Late Pre-Term Infant Management: Clinical Practice Guideline (35 – 36 6/7 weeks gestational age)

General Information

This clinical practice guideline addresses the care of the infants in the newborn nursery, who are 35 0/7 weeks to 36 6/7 weeks gestation (as determined by first trimester ultrasound or LMP if first trimester U/S not available). These infants are most commonly at increased risk for the following issues:

Thermoregulation **Jaundice** **Sepsis/Respiratory Risks** **Feeding Difficulties** **Hypoglycemia**

Admission Criteria:

a. Infants < 35 0/7 weeks will be managed initially in the NICU.
b. Infants between 35 0/7 and 35 6/7 weeks will be managed initially in the transitional nursery by neonatology.
c. Infants admitted to the transitional nursery or NICU will be transferred to the newborn nursery under the discretion of nurse staffing, flow coordinator, as well as attending physicians.
d. Infants ≥ 36 0/7 weeks will be admitted to the newborn nursery if clinically stable and without sepsis risk factors.

Discharge Criteria:

a. All late pre-term infants in the newborn nursery will demonstrate the following prior to discharge:
    - Temperature stability
    - Stable blood glucose
    - Adequate feeding
b. Follow-up suggested within 2 days with Primary Care Physician and/or home Visiting Nurse (VNA) to assess weight gain, feeding, and jaundice
c. Priority status for VNA referral to be completed by discharge planner.
d. Car seat angle test if < 37 weeks gestational age, < 2.5 kg at birth, has sepsis/respiratory risk factors, or other parameters according to policy NPM 12D.

Thermoregulation

- Initiate skin-to-skin contact with the mother to facilitate temperature regulation of the infant
- Maintain skin-to-skin as much as possible
- Place in an isolette when not skin-to-skin until infant able to thermoregulate
- Weaning from isolette: In newborns ≥35wks and > 2 kg, dress in an isolette (temp of 27-28) and maintain a temp ≥ to 36.5. Initiate wean by removing baby from isolette, bundle warmly, and repeat temp hourly x 4. If temperature drops below 36.5, add blanket. If unable to maintain at least 36.5, place baby back in isolette, rewarm slowly to 37 and re-attempt weaning out of isolette after maintaining above criteria for 6-12 hours.

Sepsis/Respiratory Risks

- Screen for infection per "GBS and Suspected Sepsis Clinical Practice Guideline"
- If asymptomatic infant <37 weeks and has any additional risk factors for sepsis (rupture of membranes >18 hours, maternal fever, inadequate GBS prophylaxis) infant will be admitted to NICU/transitional nursery for blood culture, CBC, CRP, and initiation of antibiotics.
- If asymptomatic infant <37 weeks and without risk factors- observe for >48 hours, screening CBC, CRP at 12 hours.
- If ≤ 35 6/7 weeks gestation, monitor cardio-respiratory status until stable x 48 hours.

Jaundice

Jaundice: Adhere to "Hyperbilirubinemia Clinical Practice Guideline" for screening of jaundice

- Utilize Bhutani nomograms's more conservative estimates to begin phototherapy (bottom line on graph) or perform follow-up bilirubin given the significant risk factor of decreased gestational age
- Initiate early follow-up at discharge with PCP or VNA per Bhutani nomogram

Feeding and glucose screening

Refer to Late Preterm Feeding Algorithm

- Initiate early feedings and skin-to-skin to stabilize blood glucose and to stimulate stooling
- Screen serum glucose levels per "Hypoglycemia Clinical Algorithm"

REFERENCES:

1. AAP, Committee on Fetus and Newborn. Hospital Discharge of the high risk neonate. Pediatrics,122,1119-26. 2008.
2. Wang, M.L., Dorer, D.J., Fleming, M.P. & Catlin, E.A. (2004). Clinical Outcomes of Near-term Infants. Pediatrics, 114, 372-376.
3. RM Phillips et al, Multidisciplinary guidelines for the care of late preterm infants. Journal of Perinatology (2013) 33, 55-522.
4. P Meier et al, Management of Breastfeeding During and After the Maternity Hospitalization for Late Preterm Infants. Clin Perinatology 40 (2013) 689-705.

Late Preterm Feeding Guideline

The Barbara Bush Children's Hospital At Maine Medical Center

Birth - 12 hours of life	12 - 24 hours of life	24 - 48 hours of life	48 - 96 hours of life
*Initiate skin-to-skin contact with mother *Initiate Cue Based Feeding Score (CBFS) If scores 4-5: *Initiate breastfeeding *Initiate hand expression *Finger feed colostrum *Initiate bottle feeding (if formula feeding) If scores < 4: *Initiate hand expression and pumping (Q3 hrs) *Discuss IV fluids vs gavage with parents (to be administered according to Provider order/protocol)	*Continue skin-to-skin contact with mother *Continue hand expression (Q3hrs) *Initiate pumping (Q3hrs) *Continue CBFS If scores 4-5: *Breastfeed to cues *Finger feed any expressed colostrum at least Q3hrs *If formula feeding, bottle feed to cues (Minimum volumes per protocol below) If scores < 4: *Administer IV/Gavage according to Provider orders & protocol	*Continue skin-to-skin contact with mother *Continue hand expression & pumping (Q3hrs, or after feedings) *Continue CBFS If scores 4-5: *Breastfeed to cues *Finger feed any expressed colostrum *If formula feeding, bottle feed to cues (Minimum volumes per protocol below) If scores < 4: *Administer IV/Gavage according to Provider orders & protocol *If infant has been receiving IV fluids, consider weaning to gavage feedings	*Continue the previous steps to the Left *If infant is breastfeeding well, but still needs continued complimentary feedings, offer SNS (ideal) or paced bottle feedings, according to patient preference.

Is Volume Enough?

Monitor for:
- *Hypoglycemia per protocol
- *Output: Wet diapers = day of age | Stools = 1-2 in 24 hours
- *"*Audible Swallowing*" LATCH Score of 1-2
- *Weight loss <3% in 24 hours
- *No other signs of dehydration

If complimentary feeding is needed:

Preference to use:
- *Breastmilk / Colostrum
- *Pasteurized Donor Human Milk (PDHM) if available
- *Formula of choice

Complimentary Volumes

Cue Based Scores of 4-5:
- *First 24 Hours: 5-10 ml per feeding
- *>24 Hours: 10-30 ml per feeding (advance slowly)
- **If IV fluids preferred, contact provider for volume. Wean per Hypoglycemia protocol*

Cue Based Scores of <4
- *First 24 Hours: 80 cc/kg/day divided Q3hrs via gavages
- *>24 Hours: 100cc/kg/day divided Q3hr via gavages:
  - *Advance feeds as clinical status allows to achieve goal feeding of 150cc/kg /day by day 7-10.

Algorithms are not intended to replace providers' clinical judgment or to create a single protocol. Some clinical problems may not be adequately addressed in this guideline. As always, clinicians are urged to document management strategies.

Cue Based Scoring

5	Awakens at or before scheduled feeding time. Alert or fussy. Rooting and/or hands to mouth, takes pacifier
4	Drowsy or alert once handled. Able to elicit rooting or takes pacifier
3	Briefly alert with care. No hunger cues(crying, rooting, sucking)
2	Sleeps through care. No hunger cues
1	Needs increased oxygen (from infant's baseline for care). Stops breathing, drops heart rate or decreased oxygen saturation with care. Increased respiratory rate or increased heart rate over baseline

"Audible Swallowing" LATCH Score

	0	1	2
A Audible Swallowing	None	A few with stimulation	Spontaneous and intermittent (< 24 hours old) Spontaneous and frequent (> 24 hours old)