'coming in'

→ Daily milk volumes are tracked.

→ Mothers with delayed (> 72 hours) secretory activation (milk 'coming in') are identified.

Three consecutive expression volumes of > 20 ml are an indicator of milk 'coming in'. [12] Delayed secretory activation has been associated with a shortened lactation and is a sign that increased lactation care is needed. [13]

Coming to volume

→ Mothers' expression volumes are logged and assessed regularly.

→ Coming to volume (defined as three consecutive days of > 500 ml total volume) is achieved by day 14.

→ Lactation care after coming to volume is provided.

Coming to volume by day 14 indicates that milk supply is on track to meet the long-term needs of the infant. [15–17] Lactation care should continue even when expression volumes exceed the daily infant feed volumes.

Infant scorecard

Rate the NICU performance based on the following indicators (→)

Oral therapy with OMM

→ Oral therapy is regularly performed as a standard practice until oral feeds begin.

Regularly applying small amounts of OMM inside the infant's cheeks is safe, has potential health benefits and empowers parents as the infants appear to respond to the taste. [2, 18–19]

Skin-to-skin

→ Skin-to-skin is a part of standard policy and practice.

→ Frequency and duration are tracked and assessed.

Skin-to-skin helps transition to direct feeding at breast, helps improve milk volumes and is associated with a longer duration of breastfeeding. [1, 4, 14, 20]

Dose of OMM

→ Hospital feeding logs define the relative composition of each feed OMM:DHM:Formula.

→ The percentage of infants receiving 100% human milk (OMM and/or DHM) in the first 14 days is audited regularly.

→ The percentage of infants receiving > 50 ml /kg/day OMM in the first 28 days is audited regularly.

Total avoidance of bovine formula from days 0–14 reduces NEC. [21]
High dose OMM (> 50 ml/kg/day) from days 0–28 reduces the risk of late onset sepsis and other morbidities. [2, 22–24]

Transitioning to direct feeding at breast

→ Non-nutritive and nutritive sucking are recorded and assessed as part of standard practice.

→ Test weighing (for nutritive sucking) is used to evaluate milk transfer.

These practices support exclusive direct feeding at breast. [1,4, 25]
Monitoring at-breast experiences can help health care professionals to provide specific guidance and care.

Breastfeeding rates

→ Exclusive breastfeeding and OMM feeding rates at discharge; 2 and 4 weeks post-discharge; 3 and 6 months corrected gestational age are assessed.

→ The percentage of infants with exclusive, partial and no breastfeeding or OMM at each time point is recorded regularly.

Low exclusive breastfeeding or OMM at these time points may indicate sub-optimal lactation care during the hospital stay. [26]

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To learn more about how to support lactation practices in the NICU, ask your Medela representative about the following education materials:

1. NICU talking points

2. Research reviews

3. Educational posters

Find more at medela.com

References

1. Every Premie-SCALE. http://www.everypreemie.org/wp-content/uploads/2017/07/HBM_7.2.17.pdf. 2017.
2. Bigger HR et al. J Perinatol. 2014;34:287-291.
3. Spatz DL. Adv Neonatal Care. 2017;17:417-423.
4. Spatz DL. J Obstet Gynecol Neonatal Nurs. 2012;41:138-143.
5. Edwards TM, Spatz DL. J Perinat Neonat Nurs. 2010;24:246-253.
6. Parker LA et al. FASEB J. 2017;31:650.19.
7. Spatz DL. J Perinat Neonatal Nurs. 2004;18:385-396.
8. Froh EB et al. J Pediatr Nurs. 2015;30:521-523.
9. Meier PP et al. J Perinatol. 2016;36:493-499.
10. Prime DK et al. Breastfeed Med. 2012;7:442-447.
11. Hill PD et al. J Hum Lact. 2001;17:9-13.
12. Meier PP et al. J Perinatol. 2012;32:103-110.
13. Nommsen-Rivers LA et al. Am J Clin Nutr. 2010;92:574-584.
14. Meier PP et al. Clin Perinatol. 2017;44:1-22.
15. Spatz DL et al. J Perinat Educ. 2015;24:160-170.
16. Meier PP et al. Clin Perinatol. 2017;44:1-22.
17. Hoban R et al. Breastfeed Med. 2018-Epub ahead of print.
18. Sohn K et al. J Perinatol. 2016;36:106-111.
19. Lee J et al. Pediatrics. 2015;135:e357-e366.
20. Acuña-Muga J et al. J Hum Lact. 2014;30:41-46.
21. Sisk PM. J Perinatol. 2007;27(7):428-33
22. Patel AL et al. Arch Dis Child Fetal Neonatal Ed 2017;102(3):F256-F261.
23. Patel AL. J Perinatol 2013 Jul;33(7):514-9.
24. Patra K et al. Neonatology. 2017;112:330-336.
25. Narayanan I et al. Arch Dis Child. 1991;66:241-244.
26. WHO. 1991. Report No.: WHO/CDD/SER/91.14, Corr.1.

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