



Program Requirements for Fellowship Education in Medical Retina

I. Introduction

A. Definition and Scope of the Subspecialty

The goal of the fellowship is to provide an advanced level of training in the diagnosis and management of medical disorders of the retina and vitreous. Fellows will acquire the necessary clinical skills for the treatment of patients with vitreoretinal diseases by initial evaluation and long-term follow-up of patients, in-depth reading of subspecialty journals and texts, and discussions and lectures. Fellows will also understand indications for surgery and the proper timing of appropriate patient referral to surgical colleagues.

B. Duration and Scope of Education

1. Admission prerequisites: All fellows entering AUPO – FCC compliant programs must be able to fully comply with the clinical requirements of the fellowship program and have completed an appropriate residency program for that sub-specialty fellowship.
2. A minimum of one full year, with at least 12 months devoted to clinical training is required.
3. Prior to entry in the program, each fellow must be notified in writing of the required length of the program.

II. Institutional Support

A. Sponsoring institution

1. One sponsoring institution will assume the ultimate responsibility for the program as described in the Institutional Requirements, and this responsibility extends to fellow assignments at all participating institutions.

2. Fellowship programs in medical retina should be in institutions that sponsor Accreditation Council for Graduate Medical Education (ACGME) accredited residency programs in ophthalmology or be affiliated with such a residency. Requests for exceptions to this policy will be reviewed on a case-by-case basis.

B. Participating institutions

1. Assignments to other participating institutions must be based on a clear educational rationale, have clearly stated learning objectives and activities, and provide resources not otherwise available to the program.
2. Assignments at participating institutions must be of sufficient length to ensure a quality educational experience and should provide sufficient opportunity for continuity of care. Although the number of participating institutions may vary based on need, all participating institutions must demonstrate the ability to promote the program goals and educational and peer activities. Exceptions must be justified and pre-approved.
3. When an institution other than the sponsoring institution is involved in the fellowship program, letters of agreement must be developed for each participating institution. In instances where two or more participating institutions in the program function as a single unit under the authority of the Fellowship Director, letters are not necessary. The agreements should
 - a. identify the faculty who will assume the educational and supervisory responsibility for the fellow(s) and specify the faculty responsibilities for teaching, supervision, and formal evaluation of fellow performance per Sections IV.D. and VI.A. of the Program Requirements;
 - b. outline the educational goals and objectives to be attained by the fellow(s) during the assignment;
 - c. specify the period of fellow(s) assignment;
 - d. establish the policies that will govern fellow education during the assignment.

C. Facilities and Resources

1. Clinic

The outpatient area of each participating institution must have a minimum of one appropriately equipped examining lane for each fellow in the clinic. There must be access to current diagnostic equipment designed for ophthalmic photography (including fluorescein angiography (FA), fundus autofluorescence and indocyanine green angiography (ICGA), perimetry ultrasonography, optical coherence tomography (OCT), retinalelectrophysiology, and microbiology, as well as other appropriate equipment (e.g., ophthalmoscopes). In addition, the utilization of emerging novel imaging modalities is encouraged, as they become mainstream in the diagnosis and management of retinal diseases such as wide field imaging, OCT angiography, swept-source OCT, adaptive optics and others.
2. Laser and minor procedure facilities

The facilities at each participating institution in which fellows are trained in laser surgery, intravitreal injection and cryotherapy must have equipment for laser treatments, cryotherapy, and the storage and delivery of intravitreal medications.
3. Library
 - a. Fellows must have ready access to the inventory of a major medical library, either at the institution where the fellows are located or through arrangement with other institutions.
 - b. Library services should include electronic retrieval of information from medical databases.
 - c. There must be readily available an on-site library, an institutional account to online collections, or a collection of ophthalmology, retina vitreous and general medical texts, journals, films, records, and tapes in each institution participating in the fellowship program. On-site libraries and/or collections of texts and journals must be readily available during nights and weekends.

III. Fellow Appointment

A. Eligibility Criteria

All applicants entering accredited medical retina fellowships must have satisfactorily completed an ACGME accredited ophthalmology residency program or be eligible to take the American Board of Ophthalmology certifying examinations, or already be certified by that Board. Exceptions must be presented to the AUPO-FCC for approval.

B. Number of Fellows

The AUPO FCC will approve the number of fellows based upon established written criteria that include the adequacy of resources for fellow education such as quality and volume of patients and related clinical material available for education, faculty-fellow ratio, institutional funding, as well as the quality of faculty teaching

C. Fellow Transfer

To determine the appropriate level of education for a fellow who is transferring from one fellowship program to another fellowship program, the accepting program director must receive written verification of the previous educational experiences and a statement regarding the performance evaluation of the transferring fellow, including an assessment of competence in the six areas described in section V. A., prior to acceptance into the program. A Fellowship Director is required to provide verification of fellowship education for any fellow who may leave the program prior to completion of their education.

D. Appointment of Fellows and Other Students

The appointment of specialty fellows or students must not dilute or detract from the educational opportunities of the regularly appointed residents in the affiliated ophthalmology program. The fellowship program as much as possible should complement, support, and enhance the residency program. The department chair, fellowship director, and residency program director should work together and periodically meet to assure that the presence of the subspecialty fellowship does not draw significant cases, learning opportunities, or funding from the residency program.

IV. Faculty

The Fellowship Director and faculty are responsible for the general administration of the program and for the establishment and maintenance of a stable educational environment. Adequate lengths of appointment for the Fellowship Director and faculty are essential to maintaining such an environment. The length of appointment for the Fellowship Director should provide for continuity of leadership.

A. Qualifications of the Fellowship Director

1. There must be a single Fellowship director responsible for the program. The person designated with this authority is accountable for the operation of the sponsoring program and should be a member of the staff of the sponsoring or integrated institution.
2. The Fellowship director must
 - a. Possess requisite specialty expertise as well as documented educational and administrative abilities and experience in his or her field.
 - b. Be certified by the American Board of Ophthalmology or possess qualifications judged to be acceptable by the AUPO FCC.
 - c. Be appointed in good standing and based at the primary teaching site.
 - d. Have at least three years clinical experience in the diagnosis and treatment of medical diseases of the retina vitreous following his/her fellowship training.
 - e. Have a clinical practice consisting of at least 50% medical retina patients.
 - f. Be engaged in ongoing research in the area of retina and vitreous as demonstrated by regular publications in refereed journals and/or presentations of research material at national meetings.

B. Responsibilities of the Fellowship Director

1. Overseeing and organizing the activities of the educational program in all institutions that participate in the program. This includes selecting and supervising the faculty and other program personnel at each participating institution, appointing a local site director, and monitoring appropriate fellow

supervision at all participating institutions.

2. Preparing an accurate statistical and narrative description of the program as requested by the AUPO FCC as well as updating annually the program and fellow records.
3. Promptly notifying the AUPO FCC of a change in Fellowship Director or department chair.
4. Grievance procedures and due process: The Fellowship Director must ensure the implementation of fair policies and procedures, as established by the sponsoring institution, to address fellow grievances and due process in compliance with the Institutional Requirements.
5. Monitoring of fellow well-being: The Fellowship Director is responsible for monitoring fellow stress, including mental or emotional conditions inhibiting performance or learning, and drug- or alcohol-related dysfunction. Both the Fellowship Director and faculty should be sensitive to the need for timely provision of confidential counseling and psychological support services to fellows. Situations that demand excessive service or that consistently produce undesirable stress on fellows must be evaluated and modified.
6. Any proposed change in the Fellowship Director MUST be communicated to the AUPO FCC in writing, preferably prior to appointment of a new Fellowship Director.
7. Obtaining prior approval of the AUPO FCC for changes in the program that may significantly alter the educational experience of the fellows, for example:
 - a. The addition or deletion of major participating institution(s) as specified in section II.B. of this document.
 - b. Change in the approved fellow complement.
 - c. Change in the format of the educational program.

C. Faculty Qualifications

1. The physician faculty must
 - a. possess requisite subspecialty expertise as well as documented educational and administrative abilities and experience in their field.

- b. be certified by the American Board of Ophthalmology or possess qualifications judged by the AUPO FCC to be acceptable.
 - c. be appointed in good standing to the staff of an institution participating in the program.
2. Non-physician faculty must be appropriately qualified in their field and possess appropriate institutional appointments.

D. Faculty Responsibilities

1. At each institution participating in the program, there must be a sufficient number of faculty with documented qualifications to instruct and supervise adequately the fellows in the program.
2. In addition to the Fellowship Director, at least one full-time fellowship trained faculty member is required for each fellow in the program. All faculty members should have at least one year of post-fellowship clinical experience in retina vitreous; they may have part-time or voluntary faculty appointments. It is beneficial to have a medical retina specialist as a member of the faculty.

In programs with both Surgical and Medical Retina Fellowships, it is likely that there will be shared faculty. There must be at least one fellowship trained faculty member for each fellow, in addition to the Fellowship Director. In addition, it is beneficial that each Fellowship Program have an independent Fellowship Director.

3. Faculty members must devote sufficient time to the educational program to fulfill their supervisory and teaching responsibilities. The faculty must evaluate in a timely manner the fellows whom they supervise.
4. The faculty must demonstrate a strong interest in the education of fellows, demonstrate competence in both clinical care and teaching abilities, support the goals and objectives of the educational program, and demonstrate commitment to their own continuing medical education by participating in scholarly activities as described in Section V.D

E. Other Program Personnel

The program must be provided with the additional professional, technical, and clerical personnel needed to support the administration and educational conduct of the program.

V. The Educational Program

The program design and sequencing of educational experiences will be approved by the AUPO FCC.

A. Role of Fellowship Director and Faculty

1. The Fellowship Director, with assistance of the faculty, is responsible for developing and implementing the academic and clinical program of fellow education by
 - a. Preparing and implementing a written statement outlining the educational goals of the program with respect to the knowledge, skills, and other attributes of fellows for each major assignment and each level of the program. The statement must be distributed to fellows; and faculty and reviewed with fellows prior to the assignment.
 - b. Preparing and implementing a comprehensive, well-organized, and effective academic and clinical curriculum that includes the presentation of core specialty knowledge, supplemented by the addition of current information.
 - c. Providing fellows with direct experience in progressive responsibility for patient management.

B. Didactic Components

One of the functions and continuing obligations of fellowship trained retina sub specialists has been as medical educators. The fellow will be required to prepare and present teaching conferences and participate in the teaching of residents and/or medical students. The fellow must participate in a minimum of 50 hours of didactic instruction, including seminars, lectures, and approved basic science courses, of which at least 25 hours will be in the parent institution. These may include the following:

1. Mandatory attendance at weekly conferences. The fellow is to actively participate in case presentations and discussions of patients with retina and vitreous diseases. The subspecialty fellow must prepare and present at least two of these rounds per year.
2. Mandatory attendance at regularly scheduled morbidity, pathology, and complications conferences.

3. Attendance at lectures on retina vitreous topics given by the faculty during the subspecialty residency teaching program. These must include at least six lecture hours per year. The fellow is required to at least prepare one presentation for conferences, which include faculty and fellows.
4. Attendance and preparation of case presentation for at least one retina vitreous visiting professor conference per year is suggested.
5. Attendance and participation in courses on retina and vitreous presented by the Retina Service or the Department of Ophthalmology.
6. The subspecialty fellow must actively participate, along with the retina faculty in a journal club at least quarterly. The fellow and faculty should present and critically discuss selections from the current literature.
7. The fellow should attend local and regional and national conferences relevant to vitreoretinal diseases.
8. The fellow must maintain a log of attended conferences, lectures given, journal clubs, research activities, publications, and meetings attended.

C. Clinical Components

1. Clinical Experience

The clinical patient population must include patients of all ages with a variety of vitreoretinal disorders of varying complexity so that an acceptable experience in the diagnosis and management of the conditions outlined in these requirements can be accomplished. This experience should be verified through attestation by the fellow and Fellowship Director at the completion of the fellowship. Supervision, documentation and verification of each fellow's activities are the responsibility of the Fellowship Director. The Fellowship Director and associated faculty should maintain a consistent presence in the clinic service. The retina subspecialty program will support the general ophthalmology teaching program. Specifically, fellows will see patients and assist with care of patients with vitreoretinal diseases. The fellows should provide teaching in the area of vitreoretinal disease for residents in addition to helping with specific aspects of retinal care.

- a. The fellowship program shall ensure proficiency in the evaluation and management of common medical retina entities including but not limited to age-related macular degeneration, central serous chorioretinopathy,

diabetic retinopathy and vascular occlusive disease, retinal telangiectasia (macular telangiectasia type 2 and Coats disease), and drug toxicities of the posterior segment (hydroxychloroquine, MEK inhibitors, tamoxifen, etc.).

- b. It is encouraged that the fellow receives training in the following sub-specialty areas through either direct patient contact and/or educational material such as conferences, webinars, and journal clubs:
 - 1. Uveitis – The fellow should have exposure to the diagnosis and treatment of patients with posterior uveitis.
 - 2. Oncology/Tumor – At minimum, the fellow should be able to diagnose and understand management options for intraocular tumors.
 - 3. Hereditary retina disorders/Retinal degenerations – The fellow should have an understanding of the presentation and diagnosis of hereditary retinal disorders.
 - 4. Participation in ROP screening of at-risk infants is encouraged.
- c. Evaluation of retinal entities requiring surgery

Experience with evaluating the following surgical retinal conditions should be ensured:

- 1. Retinal Detachment: including rhegmatogenous, and tractional detachments.
- 2. Other indications that require surgical referral including but not limited to vitreous hemorrhage, diabetic retinopathy, proliferative vitreoretinopathy, giant retinal tear, endophthalmitis, intraocular foreign body, epiretinal membranes, macular holes and vitreomacular traction syndrome.

2. Diagnostic Procedures

Experience with the following diagnostic procedures should be documented and verified by the fellow and Fellowship Director at the completion of fellowship:

- a. Imaging including:
Fluorescein angiography, indocyanine angiography, and optical coherence tomography (OCT). The fellow should independently, but

under supervision, provide interpretation of at least 50 fluorescein angiograms/ICG and 200 OCTs. The fellow should be familiar with the details of performing these studies and the complications associated with them.

- b. Electrophysiology - The fellow should understand the indications for and interpretations of electrophysiological and psychophysiological tests of retinal disorders. The fellow should understand the methods of performing these studies.
- c. Ultrasound - The fellow should be familiar with the principles of A- and B-scan ultrasound evaluations and interpretations and should have sufficient experience to adequately perform basic B-scan ultrasonography.
- d. Radiology - The fellow should understand the indications for and interpretations of a variety of radiological examinations including orbital and ocular X-rays, CT scans, and MRI studies.

3. Therapeutic Procedures

- a. Laser photocoagulation - The fellow should understand the principals of photocoagulation and have experience in treating retinal vascular disorders, macular diseases, and retinal tears with both indirect and slit lamp laser. This experience should be demonstrated through documentation of observing or performing a minimum of 50 combined cases of focal laser, panretinal laser photocoagulation or laser retinopexy.
- b. Intravitreal injections - The fellow should understand the indications for and have experience in treating retinal diseases with anti-VEGF, steroids, antibiotics (see vitreous tap and inject) and other chemotherapeutics. This experience should be demonstrated through documentation of performing a minimum of 50 injections.
- c. Vitreous tap and inject – The fellow should specifically have an understanding of the indications for performing a vitreous tap with injections of intravitreal antibiotics for the treatment of endophthalmitis and documentation of this understanding.
- d. Sub-tenon’s injections – The fellow should have exposure to sub tenons’ injections with an understanding of its indications and contraindications.
- e. Cryotherapy – The fellow should have exposure to cryotherapy and understand the indications and complications.

- f. Photodynamic therapy – The fellow should have an understanding of indications and complications of photodynamic therapy as well as knowledge of appropriate settings and selecting spot size.

D. Scholarly Activities

1. The responsibility for establishing and maintaining an environment of inquiry and scholarship rests with the faculty, and an active research component must be included within each program. Both faculty and fellows must participate actively in scholarly activity. Scholarship is defined as one of the following:
 - a. The scholarship of discovery, as evidenced by peer-reviewed funding or publication of original research in peer-reviewed journals.
 - b. The scholarship of dissemination, as evidenced by review articles or chapters in textbooks.
 - c. The scholarship of application, as evidenced by the publication or presentation at local, regional, or national professional and scientific society meetings, for example, case reports or clinical series, and other clinical and scientific studies.
 - d. Active participation of the faculty in clinical discussions, rounds, journal club, and research conferences in a manner that promotes a spirit of inquiry and scholarship; offering of guidance and technical support e.g., research design, statistical analysis, for fellows involved in research; and provision of support for fellow participation as appropriate in scholarly activities.
2. Adequate resources for scholarly activities for faculty and fellows must be available, e.g., sufficient laboratory space, equipment, computer services for data analysis, and statistical consultation services.
3. **Fellow's Research Activities**
Research activities are required of all retina and vitreous fellows. This should include clinical research, and, when possible, laboratory research. Although it is not required, it is expected that such research will lead to a presentation at a scientific meeting and/or a publication in a peer-reviewed journal. The fellowship must provide resources to equip the fellow to assume this responsibility by participating in the development of new knowledge and evaluating research findings.

4. Ethics

Fellowship preceptors must emphasize the principles of ethical and humane treatment of patients in accordance with the Code of Ethics of the American Academy of Ophthalmology, the Declaration of Helsinki Standards, and the ARVO statement for the use of Animals in Ophthalmic and Vision Research. Preceptors and faculty should communicate these principles to their trainees in both didactic and clinical aspects of the fellowship training. The program must meet or exceed RRC requirements for teaching of ethics in residency and fellowship programs.

E. Fellow Duty Hours and the Working Environment

Providing fellows with a sound academic and clinical education must be carefully planned and balanced with concerns for patient safety and fellow well-being. Each program must ensure that the learning objectives of the program are not compromised by excessive reliance on fellows to fulfill service obligations. Didactic and clinical education must have priority in the allotment of fellows' time and energies. Duty hour assignments must recognize that faculty and fellows collectively have responsibility for the safety and welfare of patients.

1. Supervision of Fellows

- a. All patient care must be supervised by qualified faculty. The Fellowship Director must ensure and document adequate supervision of fellows at all times. Fellows must be provided with rapid, reliable systems for communicating with supervising faculty.
- b. Faculty schedules must be structured to provide fellows with supervision and/or consultation.
- c. Faculty and fellows must be educated to recognize the signs of fatigue and adopt and apply policies to prevent and counteract the potential negative effects.

2. Duty Hours

- a. Duty hours are defined as all clinical and academic activities related to the fellowship program, i.e., patient care (both inpatient and outpatient), administrative duties related to patient care, the provision for transfer of patient care, time spent in-house during call activities, and scheduled academic activities such as conferences. Duty hours do not include reading and preparation time spent away from the duty site.

- b. Fellows should be provided with 1 day in 7 free from all educational and clinical responsibilities, averaged over a 4-week period, inclusive of call. One day is defined as one continuous 24-hour period free from all clinical, educational, and administrative activities.
- c. Adequate time for rest and personal activities must be provided.

3. Oversight

- a. Each program must have written policies and procedures consistent with the sponsoring Institutional and Program Requirements for fellow duty hours and the working environment. These policies must be distributed to the fellows and the faculty. Monitoring of duty hours is required with frequency sufficient to ensure an appropriate balance between education and service.
- b. Back-up support systems must be provided when patient care responsibilities are unusually difficult or prolonged, or if unexpected circumstances create fellow fatigue sufficient to jeopardize patient care.

4. Graded Responsibility

The responsibility given to fellows in patient care should depend upon each fellow's knowledge, problem-solving ability, manual skills, experience, and the severity and complexity of each patient's status.

5. Supervision

- a. All patient care services must be supervised by qualified faculty.
- b. The Fellowship Director must ensure and document adequate supervision of fellows at all times.
- c. Fellows must be provided with rapid, reliable systems for communicating with supervisors.

VI. Evaluation

A. Fellow Evaluation

- 1. The fellowship program must demonstrate that it has an effective plan for assessing fellow performance throughout the program and for utilizing the results to improve fellow performance. This plan should

include:

- a. Mechanisms for providing regular and timely performance feedback to fellows that includes at least:
 1. Written semiannual evaluation that is communicated to each fellow in a timely manner. Ongoing evaluations of the fellows is encouraged.
 2. The maintenance of a record of evaluation for each fellow that is accessible to the fellow. This plan should include a process involving use of assessment results to achieve progressive improvements in fellows' competence and performance, including the development of professional attitudes consistent with being a physician.

Appropriate sources of evaluation include faculty, patients, peers, self, and other professional staff.

2. The Fellowship Director must provide a final evaluation for each fellow who completes the program. The evaluation must include a review of the fellow's performance during the final period of education and should verify that the fellow has demonstrated sufficient professional ability to practice competently and independently. The final evaluation must be part of the fellow's permanent record maintained by the institution.

B. Faculty Evaluation

The performance of the faculty must be evaluated by the program no less frequently than yearly. The evaluations should include a review of their teaching abilities, commitment to the educational program, clinical knowledge, and scholarly activities. Annual written evaluations by fellows must be included in this process.