
Clinical Care Guidelines

CLINICAL CARE GUIDELINE

SUBJECT: CARE OF THE NEWBORN

Introduction:

An infant experiences profound physiologic changes at the moment of birth. Within minutes, he must initiate respiration and adapt his circulatory system to accommodate extrauterine oxygenation. Within 24 hours, his neurologic, renal, endocrine, gastrointestinal, and metabolic systems must be functioning competently in order for him to survive. How well the newborn can achieve these dramatic changes greatly depends on the quality of care and management he receives in the hospital.

POSITION STATEMENT

- The staff of Women and Family Services at the University of Illinois recognizes the importance of the first few days of life as a critical transition for the newborn and his family.
- We strive to provide individualized, competent care while supporting the family's desire for adequate opportunities for parent child attachment.
- It is our goal to provide the highest standard of care with respect for the family's birth plans and supporting the family in their growth as competent parents.

I. Infant Care 0-2 Hours of Age (Delivery/Recovery)

A. Obstetric care

1. Immediately after delivery of the infant's head, the airway must be cleared as thoroughly as possible by suctioning of the nose and mouth. Once fully delivered, the infant should be held supine on his side with the neck in a neutral position.
2. While the infant is being drained/ suctioned, the infant is to be held at the level of the introitus or on mother's abdomen to prevent any significant shift of the placental blood volume. Consequences of a significant shift of blood toward the infant may include infant polycythemia, circulatory volume overload, and hyperbilirubinemia.
3. After suctioning, the cord is securely double clamped and then cut. The cord must be examined for number of umbilical vessels and appropriately documented. Notify newborn provider of any two vessel cords.

Clinical Care Guidelines

B. Prevention of Cold Stress

1. Immediately after birth, the infant should be thoroughly dried with warm blankets to prevent evaporative heat loss. A Stockinette cap should be placed on his head and the dried body wrapped snugly in clean warm blankets. If assessed to be stable, the infant may also be placed skin to skin on mother's abdomen with a warm blanket covering the infant.
2. The infant's temperature should be checked at 30, 60, 90, and 120 minutes of age. If the infant's axillary temperature falls below 97.6°F/36.5 C, then the infant should be rewrapped (double swaddled) in fresh warm blankets and the temperature rechecked in 15 minutes.
3. If infant is unable to maintain temperature at 97.6°F/36.5 C after 15 minutes, he must be moved to a radiant warmer for further evaluation. It is preferable that infants are not bathed in the first 3 hours of life.

C. Assessment of Adaptation

1. The pediatrician on call must be paged to attend any delivery where a difficult transition to extrauterine life is anticipated. These include but are not limited to:
 - Maternal bleeding or hemorrhage
 - Suspected/actual anomalies
 - Abnormal presentation
 - Premature labor (≤ 37 weeks)
 - Non-reassuring fetal heart rate tracing
 - Meconium stained amniotic fluid
 - Prolapsed cord
 - Dystocia
 - Cesarean section
 - Maternal fever/suspected chorioamnionitis
 - Rupture of membranes >18 hours
 - Pre-eclampsia / eclampsia
 - Multiple gestation
 - SGA / IUGR
 - Maternal insulin dependent diabetes
 - Trial of forceps
 - Recent maternal narcotic administration

Clinical Care Guidelines

- a. Meperidine (Demerol™) within 4 hours
 - b. Nalbuphine (Nubain™) within 2 hours
 - c. Fentanyl (Sublimaze™) within 1 hour
2. The labor and delivery nurse must notify the newborn provider prior to transfer to the mother baby unit of infants born to mothers with a positive history of:
 - Maternal infectious disease (See Infection Control, Sec. I, F)
 - Poor/absent prenatal care
 - Psychiatric illness
 3. The Apgar score is the accepted clinical standard for evaluating an infant's condition after delivery and his immediate ability to adapt to extrauterine life. The Apgar score consists of five categories that are assessed by the provider or delivery room nurse at 1 and 5 minutes after the infant is born and beyond if the condition warrants.
 4. An infant's adaptation is considered normal when the total score is 7-10. A score of 4-6 indicates moderate depression and a score of 0-3 reflects severe depression. All stabilization and resuscitation measures needed by the infant from time of birth must be clearly documented by the nurse and pediatrician on call on the Labor and Delivery Resuscitation Flowsheet. (See Appendix 1)
 5. Any infant with an Apgar score of 6 or less at 5 minutes must be evaluated by the pediatrician for possible admittance to the observation nursery.
- D. Identification and Security
1. Soon after infant stabilization is achieved, the footprint sheet should be completed and the identification bands secured - one on the mother's wrist and two on the infant (opposing wrist and ankle).
 2. The information on all three of these bands must be identical and include the mother's name, her hospital identification number, the infant's sex and the time/date of birth. All three bands must match and accuracy be verified by two nurses.
- E. Admission Procedures
- After initial stabilization, identification and bonding, routine admission procedures must be completed. These include:
1. Verifying parent's choice of newborn provider both by reviewing the prenatal care

Clinical Care Guidelines

record (MARS) and by verbal confirmation of the parent. Family Medicine and Pediatrics should be informed of all of their newborn admissions.

2. Obtaining newborn birth weight in the delivery room
3. Administering to each newborn, vitamin K 1.0 mg (0.5 ml), intramuscularly (IM), after the first feeding and within 6 hours of birth
4. Delivering 0.5% erythromycin ophthalmic ointment to each newborn's eye within 1 hour of delivery
5. Applying alcohol to cord every shift, and instructing parents to apply with every diaper change
6. Completing gestational age assessment with graphing of body measurement (birth weight, head circumference, and length) on the Newborn Maturity Rating and Classification sheet (See Appendix 2)
7. Initiating glucose monitoring immediately after delivery, if indicated. (See guidelines- Monitoring infants at high risk for hypoglycemia)
8. Completing Newborn Admission Assessment sheet. (See Appendix 3) Monitor and document vital signs, behavior and activity at 30, 60, 90, and 120 minutes. The designated newborn provider should be notified for any abnormality noted in the infant. If closer infant monitoring is necessary, the infant may be transferred to the appropriate nursery.
9. After completion of routine admission procedures, the infant is kept in a supine position. In the absence of any sign or symptom suggesting circulatory and/or respiratory compromise, breast feeding should be initiated within the first 30 minutes of life, then feed on demand (See Breast feeding guidelines).

F. Infection Control

1. Newborn infants are vulnerable to infections acquired from their mothers, the environment, visitors and hospital personnel. Hands should be thoroughly washed before handling babies. Until the infant has received his first bath, hospital personnel are required to wear gloves when touching an infant.
2. The newborn provider should be notified at birth of any infant at risk for neonatal infection, including inadequate or questionable treatment of maternal intrapartum

Clinical Care Guidelines

infections. History of maternal infection and treatment must be documented by the provider attending the delivery on the Labor and Delivery Resuscitation Flowsheet. Significant maternal infections include:

- HIV
- Hepatitis
- Active Herpes
- Gonorrhea
- Group B beta Streptococcus
- Syphilis
- Active Tuberculosis
- Varicella
- Maternal fever > 100.4 F during labor and delivery course

II. Routine Newborn Care For All Infants (0-24 hours old)

- A. The following procedures may be continued in an infant as part of the initial care in the delivery room, when rooming in with the mother or during closer observation in a nursery:
1. Monitor temperature (axillary), pulse rate, and respiration at 30, 60, 90, and 120 minutes. Then, if stable, a minimum of every eight hours or as the infant's condition indicates.
 2. If infant temperature <97.6°F/36.5°C, it is recommended that infant be double swaddled with blankets and the head covered. Recheck temperature in 15 minutes. If temperature is still < 97.6°F/36.5°C, the newborn provider has to be notified for possible transfer to observation nursery for placement under a radiant warmer.
 3. Notify newborn provider of temperature persistently <97.6 or >100.2, heart rate (HR >160bpm or <100bpm) or respiratory (RR >60), signs of respiratory distress, poor feeding jaundice, jitteriness, or withdrawal symptoms.
 4. Newborn provider should also be notified of any significant maternal history, i.e., pre-eclampsia, thyroid disease, diabetes, sexually transmitted diseases, psychiatric illness, substance abuse, poor prenatal care, abnormal prenatal sonograms, prolonged rupture of membranes, intrapartum fever, positive maternal group B strep, antepartum antibiotic prophylaxis, intake of drugs contraindicated during pregnancy, etc.

Clinical Care Guidelines

5. In the absence of any sign or symptom suggesting circulatory and/ or respiratory compromise, an infant may be bathed when the temperature has been stable at $\geq 97.6^{\circ}\text{F}/36.7\text{C}$ for at least 3 hours.
6. Daily weights, beginning with an admission weight after the first bath.

B. Usual Indications for Testing in the First 24 Hours

1. Newborns will be monitored carefully for the development of hyperbilirubinemia. This includes: cord bilirubin level when mother has blood type O or Rh negative or has a positive antibody screen, or if maternal Rh status and antibody screen are not available; clinical ongoing observation for visible jaundice, and discharge assessment of the risk of hyperbilirubinemia with a screening bilirubin level and clinical risk factor assessment.
2. For infants born to mothers receiving magnesium sulfate (Mag. Sulf.) and exhibiting signs of hypermagnesemia (i.e. apnea, hypotonia, abdominal distension, poor feeding), obtain blood specimen for magnesium level and notify newborn provider.
3. An infant urine toxicology screen (for amphetamines, barbiturates, cocaine, marijuana, methadone, opiates and PCP) is required for the following:
 - mother has tested positive for illegal substances
 - infant is manifesting signs/symptoms of withdrawal
 - mother is enrolled in Methadone maintenance program

NOTE: A urine bag should be attached to the infant as soon as possible after birth with any of the above conditions.

If unable to obtain a urine specimen within the first 12 hours of life, notify newborn care provider for possible meconium screening.

III. General Newborn Care Standards

- A. Neonatal screening- All newborns will undergo hearing screening and metabolic screening prior to discharge

Clinical Care Guidelines

1. The metabolic screen is obtained after 30 hours of life and is sent to the Illinois Department of Health State lab.
2. Hearing screening is completed as soon as possible but preferably after 12 hours of life. Notify newborn provider if the infant refers on the hearing screening twice. All infants who refer on the hearing screen are referred to outpatient audiology for further testing.

B. Neonatal pain assessment and management

1. Pain assessment- All infants are screened for the presence of pain each time vital signs are assessed, during and after painful procedures, and whenever the healthcare provider or parent has concern that the patient may be in pain. Pain will be assessed using the Neonatal Infant Pain Scale (NIPS- See Appendix 4)
2. Pain relief measures should be initiated as needed prior to, during, and after painful procedures.
 - Non- pharmacologic therapies such as cuddling, swaddling, reduction of stimulation, massage, rocking, feeding, and offering skin to skin care should be employed as indicated.
 - Pharmacologic agents should be used as indicated:
 - Oral sucrose 24 % is administered via pacifier 2 minutes prior to painful procedures. The dose may be repeated every 2- 5 minutes up to 3 doses.
 - Acetaminophen may be given for known painful conditions, e.g. post circumcision or clavicular fracture. Dosages are listed below:

30 mg for weight 2-2.99 kg
40 mg for weight 3.0-4 kg.
60 mg for weight >4 kg

IV. Routine Care of Newborn Prior to Discharge

A. Hepatitis B vaccine

Hepatitis B vaccine 0.5 ml IM is given prior to newborn discharge after providing informed parental consent. The parent is given a copy of the immunization record to bring to their provider. (See Hepatitis B guidelines- CDC) If the parent chooses to defer Hepatitis B vaccine, this is documented in the medical record.

Clinical Care Guidelines

B. Assessment of risk for hyperbilirubinemia

Before discharge, every newborn is assessed for the risk of developing severe hyperbilirubinemia. An assessment of risk based on clinical risk factors and a measurement of the 30 hour bilirubin level is currently in place. If jaundice occurs prior to discharge, clinical significance is determined and appropriate management and follow-up plans are put into place. Information about jaundice is provided to parents at the time of discharge. (See Guidelines – Management of hyperbilirubinemia)

C. Follow-up plans for breastfed infants

All breastfed newborns are discharged with instructions to return for a follow up visit within 48-72 hours of discharge to assess adequacy of breastfeeding and to monitor for hyperbilirubinemia.

D. Discharge Criteria

Infants will be discharged home with parents after successfully meeting the following criteria:

1. Vital signs have been within normal ranges for the 12 hours prior to discharge
2. Infant has urinated and passed at least one stool
3. Infant has demonstrated successful feeding patterns
4. Caregiver has received training and demonstrates competency regarding feeding, general infant care, infant safety, and signs and symptoms of illness.
5. Maternal and infant laboratory tests have been reviewed, consultations for medical problems have been completed, and management plans are in place, if indicated.
6. Metabolic, hearing, and bilirubin screening tests have been completed and evaluated.
7. Social history, and availability of adequate social supports have been assessed and appropriate follow-up plans are in place.

Clinical Care Guidelines

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Clinical Care Guidelines

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