GUIDELINES FOR COMPETENCY BASED POSTGRADUATE TRAINING PROGRAMME FOR DM IN INFECTIOUS DISEASES

Preamble

The Infectious Diseases training programme is designed to train physicians to become competent specialists in the management of infectious diseases. Today, an increasing number of antibiotics, antiviral, antifungal and anti-tuberculosis agents are available for treatment of infectious diseases. In addition, one will have the opportunity to acquire experience which is required to pursue an academic career in infectious diseases. This document reflects the necessary educational requirements for the DM training programme in Infectious Diseases. The programme will include core clinical rotations in the department of Infectious Diseases, supervision of post graduate students and providing consultations in the treatment of infectious diseases. An expert in Infectious Diseases, besides managing patients with infectious diseases, is required to assist in consultation services in virtually all clinical Departments, be it medical or surgical specialities and others. The advent of HIV/ AIDS has added a new dimension to infectious diseases which requires special knowledge as there are rapid advances in the diagnosis and treatment of this condition. Epidemics caused by emerging and re-emerging organisms frequently pose serious threats to the population of this country. In spite of vast developments in many tertiary care facilities, infectious diseases still constitute major causes of morbidity and mortality.

Goal

The Infectious Diseases training programme provides rigorous training and supervised experience by faculty with broad clinical and research expertise so that the post graduate student acquires necessary skills and competencies as a specialist in infectious diseases.

SUBJECT SPECIFIC OBJECTIVES

a. Clinical Skills

The post graduate student would have an exposure to the entire range of cases in infectious disease spanning all general medical services like General Medicine, General Surgery, Pediatrics, Orthopaedics and Obstetrics and Gynecology and organ based specialities, during

the DM programme. PG training should include regularly encountered inpatient and outpatient infections and special situations including HIV/AIDS, transplant-associated infections, Hematology-Oncology infections, immune-compromised hosts, illnesses of travelers, hospital acquired infections, ICU patients with sepsis, sexually transmitted infections and the epidemiology of these infections. The students should be able to perform the following:

- meticulous history taking,
- thorough clinical examination,
- order diagnostic tests,
- interpret results, especially those provided by the Microbiology Laboratory including molecular methods,
- make diagnostic and therapeutic decisions,
- perform procedures,
- counsel and manage patients,
- use antimicrobial agents appropriately and rationally and work with other departments to provide patient-focused care.

b. Teaching Skills

The post graduate student should be exposed to teaching methods and develop competence in teaching medical, paramedical and nursing students at the undergraduate and post graduate levels.

c. Research Skills

The students should gain basic skills and knowledge to function as independent investigators and should be exposed to state-of-the-art basic, translational, and clinical research. They should acquire scientific knowledge and critical evaluation of the relevant literature, problem solving, design and interpretation of experiments, communication of progress and research results in formal and informal settings, and understand national and international systems available for funding of research. Scientific professionalism will be stressed in each encounter. Basic knowledge of statistics, along with clinical epidemiologic principles like

appropriate study designs, critical appraisal of data management and analysis are also required.

d. Group Approach

The students would be required to interact with various departments to provide patient centered holistic care, be able to lead a team of health care workers and provide expertise to public health authorities during an outbreak of infectious diseases or natural calamities.

SUBJECT SPECIFIC COMPETENCIES

The DM student is required to achieve the following competencies:

1. Ability to diagnose and manage all infectious diseases, adopting proper examination, modern methods of investigation and on an evidence-based practice.
2. Ability to integrate knowledge of global and local epidemiology, geographical habitats, reservoirs and modes of transmission of infections of public health importance and plan preventive measures.
3. Ability to practice advocacy related to public health issues in the occurrence and spread of infectious diseases with the idea of preventing / controlling epidemics.
4. Ability to be a team leader and community advisory on matters related to infectious diseases.
5. Ability to plan and execute infection control practices in hospital and community settings
6. Ability to coordinate and execute various research plans in existing and emerging infectious diseases.
7. Ability to provide continuity of care including counseling and palliative care
8. Ability to promote Team work & Good communication including confidentiality, empathy and social justice
9. Promote ethical principles in various roles
10. Ability to document the observations, organise data, conduct research and plan corrective steps
11. Ability to coordinate the interdisciplinary and social interactions

a. Cognitive Domain (knowledge domain)

The post graduate student would learn a broad range of problems in infectious diseases care of the individual patient and the larger community through patient care in a variety of settings, conferences, lectures, and appropriate use of the medical literature. The students will have appropriately supervised primary responsibility for applying their knowledge to the solution of problems in differential diagnosis and complex disease management. They will learn to manage challenges unique to the treatment of Infectious Diseases including antimicrobial resistance, from the individual patient to the environment; loss of useful antimicrobial agents and recognition of new diseases. The students will become experts in using current medical literature to support evidence based decision-making. They will learn to appraise the medical literature critically and perfect their clinical skills. They will maintain a record of the cases for grand rounds and possible publication of case reports.

At the end of the DM course in Infectious Diseases, the students should acquire the following competencies:

1. Knowledge necessary to obtain a meticulous history on patients suspected of having an infection.
2. Knowledge necessary to perform a thorough physical examination of patients with infectious problems.
3. Knowledge necessary to generate a relevant and appropriate differential diagnosis compatible with a particular clinical syndrome and be able to elucidate typical microorganisms contributing to the same.
4. Knowledge to order appropriate tests.
5. Knowledge to recognize a possible need for specialist consultations for performance or interpretation of procedures and interpret the results.
6. Knowledge of the common infectious diseases with regard to clinical manifestations, etiologic agents and be able to generate a differential diagnosis.

7. Ability to develop an appropriate therapeutic approach depending on the patient's clinical condition and perform therapeutic procedures when appropriate to the patient's condition.
8. Knowledge of mechanism of action, indications, contra-indications, dosing schedule, efficacy, cost, side effects, and pharmacokinetics and pharmacodynamics of antimicrobials and biological products including monoclonal antibodies.
9. Ability to choose the right antimicrobial, rational combinations of antibiotics where required keeping in mind the clinical syndrome, tissue penetration and therapeutic drug monitoring where required.
10. Knowledge of drugs of choice for most microorganisms and chemoprophylaxis when required.
11. Knowledge of indications and contraindications for active and passive immunization of infectious diseases including comprehensive knowledge of the National Immunization Programme including travel related immunization.
12. Knowledge of global and local epidemiology, geographical habitats, reservoirs and modes of transmission of infections of public health importance and preventive measures.
13. Knowledge of reportable infectious diseases and proper documentation and procedures required for reporting them.
14. Knowledge of the basic principles of nosocomial infectious diseases in various institutional settings, especially catheter-associated urinary tract infections, nosocomial pneumonia, and sepsis associated with intravascular devices and therapy.
15. Knowledge for the purposes of referral and patient education, indications, success rates, and complications of common surgical procedures for infectious disease problems.

B. Affective Domain

The post graduate student

1. Should be able to function as a part of a team, develop an attitude of cooperation with colleagues, and interact with the patient and the clinician or other colleagues to provide the best possible diagnosis or opinion.
2. Always adopt ethical principles and maintain proper etiquette in dealings with patients, relatives and other health personnel and to respect the rights of the patient including the right to information and second opinion.
3. Develop communication skills to word reports and professional opinion as well as to interact with patients, relatives, peers and paramedical staff, and for effective teaching.

C. Psychomotor domain

At the end of the course, the student should acquire following clinical skills and be able to:

1. observe and manage patients with wide variety of infectious diseases on both an inpatient (Inpatient Consultation Service, Immunocompromised Consultation Service) and an ambulatory basis (Infectious Disease Clinics including HIV/AIDS, Hepatitis Clinic, Fever Clinic, Sexually Transmitted Disease Clinic etc.). This would help to gain longitudinal experiences in a continuum of care to observe the course of illness and the effects of therapy.
2. learn proper methods of specimen collection, transport, handling and preparation by completing the faculty-supervised microbiology checklist
3. Procedures to be observed
    a. Gram Stain of exudates and body fluid from various sources - 20 numbers
    b. Sputum Acid fast stain -15 numbers
    c. Malaria parasite -10 numbers
    d. Bone Marrow aspirate and Biopsy -5 numbers
    e. Body fluid aspiration including joints -10 numbers
4. follow up of patients in Infectious Diseases wards during the acute and recovery phases of their illnesses.

5. provide consultative services to outpatient clinics and inpatient services in other specialties and subspecialties including the management of antibiotic administration in such diverse settings as the hospital, the office, or in conjunction with home-care services.
6. able to carry out a research project under the guidance of faculty from the Infectious Disease department including project planning, research design, collection and interpretation of data and publication.

SYLLABUS

Course contents:

The syllabus will include a study of infectious diseases of bacterial, viral, fungal and parasitic origin occurring in the adults and in the pediatric age group. The student must also have a practical knowledge of infections encountered in oncology, surgery, Obstetrics & Gynaecology, post-transplant patients, and in other specialties.

During the training programme, the post graduate student will have formal instruction, clinical experience or other opportunities to gain expertise in the etiology, pathogenesis, epidemiology, clinical presentation, differential diagnosis, management and prevention of the disorders pertaining to various pathogens and organ systems.

A detailed log book of at least 100 patients with different infectious diseases (minimum twenty of different systems) should be maintained. Grand round cases should also be recorded in log book.

The syllabus is based on (a) Syndromic or Systemic and (b) Organism based approach.

SYNDROMIC APPROACH TO INFECTIOUS DISEASES

1. Fever
    - Thermoregulation and pathogenesis
    - FUO and Acute febrile illnesses
    - Fever with rash, exanthematous fever of children

2. Upper respiratory tract infections
    - Sinusitis
    - Common cold
    - Pharyngitis, retropharyngeal and parapharyngeal infections
    - Laryngitis and croup
    - Ear infections including otitis and mastoiditis
    - Epiglottitis
    - Manifestations of different systemic infections in oral cavity, neck and head
    - Local infections of neck, oral cavity and head
3. Pleuro- pulmonary and bronchial infections
    - Infections associated with COPD and cystic fibrosis
    - Bronchiolitis
    - Acute bronchitis
    - Pneumonia (acute and chronic) including CAP and atypical pneumonia
    - Lung abscess
    - Pleural effusion and empyema
4. Urinary tract infections
5. Sepsis syndromes
6. Intra - abdominal infections
    - Peritonitis and intraperitoneal abscesses
    - Infections of liver and biliary system including liver abscess
    - Pancreatic infections
    - Splenic abscess
    - Acute and chronic appendicitis
    - Diverticulitis, typhlitis
    - Principles and syndromes of enteric infections including acute and chronic diarrhea
    - Enteric fever and other causes of abdominal symptoms with fever
    - Malabsorption syndromes
    - Food poisoning
    - Lower abdominal pain syndromes including Pelvic inflammatory disease and prostatitis
    - H. pylori infection

7. Cardiovascular infections
    - Infections of endocardium, prosthetic valve, non- valvular cardiovascular devices
    - Myocarditis, pericarditis
    - Mediastinitis
8. CNS infections
    - Approach to a patient with CNS infections
    - Meningitis: acute and chronic
    - CSF shunt infection
    - Encephalitis
    - Infections causing Brain SOLs and abscesses
    - Infections of dural spaces and brain sinuses
9. Osteomyelitis, infections of native joint and prostheses
10. Syndromic approach to STIs
11. Eye infections including endophthalmitis, uveitis and chorioretinitis
12. Multisystem sepsis syndromes, septic shock and disseminated infections
13. Pyomyositis, skin and soft tissue infections
14. Nosocomial Infections or Medical Device Related Infections
    - Organization for infection control
    - Disinfection, sterilization, disposal of hospital waste
    - Isolation and quarantine
    - Nosocomial UTI (catheter-associated urinary tract infection - CAUTI)
    - Nosocomial Pneumonia (health care—associated pneumonia – HCAP; Ventilator-associated pneumonia - VAP)
    - Catheter related infections (Central Line-Associated Bloodstream Infection-CLABSI)
    - Viral hepatitis & other transfusion- transplantation transmitted infections
15. Infection in Special Hosts
    - Immunocompromised (congenital and acquired)
    - Management of infections in cancer patients including febrile neutropenia
    - Infections in transplant recipients: solid organ, hematopoietic stem cell
    - Spinal cord injury
    - Geriatric population including infections in long term care facilities

- Infection in asplenic hosts
- Infection in IDU (Infectious Diseases Unit)
- Surgical and trauma related infection: Bite, Burn, post operative fever

ETIOLOGICAL AGENTS OF INFECTIOUS DISEASES

1. Viral Diseases
   - Arbo-viral illnesses including Dengue, Yellow fever, KFD, Chikungunya, Hantavirus, WNV, JE, Tick borne encephalitis, Syndromes associated with Arboviral infections; Herpes viridae and its infections (HSV, CMV, EBV, HSV6&7, KSAV, VZV), Poxviridae
   - Hepatitis causing viruses including Hepatitis E
   - Corona virus and SARS
   - Mumps and measles viruses
   - Rhabdoviruses
   - Ebola and Marburg virus and other viral haemorrhagic fevers
   - Adenovirus
   - Papillomavirus
   - JC, BK other polyoma viruses
   - Influenza and parainfluenza
   - Zoonotic paramyxoviruses like Nipah, Hendra
   - RSV
   - Polio, Coxsackie, Echo, Enteroviruses
   - HTLV 1 & 2
   - HIV: history, epidemiology, virology, immunology, disease spectrum including pulmonary, gastroenterological and neurological manifestations of HIVOI, malignancy, treatment guidelines including antiretrovirals, drug toxicity, Drug resistance, prevention, future planning
2. Prion Diseases Creutzfeldt Jacob, Kuru, Bovine spongiform encephalitis
3. Bacterial Diseases
   - Gram positive organisms; Gram negative organisms

- Anaerobic infections
- Mycobacteria: Tuberculosis: primary, secondary, pulmonary, extrapulmonary (as per anatomical structures), MDR and XDR TB
- Leprosy, Non-Tuberculous Mycobacteria
- Brucellosis, Chlamydial diseases, Mycoplasma
- Rickettsial diseases
- Syphilis, Leptospirosis other spirochetes, Nocardia, Actinomycosis

4. Mycoses
    - Superficial mycoses, Subcutaneous mycoses
    - Deep mycoses including endemic systemic mycoses
5. Protozoal diseases
    - Entamoeba, Free living amoeba, Malaria, Babesia, Leishmaniasis, Toxoplasmosis, Trypanosomiasis, Giardiasis, Trichomoniasis, Cryptosporidium and other HIV associated protozoas
6. Helminthic infections:

    Geohelminths, Tissue and blood nematodes, Cestodes, Trematodes
7. Ectoparasitic diseases:

    Lice (pediculosis), scabies, myasis, Mites including Chiggers, Ticks
8. Diseases associated with toxic algae:

    Prototheca

GENERAL

- Immunisation: Pediatric age group, adult, travelers
- Travel Medicine
- Bioterrorism
- Outbreak Investigation in Hospital and Community
- National Health Programmes Related to Communicable Diseases
- Pharmacotherapeutics in Infectious Diseases
- Non-infectious mimics of Infectious Diseases
- Neglected Tropical Diseases
- Critical Care Syndromes and Exotic infections

The student will undergo clinical rotations during the three-year programme *(as given in the section dealing with Teaching and LearningMethods).*The main features of these rotations will involve history taking and examination of the patients, recommend relevant investigations, reviewing investigation reports and following up with microbiology, formulating a differential diagnosis and a therapeutic plan, discussing the case with the primary consultant and the core faculty for the programme. Identification of critical questions related to the case, reading the topic from a standard ID textbook, literature search to retrieve comprehensive review including epidemiology, microbiology, pathology, clinical manifestations, investigative approach, treatment modalities, prognosis and preventive strategies, retrieve practice guidelines (Indian and international), systematic reviews (Cochrane review) if any, review of controversies and identification of research needs of the specific state will also be required.

TEACHING AND LEARNING METHODS

Post graduate teaching programme

General principles

Acquisition of practical competencies being the keystone of PG medical education, PG training should be skills oriented. Learning in PG programme should be essentially self-directed and primarily emanating from clinical and academic work. The formal sessions are meant to supplement this core effort.

a) **Journal Club/Journal Scan:** 1 hour duration - Paper presentation/discussion - once per week.
b) **Seminar:** One seminar every week of one hour duration
c) **Lecture/discussion:** Lectures on newer topics by faculty, in place of seminar as per need.
d) Infectious Diseases Case Presentations with input from Microbiology, Virology, Parasitology and various related specialties
e) Infectious Disease Seminars/discussions: Post graduate students are expected to work up one long case or two short cases and present the same to a faculty member and discuss the management.
f) Morbidity and Mortality Conference once a month

g) **Emergency situation**: Emergency duty by rotation among the post graduates with faculty cover.

h) **Ward rounds:** DM students should take history, conduct examination, clinically evaluate and manage inpatients admitted to wards. Ward rounds should be conducted by faculty for appropriate patient care and teaching. This should also cover calls from other specialties and emergency.

i) **Combined Round/Grand Round:** These exercises are to be done once a week or twice a month involving presentation of unusual or difficult cases.

k) **Clinical teaching:** In outpatient, ward rounds, emergency and ICU, the post graduate students shall be required to participate in the teaching and training programme of undergraduate students, interns, junior residents and nurses.

l) The Department should encourage e-learning activities.

j) A post graduate student of a post graduate degree course in broad specialities/super specialities would be required to present one poster presentation, to read one paper at a national/state conference and to present one research paper which should be published/accepted for publication/sent for publication during the period of his post graduate studies so as to make him eligible to appear at the postgraduate degree examination.

k) Teaching strategies

Clinical work includes the following:

- Rotation through various work stations for direct observation and hands-on learning
- Rounds in the laboratory trouble-shooting problems and addressing clinical correlation.
- Reading of textbook sources regarding background information
- Slide lectures addressing specific microscopy topics.
- HIV ELISA detection, CD4 testing, viral load in PCR lab (during lab posting)

Hospital Epidemiology:

- Discussion sessions to review readings and basic concepts in hospital epidemiology
- Regular schedule of meetings: Infectious Diseases (ID) Seminar, Infection Control (IC) Staff and Committee meetings, Drug Utilization

- Special project assignments, evaluating new or ongoing problems/nosocomial infections.
- Outbreak investigation training
- One report on hospital infection epidemiology during the course.

Infectious Disease Epidemiology

- Environmental factors in Infectious Diseases
- Emerging and re-emerging diseases like dengue, Ebola. Epidemic alert: Notification and reportable diseases, Recognition of Bioterrorism
- Control strategies (levels of prevention and modes of intervention, source reduction, vaccination, integrated vector control and diagnosis and treatment) especially with regard to malaria, kala azar, scrub typhus)
- International instruments (International Health Regulations and international disease surveillance) and WHO regulations and guidelines
- Research in Infectious Diseases
- Knowledge of the Geo-sentinel network and Geographical Information mapping of various diseases

Prevention of Hospital acquired Infections (Infection Control)

- Epidemiology and Surveillance
- Cluster investigation
- Transmission and control of nosocomial infection
- Disinfection and sterilization
- Isolation system
- Regulatory compliance

l) Clinical postings: Recommended schedule for three years training:

The post graduate student is required to work full time in the department, participate in the patient care and academic and research activities as described below.

The post graduate students will be primarily responsible for the care of patients which include clinical, investigative and therapeutic aspects. In addition, they shall pursue research and academic activities.

a. Clinical Rotations

i. First Year posting: in the parent department with resident duty (in turns) on all days (depending on the number of candidates)

ii. Second year posting will include the following:

One month posting each in:

a. General Medicine
b. Pediatrics
c. Obstetrics & Gynaecology
d. Clinical Microbiology (including Lab. work)
e. Community Medicine (including Preventive Clinic)
f. Casualty (Emergency Medicine)
g. Immuno-suppression Unit (Transplant / Oncology)
h. Medicine ICU
i. Surgery ICU
j. PICU
k. NICU
l. RNTCP Unit*
m. ART Clinic*
n. STD Clinic*

* - only morning hours- rest of the day to be spent in the parent department

iii. Third Year posting: in the parent department with on call duty on all days (in turn if feasible, depending on the number of candidates).

b. Clinical Microbiology Laboratory exposure

i. Rotation through various work stations for direct observation and hands-on learning

ii. Rounds in the laboratory trouble-shooting problems and addressing clinical correlation.

iii. Reading of textbook (and other sources) regarding background information

iv. Directed reading of the primary literature for specific information

v. Slide lectures addressing specific microscopy topics.

vi. HIV ELISA testing, CD4 testing, viral load in PCR lab

c. **Hospital Epidemiology:**

i. Discussion sessions to review readings and basic concepts in hospital epidemiology

ii. Regular schedule of meetings: Infectious Diseases (ID) Seminar, Infection Control (IC) Staff and Committee meetings, Drug Utilization

iii. Special project assignments, evaluating new or ongoing problems/nosocomial infections.

iv. Outbreak investigation training

v. One report on hospital infection epidemiology during the course.

d. Infectious diseases epidemiology

i. Environmental factors in Infectious Diseases

ii. Emerging and re-emerging diseases like dengue, ebola. Epidemic alert: Notification and reportable diseases, Recognition of Bioterrorism

iii. Control strategies (levels of prevention and modes of intervention, source reduction, vaccination, integrated vector control and diagnosis and treatment) especially with regard to malaria, kala azar, scrub typhus)

iv. International instruments (International Health Regulations and international disease surveillance) and WHO regulations and guidelines

v. Research in Infectious Diseases

vi. Knowledge of the Geo-sentinel network and Geographical Information mapping of various diseases

e. Prevention of Hospital acquired Infections (Infection Control)

i. Epidemiology and Surveillance

ii. Cluster investigation

iii. Transmission and control of nosocomial infection

iv. Disinfection and sterilization

v. Isolation system

vi. Regulatory compliance

During the training programme, patient safety is of paramount importance; therefore, skills are to be learnt initially and later to be performed under supervision followed by performing independently. Provision of skills laboratories for cardiopulmonary resuscitation in the medical colleges is mandatory.

ASSESSMENT

FORMATIVE ASSESSMENT

Formative assessment should be continual and should assess medical knowledge, patient care, procedural & academic skills, interpersonal skills, professionalism, self directed learning and ability to practice in the system.

Periodic Evaluation:

Candidates will be evaluated continuously for their performance in all areas such as clinical and investigative work, case presentations, seminars, journal clubs, procedures etc. Additional periodic assessment will include theory and practical assessment mimicking the final examination should be conducted every 6 months. Such an evaluation will help assessing the progress of the trainees and the quality of the training programme. Evaluation will be communicated to trainees and their feedback would be taken into consideration for modifications in training programme.

Internal Assessment should be frequent, cover all domains of learning and used to provide feedback to improve learning; it should also cover professionalism and communication skills.

Quarterly assessment during the DM training should be based on:

1. **Journal based / recent advances learning**
2. **Patient based /Laboratory or Skill based learning**
3. **Self directed learning and teaching**
4. **Departmental and interdepartmental learning activity**
5. **External and Outreach Activities / CMEs**

The student to be assessed periodically as per categories listed in Postgraduate Student Appraisal form (Annexure I).

SUMMATIVE ASSESSMENT

The summative examination would be carried out as per the Rules given in POSTGRADUATE MEDICAL EDUCATION REGULATIONS, 2000.

The summative assessment examination shall include two heads:

A. Theory examination.
B. Practical, Clinical examination and Viva-voce.

Theory examination and Practical/Clinical, Viva-voce shall be separate heads of passing.

Theory examination shall comprise of four papers. Passing percentage shall be cumulatively 50% with minimum of 40% marks in each theory paper.

Practical /Clinical examination consisting of at least one long case, three short cases and viva-voce. Passing percentage shall be 50%.

Passing shall be separate for each head and failing shall be common, meaning thereby that clearance at theory and failure at practical / clinical shall amount to failure at Summative examination and vice versa.

1. **Theory**: There shall be four theory papers:

Paper I:	**Basic Sciences as applied to Infectious Diseases**
Paper II:	**Clinical Microbiology including Bacteriology, Parasitology, Virology & Mycology and Pharmacology**
Paper III:	**Community acquired infections including neglected tropical diseases**
Paper IV:	**Recent Advances and Special Populations**

2. **Practical**: The practical examination should consist of the following and should be spread over two days, if the number of candidates appearing is more than five.
3. **Viva-voce Examination:** covering affective and psychomotor domain.

RECOMMENDED READING

Books (Latest editions)

1. Mandell, G.L., Bennett, J.E., Dolin, R. Mandell. Douglas, and Bennett's Principles and Practice of Infectious Diseases, Philadelphia, Churchill Livingstone.
2. Andrew Cliff and Matthew Smallman-Raynor Turgeon. Oxford Textbook of Infectious Disease Control. M.L. Oxford University Press.
3. John G. Barlett. Pocket Book of Infectious Disease Therapy. Lippincort Williams & Wilkins.
4. David Schlossberg. Clinical Infectious Disease. Cambridge University Press.
5. R Guerrant, Walker D.H, Weller P.F. Tropical Infectious Diseases. Elsiever Churchill Livingston.
6. Forbes, B., Sahm, D., Weissfeld, A. Bailey and Scott's Diagnostic Microbiology. Mosby, St. Louis.
7. Koneman, E.W., Allen, S.D. Janda, W.M., Schreckenberger, P.C., Winn, W.C. Color Atlas and Textbook of Diagnostic Microbiology, J.B. Lippincott, Philadelphia.
8. Murray P.R, Baron E.J, Pfaller M.A, Tenover F.C, Yolken R.H. Manual of Clinical Microbiology, American Society for Microbiology.
9. Garcia L.S, Bruckner D.A. Diagnostic Medical Parasitology. American Society for Microbiology.
10. Immunology & Serology in Laboratory Medicine. St. Louis, Mosby.

Journals

03-05 International and 02 national journals (all indexed)

Annexure I

Postgraduate Students Appraisal Form
Clinical Disciplines

Name of the Department/Unit :
Name of the PG Student :
Period of Training : FROM……TO……

Sr. No.	PARTICULARS	Not Satisfactory	Satisfactory	More Than Satisfactory	Remarks
		1 2 3	4 5 6	7 8 9	
1.	Journal based / recent advances learning				
2.	Patient based /Laboratory or Skill based learning				
3.	Self directed learning and teaching				
4.	Departmental and interdepartmental learning activity				
5.	External and Outreach Activities / CMEs				
6.	Thesis / Research work				
7.	Log Book Maintenance				

Publications **Yes/ No**

Remarks* _____
_____
_____
_____

***REMARKS: Any significant positive or negative attributes of a postgraduate student to be mentioned. For score less than 4 in any category, remediation must be suggested. Individual feedback to postgraduate student is strongly recommended.**

SIGNATURE OF ASSESSEE SIGNATURE OF CONSULTANT SIGNATURE OF HOD