

Allergy and Immunology

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. Provide allergy/immunology prevention counseling to parents and patients with identified allergic diseases, including:
 - ◆ Allergen avoidance and environmental control, e.g., pets and indoor allergens.
 - ◆ Access to lay organizations and support groups.
 - ◆ Proper use of epinephrine self-injectors.
2. Explain the clinical history and findings on physical examination that suggest the presence of allergic-based disease or immunologic dysfunction that requires further evaluation and treatment. Include discussion of family history and genetic factors.
3. Develop a strategy for the work-up of suspected allergic disease or immunodeficiency, based on presenting symptoms and signs.
4. Interpret clinical and laboratory tests to identify allergic disease or immunologic dysfunction, including: screening tests for immune deficiency (e.g. CBC with absolute lymphocyte and neutrophil counts, Immunoglobulin levels, DTH skin tests); delayed hypersensitivity; allergy skin testing; serology (e.g., screening with RAST); and pulmonary function tests.
5. Diagnose, explain, and manage the following allergic/immunologic conditions when they are mild to moderate in severity and without complications:
 - ◆ Allergic rhinitis
 - ◆ Allergic conjunctivitis
 - ◆ Atopic dermatitis
 - ◆ Asthma, mild intermittent and mild persistent
 - ◆ Urticaria/angioedema
 - ◆ Food allergies
 - ◆ Common drug allergies
 - ◆ Insect sting allergy—local reactions
 - ◆ IgA deficiency
 - ◆ Transient hypogammaglobulinemia of infancy
 - ◆ Sinusitis and recurrent otitis media
6. Identify, explain, initially manage, and refer the following allergic/immunologic conditions:
 - ◆ Allergic/immunologic conditions that are severe or refractory to therapy
 - ◆ Asthma, moderate or severe persistent
 - ◆ Patients who require diagnostic testing and/or immunotherapy
 - ◆ Chronic urticaria
 - ◆ Hereditary or severe angioedema
 - ◆ Anaphylaxis
 - ◆ Latex allergy
 - ◆ Immunodeficiency (congenital, acquired, or metabolic) with compatible symptoms
 - ◆ Serum sickness
7. Develop a treatment plan for initial management of urticaria, angioedema, and anaphylaxis, including indications for use of epinephrine, antihistamines, and steroids.
8. Establish an educational plan for a child with urticaria, angioedema, or anaphylaxis, including medical alert systems, trigger avoidance, and proper use of epi-pens and antihistamines.

9. Identify the indicators for an allergy referral of a child with urticaria, angioedema, and anaphylaxis
10. Discuss the indications, clinical significance, limitations of diagnostic tests for allergic rhinitis and conjunctivitis. Interpret the results of these tests: total peripheral eosinophil count, prick and intradermal skin tests, RAST tests, IgE levels
11. Identify the indicators for an allergy referral of a child with allergic rhinitis and conjunctivitis.
12. Discuss the indications, clinical significance, and limitations of diagnostic tests and procedures for asthma. Interpret the results of these tests and procedures: arterial blood gas, pulse oximetry, chest x-ray, pulmonary function testing, peak flow monitoring, spirometry, inhaler use (MDI, DPI), spacing devices (e.g. aero-chambers, inspirease,etc.), nebulizers, and asthma action plans.
13. Establish a treatment plan for the child with asthma that includes routine follow-up for reassessment, and the initial treatment and referral of the patient with impending respiratory failure due to asthma.
14. Based on a patient's symptoms and disease severity classification, develop a written asthma action plan for home and school. Include assessment and recognition of asthma symptoms (e.g., symptom-driven vs. peak flow assessments), a step-wise pharmacological approach to the management of acute symptoms ("reliever" therapy) and chronic symptoms ("controller" therapy), and instructions about when to seek professional medical care
15. Identify the indicators for an allergy or pulmonary referral of a child with asthma.
16. Understand the role of the general pediatrician in the assessment and management of atopic dermatitis
17. Recognize the signs and symptoms of drug allergies, including differentiating drug allergy from other causes of skin rash, joint swelling, and anaphylaxis
18. Establish an education and treatment plan for a child with a drug allergy that includes drug avoidance and the use of antihistamines, epinephrine, steroids, and supportive treatment.
19. Understand the role of the general pediatrician in the assessment and management of patients with food allergy.
20. Demonstrate the initial approach to evaluation, treatment and referral for a child with suspected immunodeficiency.
21. Under supervision of an immunologist, develop a treatment plan for a child with immunodeficiency, including pharmacologic management, precautions, and immunizations
22. Counsel families regarding factors influencing the prognosis or outcome of their child's chronic condition.
23. Evaluate the psychosocial impact of chronic disease (asthma, atopic dermatitis, immunodeficiency) on the child, family, parents' work and school.

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. Identify individuals at risk for developing allergic or immunologic disease by providing routine allergy/immunology screening of all patients and parents and offering prevention counseling that addresses:
 - ◆ Breast feeding and diet in the prevention of allergic disease.
 - ◆ Introduction of solid foods in the prevention of allergic disease.
 - ◆ Smoking and household chemicals/irritants that may exacerbate allergic diseases.
 - ◆ "Myths" related to allergic disease, e.g., its role in behavioral disorders such as ADHD and autism.
 - ◆ Risk factors for development of asthma and allergic diseases including family history.

2. Describe the normal development and pathophysiology of the immune system, including the cellular, humoral, phagocytic, and complement-based systems.
3. Discuss the classification of hypersensitivity reactions, e.g. Gell and Coombs classification.
4. Describe the relationship of allergic disease and immunodeficiency to otitis media, sinusitis, pharyngitis, meningitis and pneumonia
5. Create a strategy to investigate whether the following presenting signs and symptoms are caused by an allergic process or immunologic dysfunction, and determine if the patient should be treated or referred.
 - ◆ Cough
 - ◆ Wheezing
 - ◆ Skin rash
 - ◆ Recurrent pneumonia
 - ◆ Recurrent skin infections
 - ◆ Recurrent otitis, sinusitis, pharyngitis
 - ◆ Rhinorrhea
 - ◆ Red eyes
 - ◆ Gastrointestinal symptoms (vomiting, diarrhea, abdominal pain, etc.)
 - ◆ Failure to thrive
 - ◆ Vomiting, diarrhea (including bloody or mucoid stools)
 - ◆ Syncope with exercise
 - ◆ Snoring
6. Recognize the signs and symptoms of urticaria, angioedema, and anaphylaxis.
7. Distinguish anaphylaxis from anaphylactoid reactions
8. Discuss the pathophysiology of urticaria, angioedema, and anaphylaxis
9. Identify triggers for urticaria, angioedema, and anaphylaxis and provide counseling about avoidance.
10. Identify the signs and symptoms of allergic rhinitis and conjunctivitis, including differentiation of allergic from other causes of rhinorrhea and red eyes
11. Describe causes of rhinitis and conjunctivitis other than allergic disease.
12. Identify co-morbidities associated with allergic rhinitis and conjunctivitis, including asthma, eczema, sleep-disordered breathing, sinusitis, etc.
13. Compare pharmacologic options for treatment of allergic and non-allergic rhinitis and conjunctivitis, considering potential side effects and drug interactions. These therapies should include: oral and topical antihistamines and anticholinergics, topical steroids and vasoconstrictive agents, mast cell stabilizers (cromolones), decongestants, anticholinergic agents, leukotriene modifiers, combination medications, and emerging therapies (e.g. monoclonal IgE).
14. Discuss the guidelines for safe administration of immunotherapy. Administer immunotherapy prescribed by an allergist to a patient and establish a plan to monitor for untoward reactions.
15. Identify the signs, symptoms, and pathophysiology of asthma, and differentiate asthma from other causes of cough, wheezing, shortness of breath, and exercise intolerance.
16. Classify the baseline disease severity of a patient with asthma according to current national guidelines, e.g. mild-intermittent, mild-persistent, moderate-persistent, or severe-persistent.
17. Identify associated diseases or co-morbid conditions related to asthma (e.g. GER, allergic rhinitis, etc.).
18. Identify triggers that exacerbate a patient's asthma (environmental, seasonal, infectious) and provide counseling about avoidance where feasible.

19. Discuss the pathophysiology of drug allergy.
20. Discuss the genetic basis, mechanisms and manifestations of drug allergy including urticaria, serum sickness, Stevens-Johnson Syndrome, and anaphylaxis.
21. List the medications most commonly used to treat drug allergy and anaphylactic reactions.
22. Identify the signs and symptoms of immunodeficiency diseases, and differentiate immunodeficiency from other causes of acute and chronic disease, as well as primary from secondary immunodeficiency disorders.
23. Organize immunodeficiency diseases into five pathophysiologic categories (antibody, cellular-mediated, combined, complement, phagocytic) and distinguish etiologic types (e.g., genetic, post-infectious, post-chemotherapy).
24. Discuss the indications, clinical significance, and limitations of diagnostic tests and procedures to assess immune function. Interpret the results of tests of: CBC (especially evaluation for age-appropriate ALC and ANC), lymphocyte (T, B, NK cell) number and function, immunoglobulin levels, antibody function, mitogen and antigen assay for lymphocyte function, DTH skin testing, complement levels, and neutrophil assays, as well as laboratory evaluations for secondary immune disorders, such as HIV and CF.
25. Discuss treatment options available for patients with primary immunodeficiency disorders and the potential harm of blood transfusions and vaccines in these patients

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

1. Educate families and child care facilities about environmental and allergen controls that can alleviate allergic and nonallergic rhinitis and conjunctivitis, and discuss the non-infectious nature of allergic conjunctivitis.
2. Educate a patient and family as well as teachers and school personnel about all aspects of asthma, including course of disease, quality of life, risk factors for sudden death, strategies to improve adherence to treatment, trigger avoidance, symptom recognition and monitoring, asthma action plans, medications and delivery systems, and seeking professional medical care.
3. Maintain effective communication with parents, care providers, and therapists to assure coordinated, continuous care for the patient.
4. Maintain appropriate medical records, including problem list, record of medication changes, and communications with referring/outside providers.
5. 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.

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 asthma, allergy and immunological diseases, and learn the rationale for adaptations that optimize treatment.
2. Demonstrate willingness and capability to be a life-long learner by pursuing answers to clinical questions, using literature, texts, information technology, patients, colleagues and formal teaching conferences.
3. Identify personal learning needs, systematically organize relevant information resources for future reference, and plan for continuing data acquisition if appropriate.

4. Seek and incorporate feedback and self-assessment into a plan for professional growth and practice improvement.

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

1. Demonstrate skill and commitment to working as part of an interdisciplinary team in the management of chronically ill children and their families. Attend to their needs for non-medical support (e.g. educational services, child care, respite care, use of adaptive equipment, transportation, and recreation) and participate in developing individualized education plans and/or individual family service plans.
2. Reflect on your own biases toward particular illnesses or patient groups, and take steps to assure that these biases don't interfere with the care you deliver.
3. Respect your patients'/parents' privacy, autonomy and need to maintain a positive self-concept, irrespective of age, gender, or health belief system, and regardless of acuity of disease.
4. Respect the confidentiality and privacy of patients who have sensitive diagnoses and describe the laws protecting them from disclosures to parents, 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. Compare the indications, effectiveness, side effects and costs of the different pharmacologic agents used in the treatment of asthma, and discuss "reliever" and "controller" therapy.
2. Discuss the factors that affect patient/family and school adherence to treatment protocols, and the key role of support services in reducing barriers to care.
3. Establish a medical home for children with chronic illness/conditions, taking responsibility for their longitudinal, comprehensive care.
4. Describe the impact of poverty on children with chronic illness and special health care needs and how advocacy can make a difference.
5. Understand the general pediatricians' role in providing case management and coordination of services for children with chronic illness and special health care needs.
6. Discuss how the concept of a medical home should be integrated into the care and management of children with special health care needs. Comprehensive, longitudinal care should include the assessment and use of culturally competent community based resources, such as community, residential or rehabilitation programs for children.
7. Discuss key issues related to health care financing and cost management for children with complex disorders and chronic diseases.
8. List local resources and support groups for children and families with chronic illnesses and special health care needs.