

**CURRICULUM FOR D.M. COURSE**

**IN**

**NEUROLOGY- 26-4-06**

## **SECTION –I**

### **Goals**

The aim of the course is to develop human resources and personnel in the field of Neurology who shall

- i) Provide the health care to the patients needing Neurology care
- ii) Teach and train future undergraduate and postgraduate medical students and junior doctors in Neurology in Medical Colleges, Institutions and other Hospitals.
- iii) Carry out and guide research to improve the practice of the art and science of Neurology
- iv) Have management capabilities to manage personnel and budgets etc. to make health care more cost-effective.
- v) Organise health teams to provide care during natural or man-made calamities.

### **Objectives**

Departmental objectives :

At the end of the DM Neurology course, students shall be able to :

- i) Practice the art and science of Neurology in his/her field of practice and seek and provide consultation as required. He will have knowledge, skill and attitude to provide comprehensive neurology care.
  - ii) Conduct researches and communicate the findings, results and conclusion to his fraternity.
  - iii) Acquire necessary skills of teaching and training his junior colleagues and medical students.
  - iv) Keep abreast with the latest developments by self-learning and /or participating in Continuing Medical Education programmes.
  - v) Organize and manage administrative responsibilities for routine day to day work as well as new situations Including natural and/or man-made accidents/calamities etc. and be able to manage situations calling for emergency interventions in the sphere of neurology care and also routine problems in their areas.
  - vii) Exhibit awareness of the importance of audit and the need for considering cost-effectivity in patient management.
- Deliver preventive and rehabilitative care.

## **SECTION II :**

### **COURSE CONTENT**

Since the students are trained with the aim of practicing as independent Neurologist, this course content will be merely a guideline. They have to manage all types of cases and situations and seek and provide consultation. The emphasis shall therefore be more on the practical management of the problem of the individual cases within the available resources.

### **CONTENTS OF THE COURSE**

(a) Basic and Applied Neurosciences.

Basic and correlative neuro-anatomy, basic and applied neuro-physiology, principles and applied aspects of neurochemistry, pharmacology of drug interaction on the nervous system, pharmacologic basis of therapeutics, immune mechanisms underlying autoimmune disorders of nervous system and pathological basis of neurological disorders, Basic principles and application of biostatistics.

(b) Investigative Neurology.

Principles and application of diagnostic procedures in the disciplines of electrophysiology, imaging and neuropathology.

(c) Neurology.

Principles, theoretical concepts and practice of clinical neurology, including emergency neurology. The clinical profile diagnosis and management of paroxysmal disorders of nervous system, cerebrovascular disorders, neuro-infections, congenital, genetic demyelinating and degenerative disorders of central and peripheral nervous system, neuromuscular disorders, neoplasms, metabolic disorders and traumatic injuries. Recent advances in the field of clinical, applied and basic neuro-sciences.

(d) Neurosurgery.

Principles and practice of Neurosurgery.

## **SECTION –III :**

### **Teaching / Learning Methods And Activities**

Throughout the course of training the emphasis shall be on acquiring knowledge, skill and attitudes through first hand experiences as far as possible.

The emphasis will be on self-tearing rather than on didactic lectures.

The entire period shall be 'in service' training programme based on the concept Of 'learn as you work' principle.

The teaching learning activities would consist of -Participating in rounds - patient management

- 1) Presentation of cases to the faculty with discussion
- 2) Preparation and presentation of P.G. lectures on allotted topics
- 3) Journal clubs
- 4) Clinico-pathological exercise by rotation.

However to reinforce the learning the following methods shall be used to acquire knowledge, skills and attitudes.

1. Lectures prepared and presented by students under supervision.
2. Seminars, symposis, panel discussion of suitable topics, moderated by teachers.
3. Journal clubs moderated by teachers
4. Clinicopathological conferences.
5. Medical audit/fatality case discussion .meetings.
6. Pedagogic training programmes (intramural & extramural)
7. Inter-departmental meetings/discussions of interesting cases
8. Preparation and presentation of a dissertation
9. Patient care work in OPD, wards and dialysis unit.

The students shall be provided facilities to manage cases of higher and greater complexity by allowing them graded responsibility as the course progresses.

Each P.G would have an opportunity to present at least 2 P.G. lectures per year and 8-10 journal clubs per year in addition to about 20-25 cases during the clinical meetings.

They shall also be allowed to perform procedures under supervision and /or delegated authority depending on the experience and proficiency gained. The Heads of units and other consultants and guides shall be in-charge of the supervision and delegation of authority and responsibility to work.

10. Attend and participate in conference, workshops, field visits, camps, technical exchange programmes etc., and share knowledge and experience with others.

## **Dissertation:**

A subject for dissertation would be allotted to the P.G. within the first 6 months after joining. The emphasis on dissertation work would be on review of literature, maintaining a record of references, preparation of a plan of study, documentation of aims, planning the methodology, collection, documentation and analysis of data, comparison of data obtained with others in literature, drawing conclusions and writing a summary. The subject of dissertation may be prospective or retrospective. Analysis of less than 25 cases would not be permitted unless it is a rare disease. The protocol of study is to be approved by the Department faculty. 4 copies of completed dissertation after appropriate certifications by the guide and co-guide should be submitted at the end of the 2<sup>nd</sup> year (There will therefore be 2 complete years after submission of protocol and the final dissertation)

## **LEAVE/ATTENDANCE**

Since it is a resident in house work as you learn programme, it is desirable that Candidates should have 100% attendance to enable this objective to be achieved. However a minimum of at least 80% attendance would be required before they are allowed to appear for the examination.

## **ALLIED SPECIALITIES POSTINGS:**

There will be a continuous interaction between the neurology department and the allied departments to ensure that the students achieve these skills during their peripheral postings.

## **AFFECTIVE DOMAIN**

Development of attitude is an very important part of training. It would be the constant endeavour of the faculty to develop desirable attitudes in the P.G.trainees during the course by personal examples, interaction and group discussion. Constant watch will be maintained during their work in the wards to ensure that this objective is being met. Although there will be no formal evaluation of attitude some aspects of this domain would be covered during the formative evaluation as per the enclosed proforma for continued internal assessment.

## **SECTION IV**

### **Organization of course**

#### **I ELIGIBILITY:**

A candidate shall be admitted to the course provided the following conditions are satisfied. Holds the MD/ DNB in Medicine or Pediatrics from any University recognized by the Indian Medical Council.

#### **II. THE DURATION OF THE COURSE:**

The duration of the course shall be three academic years for candidate with MD/DNB.

### **III. ADMISSION:**

The selection is based on the merit and the common entrance test conducted by Superspeciality Board of Maharashtra University of Health Science.

**IV. Number of students:** Each year students will be enrolled maintaining a teacher/students ratio of 1:1

**V. Leave:** Residents would be entitled to 30 days leave in the first year and 36 days each in the second and third years of residency.

### **VI. Posting:**

During the first year orientation to clinical neurology, basic neuro-sciences, and investigative procedures will be provided. During 2nd year The candidate shall be posted for each in clinical Neuro-physiology EMG, EEG, VEEG etc.

During the second and third years, the candidate is required to participate in teaching and training of students. The candidate may be posted to the Department of Neurosurgery for and Psychiatry for short duration. Extramural training rotation for a limited period may be considered for specialised field. Time period i.e. which year may be variable.

**Dissertation :** Will be done as per the teacher's choice.

**Publications :** at least 2 in the Indexed journals during the tenure are desirable.

## **SECTION V**

### **EVALUATION**

Shall consist of formative and summative assessment.

#### **FORMATIVE ASSESSMENT.**

The purpose of continuous course assessment is mainly.

i) To ensure the habits of regularity, punctuality and disciplined working amongst postgraduates.

ii) To give periodic feedback regarding their performance for med course correction steps to enhance their learning in various area i.e. patient care, research teaching, administration etc.

iii) To monitor attainment of clinical and technical skills to ensure adequacy of training.

iv) To be available to the internal examiner at the time of final examinations to discount the possibility of a single adverse performance influencing the pass or fail situation by using it to give an idea of the continued performance of the candidate during the three years of training to the external examiners, so that candidates who have otherwise been rated as satisfactory in their internal evaluation can be given more chances in the final examinations to more questions and overcome the adverse effects of doing badly in any one case. However, internal evaluation marks cannot directly be used for influencing the outcome of the summative assessment in the course of using it to fail a candidate who has otherwise done well in the final examinations or to pass a candidate who has done consistently bad in several cases.

1. Ward work
2. Case presentation
3. Post graduate lectures
4. Journal Club

### **SUMMATIVE ASSESSMENT**

Summative assessment consists of two parts:

Evaluation of thesis/dissertation prepared by the candidates and Final examination consisting of 4 papers.

### **Thesis/dissertation**

All candidates on admission will be allotted one of the department faculty who have fulfilled the requirement to be guides for purposes of guiding Dissertation/thesis. The topic for dissertation shall be finalized and discussed in the departmental faculty meeting and allotted to the individual candidates before the completion of 3 months after admission. The purpose of dissertation is to develop in the candidate the ability to perform an independent study keeping the principles and research methodology in mind. The candidate will therefore work on the prospective problem either within the department or in collaboration with other departments. There will be continuous monitoring of the dissertation work by the guides and co-guides and by the other department staff throughout the course. The candidate will present the progress of the dissertation to the faculty on the completion of 1 % years for monitoring and feed back. The completed dissertation should be submitted no later than 31st December in the year before final examination. The dissertation shall be evaluated independently by the internal examiners and two external examiners under the following heading :

- 1) Approved
- 2) Not approved

In all cases the approval shall be given before 3 months of the date of appearing for the examination and this will be essential before the candidate is allowed to appear for the written examination.

### **WRITTEN EXAMINATION: (**

*As per Direction No. 01/2008 dtd. 26/05/2008 & practical scheme is as per revised practical marksheet.)*

## Annexure I:

### **Proformas for Internal Evaluation Evaluation form for Postgraduates Clinical Work**

( To be completed once in 6 months by respective Unit Heads )

Name:

Date:

Points to be considered :

1. Punctuality
2. Regularity of attendance
3. Quality of Ward Work
4. Maintenance of case records
5. Presentation of cases during rounds
6. Investigations work-up
7. Bedside manners
8. Rapport with patients
9. Undergraduate teaching (if applicable )
10. Others:

Guidance for Scoring:

1	2	3	4	5
Poor	Below Avg.	Average	Above Avg.	Very Good

Score: (       )

Signature:

**Proformas for Internal Evaluation**  
**Evaluation form for Postgraduates Clinical Meeting**

Name:

Date:

Points to be considered:

1. Completeness of history
2. Whether all relevant points elicited
3. Cogency of presentation
4. Logical order
5. Mentioned all positive and negative points of importance
6. Accuracy of general physical examination
7. Whether all physical signs missed or misinterpreted
8. Whether any major signs missed or misinterpreted
9. Diagnosis: whether it follows logically from history and findings.
10. Investigations required -
  - complete list -
  - relevant order
  - interpretation of investigations
11. Overall
  - Ability to react to questioning - Whether answers relevant and complete
  - Ability to defend diagnosis
  - Ability to justify differential; diagnosis
  - Confidence
  - Others

Guidance for Scoring:    1            2            3            4            5  
                                 Poor    Below    Average    Above    Very Good  
                                            Avg.                            Avg.

Score: (        )

Signature:

**Proformas for internal Evaluation**  
**Evaluation form for Postgraduates**  
**Continuous Evaluation of Dissertation Work**

Name:

Date

Points to be considered:

1. Interest shown in selecting a topic
2. Appropriate review
3. Discussion with guide and other faculty
4. Quality of protocol
5. Preparation of proforma
6. Regular collection of case material
7. Depth of analysis/discussion
8. Departmental presentation of findings
9. Quality of final output
10. Defence in Viva
11. Others:

Guidance for Scoring:	1	2	3	4	5
	Poor	Below Avg.	Average	Above Avg.	Very Good

Score: (       )

Signature:

**Proformas for Internal Evaluation**  
**Evaluation form for Postgraduates Journal Club**

Name

Date

Points to be considered:

1. Choice of articles
  2. Cogency of presentation
  3. Whether he has understood the purpose of the article
  4. How well did he defend the article
  5. Whether cross references have been consulted
  6. Whether other relevant publications have been consulted
  7. His Overall impression of articles
- If good - reasons:  
If poor - reasons:
8. Audiovisual aids
  9. Response to questioning
  10. Overall presentation
  11. Others:

Guidance for Scoring:	1	2	3	4	5
	Poor	Below Avg.	Average	Above Avg.	Very Good

Score: (       )

Signature:

## **Log (Performance record book)**

Maintenance of performance record Log book is mandatory. Certified and assessed copy should be made available at the time of practical examination for review by examiners

Log Book should contain:

1. Certificate duly signed by teacher, head of department, head of institute stating-  
Dr...has worked in department from — to — for a period of 3 years. This performance record book contains authentic record of work done and assessment for last 3 years.
2. Record of training, Name of the trainee Hospital Training period Name of teacher
  - a. Posting in Neurology
  - b. Clinical Neurology
  - c. OPD consultation Critical care etc
  - d. Neurophysiolog
3. Working schedule
4. Teaching programme