



**Tufts Medical Center
Lemuel Shattuck Hospital**
Transitional Year Program



Educational Goals and Objectives for Pathology

**Location: Tufts Medical Center
Lemuel Shattuck Hospital**

Type of Rotation: Elective

Contact: Stephen P. Naber, MD, PhD, Pathologist-in-Chief

Length of Rotation: 4 weeks

OVERVIEW

The Transitional Year Resident receives knowledge and experience through a structured rotation that includes: 1) a hands-on approach to laboratory medicine and anatomic pathology, 2) direct teaching by pathologists and clinical laboratory scientists, and 3) self study of references selected to enhance the practical learning experience.

Competency Based Goals & Objectives of the Pathology Elective

1. **Patient Care:** The TY resident will acquire competency in the technical generation and interpretation of laboratory data and in the formulation of clinicopathologic correlations, so as to provide appropriate and effective consultation in the context of pathology services. In those situations where the TY resident has direct interaction with patients, families or donors (e.g. bone marrow aspiration, fine needle aspiration, apheresis), the TY resident will perform such interviewing, examination and counseling as may be required with caring and respect. The TY resident will learn how to work effectively within a multidisciplinary health care team, participating as appropriate in informed decision-making and clinical management.

2. **Medical Knowledge:** The TY resident will acquire knowledge about established and evolving biomedical, clinical, and clinically related sciences and will apply this knowledge to the understanding of basic pathologic processes in all of the following categories:

a. **General Laboratory**

- 1) Understand basic safety regulations and procedures employed in the laboratory
- 2) Understand specimen collection, labeling and handling protocols
- 3) Observe phlebotomy rounds on patient floor (2 hours)
- 4) Understand basic principles of the laboratory information system

b. Histology

- 1) Observe routine tissue processing, embedding, sectioning, staining and final preparation (3 hours)
- 2) Observe frozen section technique
- 3) Observe special stain slides – Iron, PAS, Trichrome, Reticulin, Giemsa, Acid Fast, GMS and Immuno-Histochemical
- 4) Observe cytologic processing, staining and final preparation

c. Surgical Pathology

- 1) Observe gross examination of pathology specimens (5 hours)
- 2) Observe intra-operative consultations a pathologist (8 specimens)
- 3) Perform under direct supervision the gross examination and sampling of extremity and/or placenta (4 specimens)
- 4) Perform under direct supervision the gross examination and submission small (POC and biopsy) tissue samples (10 cases)
- 5) Review teaching file reports of selected cases, then review slides with a pathologist (20 cases)
- 6) Observe surgical pathology signout with three different pathologists on at least 3 days a week (8 hours per week)
- 7) Understand quality assurance principles in pathology

d. Cytopathology

- 1) Observe FNA and marrow collection procedures (all available, at least 5)
- 2) Review teaching file reports and slides of selected non-gynecologic cytology cases with a pathologist (10 cases)
- 3) Review teaching file pap slides with a pathologist (15 cases)
- 4) Screen pap slides with pathologist (2 cases)
- 5) Observe cytology sign-out at least 2 days a week

e. Autopsy Pathology

- 1) Observe autopsy gross and microscopic procedures
- 2) Prepare clinical summary and CPC for autopsy report under the guidance of a pathologist
- 3) Know the five classes under manner of death
- 4) Know how to classify the cause of death and complete a death certificate
- 5) Know types of deaths that are reportable to the coroner's office

f. Blood Bank

- 1) Know the major components for transfusion, including shelf life
- 2) Know the indications for transfusion of blood components
- 3) Know the basic blood group & type frequencies
- 4) Observe and perform blood group and typing
- 5) Know the principles of irregular antibody workup
- 6) Review problematic irregular antibodies (D, C, c, E, e, Kell, Duffy, Kidd, S, s and cold)

- 7) Observe and perform a direct and indirect Coomb's test
- 8) Observe blood supply protocols, including crossmatching, results reporting and release of uncrossmatched blood (3 hours)
- 9) Review criteria for transfusion reaction
- 10) Review transfusion reaction workups with blood bank supervisor
- 11) Perform transfusion utilization review for PRBC, FFP and PLTS
- 12) Observe the transport and start of all STAT transfusion components delivered to the emergency department during standard hours and evaluate the appropriateness and effectiveness of the transfusion with the blood bank director
- 13) Observe the transport and start of transfusions for platelet therapy and PRBC (one case each)
- 14) Review nursing transfusion protocol, including the use of filters with blood bank supervisor

g. Hematology

- 1) Review specimen rejection criteria
- 2) Review test results reporting
- 3) Review the criteria for submission of a CBC result to a pathologist
- 4) Perform manual reticulocyte count
- 5) Perform sedimentation rate
- 6) Set up KleihauerBetke test
- 7) Review teaching file blood films and body fluids with pathologist

h. Coagulation

- 1) Observe coagulation test processing (2 hours)
- 2) Review specimen rejection criteria
- 3) Observe and perform bleeding time under supervision
- 4) Observe and perform manual platelet count
- 5) Perform mixing study

i. Urinalysis

- 1) Observe urinalysis test processing (1 hour)
- 2) Review atlas of urine sediment and examine urine sediment with hematology supervisor (10 specimens)

j. Serology

- 1) Review list of in-house serologic tests and specimen requirements
- 2) Observe serology test processing (1 hour)

k. Microbiology

- 1) Review culture specimen requirements, including blood culture collection, with microbiology supervisor
- 2) Observe and perform under guidance the collection of blood culture specimens (3 patients)

- 3) Observe bacterial specimen plating, processing, evaluation and reporting methods (4 hours)
- 4) Observe gram stain procedure
- 5) Observe acid fast stain procedure
- 6) Review teaching gram stain and acid fast slides with microbiology supervisor (10 cases)

I. Clinical Chemistry

- 1) Review list of in-house tests, STAT tests, rejection criteria, panic values and turn around times
- 2) Observe specimen processing and resulting for routine chemistry tests, stat testing, osmolality and blood gases (3 hours)
- 3) Review POCT policies, techniques, regulation and monitors
- 4) Observe specimen send-out procedure

3. **Practice-based Learning and Improvement:** The TY resident will learn to appraise and assimilate scientific data from the medical literature toward the practice of evidence-based medicine. The TY resident will learn to apply research and statistical methods to laboratory data. The TY resident will learn the principles and practice of information technology and how it can be used to manage patient data. The TY resident will learn to investigate and evaluate his/her own diagnostic and consultative practices, and to improve his/her patient care practices.

4. **Interpersonal and Communication Skills:** The TY resident will develop interpersonal and communication skills that result in the effective exchange of information and expertise with other health care providers, patients, and patients' families, and will assume an active role in the education of the health-care community.

5. **Professionalism:** The TY resident will develop a commitment to carrying out professional responsibilities, adherence to ethical principles, and sensitivity to a diverse population of patients and health care providers.

6. **Systems-based practice:** The TY resident will develop knowledge and experience in laboratory management, an awareness and responsiveness to the place of pathology in the larger context and system of health care, and the ability to call on resources within the system to provide pathology services that are of optimal value.

The TY resident will be evaluated at the end of their rotation by the supervising physician/clinician via Myevaluations.com.

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