

## Point of View

# How to prepare your preterm baby before discharge

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## Introduction

The morbidity rate that occurs in preterm infants post-discharge is quite high, implying discharge planning for preterm infants requires more attention by health workers<sup>1</sup>. Preterm babies are defined as infants born at gestational age  $\leq 37$  weeks<sup>2</sup>. Preterm condition in infants can cause low birth weight (LBW) i.e. birth weight  $\leq 2500$  grams<sup>3</sup>. Preterm infants have many health implications for the child's long-term development and future family responsibilities<sup>4</sup>. Preterm infants and their family require special care, including psychological support and intensive medical care as well as facilitating the transition from hospital to home<sup>5</sup>. The transition process from hospital to home can be facilitated through the discharge planning process. This aims to reduce the length of hospital stay, prevent re-admittance to hospital, and improve the coordination of patient and health workers<sup>6</sup>. It also aims at reducing hospital costs, avoidance of the risk of nosocomial infections, and shortening of the separation time between parents and infants<sup>7</sup>.

In Indonesia, discharge planning for preterm infants remains a problem. Parents are not well-informed about their infant's condition, how to treat them at home and any necessary follow-up care until the baby can be discharged. This condition can lead to infant hospital re-admission<sup>8</sup>. Improvement in the quality of discharge planning is needed for preterm infants to prevent re-hospitalization, because it can increase both family

financial expenses and the burden on parents both physically and psychologically<sup>9</sup>. Aside from not being the optimal home treatment plan, re-hospitalization can also be caused by the baby's condition, lack of parental readiness and problems associated with the health care system availability<sup>7</sup>.

The discharge of a baby from the Neonatal Intensive Care Unit (NICU) is considered the most special moment of bringing the baby home and becoming full parents<sup>10</sup>. According to Mosher (2017), the parents' biggest difficulties of having an infant admitted in the NICU were identified as, firstly, being physically separated from the infant, secondly the sight of infant's weak appearance and lack of response to a variety of tools and, thirdly, the psychological disruption between parents and infant, leading to decreased parental confidence and feelings of being unable to be a proper caregiver for the infant<sup>11</sup>. Therefore, preparing to leave the NICU is very important for the physical wellbeing and development of the baby. Such preparation requires assistance from health workers, one of which is a nurse. Nurses, as the main source of information, should be able to communicate well with the parents<sup>12</sup>.

Communication is also sometimes considered as an obstacle in patient discharge planning; when miscommunication occurs between the health workers and family regarding discharge planning, it will potentially cause frustration, stress and anxiety among all parties and lead to increased length of hospital stay<sup>13</sup>. Stress experienced by the mother is due to her new role as a parent with a baby who is in a critical condition<sup>14</sup>, while stress that occurs in the father is caused by his role as husband, father and provider for the family. Also, the father must be able to stabilize the physical and psychological condition of his family. Therefore, at this critical time, optimal communication between health workers, especially nurses, with parents is really needed<sup>15</sup>.

The aim of this article is to provide an overview of discharge planning for preterm infants and the influencing factors. Furthermore, inadequate discharge planning can be avoided and help prevent morbidity in preterm infants.

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### **Readiness for discharge**

The discharge planning begins with ensuring that parents feel sufficiently prepared to bring the infant home from the NICU. Both the infant and the parents will achieve positive health outcomes by treating the infant at home. Preparing a comprehensive discharge plan has resulted in fewer treatments in a hospital after discharge, fewer total days hospitalized, and lowered healthcare costs<sup>15</sup>. The ability to manage the care needs at home is an important factor about how well individuals cope with the post-discharge condition. Preterm infants usually need additional care and post-natal support because of health and developmental problems related to their physical condition<sup>12</sup>.

Before discharge, infants who leave the NICU will receive further care in the neonatal unit to ensure they are in a good and stable state. Things nurses must teach parents when the infant is in the neonatal unit are environment orientation, healthcare staff introduction, explanation of the utilized instruments, proper hand washing techniques, and providing adequate information about infant care and what parents should do. Mothers are also taught how to breastfeed and made to practise routinely. Parents are given the opportunity to spend time with their infant to build bonds<sup>16</sup>. Involving parents in caring for the baby will benefit in teaching good and proper care. It can also increase parents' experience, so at the moment of discharge the parents are ready to take over.

Discharge planning at the NICU is considered as an advanced achievement of technical skills and knowledge, emotional comfort and trust by proper baby care by the primary caregiver when discharged<sup>17</sup>. The survival of preterm infants in recent years has increased; currently more than 90% of preterm infants born at 27 weeks' gestation or more can be discharged from neonatal care units in good and healthy condition<sup>18</sup>. Family risk assessment and calculation to assess readiness in discharge planning needs to be done. Every family with a high-risk factor of unpreparedness in infant care requires special attention during the discharge planning process so as to obtain the best results. Factors related to the high-risk unprepared family include aspects of home care readiness, family characteristics, family response in preparation for discharge and family's economic condition<sup>19</sup>.

Discharge planning for infants begins with a family readiness assessment using the Neonatal Discharge Assessment Tool (N-DAT) to assess risk factors associated with the readiness of infants and parents to be discharged<sup>20</sup>. This instrument is for planning high-risk infants, one of which is a preterm infant. The purpose of N-DAT is to classify the infant risk at the time of discharge from the NICU

and identify the specific care needs for high-risk neonates by examining risk factors related to the infant and family<sup>21</sup>. The expected outcome of screening home readiness through N-DAT scoring is identification of the required fields in the aspects of competency, resources, risk factors and childcare.

### **Discharge criteria in preterm infant**

Criteria for scheduling discharges in preterm infants vary between neonatal units, and among these are the physiological stability of the baby, unit resources, the state of the house and parental coping abilities. In addition, the application of *Kangaroo Care* has resulted in early discharge in preterm infants<sup>22</sup>. Return readiness in preterm infants is usually determined by the body's function, body weight and gestational age criteria of the baby<sup>23</sup>.

### **Thermoregulation**

Preterm infants are prone to hypothermia on exposure to cold temperatures because they have smaller reserves of white fat, making them vulnerable to body temperature instability. Changes in body temperature that occur in infants must be evaluated properly to avoid the occurrence of sepsis or infection<sup>18</sup>. Infants are considered ready to go home if and when they are released from the incubator machine and do not experience a temperature decrease and can adapt to low temperatures in the surrounding by spontaneous thermoregulation<sup>24</sup>.

### **Oral feeding skills and adequate weight gain**

Exclusive breastfeeding for preterm infant is proven to reduce the incidence of NEC sepsis, but it also has long-term benefits for the infant's nerve development. Infants that are breastfed exclusively will experience an increase in the tolerance of eating clinically, so that the provision of enteral nutrition at the time of discharge will be easier<sup>25</sup>. Preterm infants can begin to be fed externally if the sucking and swallowing reflexes are functioning properly. Older gestational age infant can be given oral feeding earlier than younger infants<sup>26</sup>. Infants born with weights of 2,500 to 3,000g can receive oral feeding 40 hours sooner than newborn infants weighing <1500g<sup>25</sup>. Giving oral feeding to preterm infants can be done when the baby is considered to be ready and capable. This is done to avoid other health complications that may occur in the baby.

### **Respiratory stability**

Preterm infants, especially with a gestational age of at least 32 weeks, are advised to be kept in the supine position to avoid sudden infant death. The purpose of supine positioned infant is they are able to maintain stable breathing and get used to the best sleeping position<sup>27</sup>. Unstable breathing in these preterm infants can cause hypoxia and acute respiratory distress syndrome (RDS)<sup>28</sup>.

### ***Apnoea of prematurity***

NICU often has patients with persistent apnoea episodes that occur after the first weeks of birth, sometimes even when the infant is considered ready to be discharged, based on an assessment of other physical aspects. Apnoea is defined as a respiratory disorder leading to cessation of breathing lasting 20 seconds or more, or between 10 and 20 seconds, sometimes accompanied by bradycardia (heart rate <80bpm) or oxygen desaturation (SaO<sub>2</sub> <80%)<sup>29</sup>. Before discharge, the infant should be confirmed to be apnoea-free for a period of 7-13 days postnatal based on the gestational age and physical condition of the baby. If infants experience apnoea and are treated properly before discharge, it has been shown that it could prevent sudden death<sup>30</sup>. Preterm infants may also have a higher risk of sudden infant death syndrome compared to full term infants<sup>28</sup>.

### **Discharge teaching process and evaluation**

In the first days postpartum, parents feel distrust, and are shocked by the state of the baby; the emotional condition occurs even before the return of the baby home. The role of the health worker is very important in explaining how the baby is and providing extensive information to parents to eliminate feelings of doubt and anxiety<sup>31</sup>.

Parents are also helped to identify those who will take part in caring for the baby when returning home; it is recommended that baby care is done by two people so that they can take turns in caring if one is absent<sup>32</sup>. This teaching phase consists of family-centred care (FCC), modelling and skills in baby care and family support<sup>19</sup>. Aspects regulated in the FCC include: 1) Infants, parents, or other family members and all people involved in baby care are treated with dignity and respect; 2) Healthcare providers communicate and share complete and impartial information with families; 3) Family building their strengths by participating in experiences that increase control and independence in baby care; 4) Collaboration between families and healthcare providers occurs in the development of policies and programs in care delivery<sup>5</sup>.

### **Discharge teaching content**

After identifying the family's readiness in discharge planning, the healthcare worker should then explain several post-discharge activities, namely:

***Technical baby care skills:*** Families need the knowledge and skill of essential care for infants, including breastfeeding; making formula milk in the proper dosage; bathing; dressing; skin care, umbilical cord care and genitals hygiene; and placing the baby in a safe sleeping position and handling any special care situations such as using medical equipment and administration, and storing drugs properly when needed<sup>33</sup>.

***Home environment preparation:*** Families need to know what supplies they need at home in taking care of the infant after discharge from the hospital, including suitable food supplies (for example, breast milk pumps, bottles, formula milk, etc.), diapers, baby clothes, thermometer and suction ball<sup>34</sup>. Ideally, these resources will be obtained before being discharged from the hospital to prevent confusion in preparing ingredients for the infant's care<sup>35</sup>.

***Car seat and car bed use:*** Before discharge, every preterm infants needs an evaluation of the use of a car seat; also referred to as a car seat challenge, this consists of placing a premature baby safely into a car seat or car bed at the right angle; adjusting the straps so that the infant is in the correct position; and monitoring the vital signs (for example, heart rate, breathing, and oxygen saturation)<sup>27</sup>. If the infants can tolerate being in a car seat or car bed for at least 90 to 120 minutes or during the anticipated trip, without apnoea, bradycardia or desaturation, then the infant is considered to have passed the evaluation.

***Preterm infant behaviour:*** Families need instructions on typical baby behaviours, including general breastfeeding patterns and bottle feeding, normal digestive and urinary functions, and the usual sleep-wake cycles of preterm infants. Family must realize that premature infants are often not socially involved as full-term infants. They are also often less active, less alert, and less responsive and more sensitive<sup>18</sup>.

### **Discharge teaching process**

Discharge planning should start as early as the first day the patient enters the hospital. The teaching process for preparing to go home must also consider the available resources in the room, as well as family learning styles. Teaching and preparing about home treatment for infants can be done as long as hospital treatment takes place; this can be done both formally and informally<sup>19</sup>. Bedside teaching by nurse is one of the most impactful teaching methods conducted at NICU. This type of close observation instruction allows staff to get information from families about what they know, want to know and need to know.

### **Transfer and/or Coordination of Care**

In infants with comorbidities or high-risk infants, after the baby has returned home, it is necessary to follow-up the baby's condition. Health-worker teams can help families to communicate with primary healthcare providers in dealing with health problems that may occur when the baby has returned home<sup>21</sup>. Families can carry out routine infant examination through primary healthcare facilities in their neighbourhood. Therefore the need for accurate

communication between the NICU team conducting discharge planning and primary care providers is important to consider. Primary care providers need to know the overall condition of the infant. It is very important for them to ensure that they obtain health information about every premature baby they meet. This is to decide whether the families are ready or not to be discharged<sup>19</sup>.

### Conclusion

The discharge planning process in preterm infants is influenced by both the baby's physiological factor and parents' psychological factor. Infants planned to be discharged are expected to fulfil various criteria

related to the physiological marker of preterm infants, such as thermoregulation or body temperature regulation, respiratory stability, feeding ability and weight gain. Parents need to be given knowledge about various care activities that need to be delivered to the baby when discharged. After the baby returns home, it is necessary to monitor the baby's health condition so as to prevent hospital readmission or other adverse effects that may occur when the infant has returned home. Further studies are needed to find out other factors that influence the preparation of discharge planning in preterm infants.

### Key Points:

- The implementation of discharge planning in preterm infants requires special criteria.
- Physiological markers in preterm infants must be fulfilled as the main requirement in discharge planning.
- Discharge planning for preterm infants can be continued at home by involving cooperation between parents and health workers.
- Family readiness, both physically and psychologically, must be considered before planning for discharging the infant.

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