Pulmonology
Competency Based Goals and Objectives

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. Demonstrate ability to sort through complex medical records/charts to find key elements of information needed to evaluate new problems and assess course of chronic problems.
2. Hone skills in identifying key history and exam needed to evaluate children presenting with conditions related to pulmonary system.
3. Provide routine pulmonary counseling to all parents and patients about:
   - The hazards of cigarette smoke, including passive smoke, and available resources for smoking cessation.
   - The hazards of inhalational agents in home, school, or work environments and in recreational exposure and abuse.
   - Significance of noisy breathing (e.g., stridor and snoring).
   - The impact of obesity on risk for sleep-disordered breathing.
   - Risks of aspiration of foreign bodies (e.g., peanuts, candies).
4. Provide counseling to parents and patients with specific pulmonary diseases, addressing:
   - Treatment and expected course of a patient with chronic lung disease, and access to support groups.
   - Annual influenza immunization for patients with chronic lung disease.
   - Prevention of exposure of high risk patient to respiratory syncytial virus (RSV).
5. Order and interpret the following tests: chest x-ray, pulmonary function test reports (e.g., spirometry and lung volume determinations), polysomnography reports, pulse oximetry, blood gas determination, sweat chloride testing, exercise challenge and bronchial provocation studies.
6. Diagnose, explain, and manage the following pulmonary conditions:
   - Apparent life threatening event (initial work-up and management)
   - Asthma (mild intermittent and mild persistent)
   - Bronchiolitis
   - Bronchitis
   - Chest pain
   - Croup
   - Follow up of apnea of prematurity
   - Uncomplicated pneumonia (bacterial, viral)
7. Identify, explain, initially manage, and refer the following pulmonary conditions:
   - Airway obstruction
   - Apnea (central and obstructive sleep apnea syndrome)
   - Apparent life threatening event requiring further investigation or monitoring
   - Asthma (moderate and severe persistent and mild persistent without adequate control)
   - Bronchopulmonary dysplasia
   - Cystic fibrosis
   - Foreign body at or below the epiglottis or in the esophagus
   - Pneumonia with empyema
   - Pulmonary presentations and complications of HIV infection (Pneumocystis carinii infection and lymphoid interstitial pneumonitis)
   - Moderate and severe persistent asthma
• Respiratory failure
• Pneumothorax
• Tuberculosis
• Volatile substance abuse or ingestion
• Hemoptysis
• Congenital lung malformations
• Ventilatory muscle weakness
• Psychogenic cough
• Interstitial lung disease
• Pleural effusion

8. Collaborate with a pulmonologist to execute a respiratory management plan as part of the coordination of care for a child with chronic lung disease.

9. Participate in development and implementation of a coordinated pulmonary and nutritional treatment plan for a patient with cystic fibrosis, including recognition and treatment of acute episodic illnesses, nutritional deficiencies, intestinal obstruction, and psychosocial issues.

10. Recognize and manage upper airway obstruction, including:
• Identify conditions that result in upper airway obstruction.
• Know indication for and demonstrate use of oropharyngeal airway vs. nasal trumpet.
• Discuss routine care of a tracheostomy and know how to recognize tracheostomy obstruction; demonstrate proficiency in replacement of a tracheostomy tube.

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 normal rates and patterns of breathing, including normal variations with sleep (e.g., brief apnea, periodic breathing), anxiety, and fever.

2. Differentiate normal variations in chest wall anatomy (e.g., pectus excavatum) from those which impair ventilation (e.g., scoliosis).

3. Explain the findings on clinical history and examination that suggest pulmonary disease that requires further evaluation and treatment.

4. Identify system conditions that may present with respiratory symptoms or lead to pulmonary disease, including swallowing dysfunction, immunodeficiency, and restrictive orthopedic conditions.

5. Identify indications and limitations of clinical and laboratory tests used to identify pulmonary-based disease and respiratory failure.

6. Create a strategy to determine if the following signs and symptoms are caused by an abnormality of the respiratory system and determine if the patient needs treatment or referral.
• Cough, both acute and chronic
• Wheezing
• Tachypnea
• Shortness of breath/dyspnea
• Exercise intolerance
• Recurrent pneumonia
• Failure to thrive
• Chest pain
• Apnea
• Noisy breathing (e.g., stridor or snoring)
• Digital clubbing
• Hemoptysis
• Cyanosis
• Sleep disturbances

7. Identify the role and general scope of practice of pulmonology; recognize situations where children benefit from the skills of specialists trained in caring for children; and work effectively with these professionals to care for children with pulmonary disorders.

8. Identify indicators that signify a worsening pulmonary condition in a child with CLD and may require a pulmonary referral and re-evaluation.

9. Discuss the medications used in the treatment of CLD, including indications, side effects, monitoring, and age and weight adjusted dosing.

10. Discuss the presenting signs and symptoms of cystic fibrosis and refer the patient for appropriate confirmatory testing, education, and treatment. Discussion should include high risk populations, associated symptoms, treatment options and expected course of the disease.

11. Identify indicators that signify an exacerbation of pulmonary symptoms. Provide appropriate initial treatment and referral to a specialty center for further evaluation and treatment.

12. Recognize desaturation that requires intervention and know the indications for use of appropriate oxygen delivery devices (e.g., simple nasal cannula, simple O2 mask, Venturi mask, partial rebreather and non-rebreather masks).

13. Describe the following diseases and explain why they are defined as chronic conditions.
   • Allergic rhinitis
   • Asthma
   • Atopic dermatitis
   • Cystic fibrosis
   • Sickle cell diseases and other hemoglobinopathies
   • Obesity

14. Discuss the steps necessary to successfully transition health care to adult providers for older adolescents and young adults with special health care needs.

15. Understand the psychosocial impact of chronic illness and disability on a child and family.

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

1. Maintain effective communication with parents, care providers, and therapists to assure coordinated, continuous care for patient.

2. Maintain appropriate medical records, including problem list, record of medication changes, and communications with referring/outside providers.

3. Talk to family members about sensitive issues that relate to a patient’s illness, e.g., coping with the child’s altered needs in his/her home setting

4. Communicate effectively with physicians, other health professionals, and health related agencies to create and sustain information exchange and team work for patient care.

5. Write an effective and timely consultation note that summarizes the findings and recommendations of the pulmonary team and clarifies the continued role and responsibility of the consultant.
6. Discuss the multidisciplinary approach to cystic fibrosis care and the role of the general pediatrician.

**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 standardized guidelines for diagnosis and treatment of pulmonary diseases and learn the rationale for adaptations that optimize treatment.
2. Identify personal learning needs, systematically organize relevant information resources for future reference, and plan for continuing data acquisition if appropriate.
3. Throughout the pulmonary rotation, take the initiative to evaluate your performance from the perspective of patients, staff, and colleagues; ask for input as needed to complete your self-audit.

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

1. Demonstrate personal accountability to the well being of all patients, even when other physicians are primarily responsible for their care, for example, by following up on lab results, writing comprehensive notes, seeking answers to difficult patient care questions, and communicating with primary care physicians.
2. Reflect on one’s own biases toward particular illnesses or patient groups, and take steps to assure that these biases don’t interfere with the care delivered.
3. Appreciate the psychosocial impact of diseases commonly seen by the pulmonologist (e.g., on the child, family, parents’ work, school).
4. Respect the confidentiality and privacy of patients who have sensitive diagnoses and describe the laws protecting them from disclosures to parents (in the case of adolescents), extended family members, schools, church representatives, or health care staff (without a need to know).

**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. Establish a medical home for children with chronic illness/conditions, taking responsibility for their longitudinal, comprehensive care
2. Understand the general pediatrician’s role in providing case management and coordination of services for children with chronic illness and special health care needs.
3. Clarify how documentation and billing/charges differ for consultations vs. referrals vs. ongoing management of children treated by the pulmonary service.
4. Demonstrate sensitivity to the costs of clinical care in this subspecialty setting, and take steps to minimize costs without compromising quality.
5. When errors occur, objectively evaluate their causes and consider contributing factors (attributable to yourself, your colleagues, and the system as a whole).