DEPARTMENT OF PATHOLOGY

DIAGNOSTIC VIROLOGY LABORATORY ROTATION

I. GOALS AND OBJECTIVES

To provide the Resident with a knowledge base in clinical diagnostic virology, the management of a diagnostic virology laboratory, and clinical findings in patients with viral infection. These objectives are a supplement to the Microbiology and Virology Objectives. See the appendix below for competency specific goals and objectives.

II. DURATION OF THE EXPERIENCE

The rotation is two weeks long.

III. DUTIES AND RESPONSIBILITIES

A. Understand and be able to perform:

1. Specimen selection, collection and transport
2. Selection of appropriate cell culture type for virus isolation
3. Specimen processing, i.e. separation of WBC’s from peripheral blood for CMV culture
4. Examination of cell cultures for detection of viral-specific cytopathic effect (CPE)
5. Identification of viral isolates by CPE, immunofluorescence, enzyme immunoassay, neutralization, and acid lability
6. Isolation of Chlamydia trachomatis
7. Direct antigen detection of respiratory syncytial virus and influenza A and B viruses by enzyme immunoassay and immunofluorescence
8. Direct antigen detection of rotavirus and enteric adenoviruses in fecal specimens by enzyme immunoassay
9. Serological testing for herpes simplex virus, rubella virus, cytomegalovirus, human immunodeficiency virus (HIV-1), and hepatitis C virus, Epstein-Barr virus
10. Antiviral susceptibility testing.
11. Direct immunofluorescence of WBC’s for CMV antigen (CMV antigenemia)
12. PCR for HSV, CMV, and enterovirus

B. Review all positive in-house viral cultures, review patients chart and see patient, discuss positive culture results with clinician, laboratory director and medical technologists in laboratory.

C. Review all common viral pathogens and develop an understanding of the clinical symptoms associated with viral infections, correlate clinical specimen site with virus likely to be present at that site.
D. Become familiar with the principles of new methods in viral diagnostics, i.e. in vitro DNA amplification (PCR) and in-situ hybridization.

E. During elective rotations, increased emphasis is placed on independent study and bench research in molecular biologic techniques in the identification of viruses.

F. Prepare a minimum of two cases for the Laboratory Medicine Clinical Conference.

IV. TEACHING STAFF

Ella Swierkosz, Ph.D., Director of Clinical Virology Lab, CGH office phone 577-5399; beeper 294-7071.

V. MANNER OF SUPERVISION AND EVALUATION

The Resident's progress on rotation is reviewed and monitored by Dr. Swierkosz. The Resident is evaluated using standard departmental evaluation form. The evaluation is discussed with the Resident.

VI. OUTCOME ASSESSMENT METHODS

The resident is expected to work-up virus unknowns and will be evaluated on the number of unknowns correctly diagnosed.

Rev. 6/2006
Virology Obj
Appendix  Competency Based Goals and Objectives

- **Patient Care**
  Know the test of choice for identification of specific viral diseases, including viral isolation

  Review all positive in-house viral cultures, review patients chart and see patient, discuss positive culture results with clinician, laboratory director and medical technologists in laboratory.

  Review all common viral pathogens and develop an understanding of the clinical symptoms associated with viral infections, correlate clinical specimen site with virus likely to be present at that site.

- **Medical Knowledge**
  Understand specimen selection, collection and transport for viral isolation
  Select appropriate cell culture type for virus isolation
  Understand specimen processing, i.e. separation of WBC's from peripheral blood for CMV culture
  Exam cell cultures for detection of viral-specific cytopathic effect (CPE)
  Identify viral isolates by CPE, immunofluorescence, enzyme immunoassay, neutralization, and acid lability
  Understand isolation of *Chlamydia trachomatis*
  Understand direct antigen detection of RSV and influenza A and B viruses by enzyme immunoassay and immunofluorescence
  Understand direct antigen detection of rotavirus and enteric adenoviruses in fecal specimens by enzyme immunoassay
  Perform serological testing for herpes simplex virus, rubella virus, cytomegalovirus, human immunodeficiency virus (HIV-1), and hepatitis C virus, Epstein-Barr virus
  Understand antiviral susceptibility testing.
  Perform direct immunofluorescence of WBC's for CMV antigen (CMV antigenemia)
  Perform PCR for HSV, CMV, and enterovirus

- **Practice Based Learning and Improvement**
  Understand the use of quality assurance and control in the virology laboratory

- **Professionalism**
  Understand laboratory safety, including how to properly inactivate various common viruses.

- **Interpersonal and Communication Skills**
  Effectively communicate with clinicians and laboratory staff about test results with appropriate interpretation.

- **Systems-Based Practice**
  Know the available antiviral therapy and mechanism of action.

  Understand regulatory issues including CAP inspection relevant to the clinical medical virology laboratory.