Internal Medicine Curriculum
Allergy and Immunology

Contact Person: Hyman Kaplan, MD

Educational Purpose
The allergy and immunology rotation provides an opportunity for PGY2 and PGY3 residents to have basic exposure to the principles of the field of allergy and immunology. Many clinical states caused by allergic or immunologic disorders are regularly encountered by the general internist. Patient allergies can cause profound occupational and socioeconomic changes as well as require extensive environmental alterations. The allergy and immunology rotation is primarily an office-based rotation in the private office of a faculty allergist. Each resident should develop an understanding of basic allergic and immunologic disease processes and how to initiate work-ups and treatment of those disorders. The resident should also gain an understanding of when consultation with an allergist is indicated.

Teaching Methods
Residents in the allergy and immunology rotation will participate in supervised patient encounters, discussion sessions with the attending, required readings, and may be required to submit a completed series of self-assessment concerning basic aspects of the field of allergy and immunology. Residents are also expected to prepare a poster or presentation as per the direction of the faculty.

Disease Mix
The following disorders will be reviewed during the rotation with the supervising attending or through direct patient interactions:
A. Outpatient asthma management, including evaluation of pulmonary function tests
B. Asthma diagnosis, pathophysiology and treatment
C. Rhinitis, classification, diagnosis and treatment
D. Atopic dermatitis
E. Anaphylaxis, diagnosis and treatment
F. Drug reactions, diagnosis and treatment
G. Food reactions, diagnosis and treatment
H. Urticaria, diagnosis and treatment
I. Initial evaluation of immunodeficiency states
J. Allergy skin testing
K. Allergen immunotherapy
L. Status asthmaticus, diagnosis and treatment
M. Care of patients with asthma and allergic rhinitis during pregnancy
N. Sinusitis
O. Allergic contact dermatitis, diagnosis and treatment
P. Atopic dermatitis, diagnosis and treatment
Q. Stinging insect reactions, diagnosis and treatment
R. Clinical immunology, including components of the immune system and immunological reactions in the more common immunodeficiency states
**Patient Characteristics and Types of Clinical Encounters**
Patients are almost exclusively outpatients presenting in non-acute settings. Patients evaluated by the resident will range from adolescent to older adults. A wide range of the clinical management problems noted above will be encountered including initial evaluation, chronic maintenance, and relapse. The resident will be supervised at all times by the attending allergist who will be present on site. The resident will also have the opportunity to work with nurse practitioners as well as other specialized ancillary staff as they participate in the various procedures performed in an allergist’s office. The resident will have the opportunity to participate in the University Medical Associates allergy consultation clinic.

**Procedures and Services**
The resident will observe and participate in the evaluation of:
A. Allergy skin testing.
B. Pulmonary function testing.
C. Allergen immunotherapy.
D. History taking and physical examination of patients with allergic disorders.
E. Immunotherapy.
F. In vitro serum IGE allergen specific assays.

**Reading List**
A. The resident will be expected to review the topics listed under “Disease Mix” listed above from *UpToDate* or other sources assigned by faculty.
B. The *Medical Knowledge Self-Assessment Program* section for Allergy/Immunology should be completed during this rotation.
C. National Institute of Health Guidelines for asthma should be reviewed: [http://www.nhlbi.nih.gov/guidelines/asthma/asthgdln.htm](http://www.nhlbi.nih.gov/guidelines/asthma/asthgdln.htm).
D. The following chapters from *ACP Medicine* are recommended for reading. *ACP Medicine* is available on the web through Erlanger Library.

I. **Organs and Cells of the Immune System**
   John R. David, M.D., Harvard School of Public Health and Harvard Medical School, and Cox Terhorst, Ph.D., Harvard Medical School and Beth Israel Deaconess Medical Center
II. **Innate Immunity**
   John P. Atkinson, M.D., Washington University School of Medicine, St. Louis Barnes-Jewish Hospital, and M. Kathryn Liszewski, M.D., Washington University School of Medicine, St. Louis
III. **ADAPTIVE IMMUNITY: ANTIGENS, ANTIBodies, AND T CELL AND B CELL RECEPTORS**
    Cox Terhorst, Ph.D., Harvard Medical School and Beth Israel Deaconess Medical Center, and John R. David, M.D., Harvard School of Public Health and Harvard Medical School
IV. CELL-CELL INTERACTIONS, CYTOKINES, AND CHEMOKINES IN IMMUNE RESPONSE MECHANISMS
John R. David, M.D., Harvard School of Public Health and Harvard Medical School, and Cox P. Terhorst, Ph.D., Harvard Medical School and Beth Israel Deaconess Center

V. ADAPTIVE IMMUNITY: HISTOCOMPATIBILITY ANTIGENS AND IMMUNE RESPONSE GENES
Edgar L. Milford, M.D., Harvard Medical School and Brigham and Women's Hospital, and Charles B. Carpenter, M.D., Harvard Medical School and Brigham and Women's Hospital

VI. ORCHESTRATING THE IMMUNE RESPONSE
[This subsection is currently in preparation.]

VII. IMMUNOGENETICS OF DISEASE
Edgar L. Milford, M.D., Harvard Medical School and Brigham and Women's Hospital, and Charles B. Carpenter, M.D., Harvard Medical School and Brigham and Women's Hospital

VIII. DEFICIENCIES IN IMMUNOGLOBULINS AND CELL-MEDIATED IMMUNITY
Fred S. Rosen, M.D., Harvard Medical School and Center for Blood Research

IX. IMMUNOLOGIC TOLERANCE AND AUTOIMMUNITY
Paul Anderson, M.D., Ph.D., Harvard Medical School and Brigham and Women's Hospital

X. ALLERGIC RESPONSE
Pamela J. Daffern, M.D., Medical College of Virginia at Virginia Commonwealth University, and Lawrence B. Schwartz, M.D., Ph.D., Medical College of Virginia at Virginia Commonwealth University

XI. DIAGNOSTIC AND THERAPEUTIC PRINCIPLES IN ALLERGY
Mitchell H. Grayson, M.D., Washington University School of Medicine, and Phillip Korenblat, M.D., F.A.C.P., Washington University School of Medicine

XII. ALLERGIC RHINITIS, CONJUNCTIVITIS, AND SINUSITIS
Raymond G. Slavin, M.D., Saint Louis University School of Medicine

XIII. URTICARIA, ANGIOEDEMA, AND ANAPHYLAXIS
Vincent S. Beltrani, M.D., University of Medicine and Dentistry of New Jersey

XIV. DRUG ALLERGIES
Mark S. Dykewicz, M.D., St. Louis University School of Medicine, and St. Louis University Hospital, and Heather Gray, M.D., St. Louis University School of Medicine, and St. Louis University Hospital

XV. ALLERGIC REACTIONS TO HYMENOPTERA
David B.K. Golden, M.D., F.A.C.P., Johns Hopkins University School of Medicine

XVI. FOOD ALLERGIES
A. Wesley Burks, M.D., Professor of Pediatrics, University of Arkansas for Medical Services, and Professor of Pediatrics, Arkansas Children's Hospital
**Performance Evaluation**

A. Daily observation and written evaluation of the resident’s performance by the attending allergist.
B. Complete the required reading list.
C. Conferences between the resident and allergist to discuss the resident’s understanding of the required topics.
D. Review of the topics listed under Disease Mix with the allergist.
E. Complete the clinical questions as part of the resident’s required knowledge base for completion of the rotation.
F. Attend all required office sessions.
G. Submit all completed list of the rotation objectives.

**Accreditation Council on Graduate Medical Education**

“Every competency can be taught with every patient.”  B. Joyce, 2006

http://www.acgme.org/Outcome

**PATIENT CARE**

Residents must be able to provide patient care that is compassionate, appropriate, and effective for the treatment of health problems and the promotion of health. Residents are expected to:

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

**MEDICAL KNOWLEDGE**

Residents must demonstrate knowledge about established and evolving biomedical, clinical, and cognate (e.g. epidemiological and social-behavioral) sciences and the application of this knowledge to patient care. Residents are expected to:

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

**PRACTICE-BASED LEARNING AND IMPROVEMENT**

Residents must be able to investigate and evaluate their patient care practices, appraise and assimilate scientific evidence, and improve their patient care practices. Residents are expected to:

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

**INTERPERSONAL AND COMMUNICATION SKILLS**
Residents must be able to demonstrate interpersonal and communication skills that result in effective information exchange and teaming with patients, their patients families, and professional associates.
Residents are expected to:
- create and sustain a therapeutic and ethically sound relationship with patients
- use effective listening skills and elicit and provide information using effective nonverbal, explanatory, questioning, and writing skills
- work effectively with others as a member or leader of a health care team or other professional group

**PROFESSIONALISM**
Residents must demonstrate a commitment to carrying out professional responsibilities, adherence to ethical principles, and sensitivity to a diverse patient population. Residents are expected to:
- demonstrate respect, compassion, and integrity; a responsiveness to the needs of patients and society that supercedes self-interest; accountability to patients, society, and the profession; and a commitment to excellence and on-going professional development
- demonstrate a commitment to ethical principles pertaining to provision or withholding of clinical care, confidentiality of patient information, informed consent, and business practices
- demonstrate sensitivity and responsiveness to patients’ culture, age, gender, and disabilities

**SYSTEMS-BASED PRACTICE**
Residents must demonstrate an awareness of and responsiveness to the larger context and system of health care and the ability to effectively call on system resources to provide care that is of optimal value.
Residents are expected to:
- understand how their patient care and other professional practices affect other health care professionals, the health care organization, and the larger society and how these elements of the system affect their own practice
- know how types of medical practice and delivery systems differ from one another, including methods of controlling health care costs and allocating resources
- practice cost-effective health care and resource allocation that does not compromise quality of care
- advocate for quality patient care and assist patients in dealing with system complexities
- know how to partner with health care managers and health care providers to assess, coordinate, and improve health care and know how these activities can affect system performance
Allergy Rotation Checklist

Intern/Resident ______________________________                 PGY 2 or 3

Supervising Faculty___________________________ Month ______________________

Rotation Check List | Yes | No | Comments
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Reviewed the goals and objectives at the beginning of the rotation | | | |
Evaluation and feedback mid month | | | |
Evaluation and feedback at the end of rotation | | | |
Attended all scheduled clinical sessions | | | |
Completed assigned readings. | | | |
Completed required case reports/abstracts/posters | | | |
Performed at or above the expected PGY level. Please check one. | | | |

PGY 1 Residents are responsible
- for gathering relevant patient data
- performing and interpreting physical examination findings
- perform basic procedures and interpret data
- interpret laboratory tests
- interpret basic radiographic studies

PGY-2 will have improved competence and demonstrate
- improved data gathering and physical examination skills
- improved knowledge
- improved decision making
- enhanced ability to counseling

PGY-3 will approach mastery and demonstrate the ability to function as consultant

Reviewed and met the core competencies as outlined. Please give at least one additional example.

A Patient Care
- Residents will obtain and document appropriate history taking, physical exam and laboratory interpretation skills for patients with allergic and immunological disorders
- Develop a basic understanding of allergy skin testing, pulmonary function testing, allergen immunotherapy and allergen specific assays

B. Medical Knowledge
- Apply clinical epidemiologic and social-behavioral science knowledge to the care of the patient
- Demonstrate appropriate skills in evaluating and managing the patients with the stated disease mix
Complete the required reading list
Attend conferences between the resident and allergist to
discuss the resident’s understanding of the required topics
Complete the clinical questions as part of the resident’s
required knowledge base for completion of the rotation

C. Practice Based Learning
- Residents will develop and implement treatment plans by
  utilizing appropriate information systems and resources to help
  manage patients presenting for allergic and immunological
diseases
- Undertakes self-evaluation with insight and initiative
- Will adapt learning and evidence based medicine to own
  patient practice

D. Interpersonal and Communication Skills
- Residents will communicate diagnosis, treatment plan and
  follow up care to patients and their families
- Residents will communicate with staff and other personnel of
  the specialty clinic

E. Professionalism
- Residents will recognize the importance of patient preferences
  when selecting diagnostic and therapeutic options.
- Commitment to ethical principles pertaining to the provision or
  withholding of care, patient confidentiality, informed consent,
  and business practices

F. Systems-Based Practice
- Residents will be able to develop, implement and evaluate
  treatment plans for patients that include determining when to
  obtain consultations
- Advocates for quality patient care and assists patients in dealing
  with health system complexity
- Uses systematic approaches to reduce errors and enhance care

Resident Signature__________________________ Date__________

Supervising Faculty _________________________ Date _________