

**Resident Curriculum
PL- 2
ICN/Special Care Nursery**

Patient Care

The competency of patient care includes:

- communicate effectively and demonstrate caring and respectful behaviors when interacting with patients and their families
- gather essential and accurate information about their patients
- make informed decisions about diagnostic and therapeutic interventions based on patient information and preferences, up-to-date scientific evidence, and clinical judgment
- develop and carry out patient management plans counsel and educate patients and their families
- use information technology to support patient care decisions and patient education
- perform competently all medical and invasive procedures considered essential for the area of practice
- provide health care services aimed at preventing health problems or maintaining health
- work with health care professionals, including those from other disciplines, to provide patient- focused care

Patient Care: Goals and Objectives

Goal #1: Understand the pediatrician's role in and become an active advocate for programs to reduce morbidity and mortality from high-risk pregnancies.

Objectives:

- #1. Strategies to reduce fetal and neonatal mortality: • Use of GBS prophylaxis • Perinatal steroids
- #2. Understand/assess: a. Basic newborn vital statistics. b. Prenatal services in your region. c. Test used by OB to measure fetal well being. d. Neonatal Transport Systems.
- #3. Describe effective intervention programs for teens & other high-risk mothers.
- #4. Recognize & demonstrate pediatricians' role in assessment & management strategies for minimizing the risk to fetus and or newborn in potential adverse perinatal conditions: a. Maternal infection during pregnancy/chorioamnionitis/Post-partum maternal fever, infections. b. Fetal exposure to harmful substances. c. Maternal insulin dependant & gestational related diabetes. d. Multiple Gestations. e. Placental abnormalities. PIH, pre-eclampsia, eclampsia, HELLP syndrome. Polyhydramnios, oligohydramnios Premature labor, prolonged rupture/ premature rupture of membranes. Fetal distress. Complications of anesthesia/and forceps/vacuum delivery methods. Maternal blood group incompatibilities. Common maternal conditions; lupus, thrombocytopenia

Goal #2: Assess, resuscitate and stabilize critically ill neonates.

Objectives:

- #1. Explain/perform resuscitation and stabilization of the neonate
- #2. Describe common causes of acute deterioration in previously stable SCN patients.
- #3. Function appropriately in codes and neonatal resuscitation as part of a team. a. Participate in resuscitations. b. Complete NRP. c. Use neonatal resuscitation drugs appropriately

Goal #3: Recognize presenting signs and symptoms and manage (under supervision of neonatology) the following common conditions in the SCN.

Objectives:

- #1. Cardiovascular: a. CHD, cyanotic & acyanotic & cyanosis not due to heart disease. b. Cardiomyopathy, pericarditis c. Congestive heart failure. d. Dysrhythmias.
- #2. Genetic/Metabolic/Endocrine: a. All metabolic abnormalities screened by the TDH NB screen. b. Common inborn errors of metabolism. c. Management of infants born to moms with endocrine abnormalities including diabetes. d. Common chromosomal abnormalities, malformations.
- #3. GI/Nutrition: a. Breastfeeding support for the high risk mother, infant, and multiple births. b. Umbilical line complications. c. Biliary atresia, NEC, GER. d. Nipple feeding the high risk infant, preterm, neurologically impaired, maxillofacial anomalies, IUGR/SGA. e. Initiation & management of TPN, identify complications of TPN.
- #4. Hematologic: a. Bleeding disorders; DIC, hemophilia b. Anemia, polycythemia c. Hydrops due to erythroblastosis fetalis d. Platelet abnormalities e. Neutropenia f. Hyperbilirubinemia
- #5. Infectious Disease: a. Congenital infections; viral, bacterial, protozoal, syphilis, ureaplasma. b. Peripheral/central line infections. c. Hepatitis d. Infant of a Hep B or HIV positive mom. e. Early & late onset neonatal sepsis, GBS, meningitis. f. Herpes Simplex. g. Nosocomial infections, treatment and prevention. h. Varicella exposure. i. RSV j. Synagis, routine vaccinations of the ill & preterm infant.
- #6. Neurologic Disorders; be able to do a good neuro exam to identify early neurologic impairment a. Central apnea, mixed apnea b. Common CNS abnormalities; encephalocele, spina bifida, holoprosencephaly c. Prevention & Screening for hearing loss d. Hydrocephalous, micro and macrocephaly e. Drug withdrawal f. Hypotonic, jittery, irritable g. Seizures h. IVH, PVL i. Hypoxic Ischemic Encephalopathy j. Neuro injury due to birth trauma
- #7. Pulmonary Disorders a. HMD, BPD b. Meconium Aspiration with and without PPHN c. Pneumonias, TTN (retained fetal lung fluid) d. Air leaks
- #8. Renal a. Abnormal genitalia b. Acute – chronic renal failure c. Oliguria, anuria, proteinuria, hematuria, urinary retention d. Renal mass evaluation e. Renal malformations
- #9. Initial management of acute surgical problems in the neonate a. CHD b. Diaphragmatic hernia c. Abdominal wall defects d. Esophageal atresia tracheal esophageal fistulas e. NEC, bowel perforation f. Malrotation with a volvulus g. Bowel obstructions, meconium plugs and atresias
- #10. Family problems a. Anxiety disorders b. Child abuse & neglect c. Poor attachment d. Postpartum depression e. Substance abuse f. Teenage parents

Goal #4: Understand common monitoring technology & therapeutic modalities used in the newborn & fetus

Objective:

- #1. Be able to discuss the indications, contraindications & complications, know general technique & interpret results of the following; a. Physiologic monitoring of all parameters of vital signs & pulse oximeter b. Neonatal pain & drug withdrawal scales c. Oxygen administration and basic modes of positive pressure ventilation and CPAP under supervision of neonatology d. Endotracheal Intubation e. Surfactant administration f. Understand theory behind ECMC and nitric oxide therapy g. Umbilical and central line catheters h. Analgesics, antiepileptics, sedatives & paralytics i. Blood product transfusions including double volume and exchange transfusions j. Vasoactive drugs k. Judicious use of antibiotics l. Home medical equipment; oxygen, monitors, medication, aerosol treatments m. Know resources to assist infants with special needs in their transition during discharge to home care n. Guide moms in the use of breast pumps

Goal #5: Be able to describe the rationale for the following procedures and have the ability to perform them competently

Objectives:

- #1. Mandatory to perform and document: a. Neonatal Resuscitation b. Endotracheal Intubation c. Peripheral IV's d. Arterial and venous puncture e. Umbilical vessel catheterization (venous & arterial) f. Lumbar puncture g. Bladder catheterization h. Pain management in the neonate i. Partial exchange transfusion j. B-M ventilation
- #2. Exposure and understanding of the following (recommend documentation): a. Thorocentesis, chest tube

placement and maintenance b. Inhalation treatments c. Incision and drainage of superficial abscesses d. Double volume exchange transfusion e. NG/OG tube placement f. Suctioning; nares, oropharynx, trachea

Goal #6: Understand the following procedures, how they work, when to use them and how to competently perform the underlined ones.

Objective:

#1. Mandatory to perform and document: a. EKG and the emergency interpretation b. Hearing screen c. Cardiac, respiratory and oxygen saturation monitoring d. End tidal CO₂ monitoring e. Abdominal sonogram and x-rays f. Chest x-rays g. Head ultrasound h. GI contrast studies i. X-rays of extremities

Medical Knowledge

The competency of Medical Knowledge includes:

- demonstrate an investigatory and analytic thinking approach to clinical situations
- know and apply the basic and clinically supportive sciences which are appropriate to their discipline

Medical Knowledge: Goals and Objectives

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#2. Exposure and understanding of the following (recommend documentation): a. Thoro-centesis, chest tube placement and maintenance b. Inhalation treatments c. Incision and drainage of superficial abscesses d. Double volume exchange transfusion e. NG/OG tube placement f. Suctioning; nares, oropharynx, trachea

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Practice- Based Learning and Improvement

The competency of Practice- Based Learning and Improvement includes:

- analyze practice experience and perform practice-based improvement activities using a systematic methodology
- locate, appraise, and assimilate evidence from scientific studies related to their patients' health problems
- obtain and use information about their own population of patients and the larger population from which their patients are drawn
- apply knowledge of study designs and statistical methods to the appraisal of clinical studies and other information on diagnostic and therapeutic effectiveness
- use information technology to manage information, access on-line medical information; and support their own education
- facilitate the learning of students and other health care professionals

Practice- Based Learning and Improvement :Goals and Objectives

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#2. Exposure and understanding of the following (recommend documentation): a. Thorocentesis, chest tube placement and maintenance b. Inhalation treatments c. Incision and drainage of superficial abscesses d. Double volume exchange transfusion e. NG/OG tube placement f. Suctioning; nares, oropharynx, trachea

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Systems Based Practice

The competency of System Based Practice includes:

- understand how their patient care and other professional practices affect other health care professionals, the health care organization, and the larger society and how these elements of the system affect their own practice
- know how types of medical practice and delivery systems differ from one another, including methods of controlling health care costs and allocating resources
- practice cost-effective health care and resource allocation that does not compromise quality of care
- advocate for quality patient care and assist patients in dealing with system complexities
- know how to partner with health care managers and health care providers to assess, coordinate, and improve health care and know how these activities can affect system performance

Systems Based Practice :Goals and Objectives

Goal #1: Recognize presenting signs and symptoms and manage (under supervision of neonatology) the following common conditions in the SCN.

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#4. Hematologic: a. Bleeding disorders; DIC, hemophilia b. Anemia, polycythemia c. Hydrops due to erythroblastosis fetalis d. Platelet abnormalities e. Neutropenia f. Hyperbilirubinemia

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Professionalism

The competency of Professionalism includes:

- demonstrate respect, compassion, and integrity; a responsiveness to the needs of patients and society that supercedes self-interest; accountability to patients, society, and the profession; and a commitment to excellence and on-going professional development
- demonstrate a commitment to ethical principles pertaining to provision or withholding of clinical care, confidentiality of patient information, informed consent, and business practices
- demonstrate sensitivity and responsiveness to patients' culture, age, gender, and disabilities

Professionalism :Goals and Objectives

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- #1. Be able to discuss the indications, contraindications & complications, know general technique & interpret results of the following; a. Physiologic monitoring of all parameters of vital signs & pulse oximeter b. Neonatal pain & drug withdrawal scales c. Oxygen administration and basic modes of positive pressure ventilation and CPAP under supervision of neonatology d. Endotracheal Intubation e. Surfactant administration f. Understand theory behind ECMC and nitric oxide therapy g. Umbilical and central line catheters h. Analgesics, antiepileptics, sedatives & paralytics i. Blood product transfusions including double volume and exchange transfusions j. Vasoactive drugs k. Judicious use of antibiotics l. Home medical equipment; oxygen, monitors, medication, aerosol treatments m. Know resources to assist infants with special needs in their transition during discharge to home care n. Guide moms in the use of breast pumps

Goal #4: Be able to describe the rationale for the following procedures and have the ability to perform them competently**Objectives:**

- #1. Mandatory to perform and document: a. Neonatal Resuscitation b. Endotracheal Intubation c. Peripheral IV's d. Arterial and venous puncture e. Umbilical vessel catheterization (venous & arterial) f. Lumbar puncture g. Bladder catheterization h. Pain management in the neonate i. Partial exchange transfusion j. B-M ventilation
- #2. Exposure and understanding of the following (recommend documentation): a. Thorocentesis, chest tube placement and maintenance b. Inhalation treatments c. Incision and drainage of superficial abscesses d. Double volume exchange transfusion e. NG/OG tube placement f. Suctioning; nares, oropharynx, trachea

Goal #5: Understand the following procedures, how they work, when to use them and how to competently perform the underlined ones.

Objective:

#1. Mandatory to perform and document: a. EKG and the emergency interpretation b. Hearing screen c. Cardiac, respiratory and oxygen saturation monitoring d. End tidal CO₂ monitoring e. Abdominal sonogram and x-rays f. Chest x-rays g. Head ultrasound h. GI contrast studies 1. X-rays of extremities

Interpersonal and Communication Skills

The competency of interpersonal and communication skills include:

- create and sustain a therapeutic and ethically sound relationship with patients
- use effective listening skills and elicit and provide information using effective nonverbal, explanatory, questioning, and writing skills
- work effectively with others as a member or leader of a health care team or other professional group

Interpersonal and Communication Skills :Goals and Objectives

Goal #1: Assess, resuscitate and stabilize critically ill neonates.

Objectives:

- #1. Explain/perform resuscitation and stabilization of the neonate
#2. Describe common causes of acute deterioration in previously stable SCN patients.
#3. Function appropriately in codes and neonatal resuscitation as part of a team. a. Participate in resuscitations. b. Complete NRP. c. Use neonatal resuscitation drugs appropriately

Goal #2: Recognize presenting signs and symptoms and manage (under supervision of neonatology) the following common conditions in the SCN.

Objectives:

- #1. Cardiovascular: a. CHD, cyanotic & acyanotic & cyanosis not due to heart disease. b. Cardiomyopathy, pericarditis c. Congestive heart failure. d. Dysrhythmias.
#2. Genetic/Metabolic/Endocrine: a. All metabolic abnormalities screened by the TDH NB screen. b. Common inborn errors of metabolism. c. Management of infants born to moms with endocrine abnormalities including diabetes. d. Common chromosomal abnormalities, malformations.
#3. GI/Nutrition: a. Breastfeeding support for the high risk mother, infant, and multiple births. b. Umbilical line complications. c. Biliary atresia, NEC, GER. d. Nipple feeding the high risk infant, preterm, neurologically impaired, maxillofacial anomalies, IUGR/SGA. e. Initiation & management of TPN, identify complications of TPN.
#4. Hematologic: a. Bleeding disorders; DIC, hemophilia b. Anemia, polycythemia c. Hydrops due to erythroblastosis fetalis d. Platelet abnormalities e. Neutropenia f. Hyperbilirubinemia
#5. Infectious Disease: a. Congenital infections; viral, bacterial, protozoal, syphilis, ureaplasma. b. Peripheral/central line infections. c. Hepatitis d. Infant of a Hep B or HIV positive mom. e. Early & late onset neonatal sepsis, GBS, meningitis. f. Herpes Simplex. g. Nosocomial infections, treatment and prevention. h. Varicella exposure. i. RSV j. Synagis, routine vaccinations of the ill & preterm infant.
#6. Neurologic Disorders; be able to do a good neuro exam to identify early neurologic impairment a. Central apnea, mixed apnea b. Common CNS abnormalities; encephalocele, spina bifida, holoprosencephaly c. Prevention & Screening for hearing loss d. Hydrocephalous, micro and macrocephaly e. Drug withdrawal f. Hypotonic, jittery, irritable g. Seizures h. IVH, PVL i. Hypoxic Ischemic Encephalopathy j. Neuro injury due to birth trauma
#7. Pulmonary Disorders a. HMD, BPD b. Meconium Aspiration with and without PPHN c. Pneumonias, TTN (retained fetal lung fluid) d. Air leaks
#8. Renal a. Abnormal genitalia b. Acute – chronic renal failure c. Oliguria, anuria, proteinuria, hematuria, urinary retention d. Renal mass evaluation e. Renal malformations

#9. Initial management of acute surgical problems in the neonate a. CHD b. Diaphragmatic hernia c. Abdominal wall defects d. Esophageal atresia tracheal esophageal fistulas e. NEC, bowel perforation f. Malrotation with a volvulus g. Bowel obstructions, meconium plugs and atresias
#10. Family problems a. Anxiety disorders b. Child abuse & neglect c. Poor attachment d. Postpartum depression e. Substance abuse f. Teenage parents

Goal #3: Understand common monitoring technology & therapeutic modalities used in the newborn & fetus

Objective:

#1. Be able to discuss the indications, contraindications & complications, know general technique & interpret results of the following; a. Physiologic monitoring of all parameters of vital signs & pulse oximeter b. Neonatal pain & drug withdrawal scales c. Oxygen administration and basic modes of positive pressure ventilation and CPAP under supervision of neonatology d. Endotracheal Intubation e. Surfactant administration f. Understand theory behind ECMC and nitric oxide therapy g. Umbilical and central line catheters h. Analgesics, antiepileptics, sedatives & paralytics i. Blood product transfusions including double volume and exchange transfusions j. Vasoactive drugs k. Judicious use of antibiotics l. Home medical equipment; oxygen, monitors, medication, aerosol treatments m. Know resources to assist infants with special needs in their transition during discharge to home care n. Guide moms in the use of breast pumps

Goal #4: Be able to describe the rationale for the following procedures and have the ability to perform them competently

Objectives:

#1. Mandatory to perform and document: a. Neonatal Resuscitation b. Endotracheal Intubation c. Peripheral IV's d. Arterial and venous puncture e. Umbilical vessel catheterization (venous & arterial) f. Lumbar puncture g. Bladder catheterization h. Pain management in the neonate i. Partial exchange transfusion j. B-M ventilation

#2. Exposure and understanding of the following (recommend documentation): a. Thorocentesis, chest tube placement and maintenance b. Inhalation treatments c. Incision and drainage of superficial abscesses d. Double volume exchange transfusion e. NG/OG tube placement f. Suctioning; nares, oropharynx, trachea

Goal #5: Understand the following procedures, how they work, when to use them and how to competently perform the underlined ones.

Objective:

#1. Mandatory to perform and document: a. EKG and the emergency interpretation b. Hearing screen c. Cardiac, respiratory and oxygen saturation monitoring d. End tidal CO2 monitoring e. Abdominal sonogram and x-rays f. Chest x-rays g. Head ultrasound h. GI contrast studies i. X-rays of extremities