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Watching for Complications

"In the beginning, you expect complications and scary moments. In intermediate care, setbacks are more surprising, more disappointing, because you think those times are behind you."

When your baby is stable enough to graduate to intermediate care, she is generally considered past the real dangers that may have been present while she was critically ill. A few medical conditions can affect progress, but most cause only a temporary setback. Rarely, these conditions can mean readmission to the NICU.

Apnea and Bradycardia

Apnea, bradycardia, and desaturation often occur in babies born at less than 32 weeks' gestation, and episodes may continue in the intermediate care nursery. The staff will monitor the frequency, intensity, and duration of the episodes. If your baby was not having apnea or bradycardia in the NICU or if the frequency or intensity of the episodes increases now, this may be a sign of illness. If this happens, the physician, neonatal nurse practitioner, or physician assistant will order tests to find the cause. If the apnea and bradycardia are because of immaturity, your baby may receive medication (theophylline or caffeine) to decrease the episodes. If your baby is put on medication, drug levels in the blood may be checked periodically. As your infant grows, the doctor adjusts the dosage or allows your baby to outgrow the dose if apnea and bradycardia resolve. Unless they are a side effect of another illness, apnea and bradycardia often resolve around your baby's original due date. If your baby is ready to go home before that date, mild apnea and bradycardia may need to be managed before discharge. Management of the situation depends on the philosophy of your baby's neonatologists. Your baby may require continued monitoring in the hospital, may require testing with a pneumogram before discharge, or may be a candidate for home monitoring and/or medication. If your baby goes home with a monitor, you'll be instructed in monitor use and infant CPR.

Infection

Your recovering baby is prone to many kinds of infection. Despite the best precautions of staff and visitors, infections do occur. Some infections, such as thrush, are minor and respond to treatment rapidly. Others can be more serious.

Thrush

Your baby might get a yeast infection—called *thrush*—in her mouth. It looks like thick white patches on the tongue or gums. You cannot wipe these patches off. Infants with thrush often have feeding problems because of tenderness in the affected area. Thrush is usually treated with oral medication.

Other Infections

Signs of other infections may include feeding difficulties (intolerance, vomiting, abdominal swelling, or poor feeding), decreased activity, increased frequency of apnea and bradycardia, unstable temperature, and increased work of breathing. When the health care team becomes aware of these signs, your baby may have blood work, a spinal tap, a urine culture, or x-rays to identify the cause of infection. Intravenous antibiotics may be started, and your baby may be made NPO (no nutrition by mouth) as a precaution. Rarely, your baby may be transferred back to the NICU for respiratory support, for increased monitoring, or simply for IV medications. It is also rare that a baby overwhelmed by an infection will die. Most infections respond well to treatment, and your infant will be back to normal in 2 or 3 days.

Hernias

Preterm infants are at risk for hernias—protrusion of a body part (such as a loop of intestine) through a muscle weakness or unusual opening inside the body. If your baby develops a hernia, most eventually require surgical repair.

Inguinal Hernia

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The most common hernia is called an *inguinal hernia.* This condition occurs most often in males and usually presents as a bulge in the groin, especially after crying or straining during a bowel movement. Sometimes girls get inguinal hernias, which cause a bulge, or swelling, above or along the labia. Usually a boy's testicles stay in the inguinal canal (high in the groin, not down in the scrotal sac) until about 32 weeks' gestation. At that time, the testicles descend into the scrotum. But in preterm babies, part of the intestine may push through a remaining gap in the muscle wall into the scrotum. This may affect one or both sides and appears as a swelling above or in the scrotum. As long as the hernia is reducible (the intestine can be easily and gently pushed back through the opening), immediate surgical correction is not necessary. Surgery to repair the hernia may occur before discharge or around the time your baby weighs around 2 kilograms (or 4½ pounds). Surgery can also be postponed until the child is older or requires other surgery. If the hernia becomes incarcerated (trapped in the scrotum), the scrotum will become blue and painful, and immediate surgery is necessary.

Umbilical Hernia

Another area where the muscle may not close properly is around the umbilical cord. An umbilical hernia causes the umbilical area, or belly button, to push outward when the baby cries. As long as there is no redness or discoloration, there is no cause for concern. This condition usually corrects itself as your baby grows and the abdominal muscles strengthen and thicken. In general, surgical correction is not recommended before the age of 3 to 5 years.

Gastroesophageal Reflux

A condition known as *gastroesophageal reflux* (GER) occurs when the opening at the entrance of the stomach has not matured and allows food to move back up the esophagus. A baby with GER might vomit 3 or 4 times per day and loses a significant amount of her feedings. She may have episodes of apnea, bradycardia and desaturation during feeding, signs of discomfort during feeding, difficulty advancing volume, poor digestion, and poor weight gain. Many preterm babies show symptoms of GER and most outgrow it as they reach term age (their original due date).

A variety of factors may contribute to the dysfunction of the junction at the esophagus and stomach. Reflux may be caused by respiratory distress that causes the diaphragm and abdominal muscles to work harder than they should, positioning an infant on her back, bearing down with abdominal muscles during movement, and large volumes of food causing pressure on the junction at the esophagus and stomach. Feeding small amounts more frequently, feeding continuously by pump (although gavage tubes are associated with increased reflux symptoms), raising the head of the bed, or placing the baby on her tummy after feeding may help alleviate this condition. If tummy positioning is used, continuous cardiorespiratory monitoring must be used and the baby must be transitioned to back sleeping prior to discharge to reduce SIDS risk. If the condition is severe, treatment may include medication or surgery. The surgery to correct reflux is called *fundoplication.*

Anemia

While your baby is in intermediate care, blood counts (hematocrit or hemoglobin) will be checked weekly or as the baby's situation requires. Preterm NICU babies are at risk for anemia (low red blood cell count) because their NICU stay required drawing of blood for testing and evaluation of treatment, and the body system that makes red blood cells (RBCs) is immature. Rapid growth also causes a decrease in blood counts. Babies often cannot replenish their blood supply fast enough to keep up with the necessary blood tests in the NICU; therefore, blood transfusions may be given to correct anemia. In some institutions, the medication Epogen (EPO) is given to help stimulate RBC production.

Anemia can cause low oxygen and glucose levels in the blood, which can cause the tissues and organs to function improperly. Infants with anemia may appear pale and lethargic, have an increase in apnea and/or bradycardia, and not eat well. Infants on respiratory support may have regular transfusions. Keeping the blood count normal is important for keeping oxygen levels normal and allowing timely weaning from oxygen.

Most babies who have graduated to intermediate care are able to maintain their oxygen levels without help, so they shouldn't require many transfusions. In intermediate care, blood counts are allowed to drop lower than in the NICU to stimulate the baby's own RBC production system. When an infant receives transfusions, the production of RBCs in the bone marrow is not stimulated. A low RBC count is the necessary stimulus to trigger production. As with all immature systems, full functioning takes time.

When the hemoglobin and hematocrit drop, the body system that produces RBCs is stimulated to replenish the lost supply. A blood test called a *reticulocyte count* (retic) shows the amount of developing RBCs produced. If the retic count is within normal limits, transfusion will be postponed in the hope that the baby's system will do its job. In most [illegible] the process corrects itself without complication. Occasionally a baby may be transfused in the week before [illegible]ge. In that case, your health care provider's office may schedule follow-up lab work after discharge.

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