Curriculum

DNB Broad Specialty



Ophthalmology

- Objectives of the Programme
- Teaching and Training Activities
- + Syllabus
- Competencies
- ✦ Log Book
- Recommended Text Books and Journals

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I. OBJECTIVES OF THE PROGRAMME:

1. PROGRAMME GOAL

- The purpose of this program is to standardize Ophthalmology teaching at Post Graduate level so that it will achieve uniformity in postgraduate teaching, and create competent ophthalmic surgeons with appropriate expertise.
- Adequate current knowledge of the subject with sufficient diagnostic and surgical skills.
- Good knowledge of blindness control program to help eradicate blindness from our country.

2. PROGRAMME OBJECTIVES

A candidate upon successfully qualifying in the DNB (Ophthalmology) examination shall be able to:

- Offer to the community the current quality of 'standard of care' in ophthalmic diagnosis as well as therapeutics (medical or surgical) in most of the common and easily managed situations at the all levels of health services.
- Periodically self-assess his or her performance, keep abreast with ongoing advances in the field, and apply the same in his/her practice.
- Apply research and epidemiological methods during his/her practice. The candidate shall be able to present or publish work done by him/her.
- Contribute as an individual / group towards the fulfillment of national objectives with regard to prevention of blindness.
- Effectively communicate with patients and relatives so as to educate them sufficiently and give them the full benefit of informed consent for treatment, and ensure compliance.
- Acquire the basic skills of teaching medical and paramedical professionals.

3. OVERALL OBJECTIVES:

The clinical postgraduate training program is intended at developing in the student a blend of qualities of a clinical specialist, a teacher, a researcher and a surgeon. A postgraduate should possess the following qualities, knowledge and skills:

- **Basic Sciences:** Resident should possess basic knowledge of the structure, function and development of the human body as related to ophthalmology, and of the factors which may disturb these, the mechanisms of such disturbances, and the disorders of structure and function which may result.
- **Clinical Knowledge:** Resident should be able to practice and handle most dayto-day ophthalmic problems independently, should recognize the limitations of his clinical knowledge and know when to seek further help.
- Environment and Health: Resident should understand the effect of environment on health and be familiar with the epidemiology and common diseases in the field of ophthalmology. He/she should be able to integrate the preventive and promotive methods with the curative and rehabilitative measures in the treatment of disease.
- **Community Ophthalmology:** Resident should be able to integrate the preventive and promotive methods with the curative and rehabilitative measures in the treatment of ophthalmic disease. He should be familiar with common eye problems occurring in communities and be able to deal with them effectively. The student should be able to organize and conduct survey in rural, urban and industrial communities and special group population.
- **Recent Advances:** Resident should be familiar with the current developments in Ophthalmic Sciences.
- **Teaching:** Resident should be able to plan educational programs in ophthalmology in association with senior colleagues, and be familiar with modern methods of teaching and evaluation.
- **Research:** Resident should be able to identify a problem for research of a clinical experimental nature, clearly state the objective, plan a rational approach to its

solution, execute it, and critically evaluate the data in the light of existing knowledge.

- Scientific Method: Resident should know that conclusions should be reached by logical deduction; he/she should be able to assess evidence both as to its reliability and its relevance.
- **Medico-legal aspects:** Resident should have basic knowledge of medico legal aspects of medicine.

II. TEACHING AND TRAINING ACTIVITIES:

The fundamental components of the teaching programme should include:

- 1. Case presentations & discussion- once a week
- 2. Seminar Once a week
- 3. Journal club- Once a week
- 4. Grand round presentation (by rotation departments and subspecialties)- once a week
- 5. Faculty lecture teaching- once a month
- 6. Clinical Audit-Once a Month
- 7. A poster and have one oral presentation at least once during their training period in a recognized conference.

The rounds should include bedside sessions, file rounds & documentation of case history and examination, progress notes, round discussions, investigations and management plan) interesting and difficult case unit discussions.

The training program would focus on knowledge, skills and attitudes (behavior), all essential components of education. It is being divided into theoretical, clinical and practical in all aspects of the delivery of the rehabilitative care, including methodology of research and teaching.

• **Theoretical:** The theoretical knowledge would be imparted to the candidates through discussions, journal clubs, symposia and seminars. The students are exposed to recent advances through discussions in journal clubs. These are considered necessary in view of an inadequate exposure to the subject in the undergraduate curriculum.

- **Symposia:** Trainees would be required to present a minimum of 20 topics based on the curriculum in a period of three years to the combined class of teachers and students. A free discussion would be encouraged in these symposia. The topics of the symposia would be given to the trainees with the dates for presentation.
- **Clinical:** The trainee would be attached to a faculty member to be able to pick up methods of history taking, examination, prescription writing and management in rehabilitation practice.
- **Bedside:** The trainee would work up cases, learn management of cases by discussion with faculty of the department.
- Journal Clubs: This would be a weekly academic exercise. A list of suggested Journals is given towards the end of this document. The candidate would summarize and discuss the scientific article critically. A faculty member will suggest the article and moderate the discussion, with participation by other faculty members and resident doctors. The contributions made by the article in furtherance of the scientific knowledge and limitations, if any, will be highlighted.
- **Research:** The student would carry out the research project and write a thesis/ dissertation in accordance with NBE guidelines. He/ she would also be given exposure to partake in the research projects going on in the departments to learn their planning, methodology and execution so as to learn various aspects of research.

III. SYLLABUS:

1. The Basic Sciences:

- Orbital and ocular anatomy
 - a) Gross anatomy
 - b) Histology
 - c) Embryology
- Ocular Physiology

- Ocular Pathology
- Ocular Biochemistry-Biochemistry applicable to ocular function
- Ocular Microbiology-Specific microbiology applicable to the eye
- Immunology with particular reference to ocularimmunology.
- Ocular Pharmacology
- Genetics

2. Optics:

- Basic physics of optics
- Applied ophthalmicoptics
- Applied optics including optical devices
- Disorders of Refraction
- Low Vision Aids

3. Clinical Ophthalmology:

- Disorders of the lids
- Disorders of the lacrimal system
- Disorders of the Conjunctiva
- Disorders of the Sclera
- Disorders of the Cornea
- Disorders of the UvealTract
- Disorders of the Lens
- Disorders of the Vitreo Retina
- Disorders of the Optic Nerve & Visual Pathway
- Disorders of the Orbit
- Glaucoma
- Neuroo phthalmology
- Pediatric ophthalmology
- Ocular involvement in systemic disease
- Immune ocular disorders
- Strabismus & Amblyopia
- Community Ophthalmology

Biostatistics, Research Methodology and Clinical Epidemiology Ethics Medico legal aspects relevant to the discipline Health Policy issues as may be applicable to the discipline

IV. COMPETENCIES:

1. Basic medical science:

- Attain understanding of the structure and function of the eye and its parts in health and disease including Anatomy, Physiology, Genetics, Biochemistry, Microbiology, Pharmacology etc. and its relevance toophthalmology
- Attain understanding and application of knowledge of CNS and other systems of body which influence or control the structure and function of the eye.
- Attain understanding of, and develop competence in, executing common general laboratory procedures employed in diagnosis and research in Ophthalmology.

2. Clinical Ophthalmology:

The student will be given adequate opportunity to work, on the basis of graded responsibilities, in outpatients, in patient, and operation theaters (on a rotational basis). Thus, from the day of entry to the completion of the training program, the student shall be able to:

- Acquire scientific and rational approach to the diagnosis of ophthalmiccases.
- Acquire understanding of, and develop inquisitiveness to investigate, cause and effect of diseases.
- Manage and treat all types of ophthalmiccases
- Competently handle all ophthalmic medical and surgical emergencies
- Competently handle and execute safely all routine surgical procedures on lens, glaucoma, lid, sac, adnexa, retina and extra ocular muscles etc.
- Be familiar with micro-surgery and special surgical techniques

- Demonstrate knowledge of the pharmacological aspects (including toxicity) of drugs used in ophthalmic practice, and of drugs commonly used in general diseases that affect the eyes.
- To understand the principles, perform observe all routine and special ophthalmic investigations for example, Slit lamp examination Gonioscopy, Perimetry, Tonometry, Dark room procedures, Electrophysiological Tests (ERG, EOG, VER), OCT etc.

3. Refraction:

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

4. Medical and Surgical Management

- To demonstrate the knowledge of the pharmacology (including toxic) aspects of drugs used in ophthalmic practice and drugs commonly used in general diseases affecting the eyes.
- To exhibit competence in medical management of ophthalmiccases.
- To competently handle and execute safely common surgical procedures on lens, glaucoma, lid, sac, adnexa, ocular surface including conjunctiva, cornea and sclera and extraocular muscle, etc.
- To competently handle all ophthalmic medical and surgical emergencies.

5. Ophthalmic sub-specialties:

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

- Examine, diagnose and demonstrate understanding of management of the problems of neuroophthalmology, and refer appropriate cases to neurology and neuro-surgery.
- Examine, diagnose and demonstrate understanding of management of (medical and surgical) complicated problems in the field of (a) lens, (b) uvea, (c) ocular surface including conjunctiva cornea and sclera including transplant (d) vitreo retina (e) pediatric ophthalmology and squint (f) eyelid orbital and lacrimal diseases of the eye (g) glaucoma (h) plastic surgery of eye (i) genetic problems in ophthalmology, (j) principles of refractivesurgery.
- To demonstrate understanding of the manufacture, and competence in prescribing and dispensing of contact lenses, low visual aids, and ocularprosthesis
- 6. Ophthalmic pathological/microbiological/biochemical sciences:
 - The student should be able to interpret the relevant pathological / microbiological / biochemical data, and correlate with clinical data.
- 7. Imaging Techniques in Ophthalmology
 - X-Rays, USG, CT scan MRI, etc.
- 8. Community Ophthalmology:
 - Postgraduate students may be able to assist or carry out eye camps; community and school surveys.
 - They may be given an opportunity to participate in surveys, and to be a part of rehabilitation teams.
 - They shall be able to guide rehabilitation workers in the organization and training of the blind in the art of daily living, and in the vocational training of the blind, leading to their gainful employment.

- 9. Should be able to identify systemic emergencies of acute nature and carry out an effective emergency management
- 10. Research:
 - The student shall be able to:
 - Recognize a research problem.
 - State the objectives in terms of what is expected to be achieved in the end.
 - Plan a rational approach, with appropriate controls, with full awareness of the statistical validity of the size of the material.
 - Spell out the methodology and carry out most of the technical procedures required for the study.
 - Accurately, systematically and objectively record results and observations made.
 - Analyze the data with the aid of appropriate statistical analysis.
 - Interpret the observations in the light of existing knowledge, and highlight in what ways the study has advanced the existing knowledge on the subject and what further remains to be done.
 - Resident should be encouraged to write at least one scientific paper of National / International Standards from the material of this thesis.
 - Resident should have knowledge of ethical issues involved in research and publication.

11. Teaching

- To write Symposiums / Seminars and critically discuss them
- To methodically summarize internationally published articles according to prescribed instructions and critically evaluate and discuss each selected article
- To discuss symposia and journals with his colleague and guide his juniors in the groups

• To present cases at clinical conferences, discuss them with his colleagues and guide his juniors in groups in evaluation & discussion of these cases.

12. Learning Methods

A. Theoretical methods:

- Lectures, demonstrations: Didactic teaching in clinical, applied, and preclinical, Paraclinical, and allied sciences (like forensic medicine, radiology, microbiology, pharmacology, pathology, biochemistry, biostatistics etc). These may be imparted by the members of the staff in respective disciplines or by clinicians themselves.
- **Seminars:** seminars should be conducted regularly. The topics selected should be repeated once in 3 years so as to cover as wide a range of topics as possible. Seminars could be individual presentations or a continuum (large topic), with many students participating.
- Journal Clubs: The selected articles from the journals should be reviewed by the resident and these shall be presented by the student under the following headings, 1) Aim 2) Methods 3) Observations 4) Discussion and 5) Conclusions.

• Case Discussion:

- i. Bedside discussion, outpatient teaching, clinical case discussion should form part of a department's schedule. This could range from 1-2hours.
- ii. Clinical case presentations of the resident should be evaluated as per Annexure I.
- iii. Case presentation at other in-hospital multidisciplinary forums should been couraged.
- iv. Webinars and e-learning methods incorporated in the teaching program of residents

B. Clinical Ophthalmology:

The training should be given in wards, out-patients department, specialty clinics and operation theatres.

- Out Patients: For the first six months of the training program, students may 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 student may also be oriented to the common ophthalmic problems. After 6 months, the student may work independently, where resident receives new and old cases including refractions and prescribes for them. The students are attached to a senior resident and faculty member whom they can consult in case of difficulty.
- Wards: Each student may be allotted beds in the in-patient section depending upon the total bed capacity and the number of the postgraduate students. The whole concept is to provide the student with an increasing opportunity to work with increasing responsibility according to seniority. A detailed history and case record is to be maintained by the resident.
- Specialty clinics: The student must rotate in the various subspecialty clinics run by the department.

The following **practical skills** shall be acquired:

a) Examination techniques along with interpretation

- i. Slit lamp Examination
 - Diffuse Examination / Focal Examination / Retrollumination-direct & indirect / Sclerotic scatter / Specular reflection / Staining modalities and interpretation
- ii. Fundus evaluation
 - Direct & Indirect ophthalmoscopy with fundus drawing
 - 3-mirror, 78-D/90-D/60-DExamination

b) Basic Investigations along with their interpretation

- i. Tonometry
 - Applanation / Indentation / Non-contact tonometry
- ii. Gonioscopy- grading of the angle
- iii. Tear/ Lacrimal function test
 - Staining- fluorescein, Rose Bengal / Schirmer's tests/ Break up time / Syringing / Dacrocystography
- iv. Corneal Evaluation
 - Corneal scraping and cauterization
 - Smear preparation and interpretation (Gram'sstain/KOH)
 - Keratometry- performance & interpretation
 - Corneal topography and Scheimpflugprinciple
 - Pachymetry
- v. Colour Vision Evaluation
 - Ishihara pseudoisochromatic plates / Farnsworth Munsell 100 hue test
- vi. Refraction
 - Retinoscopy- streak/ Priestley Smith
 - Use of Jackson'scross-cylinder
 - Subjective and objective refraction
 - Prescription of glasses

vii. Diagnosis & Assessment of squint

- Ocular position and motilityexamination
- Synaptophoreusage
- Lees / Hess screen usage
- Diplopia charting
- Assessment of strabismus cover tests/ prism bars/synaptophore
- Amblyopia diagnosis and treatment
- Assessment of convergence, accommodation, stereopsis, suppression

viii. Exophthalmometry

• Usage of Hertel's Exophthalmometry- roptosismeasurement

- ix. Contact lenses:
 - Fitting and assessment of RGP and soft lenses
 - Subjective verification of over refraction
 - Common complications arising from contact lens use
 - Educating the patient regarding CL usage, and of complications
- x. 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
- xi. Community Ophthalmology
 - Ability to organize institutional screening
 - Ability to organize peripheral eye screening camps
 - Knowledge and ability to execute guidelines of National programme for prevention of Blindness.
 - Eye checkup Camps

C. Essential investigative skills: the postgraduate student should be able to perform / interpret the following tests:

- i. Fundus Photography
- ii. Fluorosceinangiography
- iii. Ophthalmic ultrasound: A-scan/B-scan
- iv. Automated perimetry for glaucoma and neurological lesions
- v. OCT and basic knowledge of UBM
- vi. ERG, EOG, VER
- vii. Specular Microscopy
- viii. New modalities of glaucoma investigation
- ix. Radiological tests
 - X rays
 - Localization of ocular and intra orbital Foreign Bodies
 - Interpretation of CT scan /MRI
 - Operations: The resident shall be provided with an opportunity to perform operations, both extra-ocular and intra-ocular, with the assistance of the senior residents and / or under the direct supervision of a faculty member. Resident shall be provided with an opportunity to learn special and complicated operations by assisting the Senior

Residents or the Senior Surgeon, in these operations. Resident shall be responsible for the post- operative care of these cases. It is desirable that the student be able to perform independently/under guidance various surgeries; the thrust areas include cataract, glaucoma, squint, lacrimal sac, entropion and enucleation /evisceration.

- To provide surgical training, a phased program may be chalked out. In the first phase the student is given training in wet lab. He is also exposed to regional anaesthetic block, preparations of cases for operation, and premedication.
- In the next phase, the student shall assist the operating surgeon during the operation. In the third phase, the student operates independently assisted by senior resident, or a facultymember.

The resident surgery should be evaluated by available tools like OSCAR, CEX

- a) Minor surgical procedures: The student must know and be able to perform independently:
 - i. Conjunctival and corneal foreign body removal on the slitlamp
 - ii. Pterygium excision with recenttechniques
 - iii. Suture removal- skin / conjunctival/ corneal /corneoscleral
 - iv. Subconjunctivalinjection
 - v. Posterior Sub-Tenon'sinjections
 - vi. Repair of corneal / corneo scleralperforations
 - vii. Chalazion incision and curettage
 - viii. Biopsy of small lidtumors
 - ix. Tarsorrhaphy

b) Major Surgical Procedures:

i. The student must know and be able to perform independently:

Ocular Anesthesia

- Peribulbar / Retrobulbar anesthesia
- Facial nerve blocks- O'Brien / Atkinson/ Van lint & modifications
- Frontal nerve blocks
- Infra orbital nerve blocks
- Blocks for sac surgery

ii. The student must be able to perform independently / under supervision / assist and deal with complications arising from the following surgeries:

Lid Surgery

- Tasorrhaphy
- Ectropion & entropion (simple procedures)
- Lid repair following trauma including lid margin tears
- Epilation, electroepilation

Destructive procedures

- Evisceration with or withoutimplant
- Enucleation with or withoutimplant
- Enucleation for eyedonation
- Cyclocryotherapy

Sac surgery

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

Strabismus surgery

• Recession and resection procedures on the horizontalrecti

iii. The student shall be well conversant with use of Operating microscope and must be able to perform the following surgeries competently using themicroscope:

Cataract surgery

- Standard ECCE with IOL implantation
- Small incision Cataract surgery with IO Limplantation
- Resident should have performed under guidance / assisted the following
- Secondary AC or PC IO Limplantation
- Phacoemulsification

Vitreous Surgery

- Intra-vitreal and intra-cameral (anterior chamber) injection techniques and dosages, particularly for endophthalmitis management.
- The student should know the basis of anterior vitrectomy in the management of cataract surgery complications.

iv. The student should have preferably assisted in the following microscopic surgeries:

Keratoplasty

• Therapeutic and optical

Glaucoma surgery

- Trabeculectomy
- Pharmacological modulation of trabeculectomy
- v. The student should have assisted in the following laserprocedures:
 - Yag Capsulotomy
 - Laseriridotomy
 - Focal and panretinalphotocoagulation
 - vi. The student should have assisted/ have knowledge of Kerato-refractive procedures.

c) Ocular Histopathology:

The student shall have basic knowledge of gross and microscopic features of various ocular pathologic conditions, to assist them in confirmation of clinical diagnosis, and help in management.

V. LOG BOOK:

A candidate shall maintain a log book of operations (assisted / performed) during the training period, certified by the concerned post graduate teacher / Head of the department / senior consultant.

This log book shall be made available to the board of examiners for their perusal at the time of the final examination.

The log book should show evidence that the before mentioned subjects were covered (with dates and the name of teacher(s) The candidate will maintain the record of all academic activities undertaken by him/her in log book.

- 1. Personal profile of the candidate
- 2. Educational qualification/Professional data
- 3. Record of case histories
- 4. Procedures learnt
- 5. Record of case Demonstration/Presentations
- 6. Every candidate, at the time of practical examination, will be required to produce performance record (log book) containing details of the work done by him/her during the entire period of training as per requirements of the log book. It should be duly certified by the supervisor as work done by the candidate and countersigned by the administrative Head of the Institution.
- 7. In the absence of production of log book, the result will not be declared.

VI. RECOMMENDED TEXT BOOKS AND JOURNALS

- 1. Clinical Ophthalmology Kanski JJ
- 2. Parson's Diseases of the Eye Sihota and Tandon
- 3. Anatomy of the eye and orbit: EugeneWolff
- 4. Clinical anatomy of the eye: Richard SSnell
- 5. Adler's Physiology of the Eye: Francis HAdler
- 6. Biochemistry of the eye: Elaine R.Berman
- 7. Ocular Pathology: A Text and Atlas: Yanoff M & FineBS
- 8. Ophthalmic Pathology: An Atlas and Textbook: ZimmermanLE
- 9. Ocular pharmacology: William HHavener
- 10. Ocular Immunology: GilbertSmolin
- 11. Duke Elder's Practice of refraction: Sir StewartDuke-Elder
- 12. Clinical optics: A. R. Elkington, Helena J. Frank, Michael J.Greaney
- 13. Paediatric Ophthalmology and strabismus: Kenneth WWright
- 14. Binocular vision and ocular motility: Gunter K vonNoorden
- 15. Diagnosis and Management of Ocular Motility Disorders: Mein J, TrimbleR.
- 16. Shields' textbook of glaucoma : Bruce MShields
- 17. Becker-Shaffer's Diagnosis and Therapy of theGlaucomas
- 18. Uveitis: a clinical approach to diagnosis and management : Ronald E Smith, Robert ANozik
- Uveitis: fundamentals and clinical practice: Robert B. Nussenblatt and Alan G. Palestine
- 20. Vitreous Microsurgery: SteveCharles

- 21. Ultrasound of the eye and orbit: Sandra F Byrne and Ronald L.Green
- 22. Clinical neuroophthalmology: Walsh & Hoyt
- 23. Diagnosis and management of intraocular tumors: Jerry AShields
- 24. Diseases of the orbit: a multidisciplinary approach: JackRootman
- 25. Diseases of the orbit: Frederick A. Jakobiec and Ira SJones
- 26. Diagnosis and management of orbital tumors: Jerry A.Shields
- 27. Grayson's diseases of theCornea
- 28. Smolin and Thoft's The Cornea: scientific foundations and clinical practice
- 29. Stallard's EyeSurgery
- 30. Ophthalmic Surgery: Principal and Practice. George L.Spaeth
- 31. Cataract Surgery and its Complications. Normal S.Jaffe
- 32. Principal and Practice of Ophthalmology. G. A.Peymen
- 33. Basic and Clinical Science Course. American Academy of Ophthalmology
- 34. Principles and Practice of Ophthalmology by FAJakobeic.
- 35. Retina by Stephen J.Ryan
- 36. Basic & Advances Biostatistics ManjuPandey
- 37. Oxford Handbook of MedicalBiostatistics

JOURNALS

- 1. Indian Journal of Ophthalmology
- 2. American Journal of Ophthalmology
- 3. Ophthalmology
- 4. Archives of Ophthalmology
- 5. Survey of ophthalmology
- 6. International Ophthalmology Clinics
- 7. British Journal of Ophthalmology
- 8. Cornea
- 9. Retina
- 10. Journal of Cataract and Refractive Surgery
- 11. Ophthalmic Surgery, Imaging and Lasers

WEB RESOURCES

- 1. International Council of Ophthalmology (ICO): www.icoph.org
 - a. ICO Center for Ophthalmic Educators: educators.icoph.org
 - b. ICO Examinations: www.icoexams.org/

- c. ICO International Fellowships: <u>www.icoph.org</u> /refocusing education/ fellowships.html
- d. ICO Foundation: www.icofoundation.org/
- 2. American Academy of Ophthalmology: http://www.aao.org
- 3. American Academy of Ophthalmology Education Resource Center: http://www.aao.org/education/index.cfm
- 4. American Board of Ophthalmology: http://www.abop.org
- 5. Digital Journal of Ophthalmology: http://www.djo.harvard.edu
- 6. Eye Search: http://www.eyesearch.com
- 7. Eye Atlas Online Atlas of Ophthalmology: http://www.eyeatlas.com
- 8. Eye Cancer Network: http://eyecancer.com
- 9. Eye Library.Org: http://www.eyelibrary.org
- 10. Eye Text.Net: http://www.eyetext.net



आयुर्विज्ञान में राष्ट्रीय परीक्षा बोर्ड स्वास्थ्य एवं परिवार कल्याण मंत्रालय, भारत सरकार मेडिकल एन्क्लेव, अंसारी नगर, नई दिल्ली – 110029

NATIONAL BOARD OF EXAMINATIONS IN MEDICAL SCIENCES

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