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Section: Education Manual	Subject Title: Mycology - Training Manual for Residents	
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MYCOLOGY - TRAINING MANUAL FOR RESIDENTS

Teaching and Supervising Technologist: Subhash K. Mohan

Reference:

1. Davise H. Larone: Medically Important Fungi, A guide to identification, 3rd. Edition, ASM Press, 1995
2. Guy St – Germain, Richard Summerbell; Identifying Filamentous Fungi, A Clinical Laboratory Handbook, Star Publisher, 1996
3. Martha E Kern: Medical Mycology; Self Instructional Text, F A Davis, 1985 (1997)
4. Selected Reference Articles

The Trainee at all levels of training shall know:

1.0 ***Processing of Specimens***

- 1.1 Know about proper mycology specimen collection, transportation and planting and the use of selective and/ or non-selective media
- 1.2 State the appropriate incubation temperature and length of incubation for recovery of various pathogens

2.0 ***Direct Microscopy***

- 2.1 Demonstrate the proper of use of microscopy in the detection of fungal elements in clinical specimens using: Fungi-Fluor (FS), 10% KOH and Calcofluor White (CW)
- 2.2 Demonstrate and interpret fungal elements examined microscopically such as yeast, pseudo hyphae, septate or non-septate hyphae, narrow or broad base attachment etc. and/ or suspect or identify certain pathogens presumptively based on structure
- 2.3 Explain the different uses, advantages and disadvantages of the FS, CW and 10% KOH

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3.0 ***Procedure for identification of Yeast***

- 3.1 Demonstrate the ability to identify various yeasts using Germ Tube, Oxgall, Cornmeal, Urea, EBM, Rapid Yeast ID System, API 20C procedures
- 3.2 Explain the principles, uses, advantages and disadvantages of the above methods
- 3.3 Ability to recognize organisms looking like yeast such as Prototheca based on structure

4.0 ***Protocol for reporting results as per manual policy***

- 4.1 Reporting positive FS results in SOFT and phoning critical results to ward
- 4.2 Reporting positive culture results in SOFT and phoning ward where applicable

5.0 ***Procedures for identification of moulds***

- 5.1 Demonstrate the following methods used: Macroscopic Examination of Cultures, Microscopic Examination of Cultures, Scotch Tape Preparation, Tease Mount Preparation, Slide Culture, Sub-Culture, Phase Conversion, Permanent Mounts and Stock Preparation
- 5.2 Explain the purpose of each of the above

6.0 ***Identification of the following fungi to the genus and/ or species level where indicated:***

Rapid Grower:

Aspergillus fumigatus, niger, flavus and terreus
Penicillium species and Paecilomyces species
Fusarium species and Acremonium species
Scopulariopsis species and Trichoderma species
Scedosporium species (apiospermum and prolificans) and P. boydii

Zygomycetes:

Rhizopus species
Mucor species
Absidia species

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Dematiaceous Moulds:

Cladosporium species
Curvularia species and *Bipolaris species*
Alternaria species and *Exophiala species*

Superficial Mycotic Agents:

Dermatophytes and *Scytalidium species*
Trichosporon beigeli
Malassezia furfur (Pityriasis versicolor – microscopic only, no culture necessary)

Dimorphic Fungi:

Histoplasma capsulatum and *Blastomyces dermatitidis*
Sporothrix schenckii and *Penicillium marneffeii*
(*C. immitis* – Demonstration only)

7.0 ***Identification of Actinomycetes and other Filamentous Organisms***

Nocardia species
Streptomyces species
(Compare to Rapid Grower *Mycobacteria*)