



ASSOCIATION OF UNIVERSITY PROFESSORS OF OPHTHALMOLOGY FELLOWSHIP COMPLIANCE COMMITTEE

Program Requirements for Fellowship Education in Glaucoma

I. Introduction

A. Definition and Scope of Subspecialty

Glaucoma is the subspecialty of ophthalmology that studies and treats disorders of the eye and optic nerve identified as a characteristic optic neuropathy with associated vision loss. Subspecialists in glaucoma manage patients with complex and/or severe glaucoma disorders and associated ocular conditions. Fellowship training in glaucoma requires more in-depth education about the pathophysiology and management of glaucoma and related ocular and systemic disorders than can be obtained in residency training in ophthalmology. Fellowships in glaucoma include a continuous period of intense and focused training in developing and maintaining knowledge, skills, scholarship and professionalism.

B. Duration and Scope of Education

1. Any fellow entering an AUPO FCC compliant program must be able to fully comply with the clinical requirements of the program and have completed an appropriate residency program for that sub-specialty fellowship.
2. A minimum of 12 months of clinical training is required, including appropriate short periods for vacation or special assignments.
3. Prior to entry in the program, each fellow must be notified of the required length of the program, policies for vacation, duties, stipends and other forms of support.

II. Institutional Organization

- A. The number of fellowship positions approved will depend on the adequacy of clinical volume, number of faculty, and other resources.
- B. All of a program's approved positions must be offered through the Ophthalmology Fellowship Match. Canadian programs are encouraged to offer their approved positions through the Match, but are exempt from this requirement. Furthermore, international applicants, who will be fully participating in a program's clinical activity, may also be accepted outside the Match.

III. Faculty Qualifications and Responsibilities

A. Fellowship Program Director: There must be a single program director responsible for the program.

1. Qualifications of the fellowship program director:

- a. Be certified by the American Board of Ophthalmology or possess other appropriate educational qualifications.
- b. Have at least three years of clinical experience in glaucoma following his/her fellowship training.
- c. Be engaged in ongoing basic and/or clinical science research in the area of glaucoma, as demonstrated by at least 1 publication in a refereed journal and at least 1 presentation of research material at a national ACCME-accredited meeting (e.g. AAO and/or ARVO annual meetings) in the last 5 years.
- d. Have a clinical practice consisting of at least 50% of patients, who have glaucoma and related disorders.
- e. Be licensed to practice medicine in the state where the institution that sponsors the program is located.

2. Responsibilities of the fellowship program director:

- a. The fellowship program director must review the 'AUPO Program Requirements for Fellowship Education in Glaucoma' with each fellow.
- b. Monitor surgical caseloads and clinical performance
- c. Have prior approval from the AUPO FCC for the following:
 - 1) A required rotation of three months or more to any institution other than the parent.
 - 2) A change in the number of fellow positions in the training program.
 - 3) A change in the duration of the training period.
 - 4) Extension of individual period of training greater than three months.
- d. Select fellows in accordance with institutional and departmental policies and procedures.
- e. Ensure that the faculty appropriately supervises the fellow.
- f. Ensure the implementation of fair procedures and due process, as established by the sponsoring institution regarding academic discipline and fellow complaints or grievance.

- g. Monitor fellow for mental and emotional conditions and drug or alcohol-related dysfunction inhibiting performance or learning. If occurs, program director and faculty should accommodate timely, confidential professional counseling.
3. Any change in the Fellowship Director MUST be communicated to the AUPO FCC in writing within 90 days.

B. Faculty

1. Faculty members must be highly qualified and possess appropriate clinical and teaching skills. The faculty must devote adequate time to the education of fellows.
2. Faculty members must demonstrate a strong interest in the education of fellows, sound clinical and teaching abilities, support of the goals and objectives of the program, commitment to their own continuing medical education, and participation in scholarly activities.
3. Faculty members must periodically evaluate the utilization of resources available to the program, the contribution of each institution participating in the program, the program's financial and administrative support, the volume and variety of patients available for educational purposes, the performance of members of the faculty, and the quality of supervision of fellows.
4. At least two clinical faculty members (including fellowship program director) are required. Fellows should spend no more than 80% of their time with one faculty member.
5. Each faculty member must have subspecialty fellowship training or equivalent training, be certified by the appropriate American Board of Medical Specialties (or Canadian equivalent), and be a member of the faculty of the sponsoring institution.
6. In addition, research faculty and scientists may be involved with the clinical fellowship program, and are, in fact, encouraged to interact with the fellows.
7. Each clinical faculty member must have at least one year of glaucoma subspecialty experience, which may include her/his fellowship training.

IV. Facilities and Resources

A. Clinic

The outpatient area of each participating institution must have at least minimum number of one fully equipped examination lane for each fellow in the clinic. There must be access to current diagnostic equipment.

V. Educational Program

A. Clinical Components

1. Clinical examination skills

The fellowship must be organized to provide training that will equip the fellows to regularly perform evaluations, and consultations, including history and examination, which involve the techniques of ophthalmology specific to glaucoma and related ocular and systemic conditions.

2. Technical clinical examinations

The fellow should become proficient in the use of specialized diagnostic testing appropriate to the subspecialty of glaucoma, including but not limited to the following:

- a. Tests of visual function
- b. Tests of optic nerve and retinal nerve fiber layer structure
- c. Assessment of intraocular pressure and pachymetry
- d. Gonioscopy

3. Therapeutics

All fellows in glaucoma must become familiar with the indications for and limitations of pharmacological, laser surgical, and incisional surgical therapies that may be recommended for patients with glaucoma and related conditions.

4. Clinical Experiences

The fellows should be exposed to as broad a variety as possible of conditions falling within the scope of glaucoma. The following minimum number of patients seen/procedures performed must be met:

- a. Subspecialty examinations (new and follow-up) over 12 months: 1000
- b. Subspecialty new patient examinations over 12 months: 150
- c. Subspecialty diagnostic examinations performed: Computerized visual field examinations, optic nerve and retinal nerve fiber layer imaging, optic disc photography, and other adjunctive studies should be performed on a sufficient number of patients to allow the fellow to gain expertise in the indications, interpretation, and limitations of these diagnostic modalities.

Minimum Operative Numbers by Fellows for Glaucoma Surgery

Operative Procedures	Primary Surgeon	Primary or First Assistant Surgeon
Angle surgery and/or canal surgery *	0	3
Cataract surgery †	5	20
Cyclophotocoagulation	0	5
Endocyclophotocoagulation		
Transscleral cyclophotocoagulation		
Ab Externo outflow surgery ‡	25	50
Trabeculectomy (including ExPRESS USF)		
Aqueous shunts		
Other ab externo procedures		
Laser iridotomy	≥1 §	≥1
Laser trabeculoplasty	≥1 **	≥1
Pediatric examinations under anesthesia	0	3

*such as goniotomy, trabeculotomy, trabectome, and canaloplasty

†components of combined procedures may each be counted (e.g. a combined phacoemulsification/IOL and trabeculectomy can be counted as a case in both the Cataract surgery and Filtering surgery categories)

‡programs are expected to confirm that fellows are competent in both trabeculectomy and aqueous shunt procedures. Additional *ab externo* procedures may include viscocanalostomy and canaloplasty.

§programs are expected to confirm that fellows are competent to perform laser iridotomy

**programs are expected to confirm that fellows are competent to perform laser trabeculoplasty

B. Didactic Components

Fellows should participate in clinical conferences and didactic lectures in glaucoma that are separate from patient care activities and related topics within the parent institution, including presenting cases and lectures, and should include grand rounds, and other departmental conferences.

C. Supervision

Fellows must be appropriately supervised in patient care services by qualified faculty.

D. Duty Hours and Conditions of Work

Duty hours and night and weekend call for fellows must reflect the concept of responsibility for patients and provide for adequate patient care.

E. Scholarly Activity

The fellowship must include scholarly activities, such as the following:

1. Active participation of the faculty in clinical discussions, rounds and conferences in a manner that promotes a spirit of inquiry and scholarship. Scholarship implies an in-depth understanding of basic mechanisms of normal and abnormal states and the application of current knowledge to practice.
2. Participation in glaucoma journal clubs (at least four annually). Participation in research conferences and participation as a peer-review referee for glaucoma manuscripts submitted for publication (such as to the Journal of Glaucoma) are also encouraged.
3. Participation in research, particularly in projects that result in publications or presentations at regional and national scientific meetings.
4. Availability of guidance and technical support (e.g. research design, statistical analysis) for fellows involved in research.
5. Adherence by faculty fellows, who participate in research, to the Declaration of Helsinki on Rights of Research Human Subjects and to the Association for Research in Vision and Ophthalmology's Guidelines for Use of Research Animals.

F. Fellow's Research Activities

The fellow should be exposed to opportunities to develop research skills by planning and executing at least one research project. A specific block of time may be set aside for clinical or laboratory research, which may require that the fellowship be extended beyond [12] months.

VI. EVALUATION

A. Program and Faculty Evaluation

The educational effectiveness of a program must be evaluated in a systematic manner. In particular, the quality of the curriculum and the extent to which the educational goals have been met by fellows must be assessed. Teaching faculty must be evaluated on a regular basis.

B. Fellow Evaluation

There must be regular evaluation of the fellow's knowledge, skills, and overall performance, including the development of professional attitudes consistent with being a physician.

The program director, with the participation of members of the faculty, shall:

1. At least semiannually evaluate the knowledge, skills and professional growth of each fellow, using appropriate criteria and procedures; this quarterly evaluation should include a review of each fellow's surgical log to ensure progress toward an appropriate surgical portfolio over the course of the fellowship.
2. Communicate each evaluation to the fellow in a timely manner.
3. Maintain a permanent record of evaluation for each fellow and have it accessible to the fellow and other authorized personnel.
4. The program director must provide a written, final evaluation for each fellow who completes the program. The evaluation must include a review of the fellow's performance during the period of training and should verify that the fellow has demonstrated sufficient professional ability to practice competently and independently. This final evaluation should be part of the fellow's permanent record maintained by the institution.

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