**Clinical Immunology Rotations Goals and Objectives**

**Rotation Director: David Keren, M.D.**

The goal of the **First Clinical Immunology Rotation** is for the resident to move from being a

**Novice**  (A novice knows little about the subject, and rigidly adheres to rules with little situational perception. He/she does not feel responsible for outcomes. )

To

**Advanced Beginner** (The advanced beginner is still dependent on rules, but can adapt rules to changing circumstances. However, all attributes of a situation tend to be given equal importance, and there is still little feeling of personal responsibility for outcomes.)

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| **First Rotation Goals** | **First Rotation Objectives** |
| **Medical Knowledge**Acquires knowledge of pathophysiology and laboratory manifestations of routinely-encountered conditions; knows where to access information to fill gaps in knowledge. | The resident will:* Gain a greater understanding of the functioning of the immune system, including the complement system, innate immune system and adaptive immune system.
* Gain knowledge of the pathophysiology of disorders of the immune system, including immunodeficiencies, autoimmune disorders and neoplasms related to the immune system, in particular neoplasms associated with monoclonal gammopathies.
* Develop working knowledge of the role of the immunology lab for providing diagnostic and prognostic information for disorders of the immune system.
* Understand how systemic diseases, such as those impacting the renal system, may affect the immune system and how the immunology lab provides diagnostic information relevant to these diseases.
* Present assigned journal club articles twice a month to the immunopathologists and other residents on service.
* Prepare a summary of the medical utility of every current test offered by the immunology laboratory and discussing this summary with the attending pathologist.
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| **Patient Care**Is able to perform procedures necessary to generate laboratory information, gather clinical information needed to establish a diagnosis, and make observations relevant to the clinical situation. | With appropriate supervision (see below), the resident will:* Participate in the interpretation of immunological assays, including serum, urine and cerebrospinal fluid protein electrophoreses and immunofixations. The interpretation will be supervised by the attending pathologist.
* Participate in the interpretation of anti-nuclear antibody and anti-neutrophil cytoplasmic antibody assays. The participation will be supervised by the attending pathologist.
* Interact with the technical staff to arrange appropriate stat testing.
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| **Practice-based Learning and Improvement**Uses feedback and evaluations to generate or modify learning plan and improve skills. | The resident will:* Develop a learning plan based on cases experienced while on the rotation as well as from independent based learning.
* Prepare for a specific topic for each sign-out as assigned by the pathologist on service and modify the learning plan based on feedback from the pathologist as assessed by question and answer period during sign-out.
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| **Interpersonal and Communication Skills**Establishes collegial interactive and communication skills in dealing with others; structures reports that are clear, succinct, and follow templates; listens to and fulfills requests from other providers. | The resident will:* Listen to and communicate clearly with all members of the laboratory.
* Communicate results as requested to clinicians, with approval of the attending pathologist.
* Communicate with clinicians to obtain relevant clinical information necessary to determine the appropriateness of a stat assay, and communicate this information to the attending pathologist.
* Present at rheumatology conferences for specific cases, including the presentation of histological images and immunopathology laboratory results to aid in the formulation of a diagnosis. The resident will work with a senior resident or the director for this presentation.
* Present at least once monthly an immunopathology case at Clinical Pathology case conference.
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| **Professionalism**Is honest, compassionate, and respectful of others; complies with laws and regulations pertaining to medical practice; fulfills patient care and educational responsibilities faithfully. Understands professional responsibility to appear for duty rested and fit to provide service. | The resident will demonstrate professionalism at all times by:* Being on time for all sign-outs, journal club presentations and rheumatology conferences.
* Demonstrate respect for all members of the laboratory.
* Respond in a prompt manner for any issues related to patient care and clinical requests.
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| **Systems-based Practice**Identifies issues related to error, cost, and the need for interdisciplinary collaboration in the delivery of health care. Conducts handoff at the conclusion of rotation with care and thoroughness. | The resident will develop a systems-based practice approach immunopathology practice by:* Interacting with members of other laboratories to discuss test results that will impact a patient’s diagnosis as necessary.
* Beginning to understand how immunopathological assays can be best utilized in a cost-efficient manner that most directly impacts patient care.
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The goal of the **Second and Third Clinical Immunology Rotations** is for the resident to move from being an

**Advanced Beginner** (The advanced beginner is still dependent on rules, but can adapt rules to changing circumstances. However, all attributes of a situation tend to be given equal importance, and there is still little feeling of personal responsibility for outcomes.)

To

**Proficient** (The competent learner grasps the relevant facts, can sort information by relevance, can bring his/her own judgment to each case, and solve problems. Guidelines are adapted to unexpected events. He/she feels accountable for outcomes because of increasing decision-making.)

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| **Second and Third Rotation Goals** | **Second and Third Rotation Objectives** |
| **Medical Knowledge**Acquires knowledge of less commonly-encountered conditions and laboratory techniques; critically evaluates knowledge sources and uses evidence-based approach to acquire new knowledge. | The resident will:* Understand the pathophysiology of primary and secondary immunodeficiencies.
* Understand the pathophysiology of autoimmune disorders.
* Become familiar with genetic disorders that affect the immune system.
* Become proficient in interpreting immunological assays that assist in the diagnosis and prognosis of immunological diseases and systemic diseases.
* Present assigned journal club articles twice a month to the immunopathologists and other residents on service.
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| **Patient Care**Uses laboratory data and own observations to generate accurate diagnoses and differential diagnoses; suggests appropriate ancillary studies as needed; responds to requests for consultation. | With appropriate supervision, the resident will contribute to patient care by :* Performing the initial interpretation for immunological assays, including serum, urine and cerebrospinal fluid protein electrophoreses and immunofixations. The resident will then review their interpretation with the attending pathologist during sign-out.
* Providing the interpretation of anti-nuclear antibody and anti-neutrophil cytoplasmic antibody assays. The resident’s interpretation will be reviewed with the attending pathologist.
* Independently interacting with the laboratory’s technical staff and clinicians to evaluate and arrange stat testing as necessary. The resident will obtain approval of the stat test by the attending pathologist after providing their own review and decision.
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| **Practice-based Learning and Improvement**Adapts practices based on literature review, case outcomes, peer reviews, and system demands; seeks and gives feedback to improve self and others. | The resident will continue to develop practice-based learning and improvement by:* Using case studies to gain further insight into the pathogenesis of specific immunological disorders and the role of the immunology laboratory in the diagnosis of the disorder.
* Discussing the assigned topics for each sign-out with the attending pathologist as well as any junior residents on service.
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| **Interpersonal and Communication Skills**Effectively communicates in a variety of settings, including during conferences, while providing consultations, and teaching peers.  | The resident will demonstrate interpersonal and communication skills by:* Communicating independently and clearly with all members of the laboratory.
* Serving as the first line contact to clinicians requesting laboratory results or consultative advice for selecting the correct assay given a specific clinical situation.
* Serving as the first line contact with clinicians regarding the evaluation of stat testing.
* Continuing to present at rheumatology conferences. The resident will begin to function independently in preparation for these conferences and also will assist junior residents on service.
* Presenting at least once monthly an immunopathology case conference at Clinical Pathology case conference.
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| **Professionalism**Manages patient care duties and interacts with other providers with compassion and respect for diversity; recognizes and responds to need for help from colleagues. | The resident will demonstrate professionalism at all times by:* Being on time for all sign-outs, journal club presentations and rheumatology conferences.
* Demonstrating respect for all members of the laboratory team and others that they interact.
* Responding in a prompt manner for any issues related to patient care and clinical requests.
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| **Systems-based Practice**Improves patient outcomes and promotes efficiency by making decisions based on best evidence of outcomes, and by involvement in quality initiatives. | The resident will continue to develop a systems-based practice by:* Participating in laboratory quality control and quality assurance projects related to current assays, or the validation and implementation of new assays.
* Participating in all aspects of medical directorship as related to the immunology laboratory.
* Serving as a mentor for any junior resident on service to impart their knowledge of the laboratory and the role of the laboratory in medical decision making.
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**Plan for Training**

 The goal is for the resident to learn by experience, with appropriate supervision, and didactic sessions the knowledge and skills required to become proficient in the interpretation of immunological assays as well as to serve as a clinical consultant for the immunology laboratory. The rotations will also serve as a foundation for the resident to become a director of an immunology laboratory should they choose that career path.

To obtain these goals, the resident will function under direct supervision of the pathology attending during the first rotation. The resident will gain experience during this first rotation so that they will begin to function independently during the second rotation and will be fully independent by the end of the third rotation. By the end of the third rotation, the resident will be fully proficient in the interpretation of all types of protein electrophoreses performed by the laboratory as well as in the interpretation of direct and indirect immunofluorescent assays. Also by the end of the third rotation, the resident will be a knowledgeable clinical consultant for the immunology laboratory.

**Supervision**

The following activities are to be conducted with **Direct Supervision** (the supervising physician is physically present with the resident):

1. Interpretation of serum, urine and cerebrospinal fluid protein electrophoreses and serum and urine immunofixations will be performed with the attending pathologist present during the first rotation, so that the resident will learn how to interpret the assays.
2. Interpretation of direct and indirect immunofluorescent assays will be performed with the attending pathologist present during the first rotation, so that the resident will learn how to interpret the assays.

There will be a transition from **Indirect Supervision** (direct supervision immediately available either within the hospital of by telephonic or electronic communication) to **Oversight** (the supervising physician is available to review with feedback after activity is completed) from the second to third rotations:

1. Interpretation of serum, urine and cerebrospinal fluid protein electrophoreses and serum and urine immunofixations will be performed independent of the attending pathologist, and then the interpretations will be reviewed with the pathologist.
2. Interpretation of direct and indirect immunofluorescent assays will be performed independent of the attending pathologist, and then the interpretations will be reviewed with the pathologist.

**Evaluation**

* Electronic (MedHub) evaluation completed by faculty at the conclusion of each rotation
* 360 evaluation completed by fellows and technical staff semi-annually
* Resident Inservice Examination (annually)