

Pediatric Infectious Diseases
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COMPETENCY 1. Patient Care. Provide family centered patient care that is developmentally and age appropriate, compassionate, and effective for the treatment of health problems and the promotion of health.

1. Effectively observe, communicate, and interact with patients, families, and other healthcare workers to obtain histories, deal with difficult situations, and insure proper record keeping.
2. Perform, record, present, and interpret appropriately focused physical exams pertinent to Pediatric Infectious Diseases.
3. Integrate data obtained from the history, physical, and laboratory to construct a problem list, develop a prioritized differential diagnosis along with therapeutic, diagnostic, and patient education plans, including disease-specific precautions, for common pediatric diseases, including:
 - a. Fever
 - b. Diarrhea
 - c. Pneumonia
 - d. Limp, bulging fontanelle with irritability
 - e. Joint swelling
 - f. Puncture wounds
 - g. Facial swelling and redness
 - h. Abdominal pain
 - i. Dysuria
 - j. Strider
 - k. Bite wounds
 - l. Kawasaki Disease
 - m. Acute rheumatic fever
 - n. Toxic shock syndrome
4. Arrive at clinical decisions and solve problems using deductive reasoning based on data obtained about the patient, principles of clinical epidemiology, and evidence-based medicine, for pediatric infectious diseases, including,
 - a. The child with frequent infections
 - b. Prolonged fever (> 1 week) in children
 - c. HIV-infected child
 - d. HIV-exposed infant
 - e. Nosocomial infections in ICU and their prevention
5. Observe and assist clinical procedures commonly recommended by Pediatric Infectious Diseases specialists:
 - a. lumbar puncture
 - b. thoracentesis
 - c. arthrocentesis
 - d. aspiration of an abscess
 - e. NP aspirate for viral cultures

6. Observe, describe procedures for and interpret the results of clinical, laboratory, and radiological tests commonly used in this specialty, including:
 - a. Culture techniques
 - b. Rapid antigen testing methods of identification in tissues and body fluids for bacteria, fungi, viruses, chlamydia, and mycobacteria
 - c. Susceptibility methods and techniques to determine antibiotic concentrations and bacteriocidal titers in serum and other body fluids
7. Construct a routine childhood immunization schedule as well as a schedule for vaccine usage in special circumstances.
8. Recognize and describe appropriate initial therapies for emergency and life-threatening situations, including:
 - a. Meningitis and cephalitis
 - b. Necrotizing fasciitis
 - c. Epiglottitis
9. Develop care plans for patients with chronic conditions with congenital and acquired immunodeficiencies.

COMPETENCY 2. Medical Knowledge. Understand the scope of established and evolving biomedical, clinical, epidemiological and social-behavioral knowledge needed by a pediatrician; demonstrate the ability to acquire, critically interpret and apply this knowledge in patient care.

1. Describe the etiology, epidemiology, clinical manifestations, differential diagnosis and treatment of common pediatric infections, including:
 - a. Upper respiratory tract infections
 - b. Pneumonia (bacterial and viral)
 - c. Septic arthritis and osteomyelitis
 - d. Otitis media and sinusitis
 - e. Meningitis, encephalitis, and other CNS infections
 - f. Endocarditis
 - g. Skin, soft tissue and muscle infections
 - h. Periorbital redness and swelling
 - i. Gastroenteritis
 - j. Urinary tract infection
 - k. Intra abdominal infections
 - l. Hepatobiliary infections
 - m. Lymphadenitis
 - n. Foreign body and catheter-related infections
 - o. Sexually transmitted diseases and their complications
 - p. Viral exanthems
2. Discuss the basic science, especially biochemical, molecular, cellular, and genetic mechanisms underlying disorders of host defenses, including the common pediatric infections listed above.
3. Discuss the pharmacologic and pharmacogenomic mechanisms that affect absorption, metabolism, excretion and interactions of antibiotics.

4. Explain indications for chemo and immunoprophylaxis in common infections including meningitis and hepatitis, and indications for use of gamma globulin and management of chicken pox exposure in the immunocompromised child.
5. Describe appropriate prophylaxis to contacts of certain diseases, including:
 - a. Measles
 - b. Systemic haemophilus influenzae meningococcus
 - c. Hepatitis A, B, and C
6. Explain the biochemical and molecular principles of common laboratory tests used in this specialty, including:
 - a. Rapid diagnostic techniques (particle agglutination, rapid strep tests, monoclonal FA tests)
 - b. Serologic tests (Western immunoblot, ELISA)
 - c. Molecular biological tests (PCR, Southern blot, in situ hybridization)
 - d. Susceptibility testing, including concepts of synergy and antagonism (MIC, MBC)
7. Describe the mechanism of action, spectrum of activity, adverse effects, contraindications, drug interactions, and relative cost of medicines commonly used or encountered in this specialty, including:
 - a. Aminoglycosides
 - b. Vancomycin
 - c. Penicillins
 - d. Cephalosporins
 - e. Beta-lactamase inhibitor combinations
 - f. Macrolides
 - g. Sulfonamides
 - h. Quinolones
 - i. Tetracyclines
 - j. Clindamycin
 - k. Monobactam
 - l. Carbapenems
 - m. Antiviral agents
 - n. Antifungal agents
 - o. Antiparasitic agents
 - p. Antituberculous agents
 - q. Antiretroviral drugs
 - r. Available vaccines, including their composition, safety, childhood immunization schedule
 - s. Passive antibodies, IVIGB, HBIG, TIG, immune serum globulin, synagis (including their appropriate uses)
8. Explain principles of antibiotic use, including static versus bactericidal drugs, combinations/synergy, and approaches to monitoring toxicity/efficacy.
9. Identify changing patterns of microbial antibiotic resistance and alterations in antibiotic usage to meet these changes.
10. Describe the causative agents, clinical manifestations, mechanisms of spread, and disease-specific prevention /isolation precautions for common pediatric infections, including:

- a. HIV-infected child
 - b. Perinatal HIV-1 transmission
 - c. Kawasaki Disease
 - d. Acute rheumatic fever
 - e. Toxic shock syndrome
 - f. Congenital infections
 - g. Nosocomial infections in ICU
11. Distinguish infections more likely to occur in the neonate, sickle cell anemia patients, cystic fibrosis patients, burn patients, and the immunocompromised host than in normal, healthy hosts.
 12. Explain the relationships in management and consultation between primary care, pediatric infectious disease specialists and other specialties.

COMPETENCY 3. Communication Skills. Demonstrate interpersonal and communication skills that result in information exchange and partnering with patients, their families and professional associates.

1. Elicit, record, and present focused history and physical examinations for common problems encountered in Pediatric Infectious Diseases.
2. Explain to physician and non-physician healthcare workers who consult Pediatric Infectious Diseases services and patients and families the findings from clinical investigations, plans for follow up, possible courses of therapy with indications, risks, benefits, and alternatives.
3. Motivate and instruct patients and their families in promoting health maintenance and infectious disease prevention.
4. Demonstrate sensitivity in communicating with patients and families of how age, culture, religion, and personal beliefs can influence their perception of physician-patient interactions.

COMPETENCY 4. Practice-based Learning and Improvement. Demonstrate knowledge, skills and attitudes needed for continuous self-assessment, using scientific methods and evidence to investigate, evaluate, and improve one's patient care practice.

1. Identify and use resources to obtain up-to-date information dealing with infection prevention and treatment for international travelers/adoptees.
2. Use information technology to access and manage clinical information and perform online searches about their patients and acquire knowledge of specific topics, including current information on common antibiotics related to their patients.
3. Search, evaluate, and present a critical review of scientific information in the medical literature on a major topic relevant to a case or an area of knowledge and practice in which they are uncertain.

COMPETENCY 5. Professionalism. Demonstrate a commitment to carrying out professional responsibilities, adherence to ethical principles, and sensitivity to diversity.

1. Display behaviors that foster and reward the patient's trust in the physician such as appropriate dress, grooming, punctuality, honesty, courtesy, respect for patient confidentiality, and other norms of behavior in professional relationships with patients.
2. Converse appropriately and behave with personal integrity in all elective activities and in interactions with peers, faculty, residents, and non-physician staff involved in the care and treatment of Pediatric Infectious Diseases patients.
3. Work collaboratively as a member of a healthcare team including nurses, dietitians, social workers and other personnel in providing Pediatric Infectious Diseases services.
4. Advocate the interests of patients over personal interests while developing an appropriate balance between personal and professional beliefs and obligations.

COMPETENCY 6. Systems-Based Practice. Understand how to practice quality health care and advocate for patients within the context of the health care system.

1. Describe the impact of economic and health insurance issues on patient care and the ability to provide Pediatric Infectious Disease services.
2. Interact with social services and the home care team to facilitate patient access to nursing care and home care services outside of the hospital.