Discharge Criteria for the Late Preterm Infant

A Review of the Literature

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ABSTRACT

Background: Standardized late preterm infant (LPI) discharge criteria ensure best practice and help guide the neonatal provider to determine the appropriate level of care following birth. However, the location can vary from the well newborn setting to the neonatal intensive care unit (NICU).

Purpose: The purpose of this review is to examine differences in LPI discharge criteria between the well newborn setting and the NICU by answering the clinical questions, "What are the recommended discharge criteria for the LPI and do they differ if admitted to the well newborn setting versus the NICU?"

Search Strategy: Databases searched include CINAHL, TRIP, PubMed, and the Cochrane Library. Focusing first on the highest level of evidence, position statements, policy statements, and clinical practice guidelines were reviewed, followed by original research.

Results: There were few differences shown between settings. Discharge criteria included physiological stability and completed screenings for hearing loss, hyperbilirubinemia, car seat safety, hypoglycemia, critical congenital heart disease, and sepsis. Parent education is provided on umbilical cord care, feeding, elimination, and weight gain norms. Recommended maternal assessment included screenings for depression, drug use, safe home environment, and presence of social support. In general, research supported protecting the mother-infant dyad.

Implications for Practice and Research: Developing a standardized approach for discharge criteria for LPIs may improve outcomes and reduce maternal stress. Research is needed to compare health and cost outcomes between settings.

Key Words: discharge criteria, late preterm infant, maternal–infant dyad, neonatal intensive care unit, parental readiness, preterm infant, readiness for discharge, term infant, very low birth weight, well newborn nursery

Video Abstract available at http://links.lww.com/ANC/A29.

Late preterm infants (LPIs) are defined as infants born between $34^{0}/_{7}$ weeks and $36^{6}/_{7}$ weeks of gestation, and this subset of infants continues to be a significant portion of premature births in the United States. Specifically, LPIs account for approximately 74% of the roughly 500,000 premature births and approximately 9% of all births in the United States.[1] Late preterm births also account for 11.2% of all neonatal costs ($1.145 billion annually) in the United States.[2] These costs included antepartum care, delivery costs, neonatal medical and nursing treatment, and associated costs for long-term medical, educational, and social services.[2] Late preterm infants may be considered the "great imitators" because they tend to appear full term but in reality they are premature and physiologically underdeveloped. Because of this immaturity, they are at higher risk for death and morbidities than full-term infants, having at least 1 diagnosed medical condition, and they are 3 times more likely to exhibit 2 or more diagnosed conditions than full-term infants.[3] Because of this, neonatal nurses should recognize that LPIs are at greater risk for morbidity and mortality related to their gestational age (GA), and there may be a risk of missing health complications because of their close resemblance to term newborns.

Late preterm infants may be discharged home earlier than ready, with unresolved health problems such as hypothermia, feeding issues, and respiratory problems that increase their risk for complications. Not surprisingly, unresolved health challenges can contribute to parental stress and anxiety when transitioning from hospital to home.[4] Research shows that lack of maternal discharge readiness is associated with poor parent-child bonding, poor coping skills, higher use of postacute healthcare resources, and a higher proportion of rehospitalizations than those who are ready.[5]

Discharging infants from a hospital is a complex process, and determining appropriate discharge criteria is a professional and healthcare concern.[6] The scope of LPI newborn discharge instructions and

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recommendations is numerous causing healthcare provider confusion and ambivalence. In examining discharge criteria, the authors were interested in exploring whether there were any differences specifically for the LPI population based on where they were cared for in the hospital (ie, well newborn setting vs NICU).

PURPOSE AND CLINICAL QUESTION

The purpose of this review was to examine differences in LPI discharge criteria between the well newborn setting and NICU by answering the clinical questions, "What are the recommended discharge criteria for the LPI and do they differ if admitted to the well newborn setting versus the NICU?"

SEARCH STRATEGY

A literature search was conducted using multiple databases that included Translating Research into Practice database ([TRIP], https://www.tripdatabase.com/), Cumulative Index to Nursing and Allied Health Literature (CINAHL), PubMed, Google Scholar, and the Cochrane Library. Less commonly known than the others, the TRIP database is a clinical question-driven search engine that yields published articles, clinical guidelines, and position statements using the components of the PICO (ie, short for Problem, Intervention, Comparison, and Outcome) question as search terms. Key terms used in the search included a combination of the following: premature infant, late preterm infant, discharge, hospital discharge, admitted to standard nursery, or neonatal intensive care unit. Articles were included if they answered the clinical question and had been published from 2006 to 2016. Older articles were included if they represented either professional organization guidelines or policy statements that continue to shape current best practices pertaining to discharge criteria for the LPI. Policy statements were identified using the aforementioned criteria and through Google Scholar. Articles were excluded if they did not answer the clinical question, did not mention discharge criteria as a major focus, or were editorials or opinion pieces.

RESULTS

When the search criteria were applied, a position statement was reviewed along with clinical practice guidelines (CPGs), reviews, organizational recommendations, and related articles. Several policy statements and CPGs have been written on discharge criteria for the LPI. Position statements and CPGs provided physiological parameters for discharge of the LPI. Table 1 summarizes recommendations for discharge criteria and follow-up identified in the position statements and guidelines. If specific recommendations were found unique to the LPI cared for in the NICU environment, they were noted.

STRENGTH OF EVIDENCE

The strength of evidence was determined using the U.S. Preventive Services Task Force Guide to Clinical Preventive Services quality-of-evidence rating scale.[17] The level of evidence using these criteria is provided in Table 1. In short, these criteria categorize level I as evidence obtained from a randomized controlled trial or meta-analysis of randomized controlled trials; level II as evidence obtained from well-designed controlled trials without randomization such as cohort, case-control, or time series studies; and level III as evidence obtained from opinions of respected authorities, descriptive studies, or reports by expert committees based on evidence reviews performed by the recognized authorities.[17] However, because the nature of a guideline or position statement takes the evidence through an expert review and clinical vetting, they are typically regarded as more useful for direct implementation into practice and can be interpreted as a standard of care, even though in this scheme of evidence they are rated lower than individual randomized controlled trials.

Late Preterm Infant Standard Discharge Criteria

It is recommended to delay hospital discharge until at least 48 hours of age to ensure adequate time to identify complications.[7] In general, there are 3 physiological requirements for discharge: (1) sufficient oral feedings to support appropriate growth, (2) ability to maintain a normal temperature, and (3) lack of the respiratory distress.[7,9] Weight loss should not exceed 3% daily or more than 7% from birth weight by day of life 3.[7] If weight loss is significant, it warrants additional feeding evaluation to ensure that the breastfeeding infant is nursing 8 to 12 times in a 24-hour period, that breast milk transfer and production are adequate, and that the bottle-fed infant is able to consume all the calories he or she needs by mouth before discharge, thereby demonstrating feeding competency.[7] While there is ample evidence supporting optimal weight gain per day in infants, the authors acknowledge that the LPI will likely not achieve this before a typical discharge because weight loss in the first week of life is to be expected. Review of the literature did not define a specific goal for daily weight gain, only that oral competency is essential.

The LPI must demonstrate stable vital signs for 12 hours preceding discharge.[7] These included evidence of respiratory stability with no signs of increased work of breathing or tachypnea, temperature that is

TABLE 1. Summary of Recommendations From Guidelines and Position Statements

Author, Year	Level of Evidence[a]	Quality of Evidence[b]	Discharge Criteria	Timing of Outpatient Follow-up
Phillips et al[7] (2013)	II, III	B-breastfeeding	• Physiologic readiness • Parental readiness • Documentation to outpatient provider at discharge • Family-centered care • Social support and safety	• Within 2 d of discharge for breastfeeding infant
Academy of Breastfeeding Medicine[8] (2011)	I, II, III	B-breastfeeding	• Support breastfeeding through use of "Ten steps to successful breastfeeding" (www.baby-friendlyusa.org) • Physiologic stability	• Follow-up 1-2 d after discharge • Check LATCH L: latch A: audible swallowing T: type of nipple C: comfort H: holding (positioning) • Weekly weight checks until 40 wk
American Academy of Pediatrics, Committee on Fetus and Newborn[9] (2008)	III	B-breastfeeding	• Physiological stability	• Provider within 48 h • Follow-up with lactation consultant • Home health
Barkemeyer[10] (2015)	III	B-breastfeeding	• Physiologic readiness (temperature and respiratory stability, feeding, voiding, stooling, weight gain, jaundice) For the NICU: • Physiologic readiness • Parental readiness (recommends rooming in to demonstrate ability to care for infant) • Social support and safety	• Follow-up as outpatient within 48 h of discharge • Recommends follow-up with lactation specialist and home health nurse
Mahle et al[11] (2012)	III	Does not review this evidence	• Critical congenital heart defect screening should occur after 24 h of age or shortly before discharge if the baby is <24 h of age	• Echocardiographic and pediatric cardiac evaluation after a positive screening result
Joint Committee on Infant Hearing[12] (2007)	II, III	No longer reviewed inactive	• Admitted in neonatal intensive care unit for >5 d to have ABR test	• Failed ABR screening: Referral should be made directly to an audiologist for rescreening and, when indicated, comprehensive evaluation
American Academy of Audiology Childhood Hearing Screening Guidelines[13] (2011)	III	Does not review this evidence inactive	• Newborn hearing screening 24-48 h after birth or before discharge if <24 h of age	• Long-term follow-up with physician if screening positive

(*continues*)

TABLE 1. Summary of Recommendations From Guidelines and Position Statements, Continued

Author, Year	Level of Evidence[a]	Quality of Evidence[b]	Discharge Criteria	Timing of Outpatient Follow-up
Maisels et al[14] (2009)	III	Does not review evidence on bilirubin	• Recommend universal predischarge bilirubin screening using TSB or TcB measurement	• Infants discharged at <72 h should be seen within 2 d of discharge per the predischarge TSB/TcB, gestational age and other risk factors for hyperbilirubinemia
Whyte, on behalf of the Canadian Paediatric Society Fetus and Newborn Committee (2010, reaffirmed 2017)[15]	II, III	Does not review this evidence	• Assess serum bilirubin levels within 48 h of birth and assess feeding, weight gain, and jaundice • Twenty-four hours of successful feeding • Less than 36-wk GA should be considered at risk of infection and managed per current guidelines for prevention of group B streptococcal infection • Euglycemic • Assessment of parenting and feeding skills • Physiologic stability	• A follow-up appointment within 48 h of discharge should be arranged with a community-based healthcare provider before the infant is discharged home • Assessed for feeding, weight gain, and jaundice repeatedly in the first 10 d of life until consistent weight gain without jaundice
American Academy of Pediatrics, Committee on Fetus and Newborn[16] (2011)	III	Does not review this evidence	• Postnatal glucose monitoring in first 24 h of age • Euglycemic	• Unstable glucose measures follow-up with endocrinologist

Abbreviations: ABR, auditory brainstem response; GA, gestational age; NICU, neonatal intensive care unit; TcB, transcutaneous bilirubin; TSB, total serum bilirubin.

[a]Rated level of evidence using criteria from the U.S. Preventive Services Task Force Guide to Clinical Preventive Services.[17]

Level I: Evidence obtained from randomized controlled trial or meta-analysis of randomized controlled trial.

Level II: Well-designed controlled trials without randomization, well-designed cohort/case-control >1 center or research group, multiple series, with or without intervention.

Level III: Opinions of respected authorities, based on clinical experience, descriptive studies, or reports of expert committees.

[b]Quality of evidence:

A: Recommends the service. There is high certainty that the net benefit is substantial.

B: Recommends the service. There is high certainty that the net benefit is moderate or there is moderate certainty that the net benefit is moderate to substantial.

C: Recommends against the service. There is moderate or high certainty that the service has no net benefit or that the harms outweigh the benefits.

D: Recommends against the service. There is moderate or high certainty that the service has no net benefit or that the harms outweigh the benefits.

I: Current evidence is insufficient to assess the balance of benefits and harms of the service. Evidence is lacking, of poor quality, or conflicting, and the balance of benefits and harms cannot be determined.

within normal limits, adequate urination, 1 spontaneous bowel movement, and no signs of sepsis.[7] Neonatal providers must screen for maternal and neonatal risk factors for sepsis such as maternal group B *Streptococcus* status or chorioamnionitis because the LPI is at higher risk for developing early-onset sepsis.[7] Physical examination should confirm the presence of the red reflex in each eye and present or absent signs of hip dysplasia.[10] The vaccination recommended for the LPIs is the hepatitis B vaccine as indicated by maternal and infant risk status.

Assessment for discharge readiness in the LPI included review of maternal laboratories and social history to include but not limited to maternal blood type, risk factors for human immunodeficiency virus, postpartum depression, mental illness, and illicit and prescription drugs use or other substance abuse.[7,18] Additional discharge teaching included proper hand hygiene when caring for the infant and handling feeding materials, positioning the infant for safe sleep practices, and sudden infant death syndrome prevention.[7] Consults that support the mother–infant dyad included lactation services, social worker referral, and case manager referral depending on inpatient and outpatient needs.[7] Follow-up appointments with the outpatient primary care provider should be made for 1 to 2 days after discharge[3] as well as scheduling any required subspecialty appointments. Ensure that the parents are provided an immunization plan per GA.[15]

Parents are taught infant behavioral cues of stress and overstimulation, as well as signs of relaxation and readiness for engagement.[7] In addition, actions to calm an infant, coping mechanisms to manage prolonged periods of crying and, the risks of shaking a baby are discussed.[7] Parents may also appreciate knowing the difference between corrected GA and chronological age and the implications.

Hypoglycemia Monitoring and Interventions

Late preterm infants are at higher risk for developing hypoglycemia secondary to decreased glycogen stores and immature metabolic pathways and require screening for hypoglycemia and treatment if necessary per established guidelines.[7] Controversy remains regarding normal glucose levels; however, development and implementation of a standardized policy are important to identify at-risk infants.[7]

In 2011, the American Academy of Pediatrics (AAP)[16] published guidelines to identify, monitor, and treat hypoglycemia in at-risk infants and this was reaffirmed in 2015. More information can be found in the AAP Postnatal Glucose Homeostasis in Late-Preterm and Term Infants guideline. Following birth, the nurse should facilitate skin-to-skin holding and early breastfeeding, within 1 hour of birth, if the LPI is clinically stable.[7,8] On demand, breastfeeding should occur 10 to 12 times daily and formula feeding 8 to 10 times daily.[7] Late preterm infants are at higher risk of feeding difficulties due to decreased reflexes, decreased feeding cues, and inadequate breast milk transfer due to low muscle tone, ineffective latch, and decreased stamina.[8] A feeding supplementation plan may be warranted on the basis of feeding observations and weight loss.[8] Some LPIs may require a nasogastric or oral feeding tube to provide adequate nutrition until they can demonstrate effective oral skills. Feeding competency has been met once full oral feedings are achieved.[15]

Infant Car Seat Challenge

An infant car seat challenge is recommended for all preterm infants born less than 37 weeks of gestation.[19] This recommendation by the AAP dates to 1991 with an additional recommendation of timing duration for the infant car seat challenge to be 90 to 120 minutes at a minimum or for the duration of the car ride home.[19] The AAP does not provide oxygen saturation levels at which a "fail" is indicated.

Hearing Screening

The Joint Committee on Infant Hearing[12] issued guidelines on early hearing detection and intervention and per the National Institutes of Health,[20] more than 95% of all newborns are screened for hearing loss shortly after birth. The rationale for early detection of hearing loss and intervention is to provide optimization of speech and achievement of verbal skills as the child grows.[13]

Family Engagement and Parental Readiness

Healthcare providers should encourage parent and family engagement during infant hospitalization with 24-hour rooming-in (if physiologically stable), caring for the infant before discharge, and collaborating with the infant's provider.[7,9] Assessment of the physical and psychosocial home environment is important to ensure that the parents can provide care independently and confidently. In some cases, this will require multidisciplinary collaboration between nursing, neonatal providers, and social workers.[7] Screening mothers and infants allows for timely recognition and intervention if there is a history of positive urine toxicology results, child abuse or neglect, mental illness, lack of social support, homelessness, domestic violence, or if they have barriers to following up with care after discharge.[10]

Late Preterm Infant Discharge Criteria From Well Newborn Settings

Critical Congenital Heart Defect Screening

In 2011, Kemper and colleagues[21] published strategies to implement a standardized program using pulse oximetry to screen infants in the well newborn setting for critical congenital heart disease (CCHD) and diagnostic follow-up. In 2012, the AAP endorsed the

recommendation by U.S. Department of Health & Human Services for pulse oximetry screening for CCHD. Recommendations are to delay the screening until 24 hours of life or as late as possible to reduce the incidence of false-positive results.[11] Readings should be obtained from the right hand and one foot; a positive screening result warrants an echocardiogram to assist in the diagnosis of a CCHD.[11] This review will not go into detail of various thresholds that would be considered a positive or false screening. More information can be found in "Strategies for Implementing Screening for Critical Congenital Heart Disease."[21]

Identification and Management of Hyperbilirubinemia

Management of hyperbilirubinemia is guided by standardized value guidelines and trajectories of risk levels.[22] Although hyperbilirubinemia is manageable disease, the sequelae of untreated jaundice can cause kernicterus, making bilirubin screening a high priority when determining discharge readiness. The Joint Commission defines a serum bilirubin level more than 30 mg/dL as severe neonatal hyperbilirubinemia and a sentinel event.[23] Kernicterus, an irreversible brain injury that causes yellow staining of neuronal gray matter, should be considered a "never event."[23] Johnson and colleagues[24] performed a root cause analysis of 125 infants who were voluntarily reported to the Pilot USA Kernicterus Registry from 1992 to 2004. There were a variety of causes that led to acute bilirubin encephalopathy and 5 of the 125 infants subsequently died.[24] Clearly, determining appropriate levels of bilirubin prior to discharge is important regardless of the setting of care.

In 2004, the AAP established guidelines on identification and management of hyperbilirubinemia in infants born at 35 weeks of gestation or greater, with updated clarifications published in 2009.[14] The updated clarifications included identifying those infants at higher risk for developing jaundice (eg, LPI, exclusive breastfeeding with excessive weight loss, ABO incompatibility with positive direct Coombs, isoimmune or hemolytic anemia such as glucose-6-phosphate dehydrogenase deficiency[G6PD]). A predischarge total serum bilirubin (TSB) or transcutaneous bilirubinometer (TcB) reading should be obtained and a more standardized approach to management and follow-up be instituted.[14] The authors would like to stress that LPIs fall into the medium risk category (ie, infants with GA of $35^0/_7$ weeks to $37^6/_7$ weeks). Infants with a GA of $34^0/_7$ weeks to $36^6/_7$ weeks are considered as LPIs. However, the AAP hyperbilirubinemia algorithm was developed on the basis of numerous study results that identified a medium risk infant as categorized with the GA listed previously. The TSB or TcB level can be interpreted using a nomogram for low-, medium-, and high-risk infants, which is available with the BiliTool (see www.bilitool.org). Late preterm infants may be safely discharged if TSB or TcB levels do not warrant phototherapy treatment. For those LPIs with TSB or TcB levels in the high-intermediate- or high-risk zone that do not meet treatment thresholds and are ready for discharge, follow-up levels should be obtained by the outpatient pediatric provider.

Late Preterm Infant Discharge Criteria From NICU

The primary difference in discharge criteria for the LPI in the NICU is location and the presence of other complications. All the aforementioned measures, except for CCHD screening, need to be met prior to discharge. While the CCHD guidelines were developed for the newborn infant cared for in the well newborn setting, the AAP offers some guidance in screening the premature infant. Specifically, if the premature infant has had an echocardiogram, the CCHD screening tool is not necessary. However, if an echocardiogram has not been obtained, the LPI should be screened once off supplemental oxygen.[25]

For hyperbilirubinemia screening in the infant less than 35 weeks of gestation, some NICUs may choose to use Premie BiliRecs.[26] Premie BiliRecs is a clinical decision support tool for premature infants ranging from $28^0/_7$ weeks to $34^6/_7$ weeks of gestation who are more than 48 hours of age.[26] This tool was developed on the basis of the recommendations from several experts in the field of neonatal hyperbilirubinemia.[26] Refer to the Web site, https://pbr.stanfordchildrens.org/, for more information. This link may be integrated within the electronic health record to provide real-time clinical decision-making support.

Infants in the NICU typically must meet more stringent criteria to show that they are physiologically and nutritionally ready for discharge. Physiologic readiness included no evidence of respiratory distress, sepsis, or hypoglycemia.[9] Nutritional readiness involves demonstration of feeding competency by breast or bottle feeding and ability to consume appropriate volumes to meet calorie needs.[9] The infant should be free of apnea for 5 to 7 days and able to maintain adequate oxygen saturation levels without additional oxygen therapy. In summary, discharge criteria for LPIs in the NICU included all the measures recommended for the well newborn setting. Because of likely separation of mother and baby during the NICU stay, it is also best practice to identify whether the parent is ready emotionally and physically ready to take the infant home.[7,9,27]

DISCUSSION

In this evidence-based practice review, the issue of whether discharge criteria for the LPI differ on the

basis of care setting (well newborn setting or NICU) is addressed. Both settings require that screening for metabolic disorders and hyperbilirubinemia is completed, that feeding competence is established, plans for follow-up are clear, and the hepatitis B vaccine is administered following parental consent. Screening for the safety of the home environment and providing education on safe sleep are also needed. Discharge from the NICU differs from the well newborn setting based mostly on individual infant characteristics (eg, presence of complications, delay of feeding competence). What is indisputable for either setting is that supporting the mother–infant dyad is best practice and should be promoted at all costs.

Despite various guidelines and recommendations from several professional organizations, review of the literature demonstrated that parents do not feel adequately prepared to care for their infant upon discharge.[27] The authors would like to point out that most of the research examined discharge readiness from the NICU setting. Nonetheless, having a consistent approach and a standardized policy reduces variation between both neonatal providers and nursing staff and can also help guide discussions with parents regarding discharge readiness.

Limitations

While this review is supportive of actions for clinical practice guided by published guidelines from professional organizations, it is not without limitations. The authors' review addressed what the state of practice should be and started our search at the level of position statements and CPGs and ended with reviewing supportive research if the position statements were not clear. This approach was used because of the rigorous process to vet the literature and conduct expert reviews to come to agreement on recommendations made. This approach differs from traditional systematic review methodology and aligns more with methods used for a focused review that other evidence-based practice briefs have employed. Using this approach, when CPGs and position statements are identified in an area, rigorous searching of other types of resources is limited because organizational and disciplinary authorities have already set a position on a topic. Some may argue this to be a limitation.

RECOMMENDATIONS FOR PRACTICE

Caring for LPIs requires collaboration through a multidisciplinary approach to include parents, nursing, lactation services, therapists, and neonatal providers. While LPIs resemble their term counterparts, there is substantial evidence that identifies these infants at a much higher risk for neonatal mortality and morbidities. Regardless of GA, the AAP[9] identifies that 3 physiologic competencies must be met prior to discharge: (1) adequate oral feedings to support growth, (2) ability to maintain temperature, and (3) stability and maturation of respiratory control. Yet, we have described that important considerations above that should also be addressed for the LPI discharge. Clinical judgment, as well as patient and family factors should also be considered. Generally, a consistent approach to discharge whether from the well newborn setting or intensive care unit is recommended. To support that end, discharge checklists (see Tables 2 and 3) are included to support consistency in practices for safe discharge of the LPI.

IMPLICATIONS FOR RESEARCH

While the literature provided recommendations and guidelines from established and reputable professional organizations and experts in the field, the authors found gaps in the literature nonetheless. Specifically, more well-designed trials are needed on discharge-preparation interventions related to educating parents before discharge, counseling, and assessing LPIs' parent readiness for discharge (ie, factors that affect discharge readiness, better instruments to measure discharge readiness, and identifying tools to assess for discharge readiness). Research is needed to examine the effects of LPI outcomes following adoption of standardized discharge criteria. Although outside of the scope of this review, future research should explore the comparative effectiveness of caring for the LPI in the well newborn setting versus the NICU. Abundant research supports maintaining the mother–infant dyad (eg, kangaroo care, breastfeeding, and bonding) that can be accomplished efficiently and effectively in the well newborn setting for the clinically stable LPI. Other strategies to encourage maintaining the mother–infant dyad include different types of hospital discharge plans such as provisional discharge home with ongoing daily management by hospital personnel.[15] The economic burden and healthcare resources should not be overlooked for this population group, and there appears to be a gap in research that specifically explores the cost of an LPI being cared for in the well-baby setting compared with the NICU. On average, the daily cost for a NICU admission for a 34-, 35-, or 36-week infant is $7200, $4600, and $2600, respectively.[2] Thomson Healthcare[28] published a report in 2007, submitted to the March of Dimes that reported the cost of an uncomplicated vaginal birth was $7737 and an uncomplicated cesarean delivery cost was $10,958 when only professional, facility, laboratory, radiology, and drug fees were included. Future studies could compare care settings using the same guideline-driven care to estimate impact on cost, readmissions, parent self-efficacy, and other relevant variables.

TABLE 2. Late Preterm Infant Discharge Preparation Checklist: Well Newborn Nursery	
Delivery date and time _____	
Anticipated discharge date and time _____	
Discharge disposition _____	
Healthcare Management	**Date/Initial**
Skin-to-skin holding and breastfeeding within 1 h of birth (if clinically stable) If supplementation medically indicated consent for banked donor milk signed? Yes No	
Initiate group B *Streptococcus* (GBS) Protocol: Yes No Monitor for sepsis? Yes No	
Initiate Hypoglycemia Protocol #1_____ #2_____ #3_____ Follow unit policy or contact provider with abnormal results	
Newborn screening (12 h or more after birth)	
Delayed bathing (6 h or more after birth)	
Transcutaneous bilirubin (TcB) screen at 18 h of age: Date/time due: _____	
Car seat challenge: Pass Fail	
Critical congenital heart disease (CCHD) screening complete (≥24 h) Pass Fail	
Circumcision education: Yes No Circumcision procedure: Yes No	
Feeding	
Initiate breast pumping within 4 h if separated from infant	
Breastfeeding education: Yes No Breast feed evaluation: proficient needs support Lactation referral: Yes No	
Parent education on fortification and/or formula supplementation Return demonstration: Proficient Needs support	
Oral competency with adequate volumes	
Social	
Social services consult	
Shaken baby syndrome prevention video watched	
Birth certificate paperwork completed	
Newborn pictures	
Postdischarge plan	
1. Appointment made with primary care provider 2. Public health nurse referral Yes No	
If breastfeeding: Lactation outpatient clinic Yes No Information on breastfeeding support group given? Yes No	
Discharge instructions given and teach back demonstrated	

CONCLUSION

This review sought to answer the clinical question about optimum discharge criteria for the LPI and whether they varied on the basis of setting of care. In summary, discharge criteria guidelines for LPIs cover a variety of newborn physiological and maternal psychosocial issues. Timing of discharge for the LPI is determined by current stability, medical and/or nursing needs of the infant (ie, hyperbilirubinemia, feeding difficulties, excessive weight loss), and the ability of caregivers to meet those needs in the home setting.[7,9,10] Furthermore, the care setting does not necessarily drive the difference in discharge criteria, rather it is the GA of the infants and the severity of their disease that influence criteria. It is important to stress that maintaining the mother–infant dyad for the clinically stable

TABLE 3. Late Preterm Infant Discharge Preparation Checklist: NICU	
Delivery date and time _____	
Anticipated discharge date and time _____	
Discharge disposition _____	
Healthcare Management	**Date/Initial**
Skin-to-skin and breastfeeding within 1 h of birth (if clinically stable) If supplementation medically indicated consent for banked donor milk signed? Yes No	
Initiate Group B *Streptococcus* (GBS) Protocol: Yes No Monitor for sepsis? Yes No	
Initiate Hypoglycemia Protocol #1_____ #2_____ #3_____ Follow unit policy or contact provider with abnormal results	
Newborn screening (12 h or more after birth)	
Delayed bathing (6 h or more after birth)	
Serum bilirubin per provider orders or TcB check if ≥35 wk Transcutaneous bilirubin (TcB) screen at 18 h of age: Date/ time due: _____	
Car seat challenge: Pass Fail	
Circumcision education: Yes No Circumcision procedure: Yes No	
Feeding	
Initiate breast pumping within 4 h if separated from infant	
Breastfeeding education: Yes No Feeding readiness cues and initiation of cue-based feedings Initial latch score: _____ Breast feed evaluation: Proficient Needs support Lactation referral: Yes No	
Parent education on fortification and/or formula supplementation Return demonstration: Proficient Needs support	
Oral competency with adequate volumes	
Social	
Social services consult	
Shaken baby syndrome prevention video watched	
Birth certificate paperwork completed	
Newborn pictures	
Postdischarge plan	
Appointment made with primary care provider Subspecialty physician follow-up Yes No Public health nurse referral Yes No	
If breastfeeding: Lactation outpatient clinic Yes No Information on breastfeeding support group given? Yes No	
Discharge instructions given and teach back demonstrated	

LPI is optimal and a consistent, standardized approach may improve neonatal outcomes and enhance parental discharge readiness.

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Summary of Recommendations for Practice and Research	
What we know:	• Discharge criteria per published CPG and recommendations are consistent regardless of newborn setting. • Depending on gestational age and severity of illness, additional discharge criteria may need to be met.
What needs to be studied:	• Compare infant outcomes from various settings in terms of parental readiness for discharge, length of stay. and readmissions. • Optimal setting of care especially in maintaining the mother–infant dyad. • Cost implications of LPI healthcare management based on setting.
What we can do today:	• Adopt standardized discharge criteria on the basis of CPG and/or AAP recommendations regardless of newborn setting. • Incorporate parental participation and family-centered care. • Encourage mother–infant dyad if LPI is clinically stable to stay with mother 24 h/d. • Trial different styles of discharge plans such as provisional discharge.

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