

Guidelines for the care of children for family medicine residents

Preamble

Family physicians must develop knowledge and skills appropriate to manage the medical, social, and emotional problems of infants and children. They need to build rapport with children and their families over time, to counsel the child and family in health promotion, to recognize and evaluate abnormal findings, and to know when to refer to pediatric subspecialists and when to continue to manage patients themselves.

Family physicians, because they treat all members of the family, have a unique opportunity to appreciate the influence that family members have on an individual infant or child's health and development. Family physicians, as community physicians, work to improve the health of children and their families as part of the larger community, in both a proactive and responsive manner. The family physician has a responsibility to nurture the development of each child and adolescent to help reach his or her full potential.

This curriculum guideline is organized into two sections. The first summarizes the primary curricular goals for each of the four key areas of care for children (prenatal care and the care of the newborn, well child care and social determinants of health, acute care, and care of children and youth with special health care needs) by ACGME competency (patient care, medical knowledge, interpersonal skill and communication, practice based learning, professionalism, and systems based practice). The purpose of section 1 is to provide a minimum standard for competency for all graduating family medicine residents.

The second section provides detailed curricular objectives for each area broken down by competency, including procedures. Residency programs are encouraged to use the detailed objectives to create program-specific curricula to meet specific needs. While not every objective listed may be necessary for successful completion of a residency, these can serve as a basis for curriculum development and resident evaluation. This section is a "living document" that can and should be updated as the care of children evolves, and the competencies required to care for them adapt to both resident education and future practice.

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Section 1: Primary Curricular Goals

Care of the Newborn

GOAL: Demonstrate competence in providing care for newborns and their families in the delivery room, normal newborn nursery, and, when necessary, in the critical care nursery.

- Patient Care: Competently manage the normal newborn and recognize and stabilize infants who require more than routine care. Engage in discussion with families about the medical, psychosocial, and family/community dynamic issues associated with a new infant. Perform appropriate screening for and provide appropriate anticipatory guidance about these issues.
- Medical Knowledge: Demonstrate knowledge of prenatal and perinatal risk factors, newborn physiology, management of common newborn problems, infant nutrition including breastfeeding, family-centered newborn care, and management of neonatal emergencies.
- Interpersonal Skills and Communication: Provide appropriate education to prepare families prior to birth and at the time of discharge of their newborn. Communicate effectively and empathetically concerning newborn problems and illnesses. Support caregivers in establishing secure attachments with their infants.
- Practice Based Learning: Recognize potential personal and system areas for improvement in providing care for the normal newborn and initiate appropriate interventions for achieving and evaluating those improvements.
- Professionalism: Act with integrity, respect, and high ethical standards towards patients and families, colleagues, and other members of the health care team involved in the care of newborns. Provide culturally effective care and education to parents about their newborn.
- Systems Based Practice: Effectively and efficiently use resources available to maximize newborn outcomes and minimize errors.

Health Supervision/Well Child Care

GOAL: Provide comprehensive health promotion, screening and disease prevention services to infants, children, adolescents and their families in the ambulatory setting.

- Patient Care: Perform culturally competent health promotion (well child care) visits at recommended ages based on nationally recognized periodicity schedules including age-appropriate screening and anticipatory guidance. Identify individual and community factors that affect behavior and development both positively and negatively for each child and identify sources of strength and resilience.
- Medical Knowledge: Demonstrate knowledge of normal growth and development, child behavior, age appropriate nutrition guidelines, the evidence base for screening and prevention practices, immunization schedules, and common parenting advice.

Demonstrate ability to counsel parents about common childhood behavioral problems. Demonstrate knowledge of the social determinants of health and the effects of psychological and medical problems in other family members on the patient's health and development. Recognize the impact of families and other environmental factors on behavioral difficulties and psychopathology in children, as well as the effect of childhood psychopathology and behavior problems on the family.

- **Interpersonal Skills and Communication:** Provide developmentally relevant, effective education, including reassurance and anticipatory guidance, for parents and patients during well child care. Utilize motivational interviewing techniques to promote improvement in home practices to achieve optimal growth and development of the child. Recognize the importance of a child and family's culture and adapt communication to this cultural context. Help families to deal with common stressors in the transition to parenthood and in raising children.
- **Practice Based Learning:** Implement standardized guidelines for well child care into practice, adapt them to the individual needs of specific patients, and evaluate key practice performance measures. Regularly consult expert sources of well child care to maintain up to date well child practices. Recognize potential personal and system areas for improvement in identifying ACEs, toxic stress, and social determinants of health.
- **Professionalism:** Demonstrate respect and sensitivity for non-traditional family structures and cultural differences regarding health practices. Observe age appropriate confidentiality guidelines in accordance with state law and ethical guidelines. Demonstrate commitment, responsibility, and accountability for continuity of care. Demonstrate compassion and empathy while providing culturally effective care and education to patients and families.
- **Systems Based Practice:** Identify key aspects of health care systems, government social support services (safety-net programs), and community organizations that serve children as they apply to the primary care provider. Identify and utilize appropriate federal, state, and community resources for families needing additional financial, educational, psychological, and emotional support.

Acute Care (Outpatient and Inpatient)

- **Patient Care:** Competently diagnose, manage, and appropriately refer acute illnesses in children in the inpatient and outpatient settings.
- **Medical Knowledge:** Demonstrate the ability to acquire, critically interpret, and apply established and evolving biomedical, clinical, epidemiological, and psychosocial knowledge needed for the diagnosis and treatment of acute childhood illnesses in the inpatient and outpatient settings.
- **Interpersonal Skills and Communication:** Demonstrate interpersonal and communication skills that result in information exchange and shared decision-making with patients, their families, and professional associates to competently care for children with acute illnesses.

- Practice Based Learning: Utilize acute care pathways to improve compliance with quality outcomes in the inpatient or outpatient setting. Demonstrate knowledge, skills, and attitudes needed for continuous self-assessment and improvement.
- Professionalism: Demonstrate personal accountability for the well-being of patients (e.g., following-up lab results, writing comprehensive notes, and seeking answers to patient care questions). Observe age-appropriate confidentiality guidelines in accordance with state law and ethical principles. Serve as an active and valuable member of the acute illness health care team, showing respect for and the ability to work effectively with all other members of the team.
- Systems Based Practice: Understand how to practice high-quality, cost-effective health care and advocate for patients within the context of acute illness in the inpatient and outpatient setting.

Care of Children and Youth with Special Healthcare Needs

- Patient Care: Provide and coordinate care as necessary for children with chronic conditions or special health care needs, including physical health, mental health, behavioral disorders and end of life care, when relevant.
- Medical Knowledge: Apply current medical information and scientific evidence effectively for the care of common pediatric chronic illnesses and be able to access sources of information necessary to understand complex pediatric disorders.
- Interpersonal Skills and Communication: Communicate effectively with physicians, other health professionals, and health-related agencies as part of an interdisciplinary team to create and sustain information exchange and teamwork for patient care. Utilize communication strategies that enhance patient adherence to optimize medical and psychosocial outcomes. Communicate compassionately with children and their parents, including giving bad news.
- Practice Based Learning: Utilize published guidelines for the care of common chronic pediatric illnesses and know how to evaluate practice performance for key measures.
- Professionalism: Provide family-centered, continuous, accessible and empathetic care in the context of the medical home to children with chronic conditions. Consistently use compassion and empathy in one's role as a physician. Serve as an active and valuable member of the chronic illness health care team, showing respect for and the ability to work effectively with all other members of the team.
- Systems Based Practice: Coordinate care with specialists, insurance companies, ancillary health care providers, and effectively utilize community resources for children with chronic illness.

Section 2: Detailed Curricular Objectives

Care of the Newborn

GOAL: Demonstrate competence in providing care for newborns and their families in the delivery room, normal newborn nursery, and, when necessary, in the critical care nursery.

Competency: Patient Care

Objectives:

1. Use a logical and appropriate clinical approach to the care of newborns, applying principles of evidence-based decision-making and problem-solving.
2. Provide sensitive support to patients and their families in the delivery room and level I and II newborn nurseries.
3. In the delivery room:
 - a. Explain risk factors at delivery that warrant having a provider in attendance who is solely dedicated to the care of the baby.
 - b. Describe the necessary medical equipment for neonatal resuscitation and demonstrate its proper use.
 - c. Accurately assess and manage normal and high-risk newborns immediately following delivery,
 - d. Obtain and maintain Neonatal Resuscitation Program (NRP) certification.
 - e. For these common conditions, demonstrate delivery room assessment and management and list criteria for consultation or transfer to a level II or III nursery:
 - i. Meconium stained fluid
 - ii. Respiratory depression or respiratory distress
 - iii. Complicated labor
 - iv. Complicated delivery
 - v. Cyanosis
 - vi. Abnormal blood gases
 - f. Support immediate breastfeeding and early bonding between baby and family and describe how hospital routines can facilitate or impede these natural processes.
 - g. Describe how obstetricians and non-delivering family physicians can communicate and work together as a team to improve outcomes at high-risk deliveries.
4. In the nursery:
 - a. Obtain and interpret information relevant to newborn health including:
 - i. Maternal medical, prenatal, and obstetric history
 - ii. Family history
 - iii. Maternal screening tests including genetic testing
 - iv. Maternal medication use and substance use/abuse
 - v. Antenatal ultrasound testing

- b. Obtain and interpret a social history to assess the physical and psychosocial environment in the infant's home.
- c. Understand and demonstrate appropriate timing for newborn exams and define the key reasons for doing the exams
- d. Perform a neonatal physical examination and identify normal and abnormal findings related to:
 - i. Gestational age assessment and growth category
 - ii. Vital signs and measurements
 - iii. General appearance and identification of anomalies
 - iv. HEENT
 - v. Neck and clavicles
 - vi. Neurologic system
 - vii. Skin
 - viii. Chest and breasts
 - ix. Heart
 - x. Lungs (including respiratory effort)
 - xi. Abdomen (including umbilical cord)
 - xii. Genitalia
 - xiii. Femoral and brachial pulses
 - xiv. Hips
 - xv. Extremities
- e. Recognize, describe the clinical significance of, and develop a strategy to evaluate, manage, and/or refer newborns with these common newborn signs and symptoms:
 - i. Abdominal distension
 - ii. Abdominal mass
 - iii. Abnormal findings on the Barlow and Ortolani maneuver
 - iv. Birth marks
 - v. Brachial plexus injury
 - vi. Cephalohematoma, caput, abnormalities of cranial bones and head shape, including macrocephaly and microcephaly
 - vii. Corneal opacities or absent red reflex
 - viii. Delayed stooling
 - ix. Delayed urination
 - x. Dysmorphic infant or infant with known chromosomal abnormality
 - xi. Ear tags, pits
 - xii. Eye discharge
 - xiii. Facial palsy
 - xiv. Fractured clavicle
 - xv. Genitourinary abnormalities
 - xvi. Heart murmurs
 - xvii. High or low temperature
 - xviii. Jitteriness
 - xix. Markings secondary to birth trauma
 - xx. Palate abnormalities
 - xxi. Pallor

- xxii. Peripheral and central cyanosis
 - xxiii. Plethora
 - xxiv. Polydactyly
 - xxv. Poor/delayed suck
 - xxvi. Rashes
 - xxvii. Respiratory distress with/without feeding
 - xxviii. Sacral or spinal dimple, pit, hair tuft
 - xxix. Subconjunctival hemorrhages
 - xxx. Swollen breasts
 - xxxi. Syndactyly
 - xxxii. Tachypnea
 - xxxiii. Two vessel umbilical cord
 - xxxiv. Vaginal bleeding
 - xxxv. Vomiting feeds/bilious emesis
- f. Recognize, describe the clinical significance of, and develop a strategy to evaluate, manage, and/or refer newborns with the following common newborn clinical situations:
- i. Abnormal newborn hearing screen results
 - ii. Child with ABO/Rh incompatibility
 - iii. Hypoglycemia
 - iv. Infant born to a mother with significant medical condition
 - v. Infant of a diabetic mother
 - vi. Infant of substance abusing mother
 - vii. Infant of a mother with active infection or history of TORCH infection
 - viii. Infant with abnormalities on prenatal ultrasound
 - ix. Infant with risk factor for developmental dysplasia of the hip
 - x. Large and/or small for gestational age babies
 - xi. Multiple gestation (near and at term)
 - xii. Polycythemia
 - xiii. Premature/postmature infant
- g. Manage jaundice in the newborn period including:
- i. Interpret maternal history for factors contributing to jaundice
 - ii. Interpret infant's history for possible etiologies of jaundice
 - iii. Perform a physical exam to assess for jaundice or other evidence of hepatic dysfunction
 - iv. Demonstrate use and interpretation of transcutaneous bilirubin monitoring.
 - v. Obtain laboratory tests judiciously for management of the jaundiced infant
 - vi. Correctly interpret test results to evaluate jaundice.
 - vii. Utilize bilirubin nomograms appropriately.
 - viii. Describe indications for phototherapy and exchange transfusions.
 - ix. Describe the use of phototherapy in both the hospital and the home and explain risks
 - x. Encourage and support breastfeeding in the jaundiced infant.

- h. Use and/or interpret clinical tests commonly used in Newborn Nursery setting, such as:
 - i. Physiologic monitoring
 - ii. Critical congenital heart disease screening
 - iii. Ballard exam for gestational age assessment
 - iv. Growth curves for premature and term infants
 - v. Blood tests: CBC, ABO typing and Coombs testing, glucose, bilirubin, maternal cord blood antibodies
 - vi. Hearing screening
 - i. Assess a newborn's nutritional status based on maternal medical and obstetrical history and infant's history and physical exam and implement appropriate feeding plans.
 - j. Understand the normal feeding cycle.
 - i. Recognize and manage common problems for breastfeeding infants and mothers.
 - ii. Address medications that are transmitted via breast milk.
 - iii. Address maternal infections and risk of transmission via breast milk
 - k. Identify and manage newborns at risk for bacterial sepsis by history, physical exam, and laboratory studies
 - l. Describe the rationale behind nursery and delivery routines and how these affect the health and well-being of families and newborns.
 - m. Describe appropriate care of the umbilicus.
 - n. Provide anticipatory guidance and prevention counseling throughout hospital stay and at time of discharge.
 - o. Practice accepted policies for infection reduction in the newborn nursery.
 - p. Describe normal infant elimination patterns.
5. Out-of-Hospital Delivery:
- a. Describe the care and treatment of an infant following delivery that occurred at home or in transit to the hospital.
 - b. Discuss the prevalence and the impact on infant health of planned out-of-hospital deliveries.
 - c. Recognize the risks and liabilities of home birth, as well as perceived benefits.
 - d. Describe ways the home-birth provider and family physician can work together to benefit the infant born at home.
 - e. Recognize the existence of birthing centers, the level of care they provide, and how they are connected to the traditional hospital system.

Competency: Medical Knowledge

Objectives:

1. Understand the scope of established and evolving biomedical, epidemiological, and psychosocial knowledge needed by a family physician; demonstrate the ability to acquire, critically interpret, and apply this knowledge in patient care.
2. Access medical information efficiently, evaluate it critically, and apply it to newborn care appropriately.

3. Understand the pathophysiology of the common conditions listed in the previous section.
4. List common assessment tools and studies used to assess normal pregnancies and infant well-being close to term and during the labor and delivery process.
5. Identify common and important perinatal infections.
6. Describe the rationale and use of eye prophylaxis, vitamin K1 administration, and hepatitis B vaccine and HBIG.
7. Describe normal physiologic changes in neonatal transition, signs of abnormal responses, and strategies for their management.
8. Describe the normal infant sleeping cycle.
9. Describe current standards, controversies, and state variation in newborn screening.
 - a. Understand local requirements and testing.
10. Describe common post-delivery obstetrical issues and how these affect maternal recovery and ability to care for the newborn:
 - a. C-section delivery
 - b. Retention of placenta
 - c. Post-partum hemorrhage
 - d. Post-partum depression
 - e. Post-partum infections
 - f. Hypertension

Competency: Interpersonal and Communication Skills

Objectives:

1. Participate in shared decision-making with families and professional associates.
2. Provide effective patient education, including reassurance, for conditions common to the newborn nursery.
3. Communicate and work effectively with staff, health professionals, specialists, referring providers, and primary care providers to create and sustain information exchange and teamwork for patient care.
4. Develop effective strategies for teaching students, colleagues, and other professionals.
5. Maintain accurate, legible, timely, and legally appropriate medical records for newborns.
6. If the family physician is not the PCP or the delivering provider, effectively communicate with the mother's delivering provider during the hospital stay and her primary care provider prior to the infant's discharge.
7. Communicate effectively with parents and family in a professional and caring manner that honors family values and enhances their parenting skills and confidence.
8. Discuss care and communication issues for an infant being placed for adoption (including both birth and adoptive parents).
9. Counsel parents about feeding choices and assess for potential risks/difficulties.
10. Counsel and support mothers who are breastfeeding.
11. Counsel and support mothers who are formula feeding.

12. Counsel parents about recommendations on routine hepatitis B vaccination, including risks, benefits, alternatives, and common side effects.
13. Counsel parents about recommendations on routine Vitamin K intramuscular administration, including risks, benefits, alternatives, and common side effects.
14. Counsel parents about types of jaundice.
15. Discuss priorities for anticipatory counseling, especially in face of time constraints due to "early discharge."
16. Provide routine counseling on topics such as:
 - a. Routine follow-up appointment time.
 - b. Contacting a medical provider for advice.
 - c. Unique concerns for infants discharged prior to 24 hours.
 - d. Needed medical, social, and governmental or safety-net services
 - e. Normal infant behaviors related to crying, sleep, and wakefulness.
 - f. Safe sleep (Alone, on Back and in a Crib)
 - g. Coping with crying/Abusive Head Trauma prevention
 - h. Postpartum adjustment including the need for rest and support, and the potential for postpartum "blues" and depression.
 - i. Uniqueness of each infant's temperament and how to identify and respond to this
 - j. Potential for sibling rivalry and management strategies
 - k. Injury prevention
 - l. Warning signs of illness, and reasons to return to hospital/clinic.
17. Provide written discharge instructions

Competency: Practice-based Learning

Objectives:

1. Demonstrate knowledge, skills, and attitudes needed for continuous self-assessment.
2. Use scientific methods and evidence to investigate, evaluate, and improve patient care practice in the nursery setting.
3. Identify standardized guidelines for diagnosis and treatment of conditions common to the newborn nursery and adapt them to the individual needs of specific patients.
4. Identify personal learning needs, systematically organize relevant information resources for future reference, and address plans for lifelong learning about newborn care.

Competency: Professionalism

Objectives:

1. Act with integrity, respect, and high ethical standards towards patients and families, colleagues, and other members of the health care team involved in the care of newborns.
2. Demonstrate a commitment to carrying out professional responsibilities, adherence to ethical principles, and sensitivity to diversity.

3. Demonstrate personal accountability to the well-being of patients.
4. Demonstrate a commitment to professional behavior in interactions with staff and professional colleagues.
5. Adhere to ethical and legal principles and be sensitive to diversity.

Competency: Systems-based Practice

Objectives:

1. Practice high-quality health care and advocate for patients within the context of the health care system.
2. Take steps to minimize costs without compromising quality of care.
3. Recognize and advocate for families who need assistance during the hospital stay and after discharge.
4. Recognize personal limits and those of the system; take steps to avoid medical errors.
5. Explain the role of the family physician in the nursery and how it relates to the continuum of office health supervision care.
6. Identify the role and scope of practice of general pediatricians, neonatologists, perinatologists, obstetricians, family physicians, nurse midwives, lactation consultants, primary care nurses for OB/Newborn, and social workers in relation to the normal nursery; and work collaboratively with these professionals in the care of newborns.
7. Refer mothers to resources for assistance with food purchase, nutrition education, and breastfeeding support equipment.
8. List resources that can be used to supplement counseling by the physician.

Diagnostic and screening procedures

GOAL: Describe the following tests or procedures, including how they work and when they should be used; competently perform and interpret those commonly used in the newborn nursery.

1. Hearing screening
2. Monitoring interpretation: pulse oximetry
3. Critical congenital heart disease screening
4. Radiologic interpretation: chest, extremity, abdomen, etc.
5. Bladder catheterization
6. Breast pump use
7. Capillary blood collection (PKU, hct, TSH)
8. Conjunctival swab

Technical and therapeutic procedures

GOAL: Describe the following procedures, including how they work and when they should be used; competently perform those commonly used by the family physician in practice

1. Delivery room resuscitation skills including:
 - a. Assess the need for immediate resuscitation.
 - b. Assign the 1-minute, 5-minute and subsequent Apgar scores.
 - c. Use appropriate technique for suctioning the nose and mouth.
 - d. Demonstrate at least two techniques to reduce radiant heat loss.
 - e. Demonstrate bag and mask ventilation.
 - f. Demonstrate intubation and ventilation.
 - g. Perform chest compressions.
 - h. Insert an umbilical venous catheter.
 - i. Demonstrate appropriate use of medications during neonatal resuscitation.
 - j. Interpret cord blood gases.
 - k. Inspect for signs of major malformations.
2. Circumcision
3. Gastric tube placement (OG/NG)
4. Lumbar puncture
5. Medication delivery: IV/IM/SC/ID
6. Pulse oximeter: placement
7. Suctioning: nares, oropharynx, trachea

Health Supervision/Well Child Care

GOAL: Provide comprehensive health promotion, screening and disease prevention services to infants, children, adolescents and their families in the ambulatory setting in the context of their community.

Competency: Patient Care

Objectives:

1. Perform health promotion (well child care) visits at recommended ages based on nationally recognized periodicity schedules.
2. Perform age-appropriate developmental and behavioral surveillance and screening based on nationally recognized guidelines, school performance monitoring, and job performance monitoring.
3. Perform a complete physical exam at every WCC visit and address any family concerns.
4. Perform and interpret age-appropriate screening procedures, using nationally-recognized periodicity schedules and according to local or state mandate (e.g., newborn screening, post-partum depression, lead, hematocrit, hemoglobin for sickle cell, BMI percentile, blood pressure, cardiovascular risk assessment, vision, hearing, dental assessment, and reproductive-related concerns).
5. Perform appropriate additional screening procedures based on patient and family concerns (e.g., sports involvement, positive family history for specific health condition, behavioral concerns, depression, identified risk for lead exposure).
6. Monitor growth charts at every WCC visit for any variance from anticipated normal growth pattern.
7. Provide age-appropriate immunizations using CDC endorsed vaccine schedules.
8. Ensure age appropriate nutritional intake in the patient at every WCC visit for optimal growth and performance.
9. Provide age-appropriate anticipatory guidance to parent(s) or caregiver(s), and the child or adolescent, according to recommended guidelines. Address topics including:
 - a. Age-appropriate medical care
 - b. Behavioral health needs
 - c. Community interactions
 - d. Discipline
 - e. Early reading and language development
 - f. Healthy nutritional choices (starting with breastfeeding) and nutritional supplementation when needed (i.e. vitamin D and iron)
 - g. Injury and illness prevention
 - h. Oral health
 - i. Personal responsibility (adolescence)
 - j. Physical activity and sports
 - k. Positive interactions between the parent and infant/child/adolescent

- l. Sexuality (infancy, early and middle childhood, adolescence)
 - m. Social competence
 - n. Substance use/abuse (middle childhood, adolescence)
10. Identify social determinants of health (e.g., financial, social, environmental, health service, insurance systems) that can impact child well-being and provide resources and strategies to overcome these for specific families.
 11. Identify maternal depression and refer to treatment resources.
 12. Arrange appropriate referrals or ongoing care for concerns identified during well-child care visits.
 13. Carefully observe the interactions between the parent and the infant, child, or adolescent and offer feedback on effective communication strategies.
 14. Identify factors that affect development both positively and negatively for each child and identify sources of strength and resilience.
 15. Assess for behavioral and mental health disorders using standardized screening methods
 16. Assess for Adverse Childhood Experiences (ACES) which may impact both parental and child health, including:
 - a. Parental mental health conditions or substance abuse
 - b. Parental incarceration
 - c. Child physical abuse, sexual abuse, emotional abuse, and neglect
 - d. Neighborhood violence
 - e. Divorce
 - f. Intimate Partner Violence
 17. Assess the impact on the child of
 - a. Poverty
 - b. Race
 - c. Ethnicity
 - d. Immigration status and acculturation
 - e. Housing Status
 - f. Family Discord and Dissolution
 - g. Literacy and language fluency
 - h. Loss through death, divorce, family member incarceration or deportation, traumatic separation
 - i. Violence
 - j. Child abuse and neglect
 - k. Environmental toxins
 - l. Family resilience
 - m. Foster care
 - n. Adoption
 18. Provide appropriate advice and interventions for school-related issues including:
 - a. Academic failure/learning disabilities
 - b. Attention difficulties that interfere with school performance
 - c. Bullying and cyberbullying
 - d. Chronic absenteeism or tardiness

Competency: Medical Knowledge

Objectives:

1. Demonstrate the knowledge of accurate use of appropriate growth charts e.g- growth charts for premature babies, certain genetic conditions like Turner Syndrome, WHO growth charts for children less than 2 years and CDC growth charts for over 2 years.
 - a. Define underweight, overweight, and obesity and outline nutritional strategies to address each.
2. Demonstrate knowledge of age specific development across various domains like: cognitive skills, fine and gross motor milestones, communication and social milestones.
3. Demonstrate knowledge of age specific nutrition:
 - a. Breast feeding
 - b. Formula – types of formula, their indications and contraindications, appropriate mixing techniques and different recipes for mixing to higher calories
 - c. Supplemental nutrition and vitamins – Vitamin D, Iron, fluoride, solid foods
 - d. The use of special formulas and nutrition in children with chronic illness or feeding problems
4. Describe the rationale behind universal immunization schedule:
 - a. Catch up immunization schedule
 - b. Vaccine safety
 - c. Vaccine refusal
 - d. Vaccine Contraindications
 - e. Vaccines in special situations
5. Demonstrate the knowledge of common age specific and seasonal anticipatory guidance:
 - a. Injury prevention
 - b. Car Seat education
 - c. Dental education
 - d. Safe Sleep education
 - e. Social Media education
 - f. Tobacco exposure
6. Describe how social determinants of health effect children and family well-being:
 - a. Low literacy
 - b. Poverty
 - c. Food insecurity
 - d. Housing instability
7. Demonstrate knowledge of attachment theory and its importance on child well-being and development.
8. Understand the implications of chronic disease in a child or parent within the family on child well-being, school performance, and development.
9. Demonstrate understanding of language and literacy development

- a. Understand the pivotal role of talking and reading to the baby and child in language development and in school-readiness
 - b. Be familiar with the language development of the child in a bilingual household
 - c. Identify red flags indicating delayed language comprehension or production
 - d. Know the social factors that impact language development
 - e. List community resources available to help children with language delay
10. Demonstrate awareness of the role of culture in child development
- a. Know about cultural differences in child rearing practices
 - b. Understand the impact of emigration and immigration on child development
 - c. Be familiar with different cultural norms to be able to provide culturally sensitive care to diverse families
 - d. Be familiar with culturally diverse community resources
11. Understand gender identity formation, typical and atypical gender development and the challenges LGBTQ children face at home and in their communities.

Competency: Interpersonal Skills and communication

Objectives:

- 1. Provide effective patient education, including reassurance, for conditions common to the outpatient setting.
- 2. Adapt patient and family educational materials and counseling as appropriate for family health literacy.
- 3. Identify cultural differences that may affect communication with patients and families, and provide culturally competent care.
- 4. Utilize motivational interviewing techniques for health promotion and disease prevention and to appropriately bring behavior change in a patient.
- 5. Educate staff, medical students, and other learners about sources of strength and resilience in children, families, and communities and how to promote and support those resources.
- 6. Communicate effectively with physicians, other health professionals, and health-related agencies to create and sustain information exchange and teamwork for patient care.

Competency: Practice based learning

Objectives:

- 1. Use standardized guidelines for providing comprehensive well child care.

2. Recognize and use resources to keep up to date with changes in recommendations for vaccines, preventive health, and screening in the pediatric age group.
3. Provide comprehensive support for children and families by recognizing areas of improvement personally and in the community.
4. Demonstrate the ability to acquire, critically interpret, and apply established and evolving biomedical, clinical, epidemiological, and psychosocial knowledge needed to provide health promotion, screening, and disease prevention services to infants, children, adolescents, and their families.

Competency: Professionalism

Objectives:

1. Demonstrate respect for non-traditional family structures and cultural differences regarding health practices. Observe age appropriate confidentiality guidelines in accordance with state law and ethical guidelines.
2. Demonstrate personal accountability to the well-being of patients (e.g., following-up lab results, writing comprehensive notes and seeking answers to patient care questions).
3. Demonstrate a commitment to professional behavior in interactions with staff and professional colleagues.
4. Adhere to ethical and legal principles and be sensitive to diversity.
5. Adhere to legal requirements for reporting child abuse and neglect.
6. Describe the laws about the treatment of minors.
7. Understand that attention to family and social concerns is integral to the care of the child.
8. Demonstrate integrity, compassion and respect.
9. When adverse conditions are identified, balance the demands of confidentiality and protection to promote the best interests and safety of the child.
10. Practice supportive, non-judgmental care for the child and family.

Competency: Systems based practice

Objectives:

1. Identify key aspects of health care systems as they apply to the primary care provider, such as the role of the PCP in decision-making, referral, and coordination of care.
2. Work collaboratively with professionals in the medical, mental health, educational, and community systems to optimize preventive health services for children.
3. Demonstrate sensitivity to the costs of clinical care in the outpatient setting and take steps to minimize costs without compromising quality.

4. Recognize and advocate for families who need assistance to deal with system complexities, such as lack of insurance, multiple medication refills, multiple appointments with long transport times, or inconvenient hours of service.
5. Recognize personal limits and those of the health care system.
6. Establish steps to avoid medical errors.
7. Adapt national care guidelines, to the needs of your local patient population.
8. Be familiar with counseling and behavioral health codes.
9. Identify and refer to community resources to assist families struggling with adverse circumstances (poverty, substance abuse, dislocation, violence).
10. Identify local child protection agencies and understand how and when to make referrals to them.
11. Develop practical office strategies that allow provision of comprehensive and efficient health supervision e.g., share tasks with office staff; develop and use electronic medical records, websites, questionnaires, patient education handouts, books, videos; develop office policies for such things as consent and confidentiality, request for transfer of medical records, school information.

Diagnostic and screening procedures.

GOAL: Describe the following tests or procedures, including how they work and when they should be used; competently perform and interpret those commonly used by a family physician

1. ADHD home and school questionnaire
2. Behavioral screening questionnaires q
3. Developmental screening tests
4. Hearing screening
5. Lead screening
6. Lipid screening
7. Peak flow meter
8. PPD: indications, placement and interpretation
9. Spirometry
10. Tympanometry evaluation: interpretation
11. Vision screening

Technical and therapeutic procedures.

GOAL: Describe the following procedures, including how they work and when they should be used; competently perform those commonly used by the family physician in practice

1. Lactation education and breast pump use
2. Medication delivery: inhaled, intramuscular, intradermal, intravenous and subcutaneous

Acute Care (Outpatient and Inpatient)

GOAL: Demonstrate high standards of professional competence while working with patients in the office and hospital.

Competency: Patient Care

Objectives:

1. Provide family-centered patient care that is development- and age-appropriate, compassionate, and effective for the treatment of health problems and the promotion of health.
 - a. Use a logical and appropriate clinical approach to the care of patients, applying principles of evidence-based decision-making and problem-solving, demonstrating:
 - i. Careful data collection and synthesis
 - ii. Well thought-out assessment and plans
 - iii. Good clinical judgment and decision-making
 - iv. Careful follow-up
2. Evaluate and manage the common **signs and symptoms** that present in the context of acute medical care in the inpatient or outpatient setting:
 - a. General: Excessive crying/colic, failure to thrive, fatigue, fever, hypothermia, weight loss or gain), brief resolved unexplained event (BRUE)
 - b. Infancy: hip clicks, skin rashes, birthmarks, jitteriness, hiccups, sneezes, wheezing, heart murmur, umbilical cord concerns, breast tissue, breast drainage, sleep disturbances, difficulty feeding, frequent infections, abnormal head shape or size, evidence of abuse or neglect, abnormal muscle tone
 - c. Cardiorespiratory: apnea, chest pain, cough, cyanosis, dyspnea, heart murmur, hemoptysis, hypertension, hypotension, inadequate respiratory effort, rhythm disturbance, shortness of breath, stridor, syncope, tachypnea, respiratory failure, wheezing
 - d. Dermatologic: Congenital nevus and other birth marks, ecchymoses, petechiae, pigmentary changes, purpura, rashes, urticaria, vascular lesions, edema
 - e. EENT: Acute visual changes, dysconjugate gaze, conjunctival injection, ear or eye discharge, ear, throat, or eye pain, epistaxis, nasal foreign body, hoarseness, stridor
 - f. Endocrine: normal and abnormal timing of pubertal changes, polydipsia, polyuria, heat/cold intolerance
 - g. GI/Nutrition/Fluids: Abdominal pain, mass or distention, constipation, dehydration, diarrhea, dysphagia, encopresis, hematemesis, inadequate intake of calories or fluid, jaundice, regurgitation, vomiting, melena, rectal bleeding

- h. Genitourinary/Renal: undescended testicle(s), change in urine color, dysuria, edema, enuresis, frequency, hematuria, pain referable to the urinary tract, scrotal mass, pain, or edema, trauma to urinary tract or external genitalia
 - i. GYN: Asymmetry of breast development, abnormal vaginal bleeding, pelvic or genital pain, vaginal discharge or odor, vulvar trauma or erythema, delayed onset of menses, missed or irregular periods
 - j. Hematologic/Oncologic: Abnormal bleeding, bruising, hepatosplenomegaly, lymphadenopathy, masses, pallor
 - k. Musculoskeletal: abnormal gait, abnormal spine curvature, arthritis or arthralgia, bone and soft tissue trauma, limb or joint pain, limp, variations in alignment (e.g., intoeing)
 - l. Neurologic and Developmental: Delays in developmental milestones, loss of milestones, ataxia, change in sensorium, diplopia, headache, head trauma, hearing concerns, gait disturbance, hypotonia, lethargy, seizure, tremor, vertigo, visual disturbance, weakness
 - m. Psychiatric/Psychosocial: Aggressive behavior, anxiety, behavioral concerns conversion symptoms, delirium, depression, hyperactivity, psychosis, self-harm, suicide attempt, suspected child abuse or neglect
3. Evaluate and manage the common **conditions** and situations presenting in the context of **outpatient** visits.
- a. General: iron deficiency, lead exposure, strabismus, hearing problems, child care decisions, parental/family stressors, oral health
 - b. Allergy/Immunology: Allergic rhinitis, angioedema, asthma, food allergies, recurrent infections, serum sickness, urticaria
 - c. Cardiovascular: heart murmurs, Kawasaki disease, palpitations, rheumatic fever, congenital heart disease, congestive heart failure, bacterial endocarditis, cardiomyopathy
 - d. Dermatology: abscess, acne, atopic dermatitis, cellulitis and superficial skin infections, impetigo, molluscum, tinea infections, viral exanthems, verruca vulgaris, other common rashes of childhood and adolescence
 - e. Endocrine/Metabolic: diabetes mellitus, growth failure or delay, gynecomastia, precocious or delayed puberty, thyroid disease, diabetes insipidus
 - f. GI/Nutritional: Appendicitis, blood in stool, constipation, diarrhea, encopresis, foreign body ingestion, gastroenteritis, gastroesophageal reflux, hepatitis, inflammatory bowel disease, nutritional issues, obesity, abdominal mass
 - g. GU/Renal: Electrolyte and acid-base disturbances (mild), enuresis, glomerulonephritis, hematuria, Henoch Schonlein purpura, nephrotic syndrome, obstructive uropathy, proteinuria, undescended testicles, UTI/pyelonephritis
 - h. Gynecologic: Genital trauma (mild), labial adhesions, pelvic inflammatory disease, vaginal discharge or foreign body, family planning, STI prevention, irregular menses, heavy menses

- i. Hematology/Oncology: anemia, hemoglobinopathies, leukocytosis, neutropenia, thrombocytopenia
 - j. Infectious Disease: Cellulitis, cervical adenitis, dental abscess with complications, laryngotracheobronchitis, otitis media, otitis externa, periorbital and orbital cellulitis, pharyngitis
 - k. Musculoskeletal: growing pains, hip dysplasia, limp, metatarsus adductus, sprains, strains, tibial torsion, apophysitis, femoral retro- and anteversion, fractures
 - l. Pharmacology/Toxicology: Common drug poisoning or overdose, ingestion avoidance (precautions)
 - m. Neurology/Psychiatry: Headache, head trauma, gait disturbance, hypotonia, lethargy, seizure, tremor, vertigo, acute weakness
 - n. Psychiatric/Psychosocial: psychosis, mania, self-harm, suicide attempt, suspected child abuse or neglect
 - o. Pulmonary: asthma, bronchiolitis, croup, epiglottitis, pneumonia; sinusitis, viral URI and LRTI.
- Surgery: Initial evaluation of patients requiring urgent referral, pre- and post-op evaluation of surgical patients
4. Evaluate and manage, with pediatric consultation as indicated, patients with **conditions** that commonly present to the **inpatient unit** (examples below):
- a. General: failure to thrive, fever of unknown origin, fever without a source
 - b. Allergy/Immunology: acute drug allergies/reactions, anaphylaxis, serum sickness.
 - c. GI/Nutrition: appendicitis, gastroenteritis, gastroesophageal reflux, failure to thrive.
 - d. GU/Renal: urinary tract infection/pyelonephritis; AKI
 - e. Gynecologic: genital trauma, pelvic inflammatory disease, sexual assault
 - f. Infectious Disease: cellulitis (including periorbital and orbital), cervical adenitis/deep neck infection, dental abscess with complications, laryngotracheobronchitis (croup), meningitis (bacterial or viral), pneumonia (viral or bacterial), sepsis/bacteremia (including newborns), osteomyelitis, septic arthritis.
 - g. Pharmacology/Toxicology: poisoning overdose, dose adjustments needed for specific medical conditions, serum drug level monitoring
 - h. Neurology/Psychiatry: developmental delay, delirium, febrile seizures, altered mental status, headache.
 - i. Respiratory: asthma exacerbation, bronchiolitis, croup.
 - j. Surgery: pre- and post-op consultation and evaluation of surgical patients (general, ENT, orthopedics, urology, neurosurgical, etc.).

5. Recognize **conditions that commonly require management or co-management by pediatric subspecialists** that commonly present to the **inpatient unit** (examples below):
 - a. Allergy/Immunology: severe angioedema
 - b. Cardiovascular: congenital heart disease, congestive heart failure, Kawasaki disease, rheumatic fever, cardiomyopathy
 - c. Endocrine: diabetes (including diabetic ketoacidosis), electrolyte disturbances secondary to underlying endocrine disease, adrenal insufficiency
 - d. GI/Nutrition: appendicitis, bleeding, cholangitis, complications of inflammatory bowel disease, severe gastroesophageal reflux, bowel obstruction, pancreatitis, severe malnutrition
 - e. GU/Renal: electrolyte and acid-base disturbances, glomerulonephritis, hemolytic-uremic syndrome, nephrotic syndrome, chronic kidney disease, renal failure.
 - f. Hematologic/Oncologic: abdominal and mediastinal mass, fever and neutropenia, thrombocytopenia, severe anemia, vaso-occlusive crises and other complications of sickle cell disease, common malignancies, tumor lysis syndrome
 - g. Infectious Disease: encephalitis, HIV, infections in immunocompromised hosts, late presentation of congenital infections, deep neck infection, line infection, meningitis (bacterial or viral), osteomyelitis, recurrent pneumonia, septic arthritis, tuberculosis
 - h. Neurology: acute cerebellar ataxia, Guillain-Barre syndrome, movement disorders, non-febrile seizures, encephalopathy/encephalitis, shunt infections
 - i. Orthopedic: Non-accidental trauma
 - j. Psychiatric: Suicide attempt, child abuse or neglect, depression, self-harm or harm to others
 - k. Respiratory: airway obstruction, bacterial tracheitis, epiglottitis, cystic fibrosis exacerbation
 - l. Rheumatologic: Henoch Schonlein purpura (HSP), juvenile idiopathic arthritis (JIA), systemic lupus erythematosus (SLE)

6. Demonstrate how to competently perform and use common physiologic monitoring, therapeutic modalities, and special technology in the general inpatient setting, including indications for use, interpretation of results, and issues specific to care of the ill child.
 - a. Pulse oximetry
 - b. Cardiac monitoring including telemetry
 - c. Monitoring of temperature, blood pressure, heart rate, respirations
 - d. Determination of which patients need continuous monitoring or special monitoring
 - e. Universal precautions
 - f. Nasogastric tube placement

- g. Administration of nebulized medication
- h. Injury, wound and burn care
- i. Oxygen delivery systems
- j. I.V. fluids
- k. I.V. pharmacotherapy
- l. Transfusion therapy

Competency: Medical Knowledge

Objectives:

1. Understand the scope of established and evolving biomedical, epidemiological and psychosocial knowledge needed by a family physician.
2. Demonstrate the ability to acquire, critically interpret and apply this knowledge in patient care
3. Understand the pathophysiology of the common conditions listed in the previous section.
4. Describe evidence-based diagnostic and therapeutic strategies for these conditions and identify conditions for which there is a paucity of evidence.

Competency: Interpersonal Skills and communication

Objectives:

1. Demonstrate interpersonal and communication skills that result in information exchange and partnering with patients, their families, and professional associates.
 - a. Provide effective patient education, including reassurance, for acute condition(s) commonly seen in the clinic or on the inpatient service.
 - b. Participate and communicate effectively as part of an interdisciplinary team, as the primary provider.
 - c. Develop effective strategies for teaching students, colleagues, other professionals and laypersons.
 - d. Maintain accurate, legible, timely, and legally appropriate medical records.

Competency: Practice based learning

Objectives:

1. Demonstrate knowledge, skills and attitudes needed for continuous self-assessment.

- a. Use scientific methods and evidence to investigate, evaluate and improve patient care practice in the inpatient setting.
- b. Identify personal learning needs, systematically organize relevant information resources for future reference, and plan for continuing acquisition of knowledge and skills.
- c. Identify, locate and utilize the most recent published information to support clinical decision making.

Competency: Professionalism

Objectives:

1. Demonstrate a commitment to carrying out professional responsibilities, adherence to ethical principles, and sensitivity to diversity.
 - a. Demonstrate personal accountability to the well-being of patients.
 - b. Behave professionally in interactions with staff and professional colleagues.
 - c. Adhere to ethical and legal principles.
 - d. Demonstrate sensitivity to diversity while providing acute care and be aware of personal implicit biases.

Competency: Systems based practice

Objectives:

1. Practice high-quality health care and advocate for patients within the context of the health care system.
 - a. Identify key aspects of health care systems, cost control, billing, and reimbursement in the outpatient acute care or hospital inpatient setting.
 - b. Consider cost and resource allocation without compromising quality of care.
2. Take steps to avoid medical errors by recognizing the limits of one's knowledge and expertise.
3. Work with the health care team to recognize, report, and address systems errors.
4. Understand the community context of providing acute care for children (rural, suburban, urban) and the local and regional capacity for tertiary and quaternary care.

Diagnostic and screening procedures.

GOAL: Describe the following tests or procedures, including how they work and when they should be used; competently perform and interpret those commonly used procedures in the inpatient or outpatient setting

1. Arterial, capillary, and venous blood gases
2. Blood chemistries: electrolytes, glucose, calcium, magnesium, phosphate
3. CBC with differential, platelet count, RBC indices
4. Cerebrospinal fluid analysis
5. Coagulation studies
6. C-reactive protein, erythrocyte sedimentation rate
7. Detection of bacterial, viral, and fungal pathogens
8. Electrocardiogram (perform and interpret)
9. Gram stain
10. Hemoglobin A1C
11. Lead
12. Lipid profile
13. Newborn metabolic disease screen, CCHD screening, hearing screening
14. Other fluid studies (pleural, joint)
15. Renal function tests
16. Serologic tests for infection
17. Stool studies
18. Tests of hepatic function) and damage
19. Therapeutic drug concentrations
20. Urinalysis
21. Wet prep

Technical and therapeutic procedures.

GOAL: Describe the following procedures, including how they work and when they should be used; competently perform those commonly used by the family physician in practice

1. Arterial puncture
2. Bladder catheterization
3. Chest physiotherapy
4. Gastric tube placement (OG/NG)
5. I and D simple abscess
6. Intravenous line placement
7. Lumbar puncture
8. Medication delivery: intramuscular, subcutaneous, intradermal, intravenous, inhaled, rectal
9. Nursemaid elbow reduction
10. Pain management
11. PPD: placement and interpretation

12. Pulmonary function tests
13. Pulse oximeter: placement
14. Rectal swab
15. Sterile technique
16. Subungual hematoma drainage
17. Suctioning
18. Venipuncture

Care of Children and Youth with Special Health Care Needs (CYSHCN)

GOAL: Demonstrate competence in providing care for children with chronic diseases in a knowledgeable and compassionate manner consistent with the needs of the child and the family.

Competency: Patient Care

Objectives:

1. Demonstrate familiarity with the concept of the medical home.
2. Demonstrate accuracy in information gathering.
3. Evaluate and manage (or co-manage with subspecialty support) the common conditions and situations for children with chronic disorders in various clinical settings:
 - a. The office setting, including incorporation of children and youth with special health care needs disease into the resident's panel of patients
 - b. Chronic care institution
 - c. Acute care hospital
 - d. Home
4. Evaluate the physical health and mental health of both the patients and their family members throughout the continuum of care.
 - a. Screen for physical health and mental health problems among patients and their family members.
 - b. Treat or refer affected children or family members to specialty care as needed.
5. Show effective counseling and educational skills to allow patients and families to better deal with the rigors of chronic illness.
6. Develop an understanding of and comfort with technology that maximizes functional abilities of CYSHCN.
7. Elicit family and patient preferences for end-of-life care and assist in achieving patient and family goals of care.
8. Evaluate and manage, with specialist consultation as needed, the common **conditions** and situations encountered in this population:
 - a. Central nervous system disorders
 - i. Intellectual disability
 - ii. Developmental disability
 - iii. Traumatic brain injury
 - iv. Mental illness
 - v. Epilepsy
 - vi. Cerebral palsy
 - vii. Behavioral disorder
 - viii. Autism spectrum disorder
 - ix. Neurodevelopmental disorders
 - x. Neuromuscular disorders
 - xi. Congenital disorders including spina bifida

- xii. Hydrocephalus/ VP shunt
 - xiii. School dysfunction including learning disabilities
- b. Cardiac conditions
 - i. Congestive heart failure
 - ii. Congenital heart conditions
 - iii. Hypertension
- c. Pediatric cancer
- d. Endocrine conditions
 - i. Diabetes mellitus
 - ii. Thyroid Disorders
- e. Allergic disorders
- f. Pulmonary conditions
 - i. Congenital diaphragmatic hernia
 - ii. Cystic Fibrosis, ciliary dyskinesia
- g. Renal Conditions
 - i. Renal Failure
 - ii. Dialysis dependence
 - iii. Transplant recipient
- h. Gastrointestinal conditions
 - i. Biliary atresia
 - ii. Celiac Disease
 - iii. Irritable Bowel Syndrome
 - iv. Inflammatory Bowel Disease
 - v. Functional Bowel Disorders
- i. Sensory system dysfunction
 - i. Hearing loss
 - ii. Visual loss
- j. Musculoskeletal disorders
 - i. Congenital bone anomalies
 - ii. Arthritis
- k. Skin
 - i. Acne
- l. Hematologic disorders
 - i. Sickle Cell Anemia
- m. Chromosomal disorders
 - i. Down Syndrome
 - ii. Turner Syndrome
 - iii. Other identified genetic or chromosomal disorders

Competency: Medical Knowledge

Objectives:

1. Demonstrate command of the knowledge necessary to care for children and youth with special health care needs

2. Access sources of information necessary to provide care to those with chronic disorders.
3. Understand the pathophysiology that underlies the specific conditions listed in the previous section.
4. Describe the diagnostic and therapeutic approach to each of these conditions.
5. Outline different resources available for children with life-limiting illness.

Competency: Interpersonal Skills and Communication

Objectives:

1. Communicate effectively with children suffering from chronic disorders, including children with intellectual impairment
2. Communicate effectively with families and caregivers of children and youth with special health care needs, paying attention to:
 - a. Understanding of plans
 - b. Education of families and patients
 - c. Counseling of patients and families
3. Ensure frequent and detailed communication with staff and other health professionals involved in the patient's care.
 - a. Maintain appropriate accurate medical records.
 - b. Work as a member of the interdisciplinary health care team.

Competency: Practice Based Learning

Objectives:

1. Use evidence-based medicine in the care of children with chronic disorders.
2. Maintain current knowledge of guidelines, growth charts, and other documents for children and youth with special health care needs.
3. Understand the impact of childhood chronic illness on family members.
4. Develop and maintain an understanding of the psychosocial and environmental context of care of children and youth with special health care needs including:
 - a. Potential adverse health and mental health outcomes among family members.
 - b. Financial impact of caring for a child with special healthcare needs.
 - c. Impact of adverse family health and mental health on child outcomes.

Competency: Professionalism

Objectives:

1. Provide compassionate, competent care for children and youth with special health care needs.

2. Espouse a commitment to professional care for children and their families.
3. Demonstrate respect, compassion, and integrity.
4. Assume responsibility for assigned patients and their families
5. Provide sensitive support to the families of children and youth with special health care needs.

Competency: Systems Based Practice

Objectives:

1. Work with consultants, case managers, social workers, and schools to coordinate care for children and youth with special health care needs.
2. Identify the patient's insurance(s).
3. Use the appropriate formulary for prescription writing.
4. Code (ICD-10) and bill (E&M code) appropriately for services rendered.
5. Ensure access to ancillary services as required.
6. Write skillful and accurate referral letters and communicate with other specialists.

Diagnostic procedures.

GOAL: Describe the following tests or procedures, including how they work and when they should be used; competently interpret those commonly used diagnostic procedures for children and youth with special health care needs.

1. Laboratory tests:
 - a. Glucose and Hemoglobin A1c
 - b. Sweat test
 - c. Tests for malabsorption
 - d. Thyroid function tests
 - e. Renal function tests
 - f. Liver function tests
 - g. Hematologic tests including hemoglobin electrophoresis
 - h. Chromosome analysis, SNP, FISH, and exome sequencing
2. Radiological tests:
 - n. CT scan brain
 - o. MRI brain
 - p. X-Rays
 - q. Bone Scan
 - r. VCUG
 - s. Abdominal Ultrasound

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