

# Insights into career prospects after post-graduation in ophthalmology

Bharat Gurnani, Kirandeep Kaur<sup>1</sup>

Postgraduate ophthalmic education in India has taken considerable strides and improved tremendously over the last decade. Career options have improved manifold and trainee residents and fellows are often required to make key trade-off decisions when choosing a particular option. This leads many toward anxiety, fear, and dissatisfaction toward the decision-making process, and eventually even toward their career in ophthalmology. Candidates often seek guidance from mentors to aid in driving clarity of thought. To help candidates with a solid foundational knowledge of key ophthalmic education and training programs in our country and abroad, we have documented many career opportunities available after post-graduation and fellowship in this article. We have also added insights on various international fellowship and job opportunities along with notes on various national/international ophthalmic exams a post-graduate can consider.

**Key words:** Career prospects, ophthalmology, post graduation, Ophthalmic education, Fellowships

Access this article online

Website:

www.ijo.in

DOI:

10.4103/ijo.IJO\_1597\_21

Quick Response Code:



In this progressive world of academic competence and growing technological advancements in healthcare, it is a dream of all young ophthalmologists to get a brilliant academic and surgical career after post-graduation.<sup>[1]</sup> Still today, since the inception of NEET PG in 2013, the top All India Rankers have continued to ignore ophthalmology as a career prospect.<sup>[2]</sup> Traditionally, ophthalmology has always been looked upon as a subspecialty with limited job opportunities and research prospective. The number of years required to excel as a successful surgeon and clinician and the costly equipment required to establish a private setup have always created a mental barrier even in top-notch candidates.<sup>[3]</sup> But the scenario in the west is the opposite, where it is looked upon as one of the lucrative branches with maximum career opportunities. Ophthalmology is an ever-growing dynamic specialty that has a lot to offer. The health care industry has undergone revolutionary changes in the last decade and immense opportunities have opened up in the ophthalmology space.<sup>[3]</sup>

Two to three decades back, senior residency<sup>[1]</sup> was the norm as fellowship opportunities were meager and obsolete. In the current scenario, after finishing post-graduation, the majority of doctors are in a dilemma whether to go for senior residency, fellowship, or opt for an international platform. Senior colleagues and ophthalmologists must pass on the baton and guide these progressive minds toward a successful career.<sup>[4]</sup> With this seminal article on detailed insights into

career prospects of ophthalmology, the competitive exams a post-graduate can attempt, and overseas fellowships available, we have taken a critical step toward creating excitement and energetic conversation around the potential that ophthalmology presents toward the future career prospects for young postgraduates and trainees across the country.<sup>[5]</sup>

Since the article doesn't involve any prospective or retrospective human research or any form of surgical or medical intervention, hence it is exempted from the ethics committee approval at our institution. This is an original article focused on ophthalmic education and training and doesn't involve any human research.

## Career Prospects after Post-Graduation and Fellowship in India

### 1. Diploma in Ophthalmology (DO), Diplomate of National Board (DNB), MD/MS in Ophthalmology

The postgraduates who have completed their DO program of 2 years from medical colleges can either opt for a secondary DNB course for 2 years or rarely go for MS/MD 3-year program. The MS/MD candidates can appear for the DNB exam directly but not vice-versa. This exempts them from 3 years of DNB clinical rotation as they have already completed it during MD/MS program. For candidates who want to join as a faculty in medical colleges, it is better to peruse secondary DNB after DO. The DO candidates can also opt for comprehensive/subspecialty fellowship at various tertiary eye care centers [Fig. 1].<sup>[6]</sup>

Consultant Cataract, Cornea and Refractive Services, <sup>1</sup>Consultant Cataract, Pediatric Ophthalmology and Squint Services, Aravind Eye Hospital and Post Graduate Institute of Ophthalmology, Pondicherry, India

**Correspondence to:** Dr. Kirandeep Kaur, MBBS, DNB, FPOS, FICO, MRCS Ed, MNAMS, Consultant Cataract, Pediatric Ophthalmology and Squint Services Aravind Eye Hospital and Post Graduate Institute of Ophthalmology, Pondicherry - 605 007, India. E-mail: beingkirandeep@gmail.com

Received: 08-Jun-2021

Revision: 15-Jun-2021

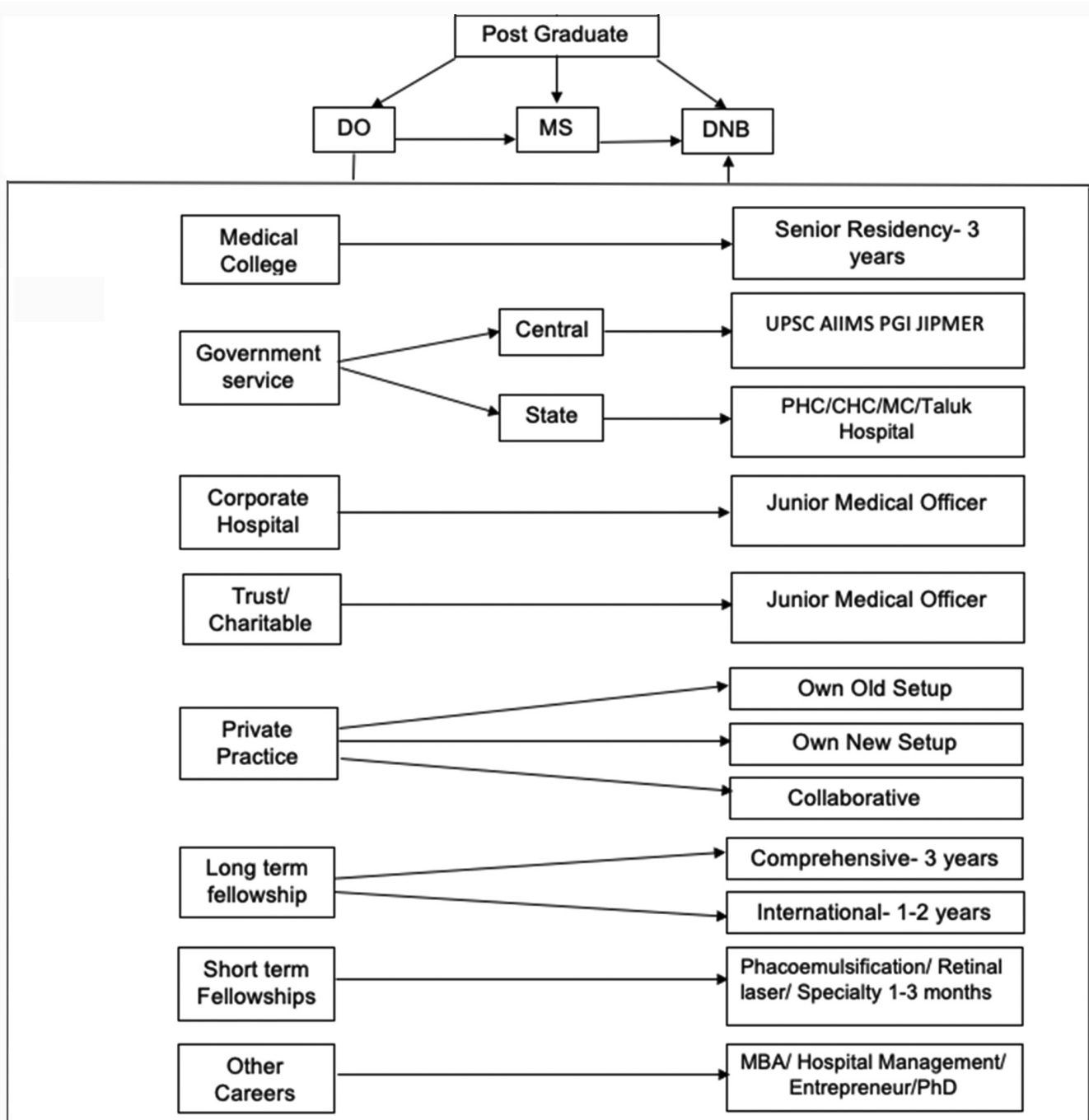
Accepted: 21-Jul-2021

Published: 26-Nov-2021

This is an open access journal, and articles are distributed under the terms of the Creative Commons Attribution-NonCommercial-ShareAlike 4.0 License, which allows others to remix, tweak, and build upon the work non-commercially, as long as appropriate credit is given and the new creations are licensed under the identical terms.

**For reprints contact:** WKHLRPMedknow\_reprints@wolterskluwer.com

**Cite this article as:** Gurnani B, Kaur K. Insights into career prospects after post-graduation in ophthalmology. Indian J Ophthalmol 2021;69:3709-18.



**Figure 1:** Flowchart depicting career prospects for postgraduates in Ophthalmology. DO- Diploma in Ophthalmology, MS- Master of Surgery, DNB- Diplomate of National Board, UPSC- Union Public Service Commission, AIIMS- All India Institute of Medical Sciences, PGI- Post Graduate Institute, JIPMER- Jawaharlal Institute of Post Graduate Medical Education and Research, PHC- Primary Health Center, CHC- Community Health Center, MC- Medical College, MBA- Master of Business Administration, Ph.D.- Doctor of Philosophy

## 2. Senior Residency (SR) – Medical College

The candidates passing from medical college (MD/MS) usually opt for SRship. Post-DNB candidates can also opt for SRship. It is a 3-year structured training program from state or central government medical colleges after qualifying for an MCQ-based exam and personal interview at majority centers. It provides ample clinical and surgical exposure, hands-on training, the opportunity for research and publication, and a great qualification on the curriculum vitae. The salary ranges

from INR 50,000 to 1,00,000. The age limit in India is 33 years and at some places 35 years [Fig. 1].<sup>[2]</sup>

### Merits

- It provides you with an extra qualification for applying for a job in India.
- Sets you up well for private or corporate practice.
- The candidate can also opt for short-term or long-term fellowship after SRship and can appear for competitive

exams such as ICO, FAICO, FRCS, and MRCS at the same time.

#### Demerits

- a. The SRship certificate is not recognized while applying for international fellowships as compared to the fellowship certificate.
- b. Longer duration as compared to a fellowship of 1–2 years.<sup>[2]</sup>

### 3. Comprehensive fellowship or Subspecialty fellowships

- a. **Comprehensive fellowship** - They are available at the major tertiary eye care institutes in the country such as LV Prasad Eye Institute (LVPEI), Aravind Eye Care System (AECS), and Sanakara Nethralaya (SN), Chennai. The duration is 3 years with a minimum qualification of DO/DNB/MD or MS. The detailed information can also be found on the last few pages of the Indian Journal of Ophthalmology [Fig. 1].<sup>[7]</sup>

#### Merits

1. This fellowship allows you to fill up the deficits of your previous training program.
2. Gives a holistic approach to managing a patient; clinical, research, and surgical exposure; and forms a base for specialty fellowships.
3. This fellowship also provides with a future opportunity to write various exams such as ICO, MRCS, and FRCS.

#### Demerits

1. You may get fewer opportunities to teach postgraduates.
2. For a particular specialty exposure, you again must spend 2 years to do a fellowship.
- b. **Subspecialty fellowships** - They are available in all subjects such as oculoplasty, glaucoma, cornea and refractive surgery, retina and vitreous, pediatric ophthalmology and strabismus, uvea, cataract and IOL, and phcorefractive and medical retina at institutes such as LVPEI,<sup>[7]</sup> AECS,<sup>[8]</sup> SN, Chennai<sup>[9]</sup> Eye Foundation,<sup>[10]</sup> Sadguru Nethralaya, Chitrakoot,<sup>[11]</sup> Susrut eye hospital,<sup>[12]</sup> ASG eye hospital,<sup>[13]</sup> and MM Joshi.<sup>[14]</sup> The minimal qualification is DO/DNB/MS/MD with a duration of 1–2 years [Fig. 1].

#### Merits

1. The advantage of these fellowships is dedicated subspecialty clinical and surgical exposure.
2. Ample knowledge in a particular field of interest gives you an extra edge while writing FAICO and ICO fellowship exams.
3. Maximizing opportunity to publish research papers in a particular field.

#### Demerits

1. Lack of comprehensive ophthalmology exposure.
2. Posterior segment fellowships usually preclude you from anterior segment surgical exposure.

### 4. Government Service

- a. **Central Government** - Opportunities are available at UPSC,<sup>[15]</sup> AIIMS,<sup>[16]</sup> PGI,<sup>[17]</sup> JIPMER,<sup>[18]</sup> SGPGI,<sup>[19]</sup> and Delhi government<sup>[20]</sup> as a Junior Medical Officer. The application is through an entrance exam and/or personal interview. The financial remunerations are high starting from a minimum of INR 75,000 as compared to state government and job opportunities are available at 3-tier cities. The DO candidates can join as Assistant Divisional Medical Officer under the UPSC scheme and 3 years

later can be promoted to DMO as a specialist. In contrast, DNB/MD/MD can directly join as DMO [Fi. 1].<sup>[15]</sup>

- b. **State Government**- The candidates can apply through direct personal interviews under the state government. The financial remuneration starts from INR 50,000 to 75,000 and the candidate may have to work in a small PHC, CHC, or Taluk hospital till further promotions [Fig. 1].

### 5. Corporate Hospital

The corporate hospitals Center for Sight (CFS),<sup>[21]</sup> Sir Gangaram Hospital,<sup>[22]</sup> Vasani Eye Care,<sup>[23]</sup> Dr. Agarwal's Eye Hospital,<sup>[24]</sup> Eye Foundation,<sup>[10]</sup> ASG Eye Hospital,<sup>[25]</sup> Apollo<sup>[26]</sup> and Medanta, Gurugram<sup>[27]</sup> provide opportunities to work in an organized, quality framework alongside well trained and supportive staff. The requirement is usually post-fellowship candidates with a minimum of 3 years of surgical experience. They also give new joiners an opportunity but usually in peripheral setups. The financial remunerations are higher with a minimum of INR 1,25,000–1,50,000. Most of the corporate hospitals also offer fellowship opportunities and stipends are comparatively higher (minimum of INR 35,000–50,000) than tertiary eye care hospitals [Fig. 1].

### 6. Trust/Charitable Hospital

Candidates who want good surgical hands-on immediately after post-graduation can join trust hospitals across the country. They can join as an ad-hoc candidate or as a junior medical officer with reasonable minimum financial remunerations of INR 50,000–70,000 [Fig. 1].

### 7. Private practice

This can be grouped under three categories:

- a. **Starting a new private setup** - If the candidate feels that he/she has gained sufficient clinical and surgical exposure during PG/Fellowship/Senior Residency and is confident of driving an independent practice, he/she can very well start his consultancy. The challenges are an initial financial investment, management skills, decision-making in critical clinical situations, dealing with all subspecialties together and managing staff, instrument stock up, and sterilization protocols, to name a few.
- b. **Joining a private setup** - The candidates who have an established private setup can pursue this option. The advantages are you have mentors to deal with critical clinical situations and the management part is already taken care of.
- c. **Collaborative private setup** - This scenario is rapidly evolving in 3-tier cities in India and is a good option for candidates confident of doing private practice immediately after post-graduation. This scenario gives you the flexibility to practice a particular subspecialty as 3–4 specialists are dealing with patients of their specialty such as cornea, glaucoma, retina, and cataract [Fig. 1].

### 7. Short-term fellowships

There are various short-term fellowships available at various tertiary eye hospitals across the country like small-incision cataract surgery {SICS} (1–2 months), phacoemulsification (1–2 months), lasers in diabetic retinopathy (2 months), diagnosis and management of glaucoma (1 month), community outreach (3 weeks), medical retina (1–3 months), pediatric ophthalmology (3 months) and facial aesthetics (10 days) [Fig. 1].<sup>[7-9]</sup>

## 8. Other Career Options

- a. **Mater of Business Administration (MBA)** - Candidates interested to join as consultants in pharma companies or corporate hospitals can opt for an MBA at reputed B schools in India such as the Indian Institute of Management (IIM),<sup>[28]</sup> Indian School of Business (ISB),<sup>[29]</sup> Hyderabad, and Symbiosis Institute of Management.<sup>[30]</sup> Doctors have priority consideration due to their background in medical education and practice over other candidates in these institutes as they add to the heterogeneity of academic culture and curriculum there.
- b. **Doctor of Philosophy (Ph.D.)** Narayana Netralaya is one such premier institute in India offering a Ph.D. program in collaboration with the University of Maastricht, Netherlands. Interested candidates can join this research program.<sup>[31]</sup>
- c. **Entrepreneurship/Research fellowships** These are other opportunities that are gaining momentum in recent years [Fig. 1].

## Career Prospects after Post-Graduation and Fellowship in Foreign Countries

### 1. England (UK)

England is the most favored country by candidates after post-graduation as it opens numerous career opportunities. The courses available are clinical, clinical + research, research, Ph.D., and MD opportunities. Some of the training programs consider a certificate of completion of training in India as a recognized degree and others consider FRC Ophtha part 2 or equivalent (MD/MD/DNB). The candidates who have cleared MRCS, FRCS, and IELTS/OET are exempted from the PLAB exam and can directly apply for General Medical Council (GMC) registration for the post of Assistant, Associate Locum, or Substantive Consultant. The details of how to apply in England are listed in the flowchart [Figs. 2 and 3; Tables 1 and 2].<sup>[32]</sup>

### 2. United States of America (USA)

The USA is a key country for candidates due to the overall superior quality of training provided there. Most US-based international fellowships widen the perspective of candidates and stimulate them to deliver high-quality results. The best time to opt for international fellowships is after completing a long-term fellowship in India. Various short-term, long-term, basic science, clinical, clinical + research, research, and collaborative fellowships are available. California and Pennsylvania are two states in the USA that exempt overseas candidates from USMLE and you can directly join to work there. The long-term fellowships are highly competitive and candidates can apply through various routes as listed in the table. The disadvantage is they are usually non-funded fellowships [Fig. 2 and Tables 1 and 2].<sup>[33]</sup>

### 3. Canada

Canada is another priority consideration for candidates due to its extremely friendly work culture, good hands-on training, reasonable patient volume, and for its paid fellowships. The other advantage of working in Canada is FRCS applicants have priority consideration; direct applications are also accepted, and the College of Physicians and Surgeons of Ontario grants full clinical educational license to work in Canada upon completion. The details are listed in the table [Fig. 2 and Tables 1 and 2].<sup>[34]</sup>

## 4. Asia Pacific Academy of Ophthalmology (APAO) Fellowships

Singapore is one of the best places to offer structured fellowship opportunities for overseas candidates. Singapore National Eye Center (SNEC) and Tan Tock Seng Hospital offer fellowships with 1–2 years duration and are variably funded. The National University Hospital offers fellowships in vitreoretina, glaucoma, and oculoplasty and are well funded. FRCS and Ph.D. candidates get priority considerations. After completing the fellowship, applicants are required to go through conditional registration with specialist accreditation to practice as a consultant.<sup>[35]</sup>

Australia and New Zealand with Brisbane, Sydney, Adelaide, Melbourne, and Auckland are the additional options for consideration. These fellowships are very well funded with good exposure in oculoplasty and oncology. Candidates can either apply directly or can write the Royal Australian and New Zealand College of Ophthalmologists (RANZCO) exam along with IELTS/OET certification. The other centers offering fellowships are China, Hong Kong, Taiwan, Iran, Japan, Nepal, and South Korea [Table 1]. Hong Kong offers four oculoplasty fellowships (every 2 years) of 1–2 year duration with no funding. Malaysia, Indonesia, the Philippines, and Thailand offer observerships but have no structured fellowship program for overseas candidates [Fig. 2 and Tables 1 and 2].<sup>[35]</sup>

### 5. United Arab Emirates (Dubai)

Dubai offers only a single fellowship in pediatric ophthalmology and strabismus through the ICO route. To work as a consultant in Dubai, you need to clear the Dubai Health Authority exam. FRCS candidates who are trained in the UK get an edge over others [Fig. 2 and Tables 1 and 2].<sup>[36]</sup>

### 6. International Council of Ophthalmology (ICO) fellowships

ICO fellowships are offered in the UK, USA, Spain, Austria, Germany, India, Nigeria, Turkey, Belgium, Pakistan, Japan, Finland, Switzerland, Hungary, Egypt, Brazil, Australia, Italy, Africa, France, Philippines, Poland, and Egypt. The individual description is beyond the scope of this article and the link for relevant details is provided in the table [Fig. 2 and Table 2].<sup>[37]</sup>

### 7. Long-Term Research Fellowships

The post-DNB/MD/MS/MRCS/FRCS candidates can apply for these research fellowships. The Associations for Research in Vision and Ophthalmology (ARVO),<sup>[38]</sup> Harvard, Stanford,<sup>[39]</sup> London School of Hygiene and Tropical Medicine,<sup>[40]</sup> John Hopkins<sup>[41]</sup> and University of California<sup>[42]</sup> are few of the premier universities offering research fellowships.

## Examination Opportunities for Post-Graduates and Fellows

### 1. International Council of Ophthalmology (ICO) Exam

Ophthalmology candidates can target this exam from early post-graduation and are given the title of Fellow of ICO (FICO) after clearing all three levels. This exam is considered as a confirmation of one's knowledge and ability on a standard international platform as it tests up-to-date knowledge along with precision and decision-making skills. The FICO candidates are also exempt from various steps of MRCS and FRCS exams. The other benefits include sponsored ICO short and long-term fellowships [Figs. 2 and 4; Tables 3 and 4].<sup>[43]</sup>



**Table 1: Fellowship and job opportunities in major foreign countries along with estimated salary and duration (Note-The stated information is subject to change with time)**

Country	Opportunity offered	Estimated Salary	Duration
England	All Fellowships, Clinical, Research, Clinical + Research, Research Associate/Assistant, Locum Consultant, Substantive Consultant	Fellowship: ≤25,000-50,000/year Consultant: ≤50000-100000/year	1-2 years fellowship
Canada	All fellowships, Clinical, Research, Clinical + Research, Consultant in Ophthalmology	Fellowship: CAD55,000-70,000/year Consultant: CAD1,00,000-3,00,000/year	1-2 years fellowship
USA	All fellowships Clinical, Research, Clinical + Research USMLE Route/SF Match	Fellowship: ~US\$50,000/year Consultant: US\$1,50,000-200,000/year	3-24 months
Dubai	Pediatric Ophthalmology and Strabismus Consultant	US\$50,000/year (through ICO) DH6,00,000-8,00,000/year	3-12 months
Australia and New Zealand	All fellowship Clinical, Research, Clinical + Research Consultant	US\$55,000/year US\$1,00,000-2,00,000/year	12-24 months
Singapore	All fellowship Clinical, Research, Clinical + Research Consultant	Monthly stipend as per SNEC program US\$50,000/year (ICO): 2,00,000-3,00,000 SGD/year	12-24 months
APOA fellowships	All fellowship Clinical, Research, Clinical + Research	Depend on the place of fellowship	3-12 months
China	Beijing Tongren Eye Center C-MER (Shenzhen) Dennis Lam Eye Hospital (Clinical) Zhongshan Ophthalmic Center (Basic Science)	Variably funded	12-24 months
Hong Kong, China	Department of Ophthalmology and Visual Sciences, The Chinese University of Hong Kong Department of Ophthalmology, University of Hong Kong	Variably funded	12-24 months
Iran	Khatam-al-Anbia Eye Hospital	Non-funded	1-3 months
Japan	Department of Ophthalmology, Osaka University Medical School	Variably funded	3-12 months
Nepal	B.P. Koirala Lions Center for Ophthalmic Studies Til Ganga Institute of Ophthalmology	Funded	6-24 months
New Zealand	New Zealand National Eye Center	The salary is paid at Research Fellow/ Level 1 as per the University of Auckland Academic collective agreement	12-36 months
Singapore	Singapore National Eye Center Department of Ophthalmology, National University Hospital	Limited to Variable funding	3-24 months
South Korea	Department of Ophthalmology, Kyung Hee University Hospital	Variably funded	3-12 months
United States	New York Eye and Ear Infirmary UCLA Jules Stein Eye Institute	Variable funding	3-24 months

## 2. Membership of Royal College of Surgeons (MRCS)

After 2008, MRCS was adopted as the intercollegiate examination for entrance to three Colleges in the UK (RCS Edinburgh, RCS England, and the RCPS Glasgow). It is a two-part exam based on the applied knowledge of anatomy, surgical pathology, surgical science, and critical care. FICO-cleared candidates can directly apply for MRCS Ed membership without an OSCE component [Figs. 2 and 4; Tables 3 and 4].<sup>[44]</sup>

## 3. Fellow of Royal College of Surgeons of Edinburgh (FRCS Ed)

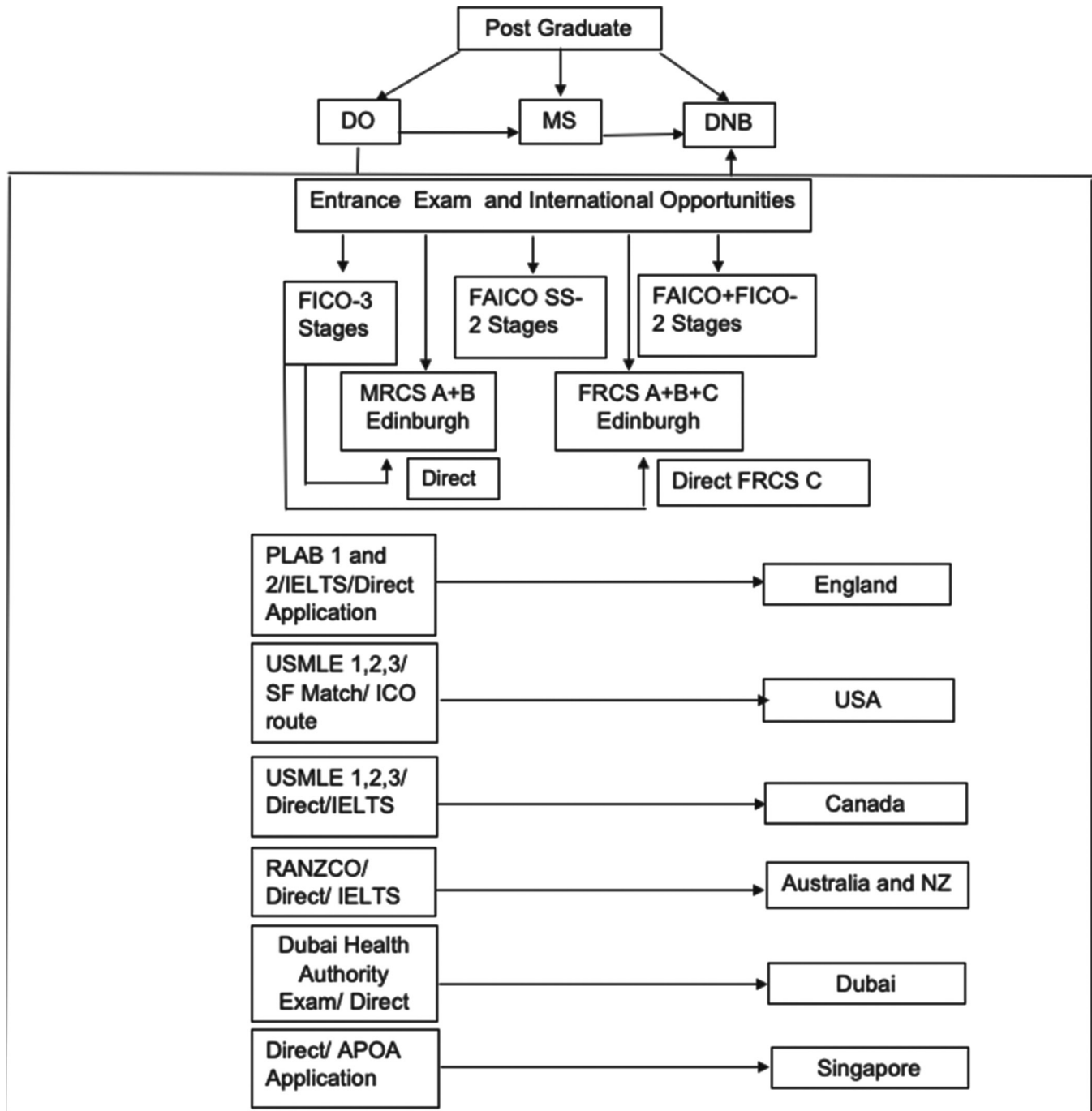
This exam consists of three parts. Clearing FRCS Ed reflects the candidate's high level of knowledge based on international standards. These candidates are exempted from PLAB and the degree is recognized by many countries for practicing and licensing considerations [Figs. 2 and 4; Tables 3 and 4].<sup>[45]</sup>

## 4. Fellow of Royal College of Surgeons Glasgow (FRCS G)

This program consists of three papers. Part 1 and Part 2 examinations are held twice each year, and the Part 3 examination is held five times each year. Clearing this exam demonstrates an individual's knowledge of the scientific basis of ophthalmology, with the experience and competence to apply that knowledge to patient care [Tables 3 and 4].<sup>[46]</sup>

## 5. Fellow of Royal College of Surgeons Ireland (FRCS I)

The examination is exclusively available only for trainees in the Basic Surgical Training program in ophthalmic surgery and the Basic Medical Training program in medical ophthalmology in Ireland. However, the applicant must be an Ireland MRCS and in the 4<sup>th</sup> or 5<sup>th</sup> year of higher specialty training. The exam consists of a single oral viva [Tables 3 and 4].<sup>[47]</sup>



**Figure 2:** Flowchart depicting entrance exams and international opportunities for postgraduates in ophthalmology. FICO- Fellow of International Council of Ophthalmology, FAICO- Fellow All India Collegium of Ophthalmology, SS- Superspeciality, MRCS- Membership of the Royal College of Surgeons, FRCS- Fellowship of the Royal College of Surgeons, PLAB-Professional and Linguistic Assessments Board test, IELTS- International English Language Testing System, USMLE- the United States Medical Licensing Exam, SF- San Francisco, RANZCO- Royal Australian and New Zealand College of Ophthalmologists, NZ- New Zealand

#### 6. Member of Royal College of Ophthalmologists (MRCOphth)

This is awarded to candidates who have passed both the Diploma (DRCOphth) and Refraction Certificate examinations. This program has been ceased since 2015.

#### 7. Fellow of the Royal College of Ophthalmologists (FRCOphth)

No previous clinical experience in ophthalmology is required to attempt Part 1 FRCOphth, but candidates must pass this before they enter the third year of ophthalmic specialist

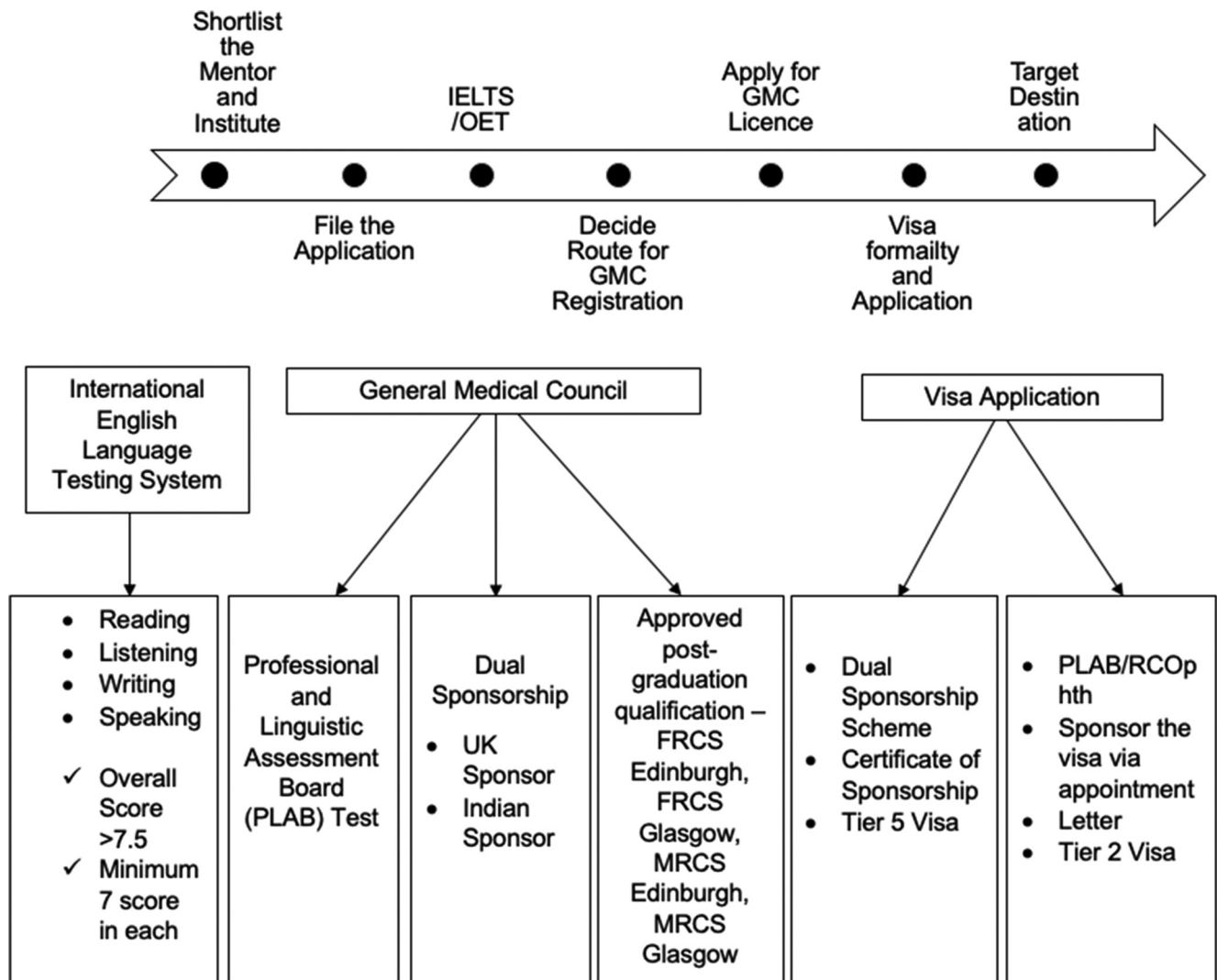
training. The Refraction Certificate and Part 2 written exams can be taken in any order, and both must be passed to sit in the final Part 2 FRCOphth Oral examination. The final assessment consists of a 10 station Objective Structured Clinical Examination (OSCE) [Tables 3 and 4].<sup>[48]</sup>

#### 8. Fellow of All India Collegium of Ophthalmology (FAICO)

This exam has been initiated by the All India Ophthalmological Society for glaucoma, retina, and vitreous, cornea,

**Table 2: List of country-specific organizations providing international fellowship and job opportunities**

Country	Information Website (URL)
England	1. <a href="https://www.gmcuk.org/education/standards-guidance-and-curricula/curricula/ophthalmology-curriculum">https://www.gmcuk.org/education/standards-guidance-and-curricula/curricula/ophthalmology-curriculum</a> 2. <a href="https://www.rcophth.ac.uk/training/ost-information/">https://www.rcophth.ac.uk/training/ost-information/</a> 3. <a href="https://uk.indeed.com/Fellowship-Ophthalmology-jobs-in-England">https://uk.indeed.com/Fellowship-Ophthalmology-jobs-in-England</a>
Canada	1. <a href="https://med.uottawa.ca/ophthalmology/education-and-training/fellowship">https://med.uottawa.ca/ophthalmology/education-and-training/fellowship</a> 2. <a href="https://ophthalmology.utoronto.ca/education/fellowships">https://ophthalmology.utoronto.ca/education/fellowships</a>
USA	1. <a href="https://www.aao.org/training-opportunities">https://www.aao.org/training-opportunities</a>
Dubai	1. <a href="http://www.icoph.org/refocusing_education/fellowships/fellowship_host_directory.html?host_city=Dubai&amp;sort_by=host_city">http://www.icoph.org/refocusing_education/fellowships/fellowship_host_directory.html?host_city=Dubai&amp;sort_by=host_city</a> 2. <a href="https://www.dha.gov.ae/en/MedicalEducation/Pages/ResidencyProgram.aspx">https://www.dha.gov.ae/en/MedicalEducation/Pages/ResidencyProgram.aspx</a>
Australia and New Zealand	1. <a href="https://www.eyedocs.co.uk/fellowship-search?url=tag/fellowshipcountry/Australia">https://www.eyedocs.co.uk/fellowship-search?url=tag/fellowshipcountry/Australia</a> 2. <a href="https://ranzco.edu/home/about-ranzco-2/special-interest-groups-sigs/australian-and-new-zealand-glaucoma-society/glaucoma-fellowships/">https://ranzco.edu/home/about-ranzco-2/special-interest-groups-sigs/australian-and-new-zealand-glaucoma-society/glaucoma-fellowships/</a> 3. <a href="https://au.indeed.com/Ophthalmology-Fellowship-jobs">https://au.indeed.com/Ophthalmology-Fellowship-jobs</a>
Singapore	1. <a href="https://www.snec.com.sg/education-training/overseas-fellowship">https://www.snec.com.sg/education-training/overseas-fellowship</a> 2. <a href="http://www.icoph.org/refocusing_education/fellowships/fellowship_host_directory.html?host_country=SG">http://www.icoph.org/refocusing_education/fellowships/fellowship_host_directory.html?host_country=SG</a>
APOA	1. <a href="https://apaophth.org/fellowship-program/">https://apaophth.org/fellowship-program/</a> 2. <a href="http://fellowship.apaophth.org/?fbclid=IwAR0xANWnQYrsHrog81PydPXiNPXvyscl7WMe152zh0LZM-KRI-nKUAV2pY">http://fellowship.apaophth.org/?fbclid=IwAR0xANWnQYrsHrog81PydPXiNPXvyscl7WMe152zh0LZM-KRI-nKUAV2pY</a>
ICO fellowships	1. <a href="http://www.icoph.org/refocusing_education/fellowships.html">http://www.icoph.org/refocusing_education/fellowships.html</a> 2. <a href="http://www.icoph.org/downloads/ICOFellowshipDirectory.pdf">http://www.icoph.org/downloads/ICOFellowshipDirectory.pdf</a>



**Figure 3:** Flowchart depicting the prerequisites to be fulfilled before applying for General Medical Council (GMC) in England (Note-The stated information is subject to change with time)

**Table 3: List of various ophthalmology exams for a candidate's consideration (Note-The stated information is subject to change with time)**

Exam Name	Steps	Fee Structure	Descriptions	Eligibility	Exam Centers
FICO	3 All steps MCQ pattern	Step 1-745 Swiss Francs Step 2-1015 Swiss Francs Step 3-650 Swiss Francs	Part 1 Basic, Optics -Annually in April (80 + 40 questions) Part 2 Clinical - annually in April. 200 MCQ in 4 h. Part 3 Advanced - Usually in October, April. MCQ + Extended matching (115)	From 1 <sup>st</sup> year of post-graduation onwards	137 test centers in 83 countries
MRCS	2 Part A - MCQ Part B - OSCE	Part A- 550 Euros Part B - 997 Euros	Part A consists of 300 MCQ's (on 2 different days) to test the knowledge of basic sciences and principles of surgery. The part B consists of an objective structured clinical exam (OSCE) with 18 exam stations (9 min each).	From 1 <sup>st</sup> year of post-graduation onwards	Ahmedabad, Bangalore, Chennai, Hyderabad, Kolkata, Mumbai, New Delhi, Pune
FRCS Edinburgh	3	New exam pattern and fee structures to be announced	Part A - September. MCQ Part B - Multiple times. Clinical exam + OSCE Part C - June. EMQ, Viva, OSCE	After completing the post-graduate training. Intercollegiate MRCS.	New centers in India yet to be declared
FRCS Glasgow	3 Part 1 - MCQ Part 2a - MCQ + problem solving Part 2b - EMQ Part 3a - Oral viva Part 3b - Clinical Examination	Part 1-350 Euros Part 2-795 Euros Part 3-141p Euros	Part 1 - March/October. MCQ Part 2 - Annually in October. Part 3 - Varied. Oral + OSCE	Primary medical qualification acceptable to the General Medical Council of the United Kingdom. Post-qualification experience of not less than 2 years, of which at least 1 year should be in preregistration training. Exemption - ICO Part 1 (both A and B), FRCS Ed Part A, MRCOphth/FRCOphth Part 1	Part 1, 2 - Online Part 3 - Bangalore
FRCS Ireland	1 - Oral Viva	20,000 Euros		Intercollegiate MRCS. 4 or 5 years in Higher specialty training	
FRCOphth	Part 1 Fellowship - Theoretical written Refraction Certificate- 10 station OSCE Part 2 A - Written Part 2 B - Viva and OSCE	Part 1-615 Euros Refraction Certificate - 725 (UK) ≤ 1030 (Singapore) Part 2 Written - ≤ 450 Part 2 Oral - ≤ 700 (UK) ≤ 2175 (Singapore)	Part 1-3 times per year - usually January, May, and October. 120 MCQs and 12 multi-part written questions Refraction - 3 times per year - usually April, Jun, and October Part 2 written - Twice a year - July/December. MCQ 2 parts of 90 each Part 3 -	From 1 <sup>st</sup> year of post-graduation onwards. The first step (Part 1) must be passed before the third year of specialty training. A refraction certificate needs to be acquired before the fourth year of specialty training.	
FAICO	2	5000 INR	Part 1 - October. Online (80) MCQ Part 2 - Jan/Feb. Viva + OSCE	Post-graduation, AIOS member, Minimum one-year experience in a given specialty	Bangalore, Mumbai, Chennai, New Delhi
ICO + FAICO	2	24,500 INR	Part 1 - October Online (80) MCQ Part 2 - Jan/Fe. Viva + OSCE	Post-graduation, AIOS member, Minimum one-year experience in a given specialty	Bangalore, Mumbai, Chennai, New Delhi
FIACLE	1	30-60 \$	153 MCQs	Members of IACLE dealing with contact lens education	Chennai Bangalore Online exam

comprehensive, refractive, uvea, cataract/phacoemulsification, pediatric ophthalmology, and strabismus, oculoplastic surgery subspecialties, and it consists of three stages. Stage 1 is an MCQ-based exam with 80 questions, stage 2 is OSCE, and stage 3 is oral viva [Fig. 2] [Tables 3 and 4].<sup>[49]</sup>

### 9. Fellow of International Council of Ophthalmology+ Fellow of All India Collegium of Ophthalmology (FICO + FAICO)

Recently, there has been a collaboration between ICO and AIOS for Fellowship in subspecialties of cornea, retina and vitreous, pediatric ophthalmology, glaucoma, uveitis,



**Table 4: List of various websites for national and international Ophthalmology exams**

Exam Name	Website Link to Exam Details
FICO	<a href="http://www.icoph.org/refocusing_education/examinations.html">http://www.icoph.org/refocusing_education/examinations.html</a>
MRCS	<a href="https://www.intercollegiatemrcsexams.org.uk/mrcs/candidate-guidance/">https://www.intercollegiatemrcsexams.org.uk/mrcs/candidate-guidance/</a>
FRCS Edinburgh	<a href="https://www.rcsed.ac.uk/exams">https://www.rcsed.ac.uk/exams</a>
FRCS Glasgow	<a href="https://community.rcpsg.ac.uk/examination/view/5061223?element=5061224">https://community.rcpsg.ac.uk/examination/view/5061223?element=5061224</a>
FRCS Ireland	<a href="https://www.rcsi.com/dublin/professional-cpd/professional-exams/surgery">https://www.rcsi.com/dublin/professional-cpd/professional-exams/surgery</a>
FRCOphth	<a href="https://www.rcophth.ac.uk/examinations/">https://www.rcophth.ac.uk/examinations/</a>
FAICO	<a href="https://www.aios.org/article-66-about-faico.php">https://www.aios.org/article-66-about-faico.php</a>
FICO + FAICO	<a href="http://www.icoph.org/refocusing_education/examinations/exams-types/subspecialty-examinations.html">http://www.icoph.org/refocusing_education/examinations/exams-types/subspecialty-examinations.html</a>
FIACLE	<a href="https://iaacle.org/programs/fellowship-fiacle-program/">https://iaacle.org/programs/fellowship-fiacle-program/</a>

ICO and Royal College of Surgeons Edinburgh				
Before 2016	2016-2018		2019-June2021	June 2021 Onwards
FRCSEd Part A OR ICO Basic Sciences ICO Optics & Refraction	FRCSEd Part A	FRCSEd Part A OR ICO Basic Sciences ICO Optics & Refraction	ICO Visual Sciences & Optics, Refraction and Instruments & Clinical Ophthalmology	ICO Visual Sciences & Optics, Refraction and Instruments & Clinical Ophthalmology & Advanced 115Q  ↓ Fellow of International Council Of Ophthalmology (FICO)
PLUS	PLUS			
ICO Clinical Sciences	FRCSEd Part B	ICO Clinical Sciences PLUS		
PLUS	PLUS			
ICO Advanced 115Q (+face to face)		ICO Advanced 115Q (+face to face) OR FRCSEd Part B		
<b>Membership – MRCSed (Ophthalmology)</b>				<b>Separate Exam expected from 2022</b>
FRCSEd Part C	PLUS			
	ICO Advanced 180Q			
	PLUS			
	Four Years Clinical Experience			
	PLUS			
	FRCSEd Ophthalmology VIVA face to face exam			
<b>Fellowship – FRCSEd (Ophthalmology)</b>				<b>Separate exam expected from 2022</b>

\*ICO Part 1 (A and B) exempts from FRCS Glasgow 1

\*ICO Part 2 exempts from FRCS Glasgow 2a.

**Figure 4: Flowchart depicting various ICO routes for MRCS, FRCS, and exemption of various stages of the exam (Note-The stated information is subject to change with time)**

oculoplasty, and cataract. The exam pattern remains the same for FAICO [Fig. 2; Tables 3 and 4].<sup>[49]</sup>

**10. Fellow of International Association of Contact Lens Educators (FICALE)**

Ophthalmologists who are working as cornea and contact lens educators can appear for this exam. The ideal candidate needs to be a full-time or associate member of IACLE and

is eligible to use the acronym FIACLE after clearing this exam. The institute membership is to be renewed every year and failure to renew the membership for three consecutive years results in the loss of fellowship. Annual membership cost varies from US\$30 to 60 and the fellowship exam cost depends on the country of practice [Please refer to Tables 3 and 4 for details].<sup>[50]</sup>

**Conclusion**

To conclude, post-graduate and fellowship training has taken a leap forward in our country. The quality, as well as quantity, has improved, and every year we are producing brilliant, hardworking, competitive, and highly focused young ophthalmologists. As leaders of the ophthalmological society, it is imperative to orient them toward the path of sustained career success. Through this article, we aim to highlight the career opportunities available in India as well as abroad, thereby aiding young ophthalmologists in choosing the right path based on their residency/fellowship priorities.

**Financial support and sponsorship**

Nil.

**Conflicts of interest**

There are no conflicts of interest.

**References**

- Gurnani B, Kaur K. Comments on: Senior residency: An opportunity missed? Indian J Ophthalmol 2021;69:458-9.
- Gurnani B, Kaur K. Comments on: Academic quality of incoming ophthalmology residents in India: Concerns for the future. Indian J Ophthalmol 2021;69:457.
- Li JO, Liu H, Ting DSJ, Jeon S, Chan RVP, Kim JE, et al. Digital technology, tele-medicine and artificial intelligence in ophthalmology: A global perspective. Prog Retin Eye Res 2020;100900. doi: 10.1016/j.preteyeres.2020.100900.
- Gupta A. Ophthalmology postgraduate training in India: Stirring up a hornet’s nest. Indian J Ophthalmol 2017;65:433-4.
- Gurnani B, Kaur K. Ophthalmic clinicians, researchers, scientists, and author profiles - A new window to explore. Indian J Ophthalmol 2021;69:1330-1.
- Information Bulletin-accr@natboard.edu.in. Available from: [https://accr.natboard.edu.in/online\\_user/DOCUMENTS/misc/information\\_bulletin\\_chapter/Jul-aug/09.pdf?1050197263](https://accr.natboard.edu.in/online_user/DOCUMENTS/misc/information_bulletin_chapter/Jul-aug/09.pdf?1050197263). [Last accessed on 2021 Jul 7].
- Training Programme-LV Prasad Eye Institute. Available from <https://www.lvpei.org/services/education/training-programs>. [Last accessed on 2021 Jul 7].
- Fellowships- Aravind Eye Care System- Aravind Eye Hospital. Available from: <https://aravind.org/fellowships/>. [Last accessed on 2021 Jul 7].
- Fellowships- Sanakara Nethralaya. Available from: <https://www.sankaranethralaya.org/education-fellowship.html/pdf/education/pg-training-center/Fellowships-Application.pdf>. [Last accessed on 2021 Jul 7].
- Fellowships- The Eye Foundation. Available from: <https://www.theeyefoundation.com/fellowship>. [Last accessed on 2021 Jul 7].
- Training Programmes-SNC Chitrakoot. Available from: <https://www.sadgurustrust.org/snc/training-programmes.php>. [Last accessed on 2021 Jul 7].
- Susrut Eye Foundation and Research Centre. Available from: <https://www.susrut.org/>. [Last accessed on 2021 Jul 7].

13. ASG Fellowship Programme- ASG Eye Hospital. Available from: <https://asgeyehospital.com/wp-content/uploads/2020/08/ASG-Fellowship-Programme.pdf>. [Last accessed on 2021 Jul 7].
14. M.M. Joshi Eye Institute- Fellowship – Education. Available from: <https://www.mmjoshiyeinstitute.com/fellowships/>. [Last accessed on 2021 Jul 7].
15. Union Public Service Commission. Available from: <https://www.upsc.gov.in/>. [Last accessed on 2021 Jul 7].
16. AIIMS Recruitment. Available from: <https://www.aiims.edu/en/notices/recruitment/aiims-recruitment.html>. [Last accessed on 2021 Jul 7].
17. Vacancy View- PGIMER, Chandigarh. Available from: [https://pgimer.edu.in/PGIMER\\_PORTAL/PGIMERPORTAL/Vacancies/JSP/VACANCIE\\_VIEW.jsp?countt=0](https://pgimer.edu.in/PGIMER_PORTAL/PGIMERPORTAL/Vacancies/JSP/VACANCIE_VIEW.jsp?countt=0). [Last accessed on 2021 Jul 7].
18. JIPMER Jobs. Available from: <https://www.jipmer.edu.in/announcement/jobs>. [Last accessed on 2021 Jul 7].
19. SGPGI. Available from: <http://www.spggi.ac.in/>. [Last accessed on 2021 Jul 7].
20. Health and Family Welfare- Vacancy- Delhi Health and Family Welfare. Available from: [http://health.delhigovt.nic.in/wps/wcm/connect/doiit\\_health/Health/Home/Vacancy+and+Result+2020/](http://health.delhigovt.nic.in/wps/wcm/connect/doiit_health/Health/Home/Vacancy+and+Result+2020/). [Last accessed on 2021 Jul 7].
21. Centre for Sight. Available from: <https://www.centreforsight.net/careers/current-job-openings>. [Last accessed on 2021 Jul 7].
22. Sir Gangaram Hospital. Available from: <https://sgrh.com/joblist>. Last accessed on 2021 Jul 7].
23. Careers- Vasani Eye Care. Available from: <http://vasaneyeye.com/careers/>. [Last accessed on 2021 Jul 7].
24. Careers- Agarwal Eye Hospital. Available from: <https://www.dragarwal.com/careers/>. [Last accessed on 2021 Jul 7].
25. Careers- ASG Eye Hospital. Available from: <http://careers.asgeyehospital.com/jobs/>. [Last accessed on 2021 Jul 7].
26. Careers- Apollo Hospital. Available from: <https://www.apollohospitals.com/corporate/careers/>. [Last accessed on 2021 Jul 7].
27. Careers- Medanta. Available from: <https://www.medanta.org/careers/job-application/>. [Last accessed on 2021 Jul 7].
28. Master of Business Administration (MBA)- B School. Available from: <https://bschool.careers360.com/colleges/list-of-top-iim-colleges-in-india>. [Last accessed on 2021 Jul 7].
29. Indian School of Business, Hyderabad. Available from: <https://www.isb.edu/en.html>. [Last accessed on 2021 Jul 7].
30. Symbiosis Institute of Business Management, Pune. Available from: <https://www.sibm.edu/>. [Last accessed on 2021 Jul 7].
31. Careers- Narayana Netralaya. Available from: <https://www.narayananeethralaya.org/career/>. [Last accessed on 2021 Jul 7].
32. Ophthalmic Specialist Training- The Royal College of Ophthalmologists. Available from: <https://www.rcophth.ac.uk/training/ost-information/>. [Last accessed on 2021 Jul 7].
33. Global Directory of Training Opportunities- American Academy of Ophthalmology. Available from: <https://www.aaopt.org/training-opportunities>. [Last accessed on 2021 Jul 7].
34. Fellowship Programme- Ophthalmology and Vision Science- University of Toronto. Available from: <https://ophthalmology.utoronto.ca/education/fellowships>. [Last accessed on 2021 Jul 7].
35. International Fellowship Programme/APOA. Available from: <https://apaophth.org/fellowship-program/>. [Last accessed on 2021 Jul 7].
36. Dubai Residency Training Programme. Available from: <https://www.dha.gov.ae/en/MedicalEducation/Pages/ResidencyProgram.aspx>. [Last accessed on 2021 Jul 7].
37. ICO Fellowship Programme- International Council of Ophthalmology. Available from: [http://www.icoph.org/refocusing\\_education/fellowships.html](http://www.icoph.org/refocusing_education/fellowships.html). [Last accessed on 2021 Jul 7].
38. Research Fellowships- The Association for Research in Vision and Ophthalmology. Available from: <https://www.arvo.org/awards-grants-and-fellowships/research-awards/>. [Last accessed on 2021 Jul 7].
39. International Research and Training Programme- Harvard Medical School. Available from: <https://eye.hms.harvard.edu/irtp>. [Last accessed on 2021 Jul 7].
40. MSc Public Health for Eye Care/LSHTM. Available from: <https://www.lshtm.ac.uk/study/courses/masters-degrees/public-health-eye-care>. [Last accessed on 2021 Jul 7].
41. Postdoctoral Research Fellowships- John Hopkins Medicine. Available from: <https://www.hopkinsmedicine.org/wilmer/education/research-training/postdoc-research-fellow.html>. [Last accessed on 2021 Jul 7].
42. Ophthalmology Fellowship Training Programme- UCLA health. Available from: <https://www.uclahealth.org/eye/ophthalmology-fellowship-training-programs>. [Last accessed on 2021 Jul 7].
43. ICO exams- International Council of Ophthalmology. Available from: [http://www.icoph.org/refocusing\\_education/examinations.html](http://www.icoph.org/refocusing_education/examinations.html). [Last accessed on 2021 Jul 7].
44. MRCS Candidate Guidance. Available from: <https://www.intercollegiatmrcsexams.org.uk/mrcs/candidate-guidance/>. [Last accessed on 2021 Jul 7].
45. The Royal College of Surgeons of Edinburgh- Exams. Available from: <https://www.rcsed.ac.uk/exams>. [Last accessed on 2021 Jul 7].
46. The Royal College of Surgeons of Glasgow- Exams. Available from: <https://community.rcpsg.ac.uk/examination/view/5061223?element=5061224>. [Last accessed on 2021 Jul 7].
47. The Royal College of Surgeons of Ireland- Exams Available from: <https://www.rcsi.com/dublin/professional-cpd/professional-exams/surgery>. [Last accessed on 2021 Jul 7].
48. Examinations- The Royal College of Ophthalmologists. Available from: <https://www.rcophth.ac.uk/examinations/>. [Last accessed on 2021 Jul 7].
49. Fellow of All India Collegium of Ophthalmology. Available from: <https://www.aios.org/article-66-about-faico.php>. [Last accessed on 2021 Jul 7].
50. Fellow of International Association of Contact Lens Educators (FICALE). Available from: <https://iacle.org/programs/fellowship-fiacle-program/>. [Last accessed on 2021 Jul 7].