

TEACHING PLAN FOR: Discharge Home with Bronchopulmonary Dysplasia (BPD)

- POLICY:**
1. Parents/caretakers are to be taught all of the material as appropriate for the infant's condition. Documentation of the teaching will be done on the patient and family teaching record.
 2. Parents/caregivers of infants with BPD will complete the on-line education program on BPD. The completed post-test is placed in the infant's chart.
 3. Parents/caregivers will complete the "Getting Ready for Discharge" Worksheet to identify their learning needs related to newborn care.

DESIRED PATIENT

OUTCOME: Hospitalized infant with BPD will be discharged home to competent caretakers with follow-up services arranged.

- Teaching Plan:**
- A. KNOWLEDGE OF BRONCHOPULMONARY DYSPLASIA - Refer to Parent Handout "Bronchopulmonary Dysplasia"
1. Discuss nature of disease: Increased work of breathing due to stiffness of lungs and extra fluid caused by scarring. This is a chronic illness that requires special care (especially during the first year of life).
 2. Discuss the rationale for supplemental oxygen, to ensure enough oxygen for meeting the body's daily needs, for growth, and for healing of the injured lungs.
 3. Discuss the rationale for diuretics - to decrease extra fluid in the lungs and to decrease work of breathing.
 - a. Diuretics may change the pattern of urination throughout the day so that there are very wet diapers after diuretics and less urine further away from the medications.
 4. Discuss the importance of knowledge of the infant's "baseline" respiratory status. Discuss changes in respiratory status that may indicate illness and the importance of reporting these to their pediatrician or pulmonologist so that treatment may begin before the infant gets too sick.
 - a. Explain the use of the Daily Record for documenting respiratory assessment.
 5. Discuss increased susceptibility to respiratory infection. Preterm and newborn infants have less ability to fight infection than older children or adults. Lung injury with BPD affects usual defense mechanisms that protect against infection.
 - a. Discuss the transmission of respiratory viruses through coughing, sneezing, unwashed hands, and exposure to visitors with respiratory infections.
 - b. Emphasize hand washing as the most important way of preventing infection.

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- c. Discuss the importance of avoiding crowded areas and the need to regulate visitors.
 - d. Infants with BPD are candidates for preventive treatment against respiratory viral illness (such as Synagis) if discharged during cold and flu season. This treatment is continued after the infant leaves the hospital until respiratory illness in the community is less prevalent.
6. Discuss the long-term goal to grow new lung tissue and gradually outgrow the need for oxygen and medications. Alveolar growth continues well into childhood; therefore, the expectation is that the need for supplemental oxygen will decrease as the infant grows.

B. CARE PATH/TEAM INTRODUCTION

1. Introduce the concepts of taking their baby with BPD home and being placed on the Care Path.
2. Verify that the parents/caretakers are aware of all members of the care team.
3. Discuss the importance of the family's role in the discharge education/preparation process. Refer to handout "Discharge Planning and BPD - How Families Can Help" in the handout entitled "Discharge Instructions for Home Care of Babies with Bronchopulmonary Dysplasia (BPD)".
4. If parents do not have a pediatrician, assist them in contacting the case manager to get recommendations and give them handout on questions they will want to ask in order to choose one. Hospital websites and internet sites such as WebMD may be helpful.
5. Explain who will be helping them care for their infant after discharge (pediatrician, pediatric pulmonary team, home care nurse, equipment companies, and other specialists as needed).

C. RESPIRATORY FUNCTION

1. Parents/caretakers will demonstrate how to assess their infant's respiratory status with the following indicators:
 - a. Counting respirations for one minute while sleeping to establish a baseline sleeping respiratory rate.
 - b. Identifying "normal" work of breathing and what retractions and nasal flaring look like.
 - c. Identifying plugged nares and relationship to work of breathing.
 - d. Identifying infant's color change (e.g., pallor, duskiness or cyanosis of lips, nailbeds or skin.)

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- e. Identifying wheezing, congestion, coughing.
 - f. Identifying apnea, periodic breathing and tachypnea.
2. Parents will verbalize/demonstrate how they plan to document their baby's assessment every day.
 3. Discuss the importance of avoiding respiratory irritants such as: smoking, baby powder, perfumes/hair sprays are not allowed in the baby's environment. (This content is also on the teaching record for Family Education of the Hospitalized Infant).
 - a. Smoke residue on clothing, bedding or other household items may be harmful.

D. FEEDING TECHNIQUES: ISSUES

1. Refer to Family Education of the Hospitalized Infant Teaching Plan for universal infant care issues.
 - a. The "Getting Ready for Baby's Discharge" checklist is used to assess learning needs of families and caregivers.
 - 1) If parent/family indicates that an item is "Done or Know How to Do It"; then no further action or documentation on the part of the nurse is needed.
 - 2) If the parent/family indicates that more practice is needed, then competency is validated by the RN and this is documented on the form.
2. Explain the rationale for higher calorie formula and additives if needed because of increased caloric needs. Infants with BPD have high energy needs for growth, repair of injured lung, lung growth, and because of increased work of breathing. Refer to handout "Bronchopulmonary Dysplasia".
 - a. Explain recipe for higher calorie formula and additives (if needed).
 - b. Parents will need to verbalize and/or demonstrate accurate preparation of feedings. Refer family to dietitian as needed to reinforce information.
3. Instruct family in signs and symptoms of dehydration - such as dry mucous membranes, decreased urine output, sunken fontanel, lethargy and weight loss (if the infant is weighed at home). Explain the usual pattern of wet diapers over the course of the day and the relationship to timing of diuretics. Dehydration may be a sign of inadequate intake, inaccurate dosing of diuretics, or other illness (such as GI or viral illness). Families should be instructed to call the doctor if these findings occur.
4. Instruct family in signs of fluid overload such as edema (facial and extremity), less urine output and excessive weight gain (if the infant is weighed at home), faster breathing,

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increased work of breathing and "wet breathing", decreased activity or listlessness. The infant may not look right or be pale. Refer to handout "Body Fluid Increase" - filed under "CHF".

5. Infants with BPD may tire easily with feeding; therefore they should be allowed frequent rest periods as indicated by the infant's behavior. Frequent feedings with smaller feeding volumes may be needed. Tube feedings may be needed in addition to oral feedings if feeding is too strenuous an activity.

E. MEDICATIONS

1. Refer to Medications Administration at Home Teaching Plan.

F. NEBULIZER TREATMENTS: Refer to individual medication sheets.

1. Have parents demonstrate how to administer a nebulizer treatment and verbalize what the nebulizer treatment is for.
2. Working the air compressor will be taught by the home equipment company.

G. HOME OXYGEN (If applicable) - Refer to handout "Discharge Home with Oxygen".

1. Teach parents proper nasal cannula placement and taping.
2. Parents will demonstrate how to change O₂ cannula and secure it.
3. The cannula is changed at least every seven (7) days or more frequently if plugged.
4. Demonstrate how to secure tubing to back of clothing so it won't get dislodged.
5. Instruct parent to limit oxygen delivered by portable tank to 3 hours at a time since that oxygen is not humidified and is very drying.
6. The home equipment company will teach the parents how to take care of oxygen tank.
7. Review safety precautions for home oxygen use:
 - a. Any source of sparks should be kept at least ten (10) feet away from oxygen.
 - b. "No Smoking" signs should be posted in your entire house.
 - c. Keep tanks away from electric heater vents, gas or kerosene heaters, radiators, fireplaces, wood burning stoves, kitchen stoves and grills.
 - d. All electrical appliances must have secure and grounded plugs.

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- e. Add water to the humidifier as needed. Change all water in container daily.
 - f. Plan ahead for long weekends and vacations; order extra tanks.
- H. HOME MONITORING (If applicable) - Refer to Handout - "Discharge Home with Oxygen".
1. Parents will need to know how to respond to the monitor alarm. This is taught in the Infant CPR Class.
 2. The home equipment company will teach families how to use the monitor.
 3. Instruct the parents to bring in their monitor for use during the overnight or extended stay.
 4. Teach parents proper electrode placement directly under the armpits near the bottom of the ribcage.
 5. Teach parents to wash skin with soap and water, then dry thoroughly prior to placement of electrodes which are changed at least every two (2) days.
 6. Teach parents how to check the electrodes to ensure adherence and conductivity.
- I. HEART RATE ASSESSMENT (For infants going home on monitor)
1. Teach parents how to take brachial pulse.
- J. OVERNIGHT/EXTENDED STAY
1. Parents/Caretakers are requested to stay for an extended period of time in order to fully care for their baby on the home monitor under the supervision/guidance of the staff. Preferably, this would be from approximately 10:00 PM until 8:00 AM in the parent room near SCN.
 2. Extended stay will include at least one evaluation of the parent's reaction to an alarm (either real or elicited by staff).
 3. Evaluation of the alarm response would include the parents' assessment of the baby, intervention if necessary, and resetting the monitor, all in a timely manner. Note: This may also be assessed to some extent by observing the response to alarms in the nursery.
- K. WHEN TO CALL THE DOCTOR: Parents will call doctor when any of the following changes are seen:
1. An increase in retractions.
 2. Nasal flaring more than the baseline.

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3. Color differs from normal.
4. Increase in coughing or the type of cough changes.
5. Wheezing is heard.
6. Whenever there are questions about medications, feedings or appointments.
 - a. Discuss with parents that a cold is not a minor illness for an infant with BPD. A cold can easily turn into pneumonia and serious illness.

L. WHAT TO DO IN AN EMERGENCY

1. Parents will devise and describe an emergency plan such as phone list, 911 number, identification of additional emergency support (family and neighbors).
2. The case manager will send letters to Utility companies to prioritize them for service if on home oxygen/monitoring.
3. See Family Education of the Hospitalized Infant teaching plan section on "Safety".

M. GROWTH AND DEVELOPMENT

1. Explain the concept of "corrected age" = gestational age at birth + chronological age (in weeks). Infants are corrected for prematurity until they have reached developmental milestones according to their chronological age or up to 2 years of age. This concept is important for parents to understand so that they may be realistic in their expectations for their child's development.
2. Developmental follow-up is important. Infants are evaluated by developmental specialists in the nursery who assess feeding (including stamina), responses to handling and caregiving, tone and motor development. Referral will be made for neonatal follow-up for a developmental exam at about 4 months corrected age. The focus of this exam is achievement of developmental milestones, assessment of growth and well being, and early identification of developmental problems that may be related to prematurity, illness, and/or extended hospitalization. Discuss with families that these issues often are not identified during hospitalization but may occur later on. Early identification allows early referral for treatment.
3. Instruct parents that referral to an early intervention program may be beneficial for additional provision of developmental supports in the home. Infants who are oxygen-dependent, those weighing <1,000 grams at birth, and those with central nervous system disorders may be referred. The developmental specialists can provide more information and will make the referral. The goals are to promote parent understanding of their child's development, early

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identification and treatment of developmental delays, and early treatment of identified issues (for example, hearing loss or visual impairment) to promote optimal development and outcomes.

N. PARENTING NEEDS

1. Explain that parents will develop healthy interactive relationship with infant. They will realize the importance of visiting for extended periods of time to become familiar with care needs and behavioral patterns.
 2. Encourage parents to verbalize expectations and needs:
 - a. How do they see their baby as a part of the family?
 - b. How will their baby with a chronic illness affect the family?
 3. Encourage parents to express anxieties and concerns related to discharge and expected changes in lifestyles with an infant with chronic pulmonary problems.
 4. Educate parents about available community resources and the importance of developing a functional support network with family, friends, neighbors and community services.
 5. Discuss plans for baby-sitting; day care is not recommended. Other caregivers are welcome to participate in discharge teaching. This is required for those caring for the infant for extended time periods.
 6. Discuss the need to maintain a healthy relationship between parents themselves and the impact this baby may have on it.
- O. CPR Training: Although training in infant CPR is only required for parents taking an infant home on a monitor, it is strongly encouraged for all parents of infants with BPD and/or GE Reflux. Explain the availability of classes and how to sign up. Class instructors will sign off class after completed/certified. If the class is full when a family signs up, contact CPR instructors and/or case manager so that educational needs may be prioritized.

APPROVAL: Nursing Standards Committee

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