



अखिल भारतीय आयुर्विज्ञान संस्थान, नागपुर

ALL INDIA INSTITUTE OF MEDICAL SCIENCES, NAGPUR

Plot No: 2, Sector - 20, MIHAN, Nagpur - 441 108.

Department of Ophthalmology



Department details for starting Postgraduate (MD Ophthalmology) program

1. **Name of Department:** Ophthalmology
2. **Intake capacity:** 2 Seats (1 in January, 1 in July)
3. **Number of approved PG teachers** (as approved by AIIMS Nagpur): 1 (eligible for 3 students)
4. **Infrastructure:** Adequate space, resources, man-power, facilities (**Table 1**)
5. **Instruments & Equipments:** Adequate for Post-graduate training (List attached: **Annexure 1**)
6. **Availability of data resources:** Adequate (**Table 3**)
7. **Clinical Material:** Adequate in terms of patients managed/ community activities etc. (**Table 2**)
8. **PG Curriculum:** Attached: **Annexure 2**
9. **Format for PG Logbook:** Attached: **Annexure 3**

Annexure 1

List of Equipment/ Instruments available in Ophthalmology Department

S.No	Name of Equipment/Instrument	Teaching Objective
Vision and Refractive Procedures related		
1.	Refractive Chair Units	Patient positioning & General Evaluation
2.	Projector-type Snellen's charts	Distance vision
3.	Colour Vision Chart	Assessment of colour vision
4.	Near vision box	Assessment of near vision
5.	LED Vision Chart	Visual Acuity and Amblyopia Assessment
6.	Retinoscope	Assessment of different type of refractive error
7.	Autorefractometer with Keratometer	Keratometry Corneal thickness and Refraction
8.	Lens set with Trial frame	For prescription of glasses
9.	Consumables: Cycloplegic topical drugs	Assessment of refraction in Children
Anterior Segment (overall) and Cataract		
10.	Slit Lamps with side-viewing scopes	Detailed Anterior segment evaluation
11.	Photo Slit Lamp Imaging	Clinical Imaging and evaluation
12.	Ultrasound imaging A+B Scan	Ultrasound imaging & ocular quantitative assessment / IOL power calculation
13.	Optical Biometer (in process)	IOL Power calculation
Cornea and Dry Eye		
14.	Keratometer	Assessment of corneal curvature diagnostic tool for Ant segment evaluation
15.	Pachymeter (Optical)	Assessment of corneal thickness
16.	Consumables:	

	Schirmer and Fluorecein strips	Diagnosis of dry eye
	Topical anaesthetics and other eye drops/ointments,	Diagnostic and therapeutic use
	Scraping: blades, slides, media	Surgical and diagnostic use
17.	Accessories: Clock with seconds' hand	Schirmer's test, TBUT
Oculoplasty and Extra-ocular trauma		
18.	Instruments to manage: trichiasis/ stye/ chalazion	Perform minor OPD procedure
19.	Syringing instruments	Perform minor OPD procedure
20.	Probing instruments	Perform minor OPD procedure
21.	Consumables:	
	Suturing preparedness: suture materials, needles, anaesthetics	Perform minor OPD/OT procedure
	Wound cleaning: solutions	
	Wound dressing: pads, gauze, cotton, plaster	Perform minor OPD/OT procedure
Glaucoma		
22.	Optical Coherence tomography	Optic disc Imaging & Prognostication
23.	Non-Contact Tonometer	Intra ocular pressure measurement
24.	Automated Perimeter (in process)	Assessment of Glaucoma and Disc related pathology
25.	Applanation Tonometer	Intraocular pressure measurement
26.	3 mirror Gonioscope	Diagnostic tool for glaucoma: gonioscopy
27.	Consumables: Mannitol, IV line, tubing	Emergency management in Glaucoma
Squint and Paediatric Ophthalmology		
28.	Instruments for examination of paediatric eye	Examination of paediatric eye

29.	Paediatric vision charts, LogMAR charts	Assessment of vision in children
30.	Amblyopia assessment: WFDT, Maddox rod, prisms	Amblyopia / Squint evaluation
31.	Consumables: Atropine, mydriatics	Cycloplegic refraction
Retina		
32.	Optical Coherence tomography	Retina Imaging & Prognostication
33.	Indirect Ophthalmoscope	Peripheral Retina and Optic disc evaluation
34.	Accessories: Scleral depressor, 90D, 20D, 78D lens	Visualize different extents and areas of retina
35.	Direct Ophthalmoscope	Retina and Detailed Optic disc evaluation
36.	Non Mydriatic Fundus Camera (in Procurement Process)	Clinical Imaging and evaluation of Retina/optic nerve
37.	Amsler chart	Documentation of field loss
Procedures and Dressing		
38.	Dressing trolley	Minor OT procedure
39.	Autoclave drums	Minor OT procedure
40.	Instrument trays	Minor OT procedure
41.	Ophthalmic examination and extra-ocular instruments	Diagnostic tools
42.	Consumables: suturing/ dressing/ cleaning	Minor OT procedure
Operative		
43.	IOLs: Rate Contracted	IOL implantation in Cataract Surgery
44.	OT Consumables: Rate contracted	
45.	OT Fogger and cleaning solutions	OT fumigation/ Sterility maintenance
46.	Electrocautery	Bleeding control during surgeries

47.	Eye Surgical Simulator (in Procurement Process)	Anterior and Posterior segment Surgical training and Expertise
48.	Cataract Surgical Sets	To Perform Cataract and other intra ocular surgeries
49.	DCR Sets	To Perform DCR/DCT and other Extra ocular surgeries
50.	Surgeon wearables: OT dress, slippers	Teaching OT protocol/ hygiene
51.	Surgeon Consumables: caps, masks, gloves, shields	OT protocol and maintaining safety and sterility
52.	Phaco-emulsification Machine (In Procurement Process)	To Perform Cataract surgery
53.	Zoom Ophthalmic Microscope (In Process)	To Perform Cataract and other Intraocular procedure
Other Medical and General Equipment/ Assets		
54.	BP apparatus	Perform Basic OPD investigation/procedure
55.	Weighing machine	Perform Basic OPD investigation/procedure
56.	Fully equipped crash cart	To deal with emergency condition
57.	Pulse-oximeters	Perform Basic OPD investigation/procedure
58.	Thermometers	Perform Basic OPD investigation/procedure
59.	Oxygen mask/ nebuliser/ Ambu bag and ETT with emergency drugs	To deal with emergency condition
60.	First aid kit	First Aid Management
61.	Wheel-chairs	Patients' Ambulation

62.	Stretcher	Patients' Ambulation
63.	Patient examination couch	General Examination
64.	Adjustable patient stools	Patients positioning and General Examination

Annexure 2

Proposed PG Curriculum for MD Ophthalmology

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1. GOAL

The goal of the MD course in Ophthalmology is to produce a competent Ophthalmologist who is an astute clinician, a skilled surgeon, an ethical professional, a keen researcher and a lifelong learner in addition to having good organizational and communication skills to perform his/her duties in the local community, as well as in national and international settings as a leader, team member, counselor, educator and scientist.

2. PROGRAM OUTCOMES

The clinical post graduate MD training program in Ophthalmology is intended at developing in a student a blend of qualities: those of a clinical specialist, a skilled surgeon, a teacher and a researcher. This program has been organized so that a post graduate student should possess the following qualities, knowledge and skills:

- a. The student ought to have the **basic knowledge** of structure (anatomy), function (physiology) and development (embryology) of the human body as related to Ophthalmology, of the factors which may disturb these mechanisms (pathophysiology) and the disorders of structure and function which may result thereafter (pathology and Clinical Ophthalmology).
- b. The student should be able to examine, manage and deal with most day-to-day/ common ocular problems independently. Moreover, the student should recognize his limitations in **clinical knowledge** and be able to judge the need/ optimum time to seek further help.
- c. The student should be conversant with the **epidemiology** related to ocular disease and the environmental effects on not just general and but especially on ocular health.
- d. The student should be able to apply and then counsel, teach or disseminate knowledge of the **preventive methods** along with the curative and rehabilitative measures so as to comprehensively manage the disease.
- e. The student should be familiar with common rural versus urban eye problems and also be competent to deal with them effectively.

- f. The student should be aware of the working and components of Mobile Ophthalmic Units as well as their role in **National programs** related to blindness and visual impairment.
- g. The student should be familiar with the newer/ **current advances** in Ophthalmic Sciences and should be motivated enough to update his skill-set from time to time so as to incorporate these advances into his/ her practice.
- h. The student should be able to conceptualize, plan as well as execute educational programs in Ophthalmology in alliance with senior colleagues and be in touch with the modern methods of **medical education** technology in terms of teaching and evaluation.
- i. The student should be able to identify a question/ problem for **research**, plan a rational approach to its resolution, implement it and have the ability to critically evaluate his/her study in the view of existing knowledge.
- j. The student should reach conclusions by logical deduction by assessing evidence both in terms of its validity, reliability and relevance as well as by the use of relevant **statistical** methods.
- k. The student should have basic knowledge of **medico-legal aspects** of medicine especially in relation to Ophthalmology.
- l. The student should be familiar with empathetic patient **counseling** and appropriate consent taking.

2.1 SUBJECT-SPECIFIC COMPETENCIES

A post graduate student upon successfully qualifying in the MD (Ophthalmology) examination should:

- a) Provide to the community, the latest quality of 'standard of care' in ophthalmic diagnosis and therapeutics, both, medical and surgical, at least in the commonest situations encountered at the level of secondary health services.
- b) Be capable of periodically self-assessing his /her performance and self-upgrading by

staying informed about latest advances in the field and being able to apply the same in his/her practice.

- c) Be conscious of her/his limitations to the application of his/ her services in situations that call for referral to higher centers or more qualified/ experienced individuals.
- d) Apply research and epidemiological methods through his/her routine practice. The post graduate student should be able to present, write or publish research done by him/her.
- e) Establish his/her role as an individual/group in the fulfillment of national objectives with regard to prevention and treatment of blindness.
- f) Empathetically and effectively communicate with patients or relatives with the view to educating them sufficiently and give them the full advantage of an informed consent thus making them an active participant in their treatment and hence, ensuring compliance.

2.2 DOMAIN-WISE COMPETENCIES:

A. Cognitive domain

1. Basic Medical Sciences:

- Achieve understanding of the structure, development and function of the eye and its parts in health and disease.
- Achieve understanding and application of knowledge of the structure and function of the parts of Central and autonomous Nervous System and other systems of the body which influence or control the structure and function of the eye.
- Achieve understanding of and develop proficiency in performing common laboratory procedures useful in diagnosis and research in Ophthalmology.

2. Clinical Ophthalmology:

The PG student shall be given adequate opportunity to work on the basis of graded

responsibilities in outpatients, inpatient and operation theatres on a rational basis in the clinical sections from the day of entry to the completion of the training program.

They should be able to:

- Attain a scientific and rational approach to **diagnose** ophthalmic cases.
- Develop inquisitiveness and acquire understanding leading to **investigate** a patient to arrive at the cause and estimate the effect of disease.
- To competently **manage** and treat all types of ophthalmic cases.
- To competently **operate**, handle and execute safely all routine surgical procedures for lens, glaucoma, lid, sac, adnexae, retina and muscle anomalies.
- To competently deal with all ophthalmic medical and surgical **emergencies**.
- To be conversant with **micro-surgery** and special surgical techniques.
- To demonstrate knowledge of the **pharmacological** (including ADRs and interactions) aspects of drugs used in ophthalmic practice and those commonly used in general diseases affecting the eyes.

3. Refraction:

- Acquire competence in diagnosis, classification and assessment of refractive errors and prescription of glasses for all types of refraction problems.
- Acquire basic knowledge of manufacture, fitting, individualizing and characteristics of glasses and ability of judging the accuracy and defects of the dispensed glasses.

4. Ophthalmic super-specialties:

A PG student will be given an opportunity to work on a rotational basis in various special clinics of sub-specialties of Ophthalmology. The student should be able to:

- Examine, diagnose and demonstrate understanding of management of the problems of
 - **Neuro-ophthalmology** and refer appropriate cases to the neurologist and

neuro-surgeon.

- Complicated problems in the **specialized sub-fields** of
 - (a) lens,
 - (b) glaucoma,
 - (c) cornea,
 - (d) retina,
 - (e) pediatric ophthalmology,
 - (f) oculoplasty,
 - (g) uvea, trauma and infections,
 - (l) refractive surgery
 - (m) genetic problems in Ophthalmology.
- **Aids and Prosthetics:** To demonstrate understanding of the prescription/ dispensing, manufacture and fitting of contact lenses, low vision aids and ocular prosthesis.

5. Ophthalmic pathological/microbiological/biochemical sciences

- Be able to provide adequate and appropriate samples and interpret the diagnosis in correlation with the clinical data from the routine reports received in such cases.

6. Community Ophthalmology

- Be able to help in the conduct as per specified methodology
 - Eye camps
 - Community and
 - School surveys
 - Training and guidance in Organizations for blind

7. Research :

- Identify a research problem.
- Understand the objectives: what is expected to be achieved in the end?
- Plan a rational and statistically valid approach.
- Design the appropriate methodology and execute most technical procedures

required for the study.

- Accurately and objectively record data and arrive at results.
- Analyze the data with appropriate statistical methods.
- Interpret the observations as per existing knowledge and
 - justify/ highlight how the study has advanced existing knowledge and
 - where its shortcomings lie or
 - where there is scope for more research.
- Write a thesis in accordance with the prescribed format.
- Write at least one scientific paper as expected of International Standards from the material of this thesis.

B. Affective Domain:

1. Should be able to function as a useful part of a **team**, develop an attitude of collaboration with colleagues, and interact with the patient and other clinicians or colleagues to provide the best possible diagnosis or opinion.
2. Without exception, 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 confidentiality, information and second opinion.
3. Cultivate **communication skills**: written, to word reports and professional opinion as well as spoken, to interact with patients, relatives, peers and paramedical staff, as also for effective teaching.

C. Psychomotor domain

At the end of the course, the student should acquire following clinical skills:

ESSENTIAL DIAGNOSTIC SKILLS:

- I. **Examination techniques along with interpretation**
 1. **Slit lamp Examination**

- i. Diffuse examination
- ii. Focal examination
- iii. Retroillumination –
direct and indirect
- iv. Sclerotic scatter
- v. Specular reflection
- vi. Staining modalities
and interpretation
- vii. Corneal drawings
(colour coded)

2. Fundus evaluation

- Direct/Indirect ophthalmoscopy
- Fundus drawings (colour-coded)
- 3-mirror examination of the Fundus
- 78-D/90-D/60-D examination
- Amsler’s charting

II. Basic investigations along with their interpretation

1. Tonometry

Tonometry - Applanation/Indentation/Non-contact

2. Gonioscopy

Gonioscopy grading of the anterior chamber angle

3. Tear/ Lacrimal function tests

- i. Staining- fluorescein and Rose Bengal
- ii. Schirmer test/tear film break up time
- iii. Syringing
- iv. Probing
- v. Dacryocystography

4. Corneal

- Corneal scraping and cauterization
- Smear preparation and interpretation (Gram’s stain /KOH)
- Media inoculation
- Keratometry - performance and interpretation
- Pachymetry

- Corneal topography/ aberrometry (optional)

5. Colour Vision evaluation

- Ishihara pseudo-isochromatic plates
- Farnsworth Munsell, if available

6. Refraction

- Retinoscopy- Streak/ Priestley Smith
- Use of Jackson's cross-cylinder/ Duochrome test
- Subjective and objective refraction/ focimetry
- Prescription of glasses

7. Diagnosis and assessment of Squint

- | | | | |
|------|---|------|--|
| i. | Ocular position and motility examination | | Maddox rod |
| ii. | Synoptophore usage | vi. | Amblyopia/ supression diagnosis and treatment |
| iii. | Lees screen usage | vii. | Assessment of convergence, accommodation, stereopsis |
| iv. | Diplopia charting | | |
| v. | Assessment of strabismus - cover tests/prisms bars/ | | |

8. Exophthalmometry

Usage of Hertel's exophthalmometer - proptosis measurement

9. Contact lenses

- Fitting and assessment of RGP and soft lenses
- Subjective verification of over refraction
- Complications arising of contact lens use
- Educating the patient regarding CL usage and imparting relevant knowledge of the complications arising thereon

10. Low Vision Aids

- Knowledge of basic optical devices available and relative advantages and disadvantages of each.

- The basics of fitting with knowledge of availability & cost

III. **Investigative Modalities:** The post graduate must be well versed with the interpretation of the following investigative modalities although the student may or may not perform it individually:

1. Fundus photography
2. Fluorescein angiography
3. Ophthalmic ultrasound A-scan/B scan
4. Automated perimetry for glaucoma and neurological lesions
5. Radiological tests - X rays –
 - Antero posterior/ Lateral view PNS (Water’s view) / Optic canal views
 - Localization of intra-ocular and intra-orbital FBs
 - Interpretations of -USG/ CT/ MRI Scans
6. OCT and UBM
7. ERG, EOG, and VEP

IV. **Minor surgical procedures – Must know and perform independently**

- | | |
|--|--------------------------------------|
| • Conjunctival and corneal foreign body removal on the slit lamp | corneoscleral |
| • Chalazion incision and curettage | • Tarsorrhaphy |
| • Pterygium excision | • Subconjunctival injection |
| • Biopsy of small lid tumors | • Retrobulbar, parabulbar anesthesia |
| • Suture removal- skin/conjunctival/corneal/ | • Artificial eye fitting |

V. **Surgical procedures**

1. **Must know and can perform independently**

- **Ocular anaesthesia:**
 - Retrobulbar anesthesia
 - Peribulbar anesthesia

- Facial blocks- O'Brein / Atkinson/Van lint and modifications
- Frontal blocks
- Infra orbital blocks
- Blocks for sac surgery

2. Must be able to independently perform and deal with complications arising from the following surgeries :

- **Lid Surgery -**

Tarsorrhaphy
Ectropion and entropion
Lid repair following trauma
Epilation

- **Destructive procedures**

Evisceration with or without implant
Enucleation with or without implant

- **Sac surgery**

- Dacryocystectomy
- Dacryocystorhinostomy
- Probing for congenital obstruction of nasolacrimal duct

- **Strabismus surgery**

Recession and resection procedures on the horizontal recti.

- **Orbit surgery**

Incision and drainage via anterior orbitotomy for abscess

- **Cyclocryotherapy/Cyclophotocoagulation**

3. PG Students should be well conversant with use of operating microscope and must be able to perform the surgeries listed below competently under the same:

- **Cataract surgery**

- Standard ECCE (extracapsular cataract extraction; first year) with

or without IOL implantation

- ii. Small incision ECCE with or without IOL implantation and/or Phacoemulsification with PC IOL implantation
- iii. Intracapsular cataract extraction (second year)
- iv. Cataract with Phacoemulsification (third year)
- v. Secondary AC or PC IOL implantation

- **Vitreotomy/Scleral buckling**

- Intra-vitreous and intra-cameral (anterior chamber) injection techniques and doses of drugs for the same
- Needs to know the basis of open sky vitrectomy (anterior segment) as well as management of cataract surgery complications.
- Assist vitrectomy and scleral buckling procedures

- **Ocular surface procedures**

- Pterygium excision with modifications
- Conjunctival cyst excision/foreign body removal
- Corneal foreign body removal
- Conjunctival flap/ peritomy

- **Glaucoma**

- Trabeculectomy

- **Corneal**

- Repair of corneo - scleral perforations
- Corneal suture removal
- Application of glue and bandage contact lens

4. Should have performed/assisted the following microscopic surgeries

- i. **Keratoplasty**
Therapeutic and optical
- ii **Glaucoma surgery**

- Pharmacological modulation of trabeculectomy
- Trabeculotomy
- Goniotomy
- Glaucoma valve implant surgery

5. Desirable to be able to perform following laser procedures

- Yag Capsulotomy
- Laser iridotomy
- Focal and panretinal photocoagulation

6. Should have assisted/knowledge of Keratorefractive procedures

Operations/ Procedures:

The PG shall be provided with an opportunity to perform operations in a graded manner, both extra-ocular and intra-ocular, with the assistance of a simulator, followed by the senior post graduate students and/or under the direct supervision of a faculty member. The student shall be provided with an opportunity to learn special and complex operations by assisting the senior post graduate student or the faculty in operations of cases of the specialty and be responsible for the post-operative care of these cases.

Year-wise List of Procedures to be taught are suggested as under:

1ST YEAR:

Procedures to observe:

Fundus Examination: Direct, Indirect	Automated Perimetry	Laser Photocoagulation
Slit lamp Examination including +78 D / +90D	Hess Screen	Double Frequency Nd:YAG
Fundus Exam.	Orthoptics	Nd:YAG Capsulotomy, Iridotomy
Gonioscopy	Pleoptics	
	Fluorescein Angiography	

Procedures to be performed:

Fluorescein staining of the Cornea	Fundus Examination - Direct, Indirect	Maddox rod test
Seidel's Test	Slit Lamp Examination including - +78 D / +90D Fundus Exam.	Orthoptic exercises
Syringing of Lacrimal Sac.		Amsler grid
Intraocular Pressure Measurement - Schiötz'/Applanation	A-Scan Biometry	Color Vision testing
Electrolysis	Keratometry	Refraction
Foreign Body Removal - Conjunctiva, Fornix, Cornea	Ocular Ultrasonography (U.S.G.)	Lensometer
Sub-conjunctival injections	Worth four-dot test	Auto Refractometer
	Synoptophore, including Binocular vision grading	Amsler Grid

Surgeries to be observed:

- 1) Cataract with IOL surgery - ICCE, Conventional ECCE, SICS, Phaco.
- 2) Glaucoma surgery - PI, Trabeculectomy
- 3) Eye Lids- Ptosis, tumours, Entropion, Ectropion
- 4) Eye Ball- Enucleation/Evisceration, Orbital implant

- 5) Orbit - Orbital abscess drainage
- 6) Squint - Squint Surgery

Surgeries to be assisted:

- 1) Assistantship in OR
- 2) Cataract, IOL Surgery - ICCE, ECCE, SICS, Phaco
- 3) Lacrimal Sac Surgery - DCT, DCR, Probing
- 4) Injuries - Intraocular foreign body- Localization, Conjunctival, Corneoscleral repairs
- 5) Retrieval of Corneal donor tissue from Cadaver

Surgeries to be performed:

- 1) Conjunctiva - Conjunctiva tear repair, Pterygium
- 2) Cornea - Corneal Scraping, KOH preparation, Cauterization of corneal ulcer,
-Suture removal
- 3) Lid Surgery - Entropion, ectropion, tarsorrhaphy, lid repair,
-Lid abscess drainage, Chalazion, Stye
- 4) Lacrimal Sac - Lacrimal abscess drainage

2ND YEAR:

Procedures to observe:

Double Frequency Nd:YAG laser photocoagulation	Knowledge of the various
Nd:YAG Capsulotomy, Iridotomy	- X-rays, CT Scan, MRI,
Contact lens prescription & fitting Bandage contact lens	- Pathological specimens, Histopathological slides
	- Culture plates
	- Ophthalmic Instruments

Procedures to be performed:

Electrolysis	Fundus Exam. Automated Perimetry	Synoptophore including Binocular vision grades Maddox rod test
Foreign Body Removal		
- Cornea	A-Scan Biometry, Keratometry IOL Power calculation	Maddox wing test
- Conjunctival		Orthoptic exercises
- Fornix	Ocular Ultrasonography (U.S.G.)	Amsler grid
Fundus Examination	Gonioscopy Hess screen	Color Vision testing
- Direct		
- Indirect	Worth four-dot test	Lensometer/ Refraction
Slit Lamp Examination including + 90 D / + 78 D & Goldman Contact Lens	Diplopia charting Fluorescein Angiography	Auto Refractometer Wet Lab

Surgeries to be assisted:

- 1) Retrieval of Corneal Donor Tissue from Cadaveric Eye
- 2) Cataract with IOL surgery - SICS, Phaco
- 3) Glaucoma surgery - PI, Trabeculectomy
- 4) Squint - Squint Surgery
- 5) Lids - Ptosis, Tumors

Surgeries to be performed:

- 1) Subtenon's Injection & Pterygium Surgery
- 2) Eye Ball - Enucleation / Evisceration, Orbital Implants
- 3) Injuries - Intraocular foreign body Localization, Corneoscleral Repairs
- 4) Cataract IOL Surgery - ICCE, ECCE
- 5) Lacrimal Sac Surgery - DCT, DCR
- 6) Glaucoma surgery - PI and Trabeculectomy

3RD YEAR:

Procedures to be performed:

Electrolysis	Ocular Ultrasonography (U.S.G.): Posterior seg and orbit evaluation	Orthoptic exercises
Foreign Body Removal		Amsler grid
- Cornea	Gonioscopy	Color Vision testing
- Conjunctival	Hess screen & Interpretations	Lensometer/ Refraction
- Fornix		Auto Refractometer
Fundus Examination	Worth four-dot test & Interpretations	Wet Lab
- Direct	Diplopia charting & Interpretations	Nd:YAG Capsulotomy,
- Indirect	Fluorescein Angiography & Interpretations	Iridotomy
Slit Lamp Examination including + 90 D / + 78 D & Goldman Contact Lens Fundus Exam.	Synoptophore including Binocular vision grades	Contact lens
Automated Perimetry and interpretations	Maddox rod test	Bandage contact lens
A-Scan Biometry, Keratometry IOL Power calculation	Maddox wing test	Referrals

Surgeries to be performed:

- | | |
|-------------------------|---|
| 1) Cataract IOL Surgery | - ECCE & SICS |
| 2) Glaucoma surgery | - Trabeculectomy |
| 3) Lacrimal Sac Surgery | - DCT, DCR |
| 4) Injuries | - Intraocular foreign body Localization + removal |
| | - Corneoscleral Repairs |
| 5) Eye Ball | - Enucleation / Evisceration, Orbital Implants |
| 6) Eye Lids | - Ptosis, Entropion, Ectropion |

3. Syllabus

3.1 Basic Sciences

1. Orbital and ocular anatomy
 - i. Gross anatomy
 - ii. Histology
 - iii. Embryology
2. Ocular Physiology
3. Ocular Pathology
4. Ocular Biochemistry
General biochemistry, biochemistry applicable to ocular function
5. Ocular Microbiology
General Microbiology, specific microbiology applicable to the eye
6. Immunology with particular reference to ocular immunology
7. Genetics in ophthalmology
8. Community Eye Health

3.2 Optics

- a. Basic physics of optics
- b. Applied ophthalmic optics
- c. Applied optics including optical devices
- d. Disorders of Refraction

3.3 Clinical Ophthalmology

- i. Disorders of the Lids
- ii. Disorders of the Lacrimal gland
- iii. Disorders of the Conjunctiva
- iv. Disorders of the Sclera
- v. Disorders of the Cornea
- vi. Disorders of the Uveal Tract
- vii. Disorders of the Lens
- viii. Disorders of the Retina
- ix. Disorders of the Optic Nerve and Visual Pathway
- x. Disorders of the Orbit
- xi. Glaucoma
- xii. Neuro-ophthalmology
- xiii. Paediatric ophthalmology
- xiv. Ocular involvement in systemic disease
- xv. Immune ocular disorders
- xvi. Strabismus and Amblyopia
- xvii. Ocular oncology
- xviii. Ocular trauma
- xix. Ocular Infections

3.4 Recent Advances in Ophthalmology under the following headings:

1. Lasers in Ophthalmology
2. Refractive Surgery
3. Intravitreal injections in Ophthalmology
4. Advances in Vitreous Surgery
5. Retinopathy of prematurity: Latest Recommendations and Guideline for screening and Management
6. Newer modalities in treatment of Dry Eyes
 - Lipiflow/ Role of Immunosuppressant
7. Limbal stem cell deficiency management and autografts, Keratoprosthesis
8. Intraocular lenses : Toric/ Multifocals
9. Diagnostic tools in Ophthalmology
 - Scanning Laser Ophthalmoscopy
 - Laser Interferometry
 - Optical Coherence Tomography
 - Wavefront Analysis
10. Contact Lenses
11. Contracted socket and types of Orbital Implants
12. Newer Technique and Drainage Devices in Glaucoma surgery
13. Newer Drugs in Ophthalmology
14. Lid Surgery

4.0 TEACHING PROGRAM

4.1. General Principles

- Acquisition of practical competencies being the keystone of postgraduate medical education, postgraduate training should be skills-oriented.
- Learning in postgraduate program should be essentially self-directed and primarily emanating from clinical and academic work. The formal sessions are merely meant to supplement this core effort. To this end, theoretical knowledge shall be imparted to the post graduate student through distinct courses of lecture demonstrations, seminars, symposia and inter- and intra-departmental meetings. The students are exposed to recent advances through discussions in journal clubs and participation in CMEs, and symposia.

4.2. Formal Teaching Sessions

In addition to bedside teaching rounds, there will be at least 5 hours of formal teaching per week.

<i>Journal club/ Thesis review</i>	Once a month
<i>Seminar/lecture (Multiple PGs presenting)</i>	Once a week
<i>Case discussion (variety if cases with multiple repetitions)</i>	Once a week
<i>Group Discussion/ Symposium</i>	Once a week
<i>Inter-departmental presentations</i>	Once every term

4.3. Rotations

1. **Out-Patients:** For the first six months of the training program, post graduate students will be attached to a faculty member to be able to pick up methods of history taking and ocular examination in ophthalmic practice. During this period the postgraduate student shall rotate through all the clinical units in the department. The post graduate student will, also be oriented to the common ophthalmic

problems, learn basics of refraction and some minor OT procedures. After 6 months, the clinical post graduate student shall work independently, where he shall receive new and old cases including refractions and prescribes for them. The post graduate students are attached to a senior post graduate student and faculty member whom they can consult in case of difficulty.

2. **Wards:** Each post graduate student shall be allotted beds in the in-patient section depending upon the total bed capacity and the number of the post graduates to provide increasing opportunity to work with increasing responsibility according to seniority. A detailed history and case record is to be maintained by the post graduate student.
3. **Emergency on-call:** All PG students will follow an on-call schedule for ocular emergencies. They will work-up or manage these emergencies including but not limited to ocular trauma and other acute ocular conditions, initially with senior PGs or SRs and later independently.
4. **Operations/ Procedures:** The PG shall be provided with an opportunity to perform operations in a graded manner, both extra-ocular and intra-ocular, as per the following protocol:
 - a. **Wet-lab exposure:** goat eyes procured/ human eyes unfit for transplantation
 - b. **Skills Lab:** the use of a simulator for intra-ocular surgery/ suturing etc,
 - c. **OT:**
 - Initially by **assisting** senior post graduate students and
 - Thereafter, actually **performing a few steps** under the direct **supervision** of a faculty member before
 - Carrying out the **entire procedure**, first under supervision and then independently.

5. Rotations: Specialty clinics

The student shall rotate in the following 2 month long subspecialty clinics postings on allotted Specialty Clinic designated days starting from the 2nd half of their first semester viz. April/ October depending upon whether from the Jan/ July admission batch respectively:

- | | |
|--|--|
| a. Anterior segment and cataract | e. Retina and Uvea |
| b. Glaucoma | f. Cornea, Contact lens and low vision |
| c. Oculoplastics | g. Neuro-ophthalmology |
| d. Paediatric ophthalmology and strabismus | h. Refractive Clinic |

6. Practical activity/ Integration Sessions in other Departments:

- a. **Community Medicine:** The post-graduates shall be either Posted in UHC or RHC or be required to participate in Awareness programs/ surveys at the community level and also attend Camps within the Community.
- b. **Ocular Histopathology & Microbiology:** The post graduate students shall be provided with fully stained slides/ gross specimens/ culture plates of the ocular tissues along with relevant clinical data and discuss the diagnosis and differential diagnosis on the basis of the information provided. They shall also observe/ assist specified lab procedures from time to time.
- c. **In Radiology:** The post-graduate students shall be expected to observe, assist and carry out certain procedures related to Ophthalmic practice in the Radiology Dept and enter these in their log books.

4.4 Other Academic activities

1. **CMEs, Symposia, Conferences:** PG must attend accredited scientific meetings. An MD Ophthalmology student would be required to present at least 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 postgraduate studies so as to make him eligible to appear at the postgraduate degree examination.
2. **Training workshops:** Additional sessions on basic sciences, biostatistics, research methodology, teaching methodology, hospital waste management, health economics, medical ethics and legal issues related to ophthalmology practice will be taken.

Note: These additional sessions shall be organized as an institutional activity for all postgraduates from time to time.

3. **Participation in UG and intern teaching:** In the form of tutorials
4. **E-learning:** Attending and presenting in webinars/ online conferences/ PG educational fora.
5. Maintenance of **log book:** Log books shall be checked and assessed periodically by the faculty members imparting the training.

During the training program, patient safety is of paramount importance; therefore, skills are to be learnt initially on the models in the skills' lab, later to be performed under supervision, followed by performing independently.

5.0 Thesis

5.1. Objectives

By carrying out a research project and presenting his work in the form of thesis, the student will be able to:

- (i) Identify a relevant research question;
- (ii) conduct a critical review of literature;
- (iii) formulate a hypothesis;
- (iv) determine the most suitable study design;
- (v) state the objectives of the study;
- (vi) prepare a study protocol;
- (vii) undertake a study according to the protocol;
- (viii) analyze and interpret research data, and draw conclusions;
- (ix) write a research paper.

5.2. Guidelines

While selecting thesis topics, following should be kept in mind:

- (i) The scope of study should be limited so that it is possible to conduct it within the resources and time available to the student;
- (ii) The emphasis should be on the process of research rather than the results;
- (iii) The research study must be ethically appropriate and must receive IEC sanction;
- (iv) The protocol, interim progress as well as final presentation must be made formally to the entire department;
- (v) Number of students per teacher/thesis guide will vary as per designation;
- (vi) There will be periodic departmental review of the thesis work as per following schedule:

• End of 1st year	Submission of protocol
• During 2nd year	Mid-term presentation
• 6 months prior to examination	Final presentation and submission

Timing of six monthly progress report submission to Academic Section

Report	July Session		January session	
	Period	To be submitted	Period	To be submitted
First	July to December	7th January	January to June	7th July
Second	January to June	7th July	July to December	7th January
Third	July to December	7th January	January to June	7th July
Fourth	January to June	7th July	July to December	7th January
Fifth	July to December	7th January	January to June	7th July
Sixth	January to June	10th June	July to December	10th December

Note: The first five reports will be taken into consideration to decide the eligibility of the student to appear for the Professional Examination.

Synopsis submission and approval:

Process to be completed within six months of admission to MD program as follows:

Activity	July admission	January admission
Selection of topic in consultation with PG Guide	September / October	March / April
Approval by Department PG Committee		
Institute Scientific Committee approval	November / December	May / June
Institute Ethics Committee approval		
Final approval letter by Academics Section	31st December	30th June

The Dissertation will be submitted to Academic Section at least six months prior to the scheduled examination, i.e. by 31st December for June examination and by 30th June for December examination.

6.0 Assessment

6.1. General principles

- The assessment will be valid, objective, and reliable.
- It shall cover cognitive, psychomotor and affective domains.
- Formative (continuing) and summative (final) assessment shall be conducted in theory as well as practicals/clinical. In addition, thesis shall be assessed separately.

6.2. Exam Pattern for MD Ophthalmology

6.2.1 Formative Assessment

(A) Theory[#]:

Schedule	Marks
At end of First year	100 (1 Paper)
At end of Second year	100 (1 Paper)
Pre-professional	400 (4 Papers of 100 marks each)
Total	600 Marks

(B) Practical*:

Schedule	Marks
At end of First year	100
At end of Second year	100
Pre-professional	400 (Practical 300 + Viva 100)
Total	600 Marks

Candidate should secure a minimum of 50% marks in Theory and Practical separately, in order to be eligible to appear for Professional Examination.

#Syllabus for end term Theory assessment:

I year - General ophthalmology, optics and refraction, basic sciences related to Ophthalmology.

II year - Approach to clinical disorders and emergencies.

III year - Whole syllabus.

*Syllabus for end term Practical assessment:

I year – Anterior segment case and Extra-ocular surgeries.

II year – Posterior segment case and Intra-ocular surgeries.

III year – Whole syllabus

6.2.2. Summative Assessment

A	Theory	4 Papers each of 100 Marks = 400 Marks
B	Practical	Practical 300 + Viva 100 = 400 Marks

Final Result

(A) Theory – 400 Marks (Minimum 40% marks in each paper and aggregate of 50% in order to be declared pass)

(B) Practical – 400 Marks

Criteria for Passing: Minimum 50% marks required in Theory & Practical separately, in order to be declared successful at MD Examination.

6.2.2.1. Theory syllabus

Paper 1:	Basic Sciences related to Ophthalmology, Refraction & Optics	100 marks
Paper 2:	Clinical Ophthalmology and Community Ophthalmology	100 marks
Paper 3:	Ophthalmic Surgery and Ophthalmic Pathology	100 marks
Paper 4:	Recent Advances in Ophthalmology and Systemic Diseases in Ophthalmology	100 marks

Paper pattern:

Paper 1, 4: 10 questions of 10 marks each (10 out of 10).

Paper 2, 3: 2 Questions of 25 marks each, 5 questions of 10 marks each (5 out of 5)

6.2.2.2. Practicals

SN	Subject	Type	Marks Distribution
Case Presentations			
1	Clinical Ophthalmology	Long case	100
2	Fundus	Short case (2) 40 marks each	80
3	Anterior Segment	Short case (2) 40 marks each	80
4	Refraction	Short Case/ Observation OSCE (1): 20 marks Optics: OSCE: 20 marks	40
TOTAL			300
Viva Voce			
5	Instruments	Extra-ocular 10 marks Intra-ocular including Cataract 15 marks	25
6	Pathology specimens / Microbiology	Gross specimen 10 marks Histopathology slide 10 marks Culture media 05 marks	25
7	Drugs	Viva voce	20
8	X-rays, USG/OCT/CT/MRI Scans, etc.	Viva voce	15
9	Visual fields and other ophthalmic diagnostic charts	Viva voce	15
TOTAL			100

7.0 Recommended reading

7.1. Reference Books (latest edition)

1. Ophthalmic Surgery: Principles and Techniques. Blackwell Science. Albert DM.
2. Principles and Practice of Ophthalmology. Albert DM, Jakobiec. W B Saunders
3. System of Ophthalmology. Sir Stewart Duke-Elder. Mosby
4. Principles & Practice of Ophthalmology. Gholam A Paymen
5. The Current American Academy of Ophthalmology Basic and Clinical Science Course (13 volumes)
6. Duke Elder's Practice of Refraction. Abrams D. Churchill Livingstone.
7. Text book of Ophthalmology. Yanoff and Duker
8. Retina. Stephen J Ryan:
9. Ophthalmic Ultrasound: Sandra Byrne and Ronald Green.
10. Cornea: Fundamentals, Diagnosis, and Management. Krachmer JH, Mannis MJ, Holland EJ. Mosby Elsevier.
11. Ophthalmology. Yanoff N, Duker JS. Mosby Elsevier.
12. Review of Ophthalmology. Friedman NJ, Kaiser PK, Trattler WB. Elsevier Saunders, Philadelphia.
13. Corneal Transplantation. Vajpayee RB. Jaypee Brothers Medical Publishers (P) Ltd, New Delhi.
14. Fundamentals of Clinical Ophthalmology Series. Coster D. Cornea. Blackwell Publishing Limited.
15. The Contact Lens Manual. A practical guide to fitting. Gasson A, Morris A J. Butterworth Heinemann Elsevier.
16. Steinert's cataract surgery.
17. Shields Text book of glaucoma
18. Becker and Shaffer textbook of Glaucoma
19. Smith and Nozik : Uvea

20. Rootman's diseases of the orbit
21. Eyelid, conjunctival and orbital tumors. An atlas and textbook. Shields JA, Shields CL. Philadelphia: Lippincott Williams & Wilkins.
22. Intraocular tumors. An atlas and textbook. Shields JA, Shields CL.
23. Pediatric Ophthalmology. Taylor and Hoyt: Saunders Ltd.
24. Management of Strabismus and Amblyopia. Pratt-Johnson and Tilson: ThiemeVerlag.
25. Handbook of Pediatric Eye and Systemic disease. Wright, Spiegel and Thompson.
26. Binocular Vision and Ocular Motility. Theory and Management of Strabismus. Von Noorden GK. Mosby.
27. Surgical Management of Strabismus. Helveston:
28. Strabismus: A Decision Making Approach. Von Noorden and Helveston:
29. Thyroid Eye Diseases. Char DR. Williams and Wilkins, Baltimore.
30. A Manual of Systematic Eyelid Surgery. Collin JRO (ed). Churchill Livingstone, Edinburgh.
31. Refractive Surgery. Agarwal A, Agarwal A, Jacob Soosan. Jaypee.
32. LASIK Complications, Prevention and management. Gimbel HV, Penno EEA. Slack Inc.
33. Management of Complications of Refractive Surgery. Alio JL, Azar DT. Springer.
34. Quality of Vision: Essential Optics for the Cataract and Refractive Surgeon. Holladay JT. Slack Inc.
35. Ocular Pharmacology: Havener
36. Anatomy: Wolff 's Anatomy of the Eye and Orbit
37. Physiology: Adler's Physiology of the Eye
38. Textbook of Ophthalmology (2 volumes). Easty DL, Sparrow JM. Oxford Oxford Medical Publications.
39. The Eye. Basic Sciences in Practice. Forrester JV, Dick AD, McMenemy PG, Lee WR. W B Saunders.
40. A Stereoscopic Atlas of Macular Diseases: Diagnosis and Treatment. Gass JDM.
41. Neuroophthalmology. Glaser JS. Lippincott Williams & Wilkins.
42. Neuro-ophthalmology Board Review. Bhajandas FJ. C.B. Slack

43. Neurological Differential Diagnosis. Patten J. Springer
44. Clinical Ophthalmic Pathology. Harry J, Misson G. Butterworth/Heinemann.
45. Inherited Retinal Diseases. A Diagnostic Guide. Jimenez Sierra JM, Ogden TE, Van Boemel GB. Mosby.
46. Clinical Ophthalmology. Kanski JJ. Butterworth/Heinemann.
47. ABC of Resuscitation. Colquhoun, M. C., Evans, T. R., Handley, A. J. BMJ Publishing Group.
48. Walsh and Hoyt's Clinical Neuroophthalmology (5 volumes). Miller NR, Newman NJ, Williams and Wilkins.
49. The human eye. Oyster CW Sinauer Associates. Sunderland. Massachusetts
50. Paediatric Ophthalmology. Taylor D. Blackwell Science.
51. Decision Making in Ophthalmology. Van Heuven WAJ, Zwann J. Mosby.
52. Parsons' Diseases of the eye. Sihota and Tandon.
53. Wills Eye Manual
54. International Council of Ophthalmology Residency Curriculum available at <http://www.icoph.org/>
55. Clinical Optics- A.R Elkington AR. Wiley-Blackwell.
56. Atlas of Clinical Ophthalmology- Paul Hunter. Mosby
57. Moorfields Manual of Ophthalmology. Jackson TL. Mosby
58. Harley's Paediatric Ophthalmology. Leonard B. Nelson. Lippincott Williams and Wilkins

7.2. Reference Journals

1. Indian Journal of Ophthalmology
2. Delhi Journal of Ophthalmology (DJO)
3. DOS times.
4. Current Trends in Ophthalmology
5. American journal of Ophthalmology
6. British Journal of Ophthalmology (BJO)
7. Ophthalmology
8. Cornea
9. JAMA Ophthalmology
10. Survey of Ophthalmology
11. Retina
12. Acta Ophthalmology
13. Eye
14. International Ophthalmology Clinics

Table 1

INFRASTRUCTURE FOR PG COURSES:	
DESIGNATED SPACE:	
I. Designated space/ Infrastructure related to Patient Documentation	
1. Registration	<i>Institute:</i> Reception Counter with Receptionist
	<i>Dept:</i> Counter with Receptionist
2. Patient Screening	<i>Institute:</i> Hospital Entrance for Triage of High-Risk patients
	<i>Dept:</i> Visual Acuity Assessment area
3. Data/ documentation	<i>Dept:</i> File/ Stock book storage area
	<i>Dept:</i> Dedicated Computers
4. Digital services	<i>Institute:</i> HMIS
	<i>Institute :</i> e-vaidya app
II. Dept OPD Related services with Dedicated space:	
1. Ophthalmic Specialties	Refractive services
	Anterior segment and Cornea
	Trauma and Uvea
	Glaucoma services
	Posterior Segment and Uvea
	Headache Centre
2. Cataract Services	Evaluation room
	Biometry, A –scan room
	Pre-op work-up room
	Biochemical/ Microbiology Tests (Phlebotomy room)
3. Imaging and Documentation	Anterior Segment Photo Slit-lamp
	Ultrasound B scan

	Posterior Segment OCT
4. Procedures	Diagnostic Procedure Area
	Therapeutic Procedure Area
III. Infrastructure related to Investigations	
1. Ophthalmic Investigations	Special Investigation Room in OPD
2. Microbiological Tests	Microbiology Dept: fully equipped
3. Blood Tests	Pathology Dept: Fully equipped
	Biochemistry Dept: offers required Tests
4. Radiological tests	Radiology Dept: offers USG/ x-rays, CT/ MRI: setting up currently
5. Physiology	Neuro-physiological tests
IV. OT and Related Infrastructure:	
1. Minor OT	Minor Operation theatre
	Recovery room
	Scrub area
	Instruments
2. Cataract OT	Prep room
	Post-op room
	Scrub Area
V. IPD related space	Ward for admissions of non-cataract patients
INFRASTRUCTURE RELATED TO SERVICES/ FACILITIES	
VI. Community and Preventive / Health education Services Related Infrastructure	Urban Health Centres (association with PSM Dept): Nandanvan
	Rural Health Centre: being acquired in Sept 2020 by Dept of PSM
	IT cell: To disseminate information via webinars/ videos

	QMS system: To spread Awareness through videos in waiting areas
	Departmental Notice board for posters/ awareness articles
VII. Facilities: National Level:	PMJAY Yojana registration done
	MPJAY Yojana Registration done
	Disability Board: Registered with <ul style="list-style-type: none"> • Department of Empowerment of Persons with Disabilities, Ministry of Social Justice & Empowerment, Govt. of India
	Institutional Ethics Committee Registered under <ol style="list-style-type: none"> 1. Dept of Health and Research (Academic studies) 2. DCGI (Clinical Trials)
	Certified PCR centre
VIII. Facilities: Institutional	BMW cell
	Research Cell
	C-MET cell
	Antibiotic stewardship program
	Death and Adverse event Board
	Institutional Medical Journal (in process)
	Central Library
IX. Facilities: Departmental	Dept Library
	Data Resources (see TABLE 3)
INFRASTRUCTURE RELATED TO MANPOWER	
X. Medical	Adequate Consultants
	Adequate Nursing Officers
	Refractionist

	Intensivist on-call
XI. Non-medical	Receptionist
	Multi-tasking Staff
	House-Keeping staff
	Technical assistance on-call
	IT-assistance on-call
	Security staff
INFRASTRUCTURE RELATED TO EQUIPMENT/ INSTRUMENTS/ CONSUMABLES/ FIXED ASSETS	
XII. Equipment/ Instruments/ consumables	See ANNEXURE 1
XIII. Fixed Assets	Adequate furniture: chairs/ tables/ office furniture/ almirahs/ book-cases/ drawers/ waiting-area chairs/ lockers
	Patient related: Height adjustable patient stools/ Couches for patients/ stretcher/ wheelchair/ hospital beds/ dressing trolleys/ OT table

Table 2

CLINICAL MATERIAL:
1. Patients needing a range of Services:
1. Out-patient care (OPD) care: (4000+ OPD patients within first year of starting clinical work) <ul style="list-style-type: none">a. Routine ocular complaints and headacheb. Special clinicsc. Follow-upd. Pre-/ Post-operative
2. In-patient care (IPD)
3. Operative care (OT)
4. Emergency care
5. Systemic correlation (referrals): (1000+ referrals in the first year of starting clinical work: 60% from General Medicine, 20% from orthopedics, 5-10% from Paeds, ENT, Dermatology)
6. Disability certification
7. Fitness/ sickness certification
2. Community Level:
1. Awareness drives
2. Outreach services
3. Proposed camps: prevention/ screening/ diagnostic / surgical
3. Skills Lab:
1. Hands-on virtual operative training (in process)
2. Wet lab (proposed)
4. Digital Repository of Clinical Photos and OCTs

Table 3

DATA RESOURCES	
1. Library: Departmental	Hard Copies:
	Journals: 70 issues
	Books: 22
	Digital Resources:
	Manuals
	Books
	Digital photo repository of anterior segment
	OCT library
2. Library: Central	Journals: 14 online, 5 hard copies
	Books: 42 books (currently)
	Online subscriptions: Wiley library
	MedSIM
3. Special Clinics Data	Diagnostic data
	Investigative data
	Therapeutic response
	Follow-up: sequential data
	Statistical data
4. Departmental Data Registers and Dedicated Desktops	Clinical data:
	Diagnostic
	Refractive
	Procedure
	Specialty clinic data
	Procedure/ Operative data
	Investigation

	Statistical data:
	Epidemiological information
	Monthly reports
	Statistical Software: SPSS
5. HMIS (Hospital Management Information Systems)	OPD statistical data
	Chief Complaint Data
	Diagnostic data
	Referral data
	Epidemiological data
	Patient contact data
6. Community Medicine	Statistical assistance
	Epidemiological data assistance
7. Academic Meets for Data Sharing/ exchange	Inter-departmental (Institutional):
	Death Meets
	Disability board meets
	QI meets
	Antibiotic policy meets
	Inter-departmental Faculty Dvpt Program
	Workshops: Bioethics/ Research
	Seminars
	Departmental:
	Project reviews
	Journal clubs: (National and International Data perspective)
	Thesis review
	Case reviews

	Seminars (presentations of relevant info and data)
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