Multidisciplinary guidelines for the care of late preterm infants

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PRACTICE GUIDELINES
Multidisciplinary guidelines for the care of late preterm infants

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IN-HOSPITAL ASSESSMENT AND CARE
Late preterm infants (LPIs), like all other newborns, should have a qualified healthcare provider assigned to their care during the immediate postpartum recovery period following birth. Late preterm infants may experience delayed or inadequate transition to the extra-uterine environment, so careful consideration of staffing ratios during transition (1–12 h after birth) for this population of infants is necessary. Because of their increased vulnerabilities, LPIs require continued close monitoring throughout the first 24 h after birth. Whenever possible, mother and infant should remain together, rooming in 24-h a day. Frequent, prolonged, skin-to-skin contact should be encouraged to promote optimal physiological stability. All LPIs are at risk for morbidities severe enough to require transition to a higher level of care. If an LPI is transitioned to a higher level of care, special attention should be paid to preparing the mother for going home without her newborn, and she should be monitored closely for signs of postpartum depression and post-traumatic stress disorder in the postpartum period.

**STABILITY**

**HEALTHCARE TEAM**

- Establish gestational age (GA) prior to delivery, if possible.
- Keep warm and dry, and stimulate per Neonatal Resuscitation Protocol (NRP) guidelines.
- Place stable infants skin to skin with mother as soon as possible after delivery and cover with a warm blanket.
- Do initial assessment and Apgar scores during infant’s skin-to-skin contact with mother if infant remains stable.
- After initial stabilization, assess newborn q 30 min until condition has been stable for 2 h, then q 4 h for first 24 h, then q shift until transition/discharge. « Assess respiratory rate (RR), type of respirations, and work of breathing. « Assess heart rate (HR) and rhythm, presence of murmur, distal pulses, and perfusion. « Assess axillary temperature. « Assess tone and activity. « Assess cord stump.
- Support uninterrupted skin-to-skin contact by delaying Vitamin K, eye care, and foot and hand prints until after the first breastfeeding or until 1–2 h after birth (Vitamin K and eye prophylaxis can be delayed up to maximum time allowed by hospital protocol if there are no specific risk factors.)
- Obtain weight, length, and head circumference after first breastfeeding unless needed to adjust care. » Plot measurements on appropriate preterm growth curve. » Determine if Small for Gestational Age (SGA), Appropriate for Gestational Age (AGA), or Large for Gestational Age (LGA).
- Assess with New Ballard Score within 12 h of birth to confirm GA.
- Identify maternal risk factors that can affect infant’s initial stability (e.g., diabetes, medications, or illicit drugs).

**FAMILY EDUCATION**

- Communicate risks of late preterm birth (prior to delivery, if possible), explaining that immature organ systems and brain of LPI may lead to complications in the immediate postpartum period (and beyond) that will require close monitoring, including: » Respiratory distress » Hypothermia » Sepsis » Hypoglycemia » Feeding difficulties and dehydration » Hyperbilirubinemia » Developmental, learning, and behavioral challenges.
- Stress importance of immediate postpartum skin-to-skin contact with mother to: » Stabilize infant and support optimal transition after birth. » Promote physiological stability in HR, RR, oxygen saturation, temperature, and glucose levels. » Facilitate infant’s first breastfeeding.

**Reducing Risks of Respiratory Distress**

**HEALTHCARE TEAM**

- Monitor infant’s RR and work of breathing closely by visual inspection during first hour after birth.
- Maintain skin-to-skin contact if stable to decrease infant stress, optimize respiration and oxygen saturations, and protect from hypothermia-induced apnea.

**FAMILY EDUCATION**

- Explain LPI’s increased risk for respiratory distress and apnea, including: » Immature lung development. » Decreased surfactant level. » Immature control of breathing. » Decreased airway muscle tone leading to decreased ability to protect airway.

This supplement is modified and republished on behalf of the Late Preterm Infant Guidelines Steering Committee with permission from The National Perinatal Association. Correspondence: Raylene M Phillips, MD, IBCLC, FAAP, Division of Neonatology, Loma Linda University Children’s Hospital, 11175 Campus Street, Suite 11121, Loma Linda, CA 92354, USA. E-mail: RPhillips@llu.edu
### Reducing Risks of Hypothermia

**References:** 2, 7, 9, 14, 16

- If signs of respiratory distress are present and persist, evaluate with pulse oximeter, stabilize infant, and consult with next-level perinatal care provider about transferring infant to higher level of care.
- Maintain neutral thermal environment. » Dry infant gently after birth. » Continue skin-to-skin care with parent whenever possible. » Cover infant’s back with warm blanket. » Keep hat on infant when not in skin-to-skin contact. » Use a pre-warmed blanket during weighing. » Keep infant’s bed away from air vents and drafts.
- Prevent heat loss when skin-to-skin care is not an option or is ineffective in maintaining infant’s temperature. » Swaddle with double wrap. » Increase ambient temperature. » Use radiant warmer or incubator. » Assess axillary temperature to ensure 97.7–99.5°F (36.5–37.5°C) q 30 min × 1 h, then q 4 h for first 24 h, then q shift until transition/discharge.
- Postpone bath until thermal, respiratory, and cardiovascular stability is well established (typically 2–12 h after birth). » Consider partial rather than whole-body bathing. » Dry infant immediately after bath and cover infant’s head with dry hat. » Place infant in skin-to-skin contact with mother, if possible, for optimal warming.
- If temperature instability occurs, take actions to stabilize. If instability persists, consult with next-level perinatal care provider about transferring infant to higher level of care.

### Reducing Risks of Sepsis

**References:** 17, 18, 19

- Identify maternal and neonatal risk factors: » Maternal Group B Strep (GBS)-positive or unknown status with inadequate antenatal antibiotic prophylaxis. » Chorioamnionitis/maternal fever >100.4°F (38.0°C). » Maternal cold or flu-like symptoms. » Prolonged (≥18 h) rupture of membranes. » Fetal instability during labor or delivery.
- Assess and monitor for signs of infection: » Respiratory distress, apnea. » Temperature instability. » Glucose instability, jitteriness. » Pale, mottled, or cyanotic color. » Lethargy. » Feeding problems. » Abdominal distension, vomiting.
- If signs of sepsis occur, stabilize infant, initiate septic workup (CBC, blood culture), and start antibiotics. Consult with next-level perinatal care provider about transferring infant to higher level of care.

### Reducing Risks of Hypoglycemia

**References:** 7, 12, 20, 21

- Review the antepartum/intrapartum history (as described by the Association of Women’s Health, Obstetric, and Neonatal Nurses [AWHONN] Assessment and Care of the Late Preterm Infant Evidence-Based Clinical Practice Guidelines) for conditions that increase the risk of hypoglycemia. » Maternal conditions: Gestational or pre-existing diabetes mellitus, Pregnancy-induced hypertension, Maternal obesity, Tocolytic use for preterm labor, Late antepartum/intrapartum administration of IV glucose, Difficult/prolonged delivery, Nonreassuring fetal heart rate pattern. » Neonatal conditions: Prematurity, Intrauterine growth restriction, Twin gestation, 5-minute Apgar score <7, Hypothermia/temperature instability, Sepsis, Respiratory distress, Polycythemia-hyperviscosity.
- Follow American Academy of Pediatrics (AAP) 2011 guidelines for postnatal glucose homeostasis or established hospital protocol for glucose monitoring of at-risk infants (all LPIs); serum glucose nadir occurs 1–2 h after birth.
- Monitor infant for symptoms of hypoglycemia.
- Facilitate feeding at breast during first hour after birth if mother and infant are stable.
- Monitor to ensure frequent ongoing feedings on demand, at least 10–12 breastfeedings or 8–10 formula feedings per day.
- Provide intervention if required: » Offer feeding (at breast if breastfeeding). » Recheck glucose 1 h after feeding. » If
### HEALTHCARE TEAM

- glucose is still low or infant is unable to adequately feed, provide IV glucose and consult with next-level perinatal care provider about transferring infant to higher level of care.

### References:
- 7, 12, 22, 23

### Reducing Risks of Feeding Difficulties

| References: 7, 12, 22, 23 |
|-----------------------------|
| • Identify maternal risk factors that may affect successful breastfeeding:  
  » Multiple gestation.  
  » Pregnancy-induced hypertension.  
  » Chorioamnionitis.  
  » Cesarean delivery.  
  » Provide assistance as needed to ensure adequate feeding frequency, at least 10–12 breastfeeding feeds during the first 24–48 h.  
  » Maintain nursing staff lactation competencies consistent with scope of practice and responsibilities.  
  » Provide a dedicated lactation consultant, ideally an International Board Certified Lactation Consultant (IBCLC), whenever possible.  
  » Provide (or refer to) a feeding specialist (occupational or physical therapist or speech/language pathologist) to evaluate infants with persistent feeding difficulties.  
  » Adopt the Baby Friendly Hospital Initiative’s Ten Steps to Successful Breastfeeding whenever possible (www.babyfriendlyusa.org/eng/10steps.html). |
| • Explain LPi’s increased risk for inadequate feeding:  
  » Immature suck/swallow/breathe coordination.  
  » Inadequate breastmilk transfer due to low muscle tone, ineffective latch, and decreased stamina.  
  » Low milk supply due to inadequate breast emptying.  
  » Stress the value to mother and baby of exclusive breastfeeding feeding.  
  » Explain the value of colostrum in providing immune protection and nutrition.  
  » Reassure mothers that small amounts of colostrum are usually adequate in the first few days if baby is feeding frequently enough.  
  » Teach how to recognize early feeding cues:  
  » Opening eyes.  
  » Moving head back and forth.  
  » Opening mouth, tongue thrusting, rooting, or sucking on hands/fingers.  
  » Crying (a late hunger cue often leading to difficulty with latch due to infant frustration).  
  » Explain the probable need to awaken infant for feeds due to LPi’s immature brain and increased sleepiness.  
  » Infant will transition to full cue-based feeds when closer to term gestational age.  
  » Encourage mothers to ask for assistance as needed with breastfeeding or formula feeding. |

### First Breastfeeding

| References: 7, 12, 24 |
|------------------------|
| • Assess mother’s desire to breastfeed as well as her knowledge and level of experience.  
  » Facilitate immediate, uninterrupted, and extended skin-to-skin contact for stable infants until after the first breastfeeding (usually within 1–2 h). |
| • Remind mother that babies are born to breastfeed.  
  » Review benefits of breastfeeding for baby: decreased risk of infection, diarrheal illness, Sudden Infant Death Syndrome (SIDS), and obesity.  
  » Review benefits for mother: decreased risk of breast cancer, ovarian cancer, and osteoporosis.  
  » Review risks of formula feeding, e.g., increased risk of infection due to increased gastric pH and change in gut flora, risk of cow protein allergy, increased risk of SIDS (www.health-e-learning.com/articles/JustOneBottle.pdf).  
  » Explain reasons for formula use if formula is medically indicated.  
  » Explain the importance of early and prolonged skin-to-skin contact.  
  » Promote optimal physiological stability.  
  » Facilitate the first breastfeeding. |

### Continued Breastfeeding

| References: 25, 26 |
|---------------------|
| • Monitor and document breastfeeding frequency.  
  » A healthcare professional with appropriate education and experience in lactation support, such as a RN, midwife and/or certified lactation consultant, should assess breastfeeding at least twice per day by evaluating:  
  » Coordination of suck, swallow, and breathing.  
  » Mother’s breastfeeding position and comfort.  
  » Baby’s latch and milk transfer.  
  » Mother’s questions regarding breastfeeding.  
  » Consider use of ultrathin silicone nipple shield if infant has ineffective latch or milk transfer.  
  » Use of shield requires close follow-up by knowledgeable healthcare professional.  
  » Assess mother’s level of fatigue and coping.  
  » Refer mother to a qualified lactation specialist if feeding difficulties persist.  
  » Provide written and verbal information about breastfeeding and ensure mother’s understanding.  
  » Stress the importance of frequent breastfeeding, at least 10–12 times every 24 h, waking baby if necessary, and encourage recognition of and response to early feeding cues.  
  » Educate about the size of a newborn’s stomach and the adequacy of frequent, small-volume feedings of colostrum.  
  » Use the phrase “when your milk comes in” to avoid implying that no milk is present during the colostrum phase.  
  » Stress the value of exclusive breastfeeding.  
  » Encourage mother to ask for assistance if needed. |

### Monitoring Breastfeeding Success

| References: 25 |
|-----------------|
| • Monitor weight daily, ideally when the baby is unclothed (taking care to maintain a neutral thermal environment).  
  » Weight loss of more than 3% per day or 7% by day 3 merits further evaluation and close monitoring.  
  » Document voiding and stool patterns.  
  » Explain importance of tracking voids and stools to determine adequate feeding intake:  
  » 3 voids and 3 stools by day 3.  
  » 4 voids and 4 stools by day 4.  
  » 6 voids and 4 stools by day 6 and thereafter. |

### Supplementation

| References: 12, 25 |
|--------------------|
| • Supplement feeds only if medically indicated.  
  » Maternal antenatal IV fluids may lead to infant diuresis in the first 24 h, increasing infant’s urine output and apparent weight loss and should be taken into consideration when evaluating the need for supplementation.  
  » If indicated, supplement with (in order of preference) expressed breastmilk, donor human milk, hydrolyzed formula, or formula.  
  » Supplement using one of the following:  
  » Feeding tube at breast.  
  » Cup feeding.  
  » Finger feeding.  
  » Bottle feeding.  
  » Explain reasons for supplementing breastfeeding if indicated.  
  » Explain options for providing supplementation, methods of delivery, and volumes to be given.  
  » Stress value of exclusive breastmilk feeding if possible and risks of introducing formula.  
  » Explain feeding plan.  
  » Explain that supplementation may be needed until the baby appears to be growing adequately but will likely be discontinued when baby matures and adequate growth is ensured. |
### HEALTHCARE TEAM

- Supplement no more than recommended volumes (if breastfeeding is inadequate): » 2–10 mL per feed (first 24 h). » 5–15 mL per feed (24–48 h). » 15–30 mL per feed (48–72 h). » 30–60 mL per feed (72–96 h).
- Evaluate continued need for supplementation with daily feeding plan.
- Evaluate mother’s understanding of feeding plan.

### FAMILY EDUCATION*

- Explain the importance of early and frequent milk expression if one of the following is present: » Mother and infant are separated. » Breastfeeding is inadequate due to infant’s prematurity or illness.
- Address the importance of reassuring/informing the mother that despite having to initially use a breast pump, she can go on to successfully breastfeed.
- Teach techniques of milk expression: » Hand expression. » Mechanical milk pump use. » Hands-on pumping.
- Explain the importance of complete breast emptying at least 10–12 times per day to: » Reduce Feedback Inhibitor of Lactation (FIL). » Ensure adequate milk supply.
- Teach proper handling and storage of expressed milk.

### Breast Pumping

References: 27

- Provide hospital-grade electric breast pump if pumping is needed.
- Assist with milk expression as soon as possible (ideally no later than 6 h after birth) if mother and infant are separated.
- Evaluate milk transfer and help mother hand express or pump after each feeding if milk transfer during breastfeeding is inadequate.
- Refer mother to a qualified lactation specialist if she has difficulty expressing milk or using breast pump.

### Reducing Risks of Hyperbilirubinemia

References: 2, 7, 20, 28, 29, 30, 31, 32, 33

- Identify known maternal/infant/family risk factors that add to increased risk of LPI.
- Assess adequacy of feeding (especially breastfeeding), voiding, and stooling.
- Evaluate for visible jaundice within first 24 h. » If present, obtain either transcutaneous (TcB) or serum (TSB) bilirubin level.
- Obtain TcB or TSB at 24 h after birth or at the time of metabolic screening for all infants regardless of presence or absence of visual jaundice (visual assessment alone is not reliable).
- Plot bilirubin levels on hour-specific Bhutani Nomogram to determine risk category and intervention threshold(s) for infants > 35 weeks GA. For infants < 35 weeks GA, consult next-level perinatal care provider.
- Obtain repeat bilirubin level prior to transition/discharge to determine rate of rise.
- If rate of rise is > 0.5 mg/dL/h, consider initiating phototherapy.
- If bilirubin levels checked prior to transition/discharge are higher than threshold for age in hours, initiate phototherapy. » Provide phototherapy in mother’s room, if possible. » Monitor repeat bilirubin levels per hospital protocol. » Transfer to higher level of care if infant does not respond to phototherapy in expected manner.
- Plan for repeat bilirubin testing within 24–48 h if indicated for infants transitioned/discharged prior to 72 h of age. Additional testing may be needed to coincide with peak bilirubin levels which may occur on days 5–7 in LPIs.

### Optimizing Neurologic Development

References: 34

- Assess parents’ understanding of LPI brain immaturity and implications for apnea risks, feeding and sleeping behaviors, tone, and development.
- Explain LPI’s increased risk for hyperbilirubinemia: » Delay in bilirubin metabolism and excretion. » Peak bilirubin levels at days 5–7 after birth. » Twice as likely to have significantly high bilirubin levels and more susceptible to bilirubin toxicity.
- Provide written and verbal information about jaundice, risks of kernicterus, and possible need for phototherapy to treat hyperbilirubinemia.
- Teach how to recognize signs and symptoms of hyperbilirubinemia and when to alert healthcare provider for immediate evaluation of infant.
- Stress importance of adequate feeding to minimize the risk of dehydration and hyperbilirubinemia.
- Stress importance of follow-up for all LPIs.

### Screening

References: 55, 56, 73, 74, 75

- Ensure familiarity with requirements of individual state’s newborn screening mandates (www2.aap.org/healthtopics/newbornscreening.cfm).
- Document date and time of state-required newborn screening. » Screening should be done 24 h after feeding.
- Explain reasons for newborn screening.
- Stress importance of asking primary care provider about results of newborn screening.
- Stress importance of any follow-up that is indicated: » Date, time, and location of follow-up appointment.
| HEALTHCARE TEAM |
|-----------------|
| **is initiated.** » Document plan to repeat test if screening performed earlier. » Document results, if available.  |
| *Report abnormal results or plans for repeat testing to primary care provider. » Document that intended recipient received information sent.** |
| **Hearing**  |
| **References: 2**  |
| *Perform hearing screen prior to transition/discharge. » Document hearing screening date and results. » Make referral to audiology service if indicated.** |
| **Anomalies**  |
| **References: 93**  |
| *Evaluate infant for congenital anomalies. » Consider pulse oximetry screening for congenital heart defects per hospital protocol.** |
| **Maternal Screening**  |
| **References: 36, 37, 38, 39, 40, 41, 42**  |
| *Review maternal blood type. » Review prenatal lab results and risk factors. » Be aware of Centers for Disease Control and Prevention (CDC) recommendations for HIV screening and treatment. » Review ingestion of illicit and prescription drugs or other substances during pregnancy and refer mother to drug or alcohol rehabilitation program, if indicated. » Review use of prescription or herbal medications or supplements of concern, if identified. » Review smoking history (present or past use). » Refer family members who smoke to smoking cessation program. » Encourage mothers who quit smoking during or just prior to pregnancy to avoid relapse (high risk during the postpartum period). » Screen for psychiatric illness or perinatal mood disorders (including postpartum depression and post-traumatic stress disorder). » Parents separated from the infant at birth (e.g., due to cesarean delivery or NICU admission) are at higher risk for perinatal mood disorders. » Mothers of infants born prematurely are at increased risk for mood disorders in the first 6 months postpartum (three times higher than mothers of term infants). » Make referrals for treatment if indicated. » Evaluate mother's understanding of any referrals made.** |
| **In-Hospital Safety**  |
| **References: 7**  |
| *Model proper hand hygiene when handling baby or feeding equipment. » Model proper equipment, positioning, and monitoring of the newborn for bathing, diapering, and routine care. » Model safe sleeping practices when placing baby in bed.** |
| **SUPPORT** |
| **Staff Support**  |
| *Assess adequacy of staff support for physicians, midwives, nurses, lactation and feeding specialists, social workers, occupational therapists, physical therapists, case managers, transition/discharge planners, and home health services, including: » Availability of staff to support level of services offered. » Staffing ratios. » Competencies and skills. » Availability of referral services.** |
| **Family Support**  |
| *Assess adequacy of family support including: » Partner's presence, involvement, and coping. » Grandparents and/or friends. » Provide social worker evaluation of special needs as indicated.** |
| **FAMILY EDUCATION*”** |
| **References: 36, 37, 38, 39, 40, 41, 42**  |
| *Explain reasons for hearing screening. » Reinforce understanding of hearing screening procedure. » Stress importance of any follow-up that is indicated: » Date, time, and location of follow-up appointment. » Explain that screening does not always diagnose a hearing deficit and that the need for follow-up does not always mean that the infant is impaired.** |
| **Anomalies**  |
| *Provide referrals to smoking cessation, drug or alcohol treatment, psychiatric, or support services, if indicated. » Explain risks of secondhand smoke exposure. » Stress importance of providing a smoke-free environment for all infants and children, especially those born prematurely. » Secondhand smoke exposure is associated with apnea, SIDS, behavior disorders, hyperactivity, oppositional defiant disorder, sleep abnormalities, and upper respiratory infections. » Explain risks and benefits of prescription and herbal medications and supplements, if indicated. » Where medications are indicated, encourage use of medications compatible with breastfeeding, if possible. Reference LactMed at http://toxnet.nlm.nih.gov/cgi-bin/sis/htmlgen?LACT. » Provide information about the signs and symptoms of postpartum depression and post-traumatic stress disorder, and encourage parents to seek help if needed.** |
| **SAFETY** |
| **In-Hospital Safety**  |
| **References: 7**  |
| *Teach importance of handwashing before handling baby or feeding equipment. » Teach proper use of: » Bulb syringe to suction nares, if needed. » Thermometer to take auxiliary temperature. » Teach about safe bathing procedures, bath temperature, and maintaining a neutral thermal environment during bathing and care. » Stress importance of placing babies on their backs to sleep in hospital and at home.** |
| **SUPPORT** |
| **Staff Support**  |
| *Explain roles of multidisciplinary staff. » Provide case manager evaluation to initiate transition/discharge planning process.** |
| **Family Support**  |
| *Provide contact information for support resources as indicated. » Reinforce potential challenges of caring for LPI at home and encourage use of any needed resources.** |

*When communicating with families and providing education as listed in the Family Education column, concepts should be shared in a manner appropriate for the needs of the family including those whose first language is not English.
TRANSITION TO OUTPATIENT CARE

Transition of care involves a set of actions designed to ensure continuity of care from inpatient to outpatient healthcare providers. Planning for transition of care should begin at the time of admission and requires a coordinated, multidisciplinary approach. The term “transition of care” is preferred to the term “discharge planning” in order to emphasize the active and dynamic nature of this process.

Optimal transition of care relies on accountable providers who ensure that accurate and complete information is successfully communicated and documented. The accountable sending provider sends the appropriate documents to the receiving provider in a timely manner, verifies the receipt of the information by the intended receiving provider, clarifies the receiving provider’s understanding of the information sent, documents the transaction, and resends information if not received by the intended recipient. The accountable receiving provider acknowledges having received the documents and asks any questions for clarification of the information contained therein, uses the information, and takes actions as indicated, ensuring continuity of the plan of care or services.43

| HEALTHCARE TEAM | FAMILY EDUCATION* |
|-----------------|-------------------|
| **STABILITY**   |                   |
| **General**     |                   |
| Reference: 2, 44|                   |
| • Delay transition/discharge until the late preterm infant (LPI) is at least 48 h of age. |
| • Document infant stability for at least 24 h: |
|   » Successful feeding for at least 24 h without excessive weight loss. |
|   » Stable vital signs for at least 12 h either while in skin-to-skin care or in an open crib with appropriate clothing. |
| • For formula feeding infants: » Provide formal assessment by feeding specialist if intake is inadequate or weight loss is abnormal. |
| • For all infants: » Document adequate infant feeding competency for at least 24 h. » Evaluate parents’ understanding of home feeding plan. |
| • Reinforce understanding of LPI’s increased risks compared with term infant: » Respiratory distress. |
| • Preventing skin-to-skin care. |
| • Hypothermia. |
| • Low blood sugar. |
| • Hyperbilirubinemia. |
| • Immature brain. |
| **Feeding**     |                   |
| Reference: 2, 18, 23, 25, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62|                   |
| • For breastfeeding infants: » Provide formal assessment by breastfeeding specialist at least twice before transition/discharge. » Provide prescription for breast pump if indicated. |
| • For formula feeding infants: » Provide formal assessment by feeding specialist if intake is inadequate or weight loss is abnormal. |
| • For all infants: » Document adequate infant feeding competency for at least 24 h. » Evaluate parents’ understanding of home feeding plan. |
| • Provide written and verbal infant feeding information: » Recognizing early hunger cues. |
| • Breastfeeding frequency and technique. |
| • Supplemental feeding only if indicated (review indications, such as signs of dehydration). » Breast pumping, hand expression, and milk storage. |
| • Formula mixing if indicated. » Assessing adequate intake. » Knowing how many wet diapers and stools to expect. (3 voids and 3 stools by day 3, 4 voids and 4 stools by day 4, 6 voids and 4 stools by day 6 and thereafter). » Understanding significance of decreased urine and stool output. |
| • Teach how to give Vitamin D drops; explain that Vitamin D deficiency is widespread in pregnant and breastfeeding mothers, leading to increased risk of rickets in infants. |
| • Teach how to give supplemental iron; explain that lack of iron transfer from mother (normally occurs in the third trimester) leads to increased risk of infant anemia. |
| • Provide detailed home feeding plan. |
| • Provide contact information for community breastfeeding support. |
| **Hyperbilirubinemia** |                   |
| Reference: 31, 63, 64, 65, 66, 67, 68, 69 |                   |
| • Document maternal and infant risk factors. |
| • Document 24-h bilirubin level and repeat level prior to transition/discharge. |
| • Document follow-up plan for bilirubin check within 24–48 h of transition/discharge. Additional testing may be needed to coincide with peak bilirubin levels, which may occur on days 5–7 in LPIs. |
| • Teach how to recognize signs and symptoms of worsening hyperbilirubinemia: » Deepening yellow skin and eye color (visual assessment alone is not reliable). |
| • Sleepiness and lethargy. » Decreased feeding. » Increased irritability and high-pitched cry. |
| • Inform when to call primary care provider. |
| • Explain follow-up plan for bilirubin check when indicated. |
| **Circumcision** |                   |
| Reference: 70, 71, 72 |                   |
| • Monitor for at least 2 h after procedure to assess for bleeding. |
| • Document parents’ understanding of post-circumcision care. |
| • Explain and demonstrate post-circumcision care. |
| • Explain and demonstrate care of intact penis if infant is not circumcised. |
| **Newborn Care** |                   |
| Reference: 45, 46, 47, 48, 49 |                   |
| • Assess parents’ understanding about general newborn care and issues specific to LPIs. |
| • Provide written and verbal education about general newborn care and issues specific to LPIs: » Bathing and diaper changing. » Cleaning and caring for umbilical cord. » Value of skin-to-skin holding. |
| • Need for increased clothing to keep warm when not in skin-to-skin contact. |
| **Developmental Care** |                   |
| Reference: 45, 46, 47, 48, 49 |                   |
| • Assess parents’ understanding about developmental care of preterm/LPI. |
| • Explain the differences between corrected gestational age (GA) and chronological age. |
| HEALTHCARE TEAM | FAMILY EDUCATION* |
|-----------------|--------------------|
| • Model recognition of and sensitivity to infant’s behavioral cues. | » Developmental milestone expectations are based on corrected GA rather than chronological age. |
| • Ensure familiarity with requirements of individual state’s newborn screening mandates. | • Stress importance of close monitoring of corrected GA developmental milestones by primary care provider. |
| • Document date and time of state-required newborn screening. » Ensure that screening is be done 24 h after feeding is initiated. » Document plan to repeat test if screening performed earlier. | • Provide written and verbal education about developmental care of preterms (including LPI): » Need for protection from overstimulation. » Need for positional support if low muscle tone. » Normal sleep/wake cycles and need for extra sleep. |
| • Document results, if available. | • Teach signs (behavioral cues) of stress and overstimulation, including: » Limb extension, finger or toe splaying. » Twitches or startles. » Arching or limpness. » Facial grimace or scowl. » Abrupt color changes. » Irregular breathing. » Gaze aversion. » Crying. |
| • Report abnormal results or plans for repeat testing to primary care provider. » Document that intended recipient received information sent. | • Teach signs of relaxation and readiness for engagement, including: » Limb flexion, relaxed fingers and toes. » Smooth movements. » Rounded, flexed trunk and back. » Relaxed face and mouth. » Normal color. » Regular breathing. » Eyes open and engaged. » Quiet-alert state. |
| • Reinforce reasons for newborn screening. | • Stress the importance of skin-to-skin holding for optimal brain development. |
| • Stress importance of asking primary care provider about results of newborn screening tests. | • Stress importance of any follow-up that is indicated: » Date, time, and location of follow-up appointment. |
| • Stress importance of any follow-up that is indicated: » Date, time, and location of follow-up appointment. | • Reinforce understanding of hearing screening procedure. |
| • Document results, if available. | • Stress importance of any follow-up that is indicated: » Date, time, and location of follow-up appointment. |
| • Review hearing screen test date and results. | • Explain that screening does not always diagnose a hearing deficit and that the need for follow-up does not always mean that the infant is impaired. |
| • Make referral to audiology service if indicated. | • Explain any physical or internal anomalies found. |
| • Document any congenital anomalies. | • Stress importance of any follow-up that is indicated: » Date, time, and location of follow-up appointment. |
| • Consider pulse oximetry screening for congenital heart defects per hospital protocol. If screen is done, document results. | • Provide referrals to smoking cessation, drug or alcohol treatment, psychiatric, or support services, if indicated. |
| • Reinforce understanding of hearing screening procedure. | • Explain risks of secondhand smoke exposure. » Stress importance of providing a smoke-free environment for all infants and children, especially those born prematurely. » Secondhand smoke exposure is associated with apnea, Sudden Infant Death Syndrome (SIDS), behavior disorders, hyperactivity, oppositional defiant disorder, sleep abnormalities, and upper respiratory infections. |
| • Document any congenital anomalies. | • Explain risks and benefits of prescription and herbal medications and supplements, if indicated. |
| • Consider pulse oximetry screening for congenital heart defects per hospital protocol. If screen is done, document results. | » Where medications are indicated, encourage use of medications compatible with breastfeeding. |
| • Review maternal blood type, prenatal lab results, and risk factors. | • Provide information about the signs and symptoms of postpartum depression and post-traumatic stress disorder. |
| • Review ingestion of illicit and prescription drugs or other substances during pregnancy and any referrals for drug or alcohol rehabilitation program. | • Provide referrals to smoking cessation, drug or alcohol treatment, psychiatric, or support services, if indicated. |
| • Review use of prescription or herbal medications or supplements of concern, if identified. | • Explain risks of secondhand smoke exposure. |
| • Review smoking history (present or past use) » Refer family members who smoke to smoking cessation program. » Encourage mothers who quit smoking during or just prior to pregnancy to avoid relapse (high risk during the postpartum period). | » Stress importance of providing a smoke-free environment for all infants and children, especially those born prematurely. » Secondhand smoke exposure is associated with apnea, Sudden Infant Death Syndrome (SIDS), behavior disorders, hyperactivity, oppositional defiant disorder, sleep abnormalities, and upper respiratory infections. |
| • Screen for psychiatric illness or perinatal mood disorders (including postpartum depression and post-traumatic stress disorder). » Parents separated from the infant at birth (e.g., due to cesarean delivery or NICU admission) are at higher risk for perinatal mood disorders. » Mothers of infants born | » Where medications are indicated, encourage use of medications compatible with breastfeeding. |

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| HEALTHCARE TEAM | FAMILY EDUCATION* |
|-----------------|------------------|
| Prematurely are at increased risk for mood disorders in the first 6 months postpartum (three times higher than mothers of term infants). | Stress disorder and encourage parents to seek help if needed. |
| • Make referrals for treatment if indicated. | |
| • Evaluate mother's understanding of any referrals made. | |
| **Parent-Infant Bonding**
References: 77 | |
| • Assess family, home, and social risk factors that may affect bonding. | |
| • Assess signs of attachment: » Infant's ability to demonstrate cues. » Parents' ability to recognize and respond appropriately to infant's cues. | |
| **Family Risk Factors**
References: 41, 57, 76, 77 | |
| • Document screening done and referrals made for the following: » Drug or alcohol use in home. » Smokers in home. » Domestic violence. » Mental health issues. » Social services involvement. » Evaluate parent's understanding of any referrals made. | |
| **Home Environment** | |
| • Assess parents' knowledge of how to make the home environment safe for infants. | |
| • See Tips and Tools, Safety for Your Child (www.healthychildren.org/English/tips-tools/Pages/default.aspx). | |
| • Document screening and referrals made for the following: » Adequate housing/shelter. » Utilities. » Phone. » Fire alarms. | |
| • Teach ways to make the home environment safe for infants. | |
| • Stress importance of adequate shelter for infant. | |
| • Provide written and verbal information about available support services, if indicated. | |
| **Safe Sleep**
References: 24, 94, 95, 96, 97, 98, 99 | |
| • Document education about safe infant sleep practices provided. | |
| • See Ages & Stages, A Parent's Guide to Safe Sleep (www.healthychildren.org/English/ages-stages/baby/sleep/pages/A-PARENTS-GUIDE-TO-SAFE-SLEEP.aspx). | |
| • Teach ways to make the LPI's increased risk for SIDS. | |
| • Provide written and verbal information about placing infant on his/her back to sleep and on tummy to play. | |
| • Explain unsafe sleeping practices. | |
| • Recommend use of pacifier after first month after birth. | |
| **Infection & Immunizations**
References: 2, 18, 53, 54, 57, 78, 79, 80, 81, 82, 83 | |
| • Document education provided. | |
| • Give hepatitis B vaccine prior to transition/discharge. » If parents defer until 2-month vaccine schedule or defer entirely, document the decision. | |
| • Give respiratory syncytial virus (RSV) prophylaxis and recommendations for repeat dosing as indicated. | |
| • See Talking with Parents about Vaccines for Infants (www.cdc.gov/vaccines/spec-grps/hcp/conv-materials.htm#talkpvi). | |
| • Review ways to reduce illness. » Wash hands, limit visitors, avoid crowds, protect against contact with sick people. » Breastfeed for as long as possible during the first year after birth or longer. » Stress importance of infant immunizations. » Stress importance of flu shots and pertussis boosters for family and care providers. | |
| • Provide written and verbal information about RSV prophylaxis and prevention. | |
| **Car Seat Safety**
References: 84 | |
| • Ensure parents have a car seat or assist them in procuring one. | |
| • Ensure car seat testing is done in the same car seat infant will use after transition/discharge. » A trained professional should teach proper use of car seat. | |
| • Arrange for a car bed if the infant fails the car seat test. | |
| • Instruct parents to bring their own car seat in for testing. | |
| • Provide written and verbal instruction on proper use of car seat. » Correct way to secure infant in car seat. » Age of transition to front-facing car seat. | |
| **Shaken Baby Prevention Education**
References: 117 | |
| • Provide shaken baby syndrome information and explanation using visual aids and document viewing prior to transition/discharge. | |
| • Provide written and verbal instruction about risks of shaking baby. | |
| • Teach ways to calm infant. | |
| • Teach ways to cope with crying infant. | |
| **When To Call 911 or Local Emergency Number** | |
| • Assess parents' understanding of when to call 911. | |
| • Teach how to recognize life-threatening events and when to call 911, including: » Apnea. » Choking. » Difficulty breathing. » Cyanosis | |
| • Teach CPR. | |
| **When To Call Primary Care Provider** | |
| • Assess parents' understanding of when to call primary care provider. | |
| • Teach how to recognize signs of illness and when to call primary care provider, including: » Lethargy. » Fever, hypothermia. » Poor skin color. » Decreased | |
| HEALTHCARE TEAM | FAMILY EDUCATION* |
|-----------------|-------------------|
| **SUPPORT**     |                   |
| **Staff Support** | • Assess adequacy of staff support for physicians, midwives, nurses, lactation and feeding specialists, social workers, occupational therapists, physical therapists, case managers, transition/discharge planners, and home health services. » Availability of staff to support level of services offered. » Staffing ratios. » Competencies and skills. » Availability of referral services. |
| **Family and Social Support** | • Explain roles of multidisciplinary staff. |
| **Primary Care Provider** | • Evaluate support needs and address barriers to care: » Family/Social support network. » Community-based services (e.g., WIC, lactation support, social services). » Home health care referral. » Ongoing infant care education. |
| **Discharge Summary & Checklist** | • Provide written and verbal information about available resources, if indicated. |
| References: 85, 86 | • Reinforce potential challenges of caring for LPI at home and encourage use of needed resources. |
| **STRESS IMPORTANCE OF FOLLOW-UP VISIT** | • Provide written and verbal information about available resources, if indicated. |
| **TRANSFER OF CARE** | • Stress importance of initial and subsequent follow-up appointments. |
| **Primary Care Provider** | • Review name, place, time, and purpose of first follow-up appointment. |
| References: 85, 86 | • Explain content of transition/discharge summary. |
| **Discharge Summary & Checklist** | • Stress importance of bringing transition/discharge summary to all follow-up appointments. |
| References: 43, 77 | • Explain infant’s growth curve, immunization record, list of medications, feeding plan, and follow-up. |
| **HEALTHCARE TEAM** | • Ensure parents understanding of information explained. » Ask parents if they have any questions or concerns that have not already been addressed. |
| **FAMILY EDUCATION*** | • Provide a call-back number for general questions that come up after the family is home. |

*When communicating with families and providing education as listed in the Family Education column, concepts should be shared in a manner appropriate for the needs of the family including those whose first language is not English.

**SHORT-TERM FOLLOW-UP CARE**

Late preterm infants (LPIs) should be seen by their community primary care provider within 1–2 days after transition/discharge from the hospital; the provider should assess the infant’s continued stability, review screening results, ensure ongoing safety, and evaluate the adequacy of support systems. LPIs can appear deceptively vigorous on the first day or two after birth prior to transition/discharge. It is not unusual for morbidities common to LPIs to first appear a few days after transition/discharge. If not detected and managed early, these can quickly escalate and lead to re-hospitalization, increased family stress, and eventual discharge. If not detected and managed early, these can quickly escalate and lead to re-hospitalization, increased family stress, and even permanent disability and death.1

It is especially important that breastfeeding LPIs be seen within a day after transition/discharge because of the feeding challenges so prevalent in this population. Immature feeding patterns, such as uncoordinated suck/swallow/breathe, ineffective milk transfer, and increased sleepiness because of immature brain/central nervous system (CNS) development, may not be apparent until the mother’s milk supply increases on postpartum days 2–5. Feeding failure, in both breastfed and formula-fed newborns, can be caused by other morbidities more common in LPIs, such as respiratory distress, cold stress, sepsis, hyperbilirubinemia, low muscle tone, and decreased stamina. Congenital heart disease and patent ductus arteriosus, also more common in LPIs, should be considered for any infant with feeding failure.

The community follow-up care provider should have received a copy of the transition/discharge summary from the in-hospital care provider prior to the initial follow-up visit. To guide evaluation, the follow-up care provider should carefully review maternal and infant history, as well as the infant’s hospital course, on the first follow-up visit. Because LPIs have many needs...
and because it is critically important to assess carefully the issues of continued stability, screening, safety, and support, it may be necessary to schedule extra time for follow-up visits of LPis. Short-term follow-up care should include weekly assessments until the infant reaches 40 weeks of corrected gestational age (GA) (the infant’s due date) or is clearly thriving. More frequent visits may be necessary if weight or bilirubin checks are indicated.

| **HEALTHCARE TEAM** | **FAMILY EDUCATION** |
|---------------------|----------------------|
| **STABILITY**       |                      |
| **Respiratory Distress**   |                      |
| References: 87       |                      |
| • Assess infant for current signs of respiratory distress. | • Reinforce LPi's increased risk for apnea and respiratory instability, especially when in car seat and upright devices. |
| • Ask parents if infant has had any history of apnea, cyanosis, or respiratory distress. |                        |
| **Sepsis**           |                      |
| References: 88       |                      |
| • Assess infant for current signs of sepsis. | • Reinforce LPi's increased risk for sepsis and re-hospitalization. |
| • Ask parents about any recent symptoms of sepsis. | • Review ways to reduce illness: » Wash hands, limit visitors, avoid crowds, protect against contact with sick people. » Breastfeed for as long as possible during the first year after birth or longer. |
| • Ask parents if the infant's care givers or any of the care givers' family members have signs of illness. | • Review signs and symptoms of sepsis: » Difficulty in breathing or feeding, increased or decreased temperature, decreased energy level. |
| **Weight Loss**      |                      |
| References: 2, 25, 89, 90 |                      |
| • Assess weight 1–2 days after hospital transition/discharge using appropriate preterm growth curves and compare with infant's transition/discharge weight. In addition to weight loss, take into account the number of wet diapers and stools when evaluating adequacy of intake (5 voids and 3 stools by day 3, 4 voids and 4 stools by day 4, 6 voids and 4 stools by day 6 and thereafter). | • Reinforce LPi's increased risk for excessive weight loss. |
| • Evaluate feeding practices if weight loss greater than appropriate for age. » Ask mother about any pain with breastfeeding. » Do oral exam and check for abnormalities, such as ankyloglossia, cleft palate, or thrush. » Observe infant feeding (breast or bottle). » Modify feeding and supplementation appropriately. » If unable to observe infant feeding, immediately refer mother to lactation consultant or feeding specialist. | • Review normal weight-loss parameters: » No more than 3% per day or total of 10% loss. » Regained by 14 days after birth. |
| • Assess current feeding practices, including type of milk, length of time feeding, amount taken (if formula fed). | • Review and validate understanding of feeding plan. » Explain need for supplementation of breastmilk if infant has excessive weight loss. |
| • Assess urine output, stool color, and frequency and symptoms of gastroesophageal reflux disease (GERD), colic, or oral aversion. | • Explain need to prevent infant dehydration by ensuring infant has adequate fluid intake. |
| • Modify feeding and supplementation plan if indicated. » Encourage pumping and supplementing with expressed breastmilk if supplementation is needed for breastfed infants. » Provide prescription for breast pump, if indicated. » Supplement with formula only as last resort. | • Stress importance of follow-up for weight check: » Date, time, and location of follow-up appointment |
| • Modify feeding and supplementation plan if indicated. » Encourage and support breastfeeding. » Observe and support breastfeeding. » Congratulate mother about choosing to breastfeed. » Ask about pain with breastfeeding or any other concerns. » Observe breastfeeding if concerns or pain are described by mother (evaluate for ankyloglossia). » Make immediate referral to lactation consultant if needed. |                        |
| **Feeding**          |                      |
| References: 23       |                      |
| • Determine family understanding of post-discharge feeding plan and assess adherence to plan (including iron and Vitamin D supplementation). | • Reinforce LPi's increased risk for failure to thrive and re-hospitalization: » Immature feeding skills. |
| • Assess current feeding practices, including type of milk, length of time feeding, amount taken (if formula fed). | » Ineffective sucking/swallowing. » Uncoordinated suck/swallow/breathe; may not be noticed until after increase in breastmilk supply. » Longer sleep cycles, may need to wake for feedings. |
| • Assess urine output, stool color, and frequency and symptoms of gastroesophageal reflux disease (GERD), colic, or oral aversion. | • Review normal feeding frequencies: » 10–12 times/day for breastfeeding infants. » 8–10 times/day for formula-fed infants. |
| • Modify feeding and supplementation plan if indicated. » Encourage pumping and supplementing with expressed breast milk if supplementation is needed for breastfed infants. » Provide prescription for breast pump, if indicated. » Supplement with formula only as last resort. | • Review normal urine output and stool frequency and color as indicators of adequate feeding intake (and lack of normal urine/stool as signs of dehydration): » At least 6 wet diapers/24 h by day 5 after birth. » At least 1 yellow seedy stool daily by day 4 after birth. |
| • Modify feeding and supplementation plan if indicated. » Encourage and support breastfeeding. » Observe and support breastfeeding. » Congratulate mother about choosing to breastfeed. » Ask about pain with breastfeeding or any other concerns. » Observe breastfeeding if concerns or pain are described by mother (evaluate for ankyloglossia). » Make immediate referral to lactation consultant if needed. | • Review benefits of breastfeeding/breastmilk for all infants and their mothers. |
| • Encourage and support breastfeeding. » Observe and support breastfeeding. » Congratulate mother about choosing to breastfeed. » Ask about pain with breastfeeding or any other concerns. » Observe breastfeeding if concerns or pain are described by mother (evaluate for ankyloglossia). » Make immediate referral to lactation consultant if needed. | • Provide contact information for lactation specialist and community breastfeeding support. |
| **Hyperbilirubinemia** |                      |
| References: 28, 56, 64, 66, 91 |                      |
| • Assess infant for jaundice 1–2 days after transition/discharge. | • Reinforce LPi's increased risk for jaundice requiring hospitalization and/or phototherapy. » Stress increased risk for kernicterus |
| • Assess for any feeding difficulties or dehydration, especially if infant is breastfeeding exclusively. | • Review delayed peak in bilirubin levels for LPis (at days 5–7 after birth) and possible need for additional testing to coincide with this peak. |
| • Follow-up maternal and infant blood type and Direct Coombs tests if available. | • Review signs and symptoms of worsening hyperbilirubinemia: » Deepening yellow skin and eye |
| • Review 24-h bilirubin level and repeated evaluation done prior to transition/discharge. |                        |
### HEALTHCARE TEAM

- If concerned about elevated bilirubin, obtain Total Serum Bilirubin (TSB) or Transcutaneous Bilirubin (TcB) level (visual assessment is not reliable).
- Arrange for repeat bilirubin check, home phototherapy with follow-up, or hospital admission, as indicated.

### FAMILY EDUCATION*

- color (visual assessment alone is not reliable).
- » Sleepiness and lethargy. » Decreased feeding.
- » Stress critical importance of follow-up with primary care provider if infant has signs or symptoms of worsening jaundice.
- » Explain that breastfed infants are at higher risk for jaundice and need close monitoring of feedings to reduce risk of hyperbilirubinemia. » Infant may need supplementation. » Expressed breastmilk is ideal first choice. » If mother's own milk or donor human milk is not available, cow's-milk-based formula may be used for supplementation.

### Circumcision

- Assess circumcision site for healing.
- Review normal course of healing and care of circumcised penis.
- Review care of intact penis if infant is not circumcised.

### Newborn Care

**References:** 2, 7

- Evaluate appropriateness of infant's clothing for warmth and general cleanliness.
- Evaluate evidence for proper care of umbilicus and diaper area.
- Assess parents' knowledge and skill regarding routine newborn care.

- Review parents' understanding of all routine newborn care procedures, e.g., taking temperatures, appropriate clothing, bathing, and diapering.

**References:** 45, 46, 47, 48, 49

- Evaluate parents' level of understanding about the special developmental care needs of the LPI.

### Developmental Care

**References:** 45, 46, 47, 48, 49

- Explain the differences between corrected gestational age (GA) and chronological age.
- » Developmental milestone expectations are based on corrected GA rather than chronological age.
- » Stress importance of close monitoring of developmental milestones by primary care provider.
- Provide written and verbal education about developmental care of preterms (including LPI):  
  » Need for protection from overstimulation.  
  » Need for positional support if low muscle tone.  
  » Normal sleep/wake cycles and need for extra sleep.
- Teach signs (behavioral cues) of stress and overstimulation, including: » Limb extension, finger or toe playing. » Twitches or startles. » Arching or limpness. » Facial grimace or scowl. » Abrupt color changes. » Irregular breathing. » Gaze aversion.  
  » Crying.
- Teach signs of relaxation and readiness for engagement, including: » Limb flexion, relaxed fingers and toes. » Smooth movements.
- » Rounded, flexed trunk and back. » Relaxed face and mouth. » Normal color. » Regular breathing. » Eyes open and engaged. » Quiet-alert state.
- Stress the importance of skin-to-skin holding for optimal brain development.

### SCREENING

**Newborn Screening**  
**References:** 55, 56, 73, 74, 75

- Ensure familiarity with requirements of individual state's newborn screening mandates.
- Follow-up on state-specific newborn screening mandates as indicated.
- Make referral or follow-up plan, if indicated.

- Respond to parents' questions about newborn screening results.
- Explain any abnormalities found during newborn screening results.
- Stress importance of any follow-up that is indicated:  
  » Date, time, location of follow-up appointment.

**Hearing**  
**References:** 92

- Within the first 3 months after birth, order brainstem auditory evoked response (BAER) for any infant with Total Serum Bilirubin (TSB) $\geq 20$ mg/dL.

- Explain reason for BAER if ordered: » Vulnerability of hearing to high bilirubin levels. » Importance of normal hearing for speech development.
- Stress importance of following-up on any hearing screening ordered: » Date, time, and location of follow-up appointment.

**Anomalies**  
**References:** 93

- Identify physical or internal anomalies requiring further assessment or follow-up care.
- Assess parents' understanding of anomalies if present.
- Make follow-up plan for family.

- Respond to any questions about infant's anomalies.
- Stress importance of any follow-up that is indicated:  
  » Date, time and location of follow-up appointment.

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### Multidisciplinary Guidelines for the Care of LPIs

**Family Risk Factors**

| Maternal Screening | References: 36, 37, 38, 39, 40, 41, 42 |
|--------------------|----------------------------------------|
| - Review maternal prenatal lab results and risk factors. |
| - Review ingestion of illicit and prescription drugs or other substances during pregnancy and referrals to drug or alcohol rehabilitation program. |
| - Review use of prescription or herbal medications or supplements of concern, if identified. |
| - Review smoking history (present or past use). » Refer family members who smoke to smoking cessation program. » Encourage mothers who quit smoking during or just prior to pregnancy to avoid relapse (high risk during the postpartum period). |
| - Screen for psychiatric illness or perinatal mood disorders (including postpartum depression and post-traumatic stress disorder). » Parents separated from the infant at birth (e.g., due to cesarean delivery or NICU admission) are at higher risk for perinatal mood disorders. » Mothers of infants born prematurely are at increased risk for mood disorders in the first 6 months postpartum (three times higher than mothers of term infants). » Make referrals for treatment if indicated. |
| - Evaluate mother's understanding of any referrals made. |

**Parent-Infant Bonding**

| Parent-Infant Bonding | References: 77 |
|----------------------|----------------|
| - Assess family, home, and social risk factors that may affect bonding. |
| - Assess maternal health and parents' ability to cope with challenges of newborn care and monitoring that can affect healthy bonding. |
| - Assess signs of bonding and attachment: » Infant's ability to demonstrate cues. » Parents' ability to recognize and respond appropriately to infant's cues. |

**Healthcare Team**

| Healthcare Team | Family Education* |
|-----------------|-------------------|
| - Provide referrals to smoking cessation, drug or alcohol treatment, psychiatric, or support services, if indicated. |
| - Explain risks of secondhand smoke exposure. » Stress importance of providing a smoke-free environment for all infants and children, especially those born prematurely. » Secondhand smoke exposure is associated with apnea, Sudden Infant Death Syndrome (SIDS), behavior disorders, hyperactivity, oppositional defiant disorder, sleep abnormalities, upper respiratory infections. |
| - Explain risks and benefits of prescription and herbal medications and supplements, if indicated. » Where medications are indicated, encourage use of medications compatible with breastfeeding, if possible. Reference LactMed at http://toxnet.nlm.nih.gov/cgi-bin/sis/htmlgen?LACT. |
| - Provide information about postpartum depression and post-traumatic stress disorder and encourage parents to seek help if needed. |
| - Review increased risk for postpartum mood disorders in mothers of infants born prematurely: » Nearly three times higher risk during first 6 months postpartum. |

**Safety**

| Family Risk Factors | References: 41, 57, 76, 77 |
|---------------------|----------------------------|
| - Assess and address family risk factors and make referrals if needed: » Drug or alcohol use in home. » Smokers in home. » Domestic violence. » Mental health issues. » Social services involvement. » Provide additional education as needed. |
| - Evaluate parents' understanding of any referrals made. |

| Home Environment | |
|------------------|----------------|
| - Assess and address parents' knowledge of how to make the home environment safe for infants. » See Tips and Tools, Safety for Your Child (www.healthychildren.org/English/tips-tools/Pages/default.aspx). » Provide additional education as needed. |
| - Document screening and referrals made for the following: » Adequate housing/shelter. » Utilities. » Phone. » Fire alarms. » Transportation. |

| Safe Sleep | References: 24, 94, 95, 96, 97, 98, 99 |
|------------|-------------------------------------|
| - Assess and address parents' understanding of safe sleep practices. » Provide additional education as needed. |

| Immunizations | References: 2, 18, 53, 54, 57, 78, 79, 80, 81, 82, 83 |
|---------------|------------------------------------------|
| - Assess and address parents' views and understanding about importance of immunizations for infant and family members. » Provide additional education as needed. |
| - Reinforce importance of immunizations for infant: » Scheduled immunizations as recommended by American Academy of Pediatrics (AAP). » Flu shots during flu season. » Respiratory syncytial virus (RSV) prophylaxis as indicated. » Stress importance of flu shots and pertussis boosters for family and care providers. |

| Car Seat Safety | References: 84 |
|-----------------|---------------|
| - Determine whether parents have an appropriate car seat and refer for help as needed. » Refer for assistance in obtaining appropriate car seat as needed. |
| - Assess and address parents' understanding of proper use of car seats. » Correct way to secure car seat in car. » Correct way to secure infant in car » Age of transition to front-facing car seat. |

* Provide verbal and written information about where to get professional and community support.
The importance of establishing a medical home for each LPI cannot be overemphasized. A medical home is necessary to ensure that appropriate screening and assessments are completed, referrals are made, continuity of care is coordinated and implemented by a multidisciplinary team, and duplication of services is avoided. At each follow-up visit the continued stability, screening, safety, and support of LPIs and their families should be assessed. Ongoing follow-up care should continue to be culturally, developmentally, and age-appropriate, taking into account families’ preferences and ensuring that parents are active participants in making informed decisions about follow-up testing and therapeutic interventions. Communication should occur and education should be provided in ways that are appropriate for families with limited or no English proficiency or health literacy and in ways that are developmentally appropriate for the target audience (e.g., teen parents).

If an LPI was transitioned to a higher level of care during the initial or subsequent hospitalizations, or if the mother and infant were separated at birth, both mother and father/partner should be monitored closely for signs of postpartum depression and post-traumatic stress disorder during the postpartum period and the first year of the infant’s life. Because optimal infant development is so influenced by the mental health of the infant’s primary caregivers, especially that of the mother, referrals should be made for professional help and community support whenever indicated.100,101,102,103

### HEALTHCARE TEAM

**Shaken Baby Prevention Education**

|  |  |
|---|---|
| **When To Call 911 or Local Emergency Number** | **FAMILY EDUCATION** |
|  |  |
| *Assess and address parents’ understanding of when to call 911.* | *Review how to recognize life-threatening events and when to call primary care provider, including:* |
|  |  |
|  | *Lethargy.* |
|  | *Fever, hypothermia.* |
|  | *Decreased urine output.* |
|  | *Abdominal distension.* |
|  | *Vomiting.* |
|  | *Bloody stool.* |
|  | *Insolvent infant.* |
|  | *Uncertainty about significance of infant’s symptoms.* |

| **When To Call Primary Care Provider** |  |
|---|---|
|  |  |
| *Assess and address parents’ understanding of when to call a primary care provider for urgent evaluation of infant.* | *Teach how to recognize signs of illness and when to call primary care provider, including:* |
|  |  |
|  | *Lethargy.* |
|  | *Fever, hypothermia.* |
|  | *Decreased urine output.* |
|  | *Abdominal distension.* |
|  | *Vomiting.* |
|  | *Bloody stool.* |
|  | *Insolvent infant.* |
|  | *Uncertainty about significance of infant’s symptoms.* |

**SUPPORT**

| **Family and Social Support** |  |
|---|---|
|  |  |
| *Family/Social support network.* | *Provide verbal and written information about where to find support if needed.* |
|  |  |
| *Community-based services (e.g., WIC, lactation support, social services).* | *Reinforce potential challenges of caring for LPI at home and encourage utilization of resources as needed.* |
|  |  |
| *Home health care referral.* |  |
|  |  |
| *Ongoing infant care education.* |  |
|  |  |
| *Ask parents if they have any questions or concerns that have not already been addressed.* |  |
|  |  |
| *Provide a call-back number for general questions that come up after when family is home.* |  |

*When communicating with families and providing education as listed in the Family Education column, concepts should be shared in a manner appropriate for the needs of the family including those whose first language is not English.

### LONG-TERM FOLLOW-UP CARE

There is no recognized endpoint to long-term follow-up care of late preterm infants (LPIs). Because research has documented increased morbidities for LPIs during infancy, childhood, adolescence, and through adulthood, follow-up care must begin at birth and continue, with varying degrees of surveillance and reflecting individual needs, throughout the lifespan.

Ongoing follow-up care should continue to be culturally, developmentally, and age-appropriate, taking into account
HEALTHCARE TEAM

- Assess parents' understanding of ways to reduce upper respiratory infections throughout the first few years after birth.
- Monitor for syndrome of auditory neuropathy/dysauditory or auditory dysynchrony (normal otoacoustic emission [OAE] with abnormal auditory brain response [ABR]).
- Monitor for syndrome of auditory neuropathy/dysauditory or auditory dysynchrony (normal otoacoustic emission [OAE] with abnormal auditory brain response [ABR]).
- Provide education about increased risk for sensory impairments:  
  - Hearing impairment or deafness.
  - Visual impairment or blindness.
  - Disorders of sensory integration.
- Reinforce increased LPI's risk for asthma, respiratory infection and re-hospitalization during the first year after birth:  
  - Respiratory syncytial virus (RSV) is the most common infectious etiology.
  - High morbidity is similar to that of extremely preterm infants if admitted to the PICU.
- Review ways to avoid respiratory illness:  
  - Keep immunizations current.
  - Avoid crowds and contact with sick people.
  - Careful and consistent handwashing.
  - Protect from secondhand smoke.
- Encourage breastfeeding until at least 1 year of age or longer in addition to solid foods.
- Reinforce the importance of continuing to monitor growth.

FAMILY EDUCATION*

- Assess both volume of intake and also caloric density of feeds when planning fortification or supplementation.
- Reassess at each visit to determine continued need for fortification or supplementation to maintain normal growth.  
  - Encourage fortification/supplementation in ways that encourage suckling at the breast, if possible, such as higher calorie transitional formula given at separate feeds from breastfeeding. This is preferable to giving fortified expressed milk in a bottle at each feeding, which discourages feeding at the breast.
- Recommend introducing solid foods no earlier than 6 months corrected gestational age (GA) and when infant demonstrates developmental readiness.
- Reinforce increased LPI's risk for asthma, respiratory infection and re-hospitalization during the first year after birth:  
  - Respiratory syncytial virus (RSV) is the most common infectious etiology.
  - High morbidity is similar to that of extremely preterm infants if admitted to the PICU.
- Review ways to avoid respiratory illness:  
  - Keep immunizations current.
  - Avoid crowds and contact with sick people.
  - Careful and consistent handwashing.
  - Protect from secondhand smoke.
- Breastfeed for as long as possible during the first year after birth or longer.
- Maintain good nutrition on a long-term basis.
- RSV prophylaxis as indicated.

SCREENING

**Sensory Screening**

References: 105, 106, 107, 108

- Evaluate for sensory impairments, including hearing, sight, and sensory integration.
- Follow-up brainstem auditory evoked response (BAER) results if referral had been made.
- Monitor for syndrome of auditory neuropathy/dysauditory or auditory dysynchrony (normal otoacoustic emission [OAE] with abnormal auditory brain response [ABR]).
- Provide education about increased risk for sensory impairments:  
  - Hearing impairment or deafness.
  - Visual impairment or blindness.
  - Disorders of sensory integration.
  - Auditory and visual processing delay.
- Stress importance of hearing or vision follow-up.
- Review date, time, and location of follow-up appointments.
- Stress importance of alerting primary care provider of any concerns about hearing, vision, or speech.

**Developmental Screening**

References: 2, 4, 10, 47, 75, 77, 85, 106, 109, 110, 111, 112, 113, 114, 115, 116

- Perform regular developmental screening using valid and reliable assessment tools, such as:
  - Modified Checklist for Autism in Toddlers (MCHAT).
  - American Academy of Pediatrics' (AAP) Bright Futures, including Pediatric Symptom Checklist (ages 4 years and up).
  - Brief Infant Toddler Social Emotional Assessment (BITSEA), for age 12–36 months; parent can fill out in 7–10 min.
- See the AAP's websites for more tools (www.medicalhomeinfo.org) and (www.aap.org/sections/dbpeds).
- Make referrals as indicated.
- Teach about LPI's increased risk for developmental delays:  
  - Psychomotor delay.
  - Cerebral palsy.
  - Cognitive delay.
  - Delay in school readiness.
  - Increased need for special educational services.
  - Increased disability (74% of total disability associated with preterm birth).
  - Stress importance of developmental follow-up.
  - Review date, time, and location of follow-up appointments.

**Behavioral Screening**

References: 77, 86, 106

- Ask parents about any signs of behavioral or emotional disturbances in toddler or child.
- Assess family's support system and coping abilities.
- Make referrals as indicated.
- Educate about LPI's increased risk for behavioral and emotional disturbances:  
  - Attention disorders.
  - Hyperactivity.
  - Internalizing behaviors.
  - Autism.
  - Schizophrenia.
  - Stress importance of alerting primary care provider regarding abnormal behaviors.

**Maternal Screening**

References: 36, 37, 38, 39, 40, 41, 42

- Review ingestion of illicit and prescription drugs or other substances during pregnancy and refer mother to drug or alcohol rehabilitation program, if indicated.
- Review use of prescription or herbal medications or supplements of concern, if identified.
- Review smoking history (present or past use).
- Refer family members who smoke to smoking cessation.
- Provide referrals to smoking cessation, drug or alcohol treatment, psychiatric, or support services, if indicated.
- Explain risks of secondhand smoke exposure.
- Stress importance of providing a smoke-free environment for all infants and children, especially those born prematurely.
- Secondhand smoke exposure is associated with apnea, sudden infant death syndrome, and possibly respiratory illness.

*References: 77, 86, 106, 107, 108, 105, 110, 118, 109, 113, 111, 112, 114, 115, 116*
### HEALTHCARE TEAM

- Reinforce increased risk of need for specialized family support due to special needs of infants born prematurely.
- Provide verbal and written information about how to find state and community resources for families of infants born prematurely.

### FAMILY EDUCATION

- Death Syndrome (SIDS), behavior disorders, hyperactivity, oppositional defiant disorder, sleep abnormalities, and upper respiratory infections.
- Explain risks and benefits of prescription and herbal medications and supplements, if indicated. » Where medications are indicated, encourage use of medications compatible with breastfeeding, if possible. Reference LactMed at http://toxnet.nlm.nih.gov/cgi-bin/sis/htmlgen?LACT.
- Provide information about postpartum depression and post-traumatic stress disorder and encourage parents to seek help if needed.
- Provide contact information for local professional and community resources as appropriate to provide assistance for parenting support, substance abuse, domestic violence, and mental health issues.

### SAFETY

#### Family Risk Factors

| References: | 41, 57, 76, 77 |
|-------------|----------------|

- Assess family risk factors and make referrals if needed: » Drug or alcohol use in home.
- Smokers in home. » Domestic violence.
- Mental health issues. » Social services involvement.
- Evaluate parents’ understanding of any referrals made.

- Provide verbal and written information about where to get professional and community support.

#### Developmental Risk Factors

- Assess for fine and gross motor development and behaviors that may lead to potential safety risks.
- Review LPI’s increased risk for fine and gross motor development and behaviors that may lead to potential safety risks: » Hyperactivity. » Seizure disorder.

### SUPPORT

#### Infant Support

- Assess and address specialized support needs and make referrals, if indicated: » Physical, occupational, or speech therapy. » Subspecialty care. » Early childhood intervention (0–3 years).
- School disability programs (ages 3 years and up).
- Use resources such as Child Find (free screenings, available in all states) to identify children who may need early intervention services (www.childfindidea.org).
- Use resources such as the National Dissemination Center for Children with Disabilities (www.nichcy.org).

- Reinforce LPI’s increased risk for need of specialized support and resources.
- Provide verbal and written information about how to find state and community resources.

#### Family Support

- Assess adequacy of family’s support system.
- Identify family’s support needs: » Parent support groups for specific disabilities. » State parent-to-parent groups or other parenting support groups. » State parent training and information
- Ask parents if they have any questions or concerns that have not already been addressed.
- Provide a call-back number for general questions that come up when family is home.

- When communicating with families and providing education as listed in the Family Education column, concepts should be shared in a manner appropriate for the needs of the family including those whose first language is not English.}

### CONFLICT OF INTEREST

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### REFERENCES

1. Raju TN, Higgins RD, Stark AR, Leveno KJ. Optimizing care and outcome for late-preterm (near-term) infants: a summary of the workshop sponsored by the
Bhutani VK. Combining clinical risk factors with serum bilirubin levels to predict hyperbilirubinemia in newborns. J Pediatr 2005; 147: 123–124.

Adamin DH. Late preterm infants: severe hyperbilirubinemia and postnatal glucose homeostasis. J Perinatol 2009; 29(Suppl 2): S12–17.

American Academy of Pediatrics Subcommittee on Hyperbilirubinemia. Management of hyperbilirubinemia in the newborn infant 35 or more weeks of gestation. Pediatrics 2004; 114: 297–316.

Halpern BG, Mitchell. Los Angeles, CA: Perinatal Advisory Council: Leadership, 47 and Consultation 2006.

Adams- Chapman I. Long-term neurologic outcome of infants born at cesarean section. Clin Perinatol 2008; 35: 437–454.

Ever AK, Middleton LJ, Furmston AT, Bhayar A, Daniels JP, Thangaratnam S, Deeks J, Kha KS et al. Pulse oximetry screening for congenital heart defects in newborn infants (PulseOn): a test accuracy study. Lancet 2011; 378: 785–794.

Services, U. S. D. o. H. a. H. Ned National Center for Chronic Disease Prevention and Health Promotion Coordinating Center for Health Promotion, Office on Smoking and Health (Centers for Disease Control and Prevention, Atlanta, GA 2007.

Fang WL, Goldstein AO, Butzen AY, Hartsock SA, Hartmann KE, Helton M et al. Smoking cessation in pregnancy: a review of postpartum relapse prevention strategies. J Am Board Fam Pract 2004; 17: 264–275.

U.S. National Library of Medicine, National Institutes of Health, Health and Human Services. TOXNET Toxicology Data Network: Drugs and Lactation Database (LactMed). Available at http://toxnet.nlm.nih.gov/gip/bin/sis/htmlgen[LACT Accessed June 27, 2012.

Vigod SN, Villegas L, Dennis CL, Ross LE. Prevalence and risk factors for postpartum depression among women with preterm and low-birth-weight infants: a systematic review. BJOG 2010; 117: 540–550.

Brandon DH, Tully KP, Silva SG, Mufurw HP, Turner AP, Berse BS, Holditch-Davis D et al. Emotional responses of mothers of late-preterm and term infants. JOGNN 2011; 40: 719–31.

Veugline KM, Stiller CA. The Family Life Project Investigators. Late-preterm birth, maternal symptomatology, and infant negativity. Infant Behav Dev 2010; 33: 545–54.

Zanardo V, Gambina I, Begley C, Litta P, Cosmi E, Giustardi A et al. Psychological distress and early lactation performance in mothers of late preterm infants. Early Human Dev 2011; 87(A 4): 321–3.

National Transitions of Care Coalition Measures Work Group. Transitions of Care Measures.2008http://www.ntocc.org/Portals/0/TransitionsOfCare_Measurespdf.

Newborns’ and Mothers’ Health Protection Act of 1996 http://www.dol.gov/whd/ newsroom/fsmnahs.html.

American Academy of Pediatrics Committee on Children with Disabilities. Developmental surveillance and screening of infants and young children. Pediatrics 2001; 108: 192–196.

Ahs H. Developmental care in the newborn intensive care unit. Curr Opin Pediatr 1998; 10: 138–142.

Chyi LL, Lee HC, Hintz SR, Gould JB, Sutcliffe TL. School outcomes of late preterm infants: special needs and challenges for infants born at 32 to 36 weeks gestation. J Pediatr 2008; 153: 25–31.

Cooley WC, McMallister JW, Sheriniev K, Kuhlthau K. Improved outcomes associated with medical home implementation in pediatric primary care. Pediatrics 2009; 124: 358–364.

Ahs H. Toward a synactive theory of development: promise for the assessment and support of infant individuality. Infant Ment Health J 1982; 3: 229–243.

Adamin DH. Feeding problems in the late preterm infant. Clin Perinatol 2006; 33: 831–837.

Cleaveland K. Feeding challenges in the late preterm infant. Neonatal Netw 2010; 29: 37–41.

Fein SB, Labner-Wolfe J, Shealy KR, Li R, Chen, Grummer-Strawn LM. Infant Feeding Practices Study II: study methods. Pediatrics 2008; 122(Suppl 2): 528–35.

Goyal NK, Fager C, Loach SA. Adherence to discharge guidelines for latepreterm newborns. Pediatrics 2011; 128: 62–71.

Kalyancou O, Aryu GA, Cole GP, E, Kucukoduk S. Neonatal morbidity and mortality of late-preterm babies. J Matern Fetal Neonatal Med 201; 203: 607–612.

Raju TN. Late-preterm births: challenges and opportunities. Pediatrics 2008; 121: 402–403.

Tomashke KM, Shapiro-Mendoza CK, Weiss J, Kotelchuk M, Barfield W, Evans S et al. Early discharge among late preterm and term newborns and risk of neonatal morbidity. Semin Perinatol 2007; 31: 61–68.

Verkman MT, So, he’s a little premature...what’s the big deal? Crit Care Nurs Clin North Am 2009; 21: 149–161.

Dee DL, Sharma AJ, Coggeswell ME, Grummer-Strawn LM, Fein SB, Scanlon KS. Sources of supplemental iron among breastfed infants during the first year of life. Pediatrics 2008; 122(Suppl 2): 598–104.

Backstrom MC, Aine L, Maki R, Kuusela AL, Sievanen H, Kovisto AM et al. Maturation of primary and permanent teeth in preterm infants. Arch Dis Child Fetal Neonatal Ed, 2000; 83: F104–108.
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National Healthy Mothers, Healthy Babies Coalition

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