**LEARNING OBJECTIVES: EL Laboratory Medicine Clinical Elective**

| **Overarching Goals of Curriculum** | **Elective objectives: By the end of the rotation, students will be expected to:** | **Where/how taught**  *(Location or learning activity)* | **Taught by**  *(Attending, fellows, etc.)* | **How student’s achievement of objective is assessed**  *(Assessment method)* | **How feedback is given**  *(Feedback method)* | **Quantity target**  *(Target number of patients/ events during rotation)* |
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| **1, 2, 3, 4, 5, 6** | **1.Laboratory Manifestation of Diseases**. Know the laboratory manifestations of major diseases and how to interpret laboratory information.  Know the most common lab findings for the following diseases:  Virology: SARS CoV-2, CMV/EBV, HIV, C. difficile, syphilis  Chemistry: Diabetes, hypothyroidism, drug overdose  Hematology: Anemia, leukemia, lymphoma, coagulation abnormalities  Blood Bank: Transfusion reactions, blood group alloimmunization  Immunology: Autoimmune diseases, common genetic disorders  Microbiology: Tuberculosis, community acquired pneumonia, sepsis  Molecular: common genetic disorders | Clinical laboratories at YNHH and VA-CT  Sit at bench with knowledgeable teacher  Didactic teaching conferences | Follow resident or fellow in each laboratory, including weekend call. | Student will work up and present cases for discussion | Verbal feedback on presentations, and during discussions | Informally present 2-4 patients to residents, chief resident, fellows and/or faculty during the 2 week rotation |
| **1, 2, 3, 4, 5** | **2.Appropriate Usage and Interpretation of Laboratory Tests**: Know the indications for ordering common laboratory tests, for example   * 1. Know the appropriate test to order for diseases above depending on the clinical context.   2. Name at least 3 common mistakes that clinicians make in ordering laboratory tests   3. Describe the first line therapy for each of these conditions   4. Participate in test “sign out” if available | See above | See above | See above | See above |  |
| **1, 2, 3, 4, 5, 6, 7, 8** | **3. Laboratory Procedural Skills:** Students will have a choice of laboratory procedures to observe in each laboratory, including:  Virology: NAAT, serology, Cytotoxin neutralization  Blood bank: blood typing, antibody screening, apheresis, cell therapies  Immunology: antinuclear antibody testing, immunofixation electrophoresis, flow cytometry  Toxicology; urine toxicology screening  Microbiology: bacterial culture and sensitivity testing, 16s sequencing  Molecular diagnostics: PCR, sequencing  Chemistry: serum chemistry panel, SPEP  Hematology: Blood smears  For each procedure they choose:   1. The student should know the key indications for the procedure. 2. They should know key aspects of quality assurance. 3. Know elements in interpretation 4. Understand pitfalls | In appropriate laboratory | Residents, fellows, attendings, laboratory staff | Discussion and observation. If students perform any test interpretations, they should get feedback | Verbal | 1-3 selected procedures per lab depending on test complexity |
| **4** | 1. **Attitude:** Demonstrate professional responsibility in working as a team member with other members of the Laboratory medicine team.    1. The student should exhibit honesty, accuracy and integrity in all interactions with staff, residents, attendings, fellows, and others. | All locations | All | Ongoing observation | Informal verbal, and by elective director at end of rotation | NA |
| **5, 6, 8** | 1. **Career/context**: Know the theoretical, technological, and clinical underpinnings of the specialty of Laboratory Medicine    1. Know the training pathways for Laboratory medicine    2. Know 3 aspects of career satisfaction in this specialty    3. Know key roles that Laboratory Medicine plays in the health care system | As above, meet with residency director | Interactive discussions with all. | Ongoing | Meeting with elective director at end of rotation |  |