Supporting Evidence for Maternity Practices in Infant Nutrition and Care (mPINC)

CDC calculates mPINC scores for participating hospitals to indicate their overall level of maternity care practices and policies that support optimal infant feeding. Scoring of practices and policies is consistent with recommendations from national and international experts in infant feeding within maternity care settings and supported by evidence from peer-reviewed research.

### Maternity Care Practices Supportive of Breastfeeding

<table>
<thead>
<tr>
<th>Measure</th>
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</table>
| Immediate skin-to-skin contact | After vaginal delivery, how many newborns remain in uninterrupted skin-to-skin contact with their mothers beginning immediately after birth  
- If breastfeeding, until the first breastfeeding is completed?  
- If not breastfeeding, for at least one hour? | Skin-to-skin contact can be implemented for all healthy term newborns, regardless of feeding method, immediately after birth.  
8-15 Skin-to-skin contact improves breastfeeding outcomes  
14-15 and increases infant cardio-respiratory stability and blood glucose levels.  
14 Skin-to-skin contact may also improve mother-infant bonding  
15 and infant thermoregulation  
15 and decreases infant crying  
15 and pain response.  
15 |
| Immediate skin-to-skin contact | After Cesarean-delivery, how many newborns remain in uninterrupted skin-to-skin contact with their mothers as soon as the mother is responsive and alert after birth  
- If breastfeeding, until the first breastfeeding is completed?  
- If not breastfeeding, for at least one hour? | Skin-to-skin contact can be safely implemented immediately following cesarean-delivery as soon as the mother is responsive and alert.  
10,12,13,16 Skin-to-skin contact after cesarean-deliveries improves breastfeeding outcomes  
14-17 and may also improve mother-infant bonding, maternal pain and anxiety, and maternal and infant stabilization.  
16 |
| Transition | How many vaginally-delivered newborns are separated from their mothers before starting rooming-in? | Separation before rooming in is unnecessary for stable infants. All routine procedures, assessments, screenings, immunizations, and laboratory draws can be performed during skin-to-skin contact or at the mother’s bedside.  
10,12 Early mother-infant separation may lead to poorer mother-infant interaction during breastfeeding  
18 and could affect early initiation of breastfeeding.  
19 |
| Monitoring following birth | How many newborns receive continuous observed monitoring throughout the first 2 hours immediately following birth? | Continuous monitoring of newborn breathing, activity, color, tone, and position may improve safety during skin-to-skin contact by averting obstruction of breathing and events leading to sudden unexpected postnatal collapse.  
10,12 |

### Immediate Postpartum Care

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| Immediate skin-to-skin contact | Separation before rooming in is unnecessary for stable infants. All routine procedures, assessments, screenings, immunizations, and laboratory draws can be performed during skin-to-skin contact or at the mother’s bedside.  
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### Rooming-In

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| Rooming-in | What percent of newborns stay in the room with their mothers for at least 24 hours per day (not including those separated for medical reasons)? | Continuous rooming-in allows mothers to learn to recognize and respond to their infants’ feeding cues.  
8,10,15 Rooming-in may improve early exclusive breastfeeding  
19 reduce infant stress  
21 and increase mother-infant bonding.  
18 |
| Mother-infant separation | Where are newborns usually located during each of the following situations? Click one location per | All routine procedures, assessments, screenings, immunizations, and laboratory draws can be performed during skin-to-skin contact or at the |
**Pediatric exams/rounds**
- Hearing screening
- Pulse oximetry screening
- Routine labs/blood draws/injections
- Newborn bath

**Hearing screening**

**Routine labs/blood draws/injections**

**Newborn bath**

**Pulse oximetry screening**

**Position and latch their newborn for breastfeeding**

**Understand the use and risks of artificial nipples and pacifiers**

**Recognize and respond to their newborn's feeding cues and techniques**

**Feeding Education and Support**

**Feeding Practices**

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<tbody>
<tr>
<td>Formula feeding of breastfed infants</td>
<td>What percent of healthy, term breastfed newborns are fed infant formula?</td>
<td>Formula supplementation for healthy term newborns is not recommended unless medically indicated. Early supplementation with formula is associated with poorer breastfeeding outcomes.</td>
</tr>
<tr>
<td>Glucose monitoring</td>
<td>Does your hospital perform routine blood glucose monitoring of full-term healthy newborns who are NOT at risk for hypoglycemia?</td>
<td>Exclusive breast milk feeding is sufficient to meet the nutritional and metabolic needs of most healthy, full-term newborns. Transiently low blood glucose levels are common after birth as newborns adapt to their postnatal environment. Routine blood glucose monitoring of healthy, full-term newborns who are not at risk for hypoglycemia is unnecessary, may hinder the successful establishment of breastfeeding, and is not recommended. Routine glucose monitoring should only be performed on infants at increased risk of developing hypoglycemia and those with clinical signs of hypoglycemia.</td>
</tr>
<tr>
<td>Formula counseling for breastfeeding mothers</td>
<td>When breastfeeding mothers request infant formula, how often do staff counsel them about the possible consequences to the health of their infant and the success of breastfeeding?</td>
<td>Counseling breastfeeding mothers about the possible consequences of introducing infant formula gives them information to make an informed decision. Early supplementation with formula is associated with poorer breastfeeding outcomes.</td>
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**Feeding Education and Support**

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<tr>
<td>Formula preparation and feeding techniques</td>
<td>Among mothers whose newborns are fed any formula, how many are taught appropriate formula feeding techniques and how to safely prepare and feed formula?</td>
<td>For mothers who formula feed, it is important they have information on safe preparation, feeding, handling, and storage of infant formula. Many mothers do not follow safe formula preparation practices. Infant formula is perishable and powdered infant formula can be contaminated with pathogens that can cause infections. Bottles and nipples can also become contaminated when improperly cleaned. Over and under-diluted formula can result in unmet nutritional needs and other infant health problems. Correct preparation and handling of formula reduce the risk of illness and other health problems.</td>
</tr>
<tr>
<td>Feeding cues and pacifiers</td>
<td>How many breastfeeding mothers are taught or shown how to: Recognize and respond to their newborn's feeding cues; Breastfeed as often and as long as their newborn wants without restrictions; Understand the use and risks of artificial nipples and pacifiers?</td>
<td>It is important that breastfeeding mothers are educated on skills and strategies that promote successful breastfeeding and are offered support to help facilitate successful breastfeeding and support improve breastfeeding outcomes. Effective breastfeeding relies on feeding in direct response to specific infant cues rather than scheduled frequency or duration of feedings. Artificial nipples and pacifiers may decrease breastfeeding duration and exclusivity.</td>
</tr>
<tr>
<td>Identify/solve breastfeeding problems</td>
<td>How many breastfeeding mothers are taught or shown how to: Position and latch their newborn for breastfeeding?</td>
<td>It is important that breastfeeding mothers are educated on skills and strategies that promote successful breastfeeding and are offered support to help facilitate successful breastfeeding and support improve breastfeeding outcomes. Improper positioning and latching may contribute to breastfeeding cessation and...</td>
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### Discharge Support

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<tr>
<td>Pre-discharge criteria</td>
<td>Do your discharge criteria for breastfeeding newborns require direct observation of at least one effective feeding at the breast within the 8 hours prior to discharge?</td>
<td>To help facilitate continued successful breastfeeding, it is important that a trained health professional perform an assessment of breastfeeding effectiveness at least once within the 8 hours before the mother and baby are discharged from the hospital.</td>
</tr>
<tr>
<td>Post-discharge follow-up visit</td>
<td>Do your discharge criteria for breastfeeding newborns require scheduling of the first follow-up visit with a health care provider?</td>
<td>A follow-up appointment with a health care provider 48 to 72 hours after discharge is important to observe feeding and assess an infant’s weight and general health and hydration.</td>
</tr>
<tr>
<td>Post-discharge breastfeeding support</td>
<td>What discharge support does your hospital routinely provide to breastfeeding mothers?</td>
<td>At discharge, hospitals can schedule follow-up appointments for lactation support and provide referrals to lactation providers in the community when needed. Breastfeeding support that includes lactation specialists is associated with improved breastfeeding outcomes. Telephone support for mothers during the early postpartum period is associated with improved breastfeeding outcomes.</td>
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<tr>
<td>Distribution of infant formula or formula-related supplies/coupons as gifts</td>
<td>Does your hospital give mothers any of the following items free of charge, as gifts or free samples (not including items prescribed as part of medical care)?</td>
<td>Hospital distribution of discharge packs containing infant formula or infant formula commercial advertising materials may imply to mothers that hospital staff are suggesting formula feeding. Receipt of formula packs at hospital discharge is associated with poorer breastfeeding outcomes.</td>
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### Institutional Management

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<tr>
<td>Nurse skill competency</td>
<td>Are nurses required to demonstrate competency in the following skills? Click all that apply:</td>
<td>It is important that hospital staff who provide maternity care have knowledge, skills, and competence in comprehensive breastfeeding management. Regular assessment of staff’s competency in infant feeding management helps ensure that mothers receive the appropriate care and assistance to successfully initiate and maintain breastfeeding. Hospital staff breastfeeding education and training is associated with improved breastfeeding knowledge, attitudes, practices, and outcomes. The United States Breastfeeding Committee (USBC) has developed a comprehensive list of core competencies for breastfeeding for health professionals. These competencies have been endorsed by several associations and organizations. The World Health Organization (WHO) has also developed a comprehensive list of competencies for hospital staff who help mothers with infant feeding.</td>
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<tr>
<td>Nurse competency assessment</td>
<td>How often are nurses formally assessed for clinical competency in breastfeeding support and lactation management?</td>
<td>It is important that staff’s knowledge and skills about breastfeeding management, mother-infant care, interpersonal communications, and counseling should be assessed at hiring and periodically thereafter. WHO’s global standard is defined as: at least 80% of health professionals who provide antenatal, delivery, or newborn care report receiving competency assessments in breastfeeding in the previous 2 years.</td>
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<tr>
<td>Documentation of exclusive breastfeeding</td>
<td>Does your hospital record keep track of exclusive breastfeeding throughout the entire hospitalization?</td>
<td>All Joint Commission-accredited hospitals with at least 300 live births each year must record exclusive breastfeeding throughout an infant’s entire hospitalization.62-65 WHO also recommends that facilities record and track information on exclusive breastfeeding for all infants.13 Hospital documentation of exclusive breastfeeding may increase breastfeeding initiation.64</td>
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<tr>
<td>Acquisition of infant formula</td>
<td>How does your hospital acquire infant formula?</td>
<td>The International Code of Marketing of Breast-milk Substitutes and related World Health Assembly resolutions encourages hospitals to purchase formula and feeding devices at fair market value.12,65 American Dietetic Association guidelines for mandatory elements of infant formula hazard analysis and critical control points (HACCP) plans apply to purchased and free infant formula.66 The Institute of Medicine recognizes the inherent conflict of interest this kind of financial support introduces.67 Implementation of hospital policy for market price purchasing of infant formula has been found to be associated with reduced in-hospital formula supplementation and increased in-hospital exclusive breastfeeding and breastfeeding duration.68</td>
</tr>
<tr>
<td>Written policies</td>
<td>Which of the following are included in a written policy (or policies) at your hospital?</td>
<td>Written hospital breastfeeding policies are associated with increased breastfeeding.69-71 The Academy of Breastfeeding Medicine (ABM) has developed a Model Maternity Policy Supportive of Breastfeeding that facilities can model their own institutional policies after.12,46 Ideal hospital breastfeeding policies should generally cover The WHO’s Ten Steps to Successful Breastfeeding and the WHO’s International Code of Marketing of Breast-milk Substitutes.12-13</td>
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<th>Policy requiring:</th>
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<tr>
<td>• Documentation of medical justification or informed parental consent for giving non-breast milk feedings to breastfed newborns?</td>
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<tr>
<td>• Formal assessment of staff’s clinical competency in breastfeeding support?</td>
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<tr>
<td>• Documentation of prenatal breastfeeding education?</td>
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<tr>
<td>• Staff to teach mothers breastfeeding techniques?</td>
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<tr>
<td>• Staff to show mothers how to express breast milk?</td>
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<tr>
<td>• Purchase of infant formula and related breast milk substitutes by the hospital at fair market value?</td>
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<tr>
<td>• Staff to provide mothers with resources for support after discharge?</td>
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<tr>
<td>• Placement of all newborns skin-to-skin with their mother at birth or soon thereafter?</td>
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<td>• The option for mothers to room-in with their newborns?</td>
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**Reference List**


