



# MGM INSTITUTE OF HEALTH SCIENCES

(Deemed to be University u/s 3 of UGC Act, 1956)

**Grade 'A' Accredited by NAAC**

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## Curriculum for D.M. Nephrology

Amended upto BOM- 55/2018, Dated 27/11/2018

## **Amended History**

1. Approved as per BOM– 26/2012, Resolution No. 5.15, Dated 27/09/2012.
2. Amended as per BOM- 48/2017, [Resolution No. 5.10(d)]; Dated 24/01/2017.
3. Amended as per BOM-52/2018, [Resolution No. 3.9.2], [Resolution No. 3.9.3]; Dated 13/01/2018.
4. Amended as per BOM-55/2018, [Resolution No. 4.13], [Resolution No. 4.5.4.2], Dated 27/11/2018.

### (Goals )

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

- i) provide the health care to the patients needing renal care
- ii) teach and train future undergraduate and postgraduate medical students and junior doctors in Nephrology in Medical Colleges, Institutions and other Hospitals.
- iii) carry out and guide research to improve the practice of the art and science of nephrology
- iv) have management capabilities to manage personnel and budgets etc. to make health 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 Nephrology course, students shall be able to :**

- i) practice the art and science of nephrology in his/her field of practice and seek and provide consultation as required. He will have knowledge, skill and attitude to provide comprehensive renal 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) organise and manage administrative responsibilities for routine day to day work as well as new situations including natural and on man-made accidents/calamities etc. and be able to manage situations calling for emergency interventions in the sphere of renal care and also routine problems in their areas.
- vi) exhibit awareness of the importance of audit and the need for considering cost-effectivity in patient management.
- Vii) deliver preventive and rehabilitative care.

## Course content

Since the students are trained with the aim of practicing as independent nephrologists, 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 and the community within the available resources.

(Applied basic sciences knowledge relevant to the field of nephrology.

Investigative techniques, selection and interpretation of results

Pathogenesis of renal diseases & Renal histopathology.

Diseases of the urinary tract (glomerular diseases, urinary tract infection, tubulointerstitial

Diseases, inherited diseases, toxic nephropathies, systemic diseases with renal involvement,

Renal stone disease, urinary tract obstruction, Vascular diseases of kidney, hypertension,

neoplasia etc)

Renal failure (diagnosis & medical management )

Principles and practice of dialysis, fluid, electrolyte & acid-base balance

Renal transplantation

Recent advances in nephrology

Biostatistics & clinical epidemiology, research methodology)

Preventive nephrology.

Skills : 1) Haemodialysis, Peritoneal dialysis, CAPD, Continuous renal replacement therapy,

Plasmapheresis, Vascular access, Native and graft kidney biopsies.

2)Communication

3)Education/training

4)Self directed learning

5)Research

## 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 learning 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) Clinicopathological 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, symposia, 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. Inter-departmental meetings/discussions of interesting cases
7. 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.

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

11) Candidates should be involved in departmental research activities. It is desirable to have at least two papers in peer reviewed journals.

### 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 nephrology department and the allied departments to ensure that the students achieve these skills during their peripheral postings.

### **AFFECTIVE DOMAIN**

Development of attitude is a very important part of surgical training. It would be the constant endeavor 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.

### **Organisation of course**

i) Admission: shall be through a competitive written examination of the objective variety conducted by state entrance board.

ii) Number of students: Each year students will be enrolled maintaining a Teacher/students ratio of 1:1

iii) Duration of course shall be of 3 years after completion of MD or equivalent degree. A minimum of 80% attendance and achievement of satisfactory standards in both theoretical and clinical nephrology would be mandatory before being sent up for the University examination.

iv) 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.

v) Rotation:

During the training period. The resident would be required to rotate through clinical nephrology, dialysis, transplant divisions. In

addition, he/she will spend some time in rotations through allied specialities (pathology, urology, radiology, laboratory medicine etc.) Extramural rotations or elective rotations for a maximum period of 3 months will be possible during the 3<sup>rd</sup> year of training.

## 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.

### **Procedure of formative evaluation.**

**Formative evaluation will be carried out over 4 activities of the P.G. resident.**

- 1) Ward work. This will be done by the consultants in the unit concerned at intervals of 6 months.
- 2) Case presentation
- 3) P.G. Lecture
- 4) Journal club
- 5) Theory paper (SAQs ) once a year
- 6) General assessment of affective function attitude by medical & paramedical staff.

## **SUMMATIVE ASSESSMENT**

(Final certifying examination)

Eligibility:      a) 80% attendance  
                      b) Satisfactory internal assessment  
                      c) Two Publications

Summative assessment consists of two parts:

Final examination consisting of 4 papers.



**Annexure II :**

**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            Average           Above           Very Good  
                                                       Avg.

Score : (                    )

Signature :

**Proformas for Internal Evaluation**

**Evaluation form for Postgraduates  
Postgraduate Seminar**

Number of seminars presented -

Name :

Date :

Signature :

1. Presentation
2. Completeness of preparation
3. Cogency of presentation
4. Use of audiovisual aids
5. Understanding of subject
6. Ability to answer questions
7. Time scheduling
8. Consulted all relevant literature
9. Overall performance
- 10)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  
Clinical Meeting**

**Total number of cases presented**

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 sings 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.                           Avg.

Score : (                   ) )

Signature

## Proformas for Internal Evaluation

### Evaluation form for Postgraduates Journal Club

Total Journal clubs presented -

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
- 3) Posting in Nephrology
  - 1) Clinical Nephrology
  - 2) Dialysis
  - 3) Transplantation
  - 4) OPD consultation  
Critical care etc
- 4) Working schedule
- 5) Teaching programme

### 6) Journal club

Date	Article	Name of Journal Year vol-	Assessment by faculty Score / grading(1-5 ) Signature
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### 7) Seminars

Date	Topic / Subject	Assesment by faculty Signature
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### 8) Case presentations:

Date	Case	Teacher's signature Assessment score
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**9) C P C**

Date	Case discussed	Assessment & Signature
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**10) Vascular Access ( 50 )**

Date	Name of patient	Type	Complications observed
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**11) Renal biopsies ( 25 )**

Date	Name of patient	Indoor No	Indication	Discussion interpretation Complications observe
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**12) Haemodialysis (20)**

Started, stopped & monitored

Date	Name of patient	Indications	Complications/observed
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**13) Peritoneal Dialysis**

IPD, CAPD

Date	Name of patient	Indoor No	Complications/observed
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**14) Continuous Renal Replacement Therapy**

Date	Name of patient	Indoor No	Indication Type	Complications
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**15) Renal Transplant evaluated, managed and followed up**

Date	Name of patient	Indoor No	Type R D	Complications
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**16) Teaching activity**

Date	Topic	Class
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**17) Participation in Research Activity**

Name of project	Duration
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**18) Conferences / Workshop attended paper presentation / Publications**

## **Suggested Reading**

### **Text Books:**

- 1) Oxford Text book of Clinical Nephrology- Davison, 3<sup>rd</sup> edition  
Oxford publication
- 2) Diseases of the kidney and urinary tract Robert W. Schrier  
Seventh Edition, LWW publication
- 3) The Kidney, Brenner and Rector Seventh edition, W.B. Saunders
- 4) Comprehensive Clinical Nephrology Johnson and Feehally, Mosby
- 5) Acid-Base and Electrolytes disorders Rose D. Burton  
2<sup>nd</sup> Edn, W.B. Saunders
- 6) Transplant  
Kidney transplantation  
Peter Morris----- 5th Edn  
Hand book of Kidney Transplantation  
Danovitch 4<sup>th</sup> Edn
- 7) Dialysis:
  - 1) Hand book of dialysis  
Daugirdas 4th edition
  - 2) Renal replacement therapy Drecker 2<sup>nd</sup> Edn

### **Journals:**

- 1) Kidney International
- 2) American Journal of Kidney diseases
- 3) Journal of American Society Of Nephrology
- 4) Nephrology Dialysis and Transplantation
- 5) Seminars in Dialysis
- 6) Clinical Transplantation
- 7) Transplant proceedings
- 8) New England Journal of Medicine
- 9) Journal of Indian Society of Nephrology

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## MGM University of Health Sciences

### EXAMINATION SYSTEM FOR DM NEPHROLOGY

Written examination: There will be 4 papers; each of 3 hours duration carrying 100 marks each. Each paper shall consist of ten short notes of 10 marks each. (Total marks 400)

- Paper I : Basic Sciences as applicable to Nephrology
- Paper II : Clinical Nephrology including Dialysis
- Paper III : Clinical Nephrology including Transplantation
- Paper IV : Recent advances in Nephrology

Clinical examination: There would be four examiners. These would include two internal (one head of department and the other by rotation) and two external examiners. There would be two short and one long clinical case. Candidate would also be assessed on histopathology slides, radiological investigations and 2 oral viva-voce.

Long case-100 marks

Short case 1-50 marks

Short case 2-50 Marks

Histopathology, Radiology and 2 viva each 50 marks- 200 marks

Total -400 marks

The candidate must pass separately in theory (pass percentage – 40 %), practical (pass percentage – 50 %) and in aggregate of the two (pass percentage – 50%).



# MGM INSTITUTE OF HEALTH SCIENCES, NAVI MUMBAI

## MARKLIST FOR PRACTICAL AND VIVA-VOCE EXAMINATION

EXAM CENTRE: \_\_\_\_\_ COURSE / EXAM : PG -

EXAMINATION FOR: D.M. NEPHROLOGY DATE OF EXAMINATION: \_\_\_\_\_

Seat No	1				2				Practical Total 400 Marks (1+2)
	CLINICAL CASES				VIVA-VOCE				
	Long Case 1	Short Case 1	Short Case 2	TOAL	Histopathology	Radiology	VIVA I	VIVA II	
100	50	50	50	200	50	50	50	50	200

NAME OF EXAMINER	COLLEGE	SIGNATURE WITH DATE
1.		
2.		
3.		
4.		

**Resolution passed in BOM – 48/2017, dated 24/01/2017**

**Item No. 5.10: BOS (Superspeciality) dated 16.09.2016**

- d) **Superspeciality residents should be deputed for a period of three months in other Institutions for training**

**Resolution No. 5.10(d):** Superspeciality residents can be deputed in hospitals under MGMIHS for additional training if needed for skill enhancement.

**Resolution No. 3.9.2 of BOM-52/2018:** Resolved to accept the following in all Superspeciality University Theory examinations, with effect from batch appearing in University August 2018 examination onwards:

- Paper – I (100 marks) :10 short notes out of 11 (10 marks each)
- Paper – II (100 marks) :10 short notes out of 11 (10 marks each)
- Paper – III (100 marks) :10 short notes out of 11 (10 marks each)
- The existing pattern for paper IV to be followed.

**Resolution No. 3.9.3 of BOM-52/2018:** Resolved to have following pattern in all Superspeciality University Practical examinations, with effect from batch appearing in University August 2018 examination onwards, while keeping the remaining pattern same:

Long case : 1X100 =100 marks

Short case : 4X25 = 100 marks

**Resolution No. 4.5.4.2 of BOM-55/2018:** Resolved to have 10 short notes out of 11 (10 marks each) in all the papers in university examination for PG courses including superspeciality. To be implemented from batch appearing in April/May 2019 examination onwards for MD/MS/Diploma and August/September 2019 examination onwards for superspeciality.

**Resolution No. 4.13 of BOM-55/2018: Resolved as follows:-**

- (i) Slow learners must be re-designated as potential learners.
- (ii) Students scoring less than 35% marks in a particular subjects/course in the 1<sup>st</sup> formative exam are to be listed as potential learners. These learners must be constantly encouraged to perform better with the help of various remedial measures.
- (iii) Students scoring more than 75% marks in a particular subjects/course in the 1<sup>st</sup> formative exam are to be listed as advanced learners. These learners must be constantly encouraged to participate in various scholarly activities.



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