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Management of the High Risk Infant

Beyond Survival





Sudha Chaudhari

Foreword
Haresh Kirpalani

JAYPEE

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CHAPTER 2

Discharge Planning and Counseling

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INTRODUCTION

The admission of the newborn to the neonatal intensive care unit (NICU) is not only a stressful but also a scary experience for the parents. They have dreamt of a healthy, bonny baby. Instead they have a sick, scrawny baby to deal with. Their own feelings of guilt and helplessness are compounded by the fact that they have no role to play in the care of the baby, the care is taken over by nurses and doctors.[1] Hence, the professional team needs to give moral support to the parents and guide them on how to manage the baby after discharge at home. The discharge of the sick neonate is the end of a long struggle for both the parents and the baby. Here are a few guidelines while planning the discharge.

PLANNING THE DISCHARGE

The baby should be absolutely stable before planning a discharge. Babies who are born very low birth weight (VLBW) or extremely low birth weight (ELBW) represent an "at risk" group of infants.[1,2] The prerequisites for planning a discharge for these babies are as follows:

- The baby should not require oxygen.
- There should be no apneic spells for 7 days.
- The baby should have recovered from all acute illnesses.
- The baby should be on "katori spoon" and/or partial breastfeeds.
- The baby should be able to maintain his or her temperature of >36°C in a normal household environmental temperature. This is particularly important in the winter season.

The mother is not confident about handling the baby. The baby may have been in the NICU for 6–8 weeks and the nurses have been taking care of the baby. Hence the baby should be transferred to a "step down" unit where the mothers "room in" with the baby and care for the baby with minimal supervision by the nurse.

The prerequisites for the family are as follows:

- The mother should be confident about the feeding technique (breast or katori spoon) and preparing formula feeds if a formula is needed.
- Parents should be happy to take the baby home and should have demonstrated adequate parenting skills.

- Parents need to have some basic information about infant care, which includes bathing, massage, cord care, temperature measurement, and comforting.
- Parents should be taught about:
  - Detection of early signs of illness
  - Sleeping positions
  - Ongoing medications, correct dosage, and administration

DISCHARGE DOCUMENTATION

All patients discharged from the hospital must have:

- A full examination record on the appropriate form (include age in days), weight, length, head circumference plotted in the growth chart before discharge
- A plan for follow-up clearly documented in the case notes
- A record of any prescribed therapy
- Discharge card
- No baby is to be discharged from the NICU without a discharge summary.
- Growth chart must be provided with the discharge summary.
- Immunization details regarding vaccination should be provided with the discharge summary.

DISCHARGE SCREENING

- Cranial ultrasonography (USG) should be done in all preterms on days 3, 7, 14, and 28 and term, if indicated. If any abnormality is detected, then they are advised regarding the follow-up after discharge.
- Retinopathy of prematurity (ROP) screening should be done. If the follow-up is required, then date, time, and place of the scheduled ROP screening should be mentioned in the discharge summary.
- Metabolic work up. Serum electrolyte, ionic calcium, serum bilirubin, and blood sugar levels should be within normal range before discharge.
- Hemoglobin and hematocrit should be checked before discharge to rule out anemia.

COUNSELING

At the KEM Hospital, Pune, the author personally counsels the family, the day before the discharge. We have prepared "a parent guidance book" in Marathi, Hindi, and English. The fathers are also encouraged to attend the counseling session. But the most important member of the family, the mother-in-law, is asked to attend the counseling session because she is the decision maker in many families regarding child care.

Every point in the book, page by page, is explained to the family. The benefits to the parents are that they get emotional support and proper medical guidance for the care of the baby. The counseling about hygiene reduces the

postdischarge readmissions to the hospital and they get proper information and guidance about follow-up.

The babies with the following risk factors are specially counseled.

- All ventilated babies
- Birth weight <1,500 g
- Preterms <36 weeks of gestation
- Hypoxic ischemic encephalopathy
- Seizures
- Intraventricular hemorrhage—grades II, III, and IV
- Septicemia/meningitis
- Symptomatic hypoglycemia

The key points that are explained during the counseling are as follows:

- *Isolation*: The baby should be kept in a separate room, so that the chances of infection are less.
- *Maintenance of hygiene*: Washing hands is very important for prevention of infection. In the Pune Low Birth Weight Study, maximum postdischarge morbidity and mortality was due to infection.[3] The mother and caregiver are instructed on how to wash hands with soap and use of the sanitizer. If the father comes from outside and wants to pick up the baby, he is advised to change his clothes, wash his hands, and then pick up the baby. Visitors are told not to pick up the baby. Small children are discouraged from going near the baby since they have frequent colds and coughs.
- *Massage*: The purposive, nonrepetitive contact with human hands on the baby's bare skin with oil, stimulates the baby's sense of touch. Regular oil massage will stimulate optimum growth and development of the baby.[4] The oil massage should be done by a member of the family **(Fig. 1)** by the specified method, and not by a maid, due to hygiene issues. Massage should be avoided in babies who are on gardenal.



Fig. 1: Oil massage.

- Oil should not be put in the ears, nose, and umbilicus.
- *Bathing*: Sponging with lukewarm water should be done till the baby weighs 2 kg. Baby soap should be used and not a domestic soap. Once the baby weighs 2 kg, the baby can be bathed in the traditional way.
- *Clothing*: Only cotton clothes should be used.
- *Kangaroo mother care (KMC)*: KMC should be continued at home **(Fig. 2)**. It is interesting that many fathers are offering to do KMC when the mother is unable to do it. KMC and breastfeeding have positive effects on the preterm baby's health status.
- *Stimulation*: The preterm baby should be given auditory and visual stimulation. Whenever the baby is awake, the mother is asked to use a red ball **(Fig. 3)** and move it from side to side for visual stimulation.



Fig. 2: Kangaroo mother care.



Fig. 3: Visual stimulation.



Fig. 4: Auditory stimulation.

A "pooja bell" or a rattle is used to give auditory stimulation by ringing it from side to side **(Fig. 4)**.

Music is known to help in the development of the brain. We suggest that soft instrumental music be played when the baby is awake. The mother can also sing a lullaby. It promotes neurobiological processes and neuronal learning in the brain.[5] Music, has a soothing effect on the baby. Babies have an innate response to music which can help soothe an overtired, cranky baby. We advise soft instrumental music. Babies also like the mother's voice. The mothers should be encouraged to talk to the baby. Music may have positive effects on physiological parameters and behavioral states and may reduce pain and improve oral feeding in preterm infants. In recent neuroimaging studies, full cerebral processing of music giving multisensory stimuli has been reported.[6]

- *Corrected birth date*: It is very important to explain the concept of corrected age to the parents. 40 weeks is considered full-term and the number of weeks of prematurity is added to the birth date to give the corrected date. Parents are explained that whenever they are observing the mental and motor milestones of the preterm baby, they should only consider the corrected date and forget about the birth date till the age of 2 years. This explanation helps them understand that they should not think that their baby is showing delayed development in comparison with other full-term babies in the neighborhood and this prevents anxiety issues.

FOLLOW-UP

Brainstem Evoked Response Audiometry

Screening the baby with otoacoustic emission (OAE) should be done anytime 3 days after birth. But OAE is only a screening test. At 3 months corrected age,

brainstem evoked response audiometry (BERA) is done to confirm that hearing is normal.

Neurodevelopmental Assessment

This assessment helps to identify early developmental delay. The "High Risk" infant, after the general checkup and neurological examination by the neonatologist, is referred to the occupational therapist who attends the High-risk Clinic.

The therapist assesses the baby at 3, 6, 9, and 12 months corrected age. If there is delay, we give a special stimulation kit **(*See* Chapter 8A)**. She instructs the parents about correct carrying positions, advantages of "tummy time", etc.

Development Quotient

The parents are advised to bring the child at 18 months (corrected age) for a development quotient (DQ). This gives a mental and a motor age. The parents are explained that if the DQ is normal and the child is walking, the development is on the right track and they should stop worrying about the child. This relieves a great deal of anxiety in the parents.

Retinopathy of Prematurity

If the preterm baby has ROP, frequent checkups as advised by the ophthalmologist should be done.

The parent guidance book, which we give every mother, lists some (1) practices to be avoided (2) danger signs, and (3) appointments for follow-up.

Practices to be Avoided

- Do not worry; your baby can feel your emotions.
- Do not allow your baby to be touched by unclean hands and use unclean toys.
- Do not stop medication without consulting your doctor.
- Do not supplement breast milk with anything else without consent from your doctor.
- Do not restrict your child from trying new skills.
- Do not make the baby stand till he/she is ready and avoid walkers.

Follow-up Schedule

Name	
Date of birth	
Gestational age	
Corrected date	
Birth weight	
Registration no	
Date of admission	
Date of discharge	

Contd...

Contd...

BERA appointment (3 months corrected age)	
First neurodevelopmental assessment (3 months corrected age)	
Second neurodevelopmental assessment (6 months corrected age)	
Third neurodevelopmental assessment (9 months corrected age)	
Fourth neurodevelopmental assessment (12 months corrected age)	
Developmental quotient (DQ) (18 months)	

Contact Information
For Appointments and Assessments

Contact Persons	Mobile no
Medical Officer	
NICU Coordinator	
Lactation Consultant	
Medical Emergencies	

FREQUENTLY ASKED QUESTIONS

- Which date should we give for the horoscope?
  - Corrected date or birth date?
  - When should we celebrate the baby's birthday?
  - Which date for school admission?
- When do we start breastfeeding?
- How long do we continue KMC?
- When do we start immunization?
- How much weight should a preterm gain per day?
- Should we use air conditioners in summer and heaters in winter?

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Management of the High Risk Infant
Beyond Survival

Salient Features

- A practical and detailed guide on how to do a close follow-up of the `high-risk' infant, right from the time of discharge from the neonatal intensive care unit (NICU)
- Describes not only the methods of diagnosis and the various tests used for it in detail, but also suggests the therapeutic regime
- Deals with physical, mental, cognitive, visual, auditory and orthopedic problems encountered in such babies
- Provides guidelines for their management, based on the vast experience of the author and her colleagues in this field
- A ready-reckoner for pediatricians, neonatologists and therapists.

Sudha Chaudhari is a Consultant, Department of Pediatrics, Terre Des Hommes Rehabilitation and Morris Child Development Centre, King Edward Memorial (KEM) Hospital, Pune, Maharashtra, India for the last 45 years. Her research study, "Pune Low Birth Weight Study—Birth to 22 Years" is the longest follow-up study in India. This book chronicles her insight into neurodevelopment of `high-risk' infants and her 40 years' experience gained at the Terre Des Hommes Rehabilitation and Morris Child Development Centre, KEM Hospital, Pune. Dr Barbara Schmidt, a renowned neonatologist from USA, called her a "Pioneer in Neonatal Follow-up in India."

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