# Clinical Policy: NICU Discharge Guidelines

Reference Number: CP.MP.81
Effective Date: 06/13
Last Review Date: 09/17 Revision Log

**See Important Reminder at the end of this policy for important regulatory and legal information.**

**Description**
Infants who require neonatal admission remain at increased risk for morbidity and mortality following discharge. These infants require comprehensive discharge planning to ensure a smooth transition from the neonatal intensive care unit (NICU) and reduce morbidity and mortality after discharge.

**Policy/Criteria**
It is the policy of health plans affiliated with Centene Corporation® that infants are considered medically ready for discharge if the following physiologic competencies are met:

**I. Sufficient nutrition to support appropriate growth**

A. A consistent pattern of weight gain via the current nutritional route should be demonstrated for preterm infants or term infants > 1 week of age. The weight itself should not be a criterion for discharge. Early hospital discharge is safe and feasible for very-low-birth-weight infants when behavioral and parental criteria, rather than achieved weight, serve as discharge indicators [1-4]. Typically 3 days of weight gain are sufficient to determine a consistent pattern.

B. For term infants discharged before 1 week of age, there should be a demonstrated absence of excessive weight loss > 7% of birth weight. Term infants often have a 5-7% weight loss in the first week of life with an expectation that they will be back to birth weight by 10-14 days of age.

C. The nutritional product, enteric or intravenous, should be appropriate for the nutritional needs of the infant.

D. Support and training should be provided to the family in order to assure successful nutrition and growth for the infant following discharge.

E. Every effort should be made to have the infant on full oral nutrition at the time of discharge with the following exceptions. [4,6-8]

1. Gavage feeding has been used safely in the home setting for infants who cannot feed well enough orally. This should be considered when feeding is the last issue requiring continued hospitalization. Appropriate feeding evaluation, family assessment and therapeutic interventions should be completed prior to discharge.
2. Infants with minimal or no ability to feed orally or the expectation of such are candidates for long-term gastrostomy tube feedings. Gastrostomy tube placement may be prior to NICU discharge or after a short-term trial of nasogastric (NG)/oral feeds at home.
3. Infants with inadequate ability to absorb calories (short gut) require intravenous (IV) total parenteral nutrition (TPN) as a nutritional source. Home TPN can be considered when [4,10-11]:

a. The patient's fluid and electrolyte requirements have stabilized as evidenced by physician documentation.
b. The caregiver has an appropriate setting to administer the TPN (designated "clean" area).
c. There is adequate refrigeration to store the TPN safely.
d. The caregiver has received administration training including the indications for TPN, basic instruction on getting the solutions ready for use, catheter care, dressing changes, and information on the intravenous pump.

F. All education related to nutrition should be completed and any required special equipment (e.g., pumps) be placed in the home prior to discharge.
G. Consultations (e.g. gastroenterology and nutrition) for infants with special nutritional requirements (e.g., long term TPN, metabolic formulas, long term enteric pump feeding) should be completed prior to discharge.
H. Arrangements for home visits and follow-up appointments related to special nutritional situations should be made prior to discharge.

**II. The ability to maintain normal body temperature in a home environment**

A. Infant needs to demonstrate the ability to maintain normal body temperature (>36.4 C axillary) while clothed in an open bed/crib with normal ambient temperature (23.9 to 25º C).
B. Weaning from an isolette should be considered when an infant with stable cardiopulmonary state reaches >1600 grams and is able to be swaddled. [20, 21]

**III. Mature respiratory control**

A. Preterm infants typically demonstrate mature respiratory control by 36-37 weeks post gestational age. Occasionally maturation of respiratory control can be delayed to up to 44 weeks. For guidelines for discharge of infants with apnea of prematurity, please see separate Apnea and Bradycardia policy.
B. Infants typically are safe to discharge when they are stable on room air. Exceptions include: [4, 12-16]
   1. Infants with bronchopulmonary dysplasia (BPD) can be discharged on low flow nasal cannula at any oxygen concentration as long as the flow is 1.0 LPM (liters per minute) or less. Home oxygen therapy for infants with BPD has been used safely to achieve earlier hospital discharge.
   2. Infants with a tracheostomy and requiring positive pressure ventilation will be deemed ready for discharge to home when ventilator settings are stable utilizing a home ventilator when fraction of inspired $O_2$ is $\leq 40\%$. Home ventilation requires qualified personnel to provide care at the bedside. Home nursing support will be needed for at least part of the day in most cases.
C. An assessment of cardiorespiratory stability in a car seat is recommended prior to discharge for infants born at < 37 weeks gestation or with other risk factors for respiratory compromise (e.g. neuromuscular, orthopedic problems).
D. Use of home cardiorespiratory monitors should be reserved for infants with ongoing medical conditions that place them at risk for apnea, airway obstruction, or hypoxia. An assessment should be completed to determine which type of home monitoring system is

appropriate (pulse oximetry monitor, cardiorespiratory monitor). Conditions may include:

1. Pharmacological treatment of respiratory immaturity or continued apnea at term or near term gestation.
2. Need for home oxygen therapy. (may require the need for home pulse oximetry monitoring)
3. Tracheostomy or other risk of airway obstruction.
4. Need for other technology associated with cardiorespiratory impairment such as mechanical ventilation.

E. All parents should be encouraged to attend infant CPR class. If cardiorespiratory monitoring is to be used in the home, infant CPR training is a requirement for discharge.

**IV. Other Considerations**

A. Screening Tests
   1. State-mandated metabolic screening testing should be completed.
   2. Screening for retinopathy of prematurity per AAP guidelines should be performed (or arranged as outpatient) with an opthalmologist skilled in the evaluation of the retina of the preterm infant, with adequate follow-up for patients with active disease.
   3. Hearing screening should be completed prior to discharge with follow-up plans for infants requiring a full audiology assessment.

B. Immunizations
   1. Infants should receive appropriate immunizations per AAP guidelines before discharge (or arranged as an outpatient) based on their post-natal age.
   2. Specialized immunizations, when indicated (e.g. respiratory syncytial virus prophylaxis) should be administered prior to discharge.
   3. Every effort should be made to assure that parents and caretakers have been immunized against pertussis with the TDaP vaccine.

C. Home/Foster Care Environment
   In cases of foster care placement, Case Worker contact information should be identified. The Case Worker should be involved and kept updated as to the discharge plans.
   1. The home/foster care environment should be deemed safe and accessible.
   2. The parent or caregiver should be able to demonstrate the ability to manage the care of the infant.

D. Bilirubin Levels
   1. Bilirubin levels need to be in an acceptable range based on hours of life and risk factors.

**Authorization Protocol**

As an infant stabilizes, a lower level of care for medical reasons is appropriate. If there are no significant medical issues necessitating continued stay in Level I, II, III or IV nursery, the transitional care nursery level should be approved for the following.

A. Completion of an approved duration of antibiotic treatment *(Please reference CP.MP.85 Neonatal Sepsis Management Guidelines)*.
   1. Infants should be free of serious infection prior to discharge.
   2. Length of antibiotic therapy for proven or suspected infections is variable and should be individualized.

3. In selected cases, completion of a course of parenteral antibiotics at home may be appropriate if the patient is otherwise clinically well (asymptomatic), the home situation is adequate, the parents agree, and a home infusion company experienced in neonatal IV therapy or short-term intramuscular therapy is contracted.
4. The responsible physician (neonatologist, primary care pediatrician) and back-up health care facility (NICU, community hospital) should be clarified to the family and home care agency prior to discharge.

B. Weaning of $O_2$ for a BPD patient or periodic $O_2$ needed for a patient that is progressing toward discharge on room air as supported by physician documentation.
C. Tube feeding < 50% of daily caloric requirement and progressing toward discharge on all oral feedings as supported by physician documentation. Short term home NG feedings should be considered particularly when the infant is term or near term gestation.
D. Apnea or bradycardia monitoring with a new significant episode in the last 5 days and not planning to go home on a monitor (*Please reference CP.MP.82 NICU Apnea Bradycardia Guidelines*).
E. Reference *CP.MP.86 NAS Guidelines for drug withdrawal treatment guidelines* for concerns of drug withdrawal.

Parent discharge teaching and rooming in should be timed to be completed coincidentally with the achievement of medical stability not after achieving medical stability.

Review for Level I or transitional care nursery days for social reasons such as discharge teaching, awaiting foster placement, inappropriate maternal behavior/poor bonding, unsafe home environment or maternal lengthened postpartum course, illness or disability must be sent to the medical director for review. These days may be denied as not medically necessary if Benefit Plan Contract does not include coverage for social days as medically necessary.

| Reviews, Revisions, and Approvals | Date | Approval Date |
|---|---|---|
| Policy developed and reviewed by Neonatologist | 04/13 | 06/13 |
| Updated to clarify language for social day approval/denial | 09/13 | 10/13 |
| Updated authorization protocol to reflect 2014 Interqual language | 07/14 | |
| Updated references in policy to appropriate policy numbers<br>Section III.B.2 updated vent settings to FIO2 requirement only per Specialist review<br>Reviewed by Neonatalogist | 09/14 | 10/14 |
| Converted into new template<br>Removed 'appropriate to authorize days', and changed Interqual to nationally recognized support tool in Authorization Protocol section | 10/15 | 10/15 |
| IIA: Changed degrees in Fahrenheit to degrees in Celsius. III.B.2.: changed fraction of inhaled oxygen to ≤ 40%. IV.A.2. added that the ROP screening be conducted by an ophthalmologist skilled in evaluation of the preterm infant. | 10/16 | 10/16 |
| References reviewed and updated. | 09/17 | 09/17 |

**References**

1. Davies DP, Herbert S, Haxby V, McNeish AS. When should pre-term babies be sent home from neonatal units? *Lancet.* 1979; 1(8122):914–915.
2. Brooten D, Kumar S, Brown L, et al. A randomized clinical trial of early hospital discharge and home follow-up of very-low-birth-weight infants. *N Engl J Med.* 1986; 315(15):934–939.
3. Casiro OG, McKenzie ME, McFadyen L, et al. Earlier discharge with community-based intervention for low birth weight infants: a randomized trial. *Pediatrics.* 1993;92(1):128–134\
4. American Academy of Pediatrics Committee on Fetus and Newborn. Hospital discharge of the high-risk neonate. Pediatrics 2008; 122:1119. Reaffirmed 2012.
5. American Academy of Pediatrics Committee on Infectious Diseases. Immunization of preterm and low birth weight infants. American Academy of Pediatrics Committee on Infectious Diseases. Pediatrics 2003; 112:193. Retired 2009.
6. Collins CT, Makrides M, McPhee AJ. Early discharge with home support of gavage feeding for stable preterm infants who have not established full oral feeds. *Cochrane Database Syst Rev. 2015 Jul 8;(7):CD003743.*
7. Örtenstrand A, Waldenström U, Winbladh B. Early discharge of preterm infants needing limited special care, followed by domiciliary nursing care. *Acta Paediatr.* 1999; 88(9):1024–1030.
8. Örtenstrand A, Winbladh B, Nordström G, Waldenström U. Early discharge of preterm infants followed by domiciliary nursing care: parents' anxiety, assessment of infant health and breastfeeding. *Acta Paediatr.* 2001; 90(10):1190–1195.
9. Buchman AL. Complications of long-term home total parenteral nutrition: their identification, prevention and treatment. *Dig Dis Sci*. 2001; 46:1–18.
10. Buchman AL, Scolapio J, Fryer J. AGA Technical Review on short bowel syndrome and intestinal transplantation. *Gastroenterology* 2003; 124:1111-1134. www.gastrojournal.org.
11. Pinney MA, Cotton EK. Home management of bronchopulmonary dysplasia. *Pediatrics.* 1976; 58(6):856–859.
12. Halliday HL, Dumpit FM, Brady JP. Effects of inspired oxygen on echocardiographic assessment of pulmonary vascular resistance and myocardial contractility in bronchopulmonary dys-plasia. *Pediatrics.* 1980; 65(3):536–540.
13. Groothuis JR, Rosenberg AA. Home oxygen promotes weight gain in infants with bronchopulmonary dysplasia. *Am J Dis Child.* 1987; 141(9):992–995.
14. Sekar KC, Duke JC. Sleep apnea and hypoxemia in recently weaned premature infants with and without bronchopulmonary dysplasia. *Pediatr Pulmonol.* 1991; 10(2):112–116.
15. Garg M, Kurzner SI, Bautista DB, Keens TG. Clinically unsuspected hypoxia during sleep and feeding in infants with broncho-pulmonary dysplasia. *Pediatrics.* 1988; 81(5):635–642.
16. Moyer-Mileur LJ, Nielson DW, Pfeffer KD, Witte MK, Chapman DL. Eliminating sleep-associated hypoxemia improves growth in infants with bronchopulmonary dysplasia. *Pediatrics.* 1996; 98; 779–783.
17. Schneiderman R, Kirkby S, Turenne W, Greenspan J. Incubator weaning in preterm infants and associated practice variation. *J Perinatol.* 2009 Aug; 29(8):570-4.
18. Enrico Zecca, Mirta Corsello, Francesca Priolo, Eloisa Tiberi, Giovanni Barone and Costantino Romagnoli. Early Weaning From Incubator and Early Discharge of Preterm Infants: Randomized Clinical Trial. *Pediatrics.* 2010; 126; e651.
19. Muchowski, KE. Evaluation and Treatment of Neonatal Hyperbilirubinemia. *American Family Physician*. 2014; Jun 1; 89(11):873-878.

**Important Reminder**

This clinical policy has been developed by appropriately experienced and licensed health care professionals based on a review and consideration of currently available generally accepted standards of medical practice; peer-reviewed medical literature; government agency/program approval status; evidence-based guidelines and positions of leading national health professional organizations; views of physicians practicing in relevant clinical areas affected by this clinical policy; and other available clinical information. The Health Plan makes no representations and accepts no liability with respect to the content of any external information used or relied upon in developing this clinical policy. This clinical policy is consistent with standards of medical practice current at the time that this clinical policy was approved. "Health Plan" means a health plan that has adopted this clinical policy and that is operated or administered, in whole or in part, by Centene Management Company, LLC, or any of such health plan's affiliates, as applicable.

The purpose of this clinical policy is to provide a guide to medical necessity, which is a component of the guidelines used to assist in making coverage decisions and administering benefits. It does not constitute a contract or guarantee regarding payment or results. Coverage decisions and the administration of benefits are subject to all terms, conditions, exclusions and limitations of the coverage documents (e.g., evidence of coverage, certificate of coverage, policy, contract of insurance, etc.), as well as to state and federal requirements and applicable Health Plan-level administrative policies and procedures.

This clinical policy is effective as of the date determined by the Health Plan. The date of posting may not be the effective date of this clinical policy. This clinical policy may be subject to applicable legal and regulatory requirements relating to provider notification. If there is a discrepancy between the effective date of this clinical policy and any applicable legal or regulatory requirement, the requirements of law and regulation shall govern. The Health Plan retains the right to change, amend or withdraw this clinical policy, and additional clinical policies may be developed and adopted as needed, at any time.

This clinical policy does not constitute medical advice, medical treatment or medical care. It is not intended to dictate to providers how to practice medicine. Providers are expected to exercise professional medical judgment in providing the most appropriate care, and are solely responsible for the medical advice and treatment of members. This clinical policy is not intended to recommend treatment for members. Members should consult with their treating physician in connection with diagnosis and treatment decisions.

Providers referred to in this clinical policy are independent contractors who exercise independent judgment and over whom the Health Plan has no control or right of control. Providers are not agents or employees of the Health Plan.

This clinical policy is the property of the Health Plan. Unauthorized copying, use, and distribution of this clinical policy or any information contained herein are strictly prohibited. Providers, members and their representatives are bound to the terms and conditions expressed herein through the terms of their contracts. Where no such contract exists, providers, members

and their representatives agree to be bound by such terms and conditions by providing services to members and/or submitting claims for payment for such services.

**Note: For Medicaid members**, when state Medicaid coverage provisions conflict with the coverage provisions in this clinical policy, state Medicaid coverage provisions take precedence. Please refer to the state Medicaid manual for any coverage provisions pertaining to this clinical policy.

**Note: For Medicare members,** to ensure consistency with the Medicare National Coverage Determinations (NCD) and Local Coverage Determinations (LCD), all applicable NCDs, LCDs, and Medicare Coverage Articles should be reviewed prior to applying the criteria set forth in this clinical policy. Refer to the CMS website at http://www.cms.gov for additional information.