



Council of International Neonatal Nursing (COINN) Position Statement on Care of the Late Preterm Infant

COINN Position:

The United Nations Millennium Development Goal (MDG) 4¹ calls for a 2/3rd reduction in under five years of age mortality. One third of the infant/child deaths occur during the neonatal period. Of these, ¾ occur in the first week and about 1/3rd of these within the first 24 hours. Forty to seventy percent of these are preventable through basic inexpensive interventions aimed at a continuum of care from preconception through to postnatal care.² The causes of morbidity and mortality are mostly preventable (i.e., infections such as malaria, pneumonia, and tetanus and diarrhea). While progress has been made in reducing overall infant mortality, neonatal mortality remains high.^{3,4} All newborn babies therefore require a basic standard of care in order to prevent these deaths particularly within the first 24 hours of life.

In the United States there was an increase of 18% in late preterm births from 1996 to 2006 representing 9.1% of all live preterm births.² This late preterm population accounted for more than 70% of all the preterm births in the US in the 2006.^{5,6} The same trend is seen worldwide with approximately 1 million premature infants dying during the neonatal period many of which are late premature infants.⁷ These infants are in fact, both physiologically and metabolically immature. Central nervous system function is also not at the level of term infants which reduces the self regulatory ability to adapt to the external stress.⁸ In spite of their appearance to mimic full term infants, immaturity places them at higher risk for health issues associated with increased morbidity and mortality. Although, many of the term infant care principles apply to the late preterm infants care, high risk factors must be recognized at birth to identify, prevent and intervene for the common late preterm issues such as respiratory distress, apnea, inadequate thermoregulation, hypoglycemia, feeding difficulty, hyperbilirubinemia (or Jaundice), sepsis, and other potential problems.^{9,10}

The American Academy of Pediatrics (AAP) and American Congress of Obstetricians and Gynecologists (ACOG) 6th edition *Guidelines for Perinatal Care* recommend careful observation of a newborn during the first 6-12 hours of transition period even for a well term infants.⁸ The late preterm infants require additional vigilance. Globally the problem is not always separated from over all preterm birth rates. Care given with prevention in mind to the vulnerable late preterm newborn infants during the first few hours and days of their lives may have a profound significance to the United Nations Millennium Development Goals (MDGs).

The Council of International Neonatal Nurses (COINN) is the international voice of neonatal nurses who provide care during this vulnerable period. In order to address identified gaps in current practice COINN supports and recommends the following Guideline for Care of late preterm infants:

1. A late preterm infant 34 0/7-36 6/7 weeks' gestation after the onset of the mother's Last Menstrual Period-LMP is physiologically and metabolically immature. The limited compensatory response to the external stressors must be recognized and should be cared for as immature regardless of the weight.
2. The presence, at every delivery, of a nurse/doctor trained in neonatal resuscitation (skilled neonatal attendant) dedicated solely to care for the baby. Availability of an oxygen source, suction, bag and mask set up is essential.
3. Provision of adequate thermal environment such as warmer.
4. Immediate assessment of the newborn's health status by a trained professional after delivery as drying, stimulation, and suctioning is provided for during the transition.
5. On-going maintenance of an appropriate thermal environment by placing a cap, light clothing and bundling, or skin to skin with mother. Temperature instability is one of the frequent diagnosis for the late preterm infant. Keep in mind that cold stress alone could lead to peripheral and pulmonary vascular constriction, hypoglycemia, or death if not minimized or prevented.
6. Formal admission of individual infant as an individual patient to receive identification number.
7. Recording of the newborn's condition including gestational age, physical exam and vital signs at birth.
8. Identify and document other risk factors besides late preterm at this time. These factors may include but are not limited to: Small for Gestational Age-SGA, Infant of a Diabetic Mother-IDM, maternal smoking, substance exposure, genetic anomalies, low Apgar score at 5 minutes and prenatal laboratory values for Syphilis, Hepatitis B, Human Immunodeficiency Virus-HIV, Rubella status, and Herpes Simplex Virus (HSV). Make an appropriate reporting to the doctor of these findings.
9. Give Vitamin K to prevent Vitamin K dependent Hemorrhagic disease and eye prophylaxis against gonococcal ophthalmia within 1 hour after birth.
10. Continued monitoring of vital signs, skin color, respiratory pattern, tone, peripheral circulation, level of consciousness and activity every 30 minutes until overall status is stable for 2 hours.
11. During this time and throughout the hospital stay, family-centered care practice such as on-going contact with the mother is encouraged for breast feeding initiation and bonding. However, excessive handling of the infant is not encouraged for the late preterm infant has limited compensatory mechanism for external stimulation. Excessive stimulation leads to excessive use of glucose, tiring and not being able to feed.
12. Offer feeding as soon as possible. Glucose check within an hour is recommended for hypoglycemia is another frequently diagnosed condition. If the infant is unable to suck swallow and breathe effectively, physicians/doctors or nurse practitioners must be notified immediately to avoid hypoglycemia, dehydration, aspiration and other complications.
13. Keep in mind that preterm infants' serum glucose hits nadir (low point) at 1-2 hour after birth. Each nursery's glucose protocol must be followed for continued glucose check.
14. Continued observation for potential complications by assessing for the following,
 - Temperature instability,
 - Change in activity,

- Poor feeding,
 - Poor skin color,
 - Abnormal cardiac or respiratory rate and rhythm,
 - Apnea,
 - Abdominal distension or bilious vomiting,
 - Excessive lethargy and sleeping,
 - Delayed stooling or voiding,
 - The importance of these changes in assessment findings should also be communicated to the parents while rooming-in so that a trained staff is notified of any change,
 - Trained staff should observe the infant periodically in mother's room while rooming in according the institutional protocol,
 - Infant with these findings should be evaluated by the medical team for specialized care may be necessary to properly care for the infant in a timely manner.
15. Education on prevention of infection
- Proper cord care,
 - Hygiene practices for diaper change,
 - Hand washing,
 - Clean technique for breast feeding and formula preparation,
 - Limiting visitors during the influenza season,
 - Bathing instructions.
16. First bath should be given once the infant's thermal stability is ensued to prevent hypothermia. Late Preterm infants require vigilance with this intervention. Whole body bathing is not always necessary. Localized skin care or techniques that expose the skin minimally to remove blood and meconium may prevent the excessive heat loss thus prevents hypothermia. The skin barrier function for the first four weeks of life is somewhat unstable and offers protective immunity when not disrupted.^{11,12}
17. Immunization should be initiated before discharge and followed up according to the recommended schedule by follow up health professional. (Hepatitis B, Mumps, Measles, and Rubella (MMR), Haemophilus influenzae type b-Haemophilus influenza (b-HIB), Polio and other).
18. During the Respiratory Syncytial Virus (RSV) season, RSV vaccine is offered for preterm infants of 35 weeks or less with at least one risk factor (day care or having a sibling 5 years and younger).¹⁰
19. Perform hearing screen. If the infant does not pass, make or asked the doctor for a referral for further examination.
20. Perform metabolic and genetic screen 24 hours after feeding initiated, if done before, another follow up must be arranged.
21. Identify a health care professional who will provide on-going care of the infant with whom immediate follow up care can be arranged. Discharge summary or a form of written report is sent to the follow up health care professional with specific hospital course and follow up needs.
22. The infant should be carefully assessed with #13 in mind before discharge. Individualized decision should be made regarding the timing of discharge.^{8,10}
- Feeding competency with 24 hours of successful feeding with demonstration of coordinated suck, swallow and breathing.
 - Thermoregulation ability.
 - Free from abnormal physical exam findings, (or immediate follow up plan available for a non emergent abnormal finding).

- Infants should be in stable condition for at least 12 hours prior to discharge. (Respiratory Rate less than 60/minutes, Heart Rate 100-160/minutes, Temperature 36.5-37.4 degrees C or 97-98.6 degrees F in an open crib with appropriate clothing.
 - At least one spontaneous stooling.
 - To avoid severe hyperbilirubinemia, appropriate follow up plan is made based on the bilirubin level that should be checked on the day of discharge.
 - Mother has been educated and demonstrated the understanding of feeding plan, hygiene, importance of follow up, recognition for status change including severe jaundice, dehydration, sepsis, thermoregulation, clothing, and safety issues (see 21).
 - Absence of social risk factors that endanger the infant. Availability of a safety plan for the infant if there is risk factor. (see 21)
 - Infant has demonstrated ability to tolerate car seat challenge without apnea, bradycardia or decreased oxygen saturation or skin color change.
 - Follow the policy of the state or country regarding the genetic or metabolic screening. Perform the screening after full feeding is achieved. If one was done before 24 hours of initiation of feeding, another screening is needed at a follow up. The plan must be in place before discharge and should be communicated to the follow up professional.
 - Infant passed Hearing screening or if did not pass, plan is made to repeat the screening.
 - Infant's weight loss must be assessed. Weight loss of more than 2-3% per day or maximum of 7% by the time of discharge calls for an evaluation by a medical professional. Dehydration must be considered and feeding ability and volume of feeding must be carefully assessed before discharge decision is made.
23. Family environment should be assessed to ensure safeguarding infant upon discharge and main care provider of the infant is provided with safety education. Completion of the parental education and parental demonstration of competency is documented.^{8,9}
- Free from history of abuse or neglect, domestic violence, or parent with mental illness.
 - Collaborate with the social service at the hospital and state child care service when indicated.
 - Availability of a safety plan to safeguard infant from any identified social or environmental risk such as follow up social work visit.
 - Presence of family support for the mother or the main care provider.
 - Presence of a fixed home environment with heat, water and essential supplies.
 - Identify community support as needed to address concerns.
 - Parental understanding for the care of the infant outlined below and reinforce education,
 - ✓ Prevention of hypothermia,
 - ✓ Basic hygiene including bathing, cord care, diaper change,
 - ✓ Current feeding plan,
 - ✓ Comfortable and proficient with breast feeding, and also proper prep for formula,
 - ✓ Importance of follow up care and definite plan for the next follow up,
 - ✓ Newborn safety such as car seat, smoke fire alarms at home, danger of second hand smoking, and any other environmental hazards present,

- ✓ Prevention of SIDS (back to sleep, no soft pillows and excessive blankets),
 - ✓ Appropriate layers of clothing for the infant,
 - ✓ Preventive measures against infection (avoid public in flu season, hand washing for the family, avoid crowd during newborn period),
 - ✓ Proper use of thermometer for axillary temperature,
 - ✓ Administering any medication such as multivitamin or iron,
 - ✓ Education to identify risk factors given in #13 and provision of number/clinic name/doctor's office contact information to call to report change of status,
 - ✓ Contact for emergency needs is reviewed.
- Changes that the care provider must be able to recognize and report are:
 - ✓ Increase in severity of Jaundice,
 - ✓ Lethargy and poor feeding,
 - ✓ Vomiting,
 - ✓ Poor skin color,
 - ✓ Fever greater than 38 degrees C or 100.4 degrees F or below 36 degrees C or 96.8 degrees F,
 - ✓ Respiratory distress—emergency,
 - ✓ Apnea-emergency.
24. The initial follow up with a trained professional (home health, pediatrician, public health department, etc) should be arranged for the infant within 48-72 hours after discharge if bilirubin follow up is necessary. The infant should be assessed at minimum after 6 days, 2 weeks, and every 2-3 months for first 6 months.

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COINN acknowledges that some countries may not be able to implement the recommendations as written due to limited resources-personnel, financial, and equipment. However, to improve health outcomes all the neonatal community must strive to uphold these recommendations. Determinations must be made within local and national organizations as to what constitutes basic, essential, and advanced care.

Approved by COINN Board of Directors

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