



CAST PROGRAM REQUIREMENTS FOR FELLOWSHIP EDUCATION IN NEUROSURGICAL ONCOLOGY

INTRODUCTION

Eligibility

Fellowship programs that exist within the structure of an ACGME accredited residency in neurologic surgery or within an NCI-designated comprehensive cancer center may apply for accreditation through the Committee on Accreditation of Subspecialty Training of the Society of Neurological Surgeons

Definition and Scope of the Subspecialty

Neurosurgical Oncology (NO) is that subspecialty of neurosurgery that deals with the medical and surgical treatment of patients with tumors of the brain, skull, spinal cord, spine, and peripheral nerves.

Duration of Training

Post-graduate fellowships:

Prior to beginning a CAST-accredited neurological surgery subspecialty fellowship, each fellow candidate will generally have satisfactorily completed all the requirements of an ACGME-accredited residency training program in neurologic surgery.

Enfolded fellowships:

- If a candidate is pursuing an enfolded CAST-accredited fellowship during their residency, that fellowship training should occur at the appropriate senior level of residency allowable as valid by the corresponding Joint Section(s) together with CAST.
- Prior to beginning their fellowship, the resident participant must already have a broad exposure to the full spectrum of neurosurgery with sufficient senior level clinical experience to warrant a focused experience to build upon his/her already acquired skills. It is anticipated that any fellow should already have both the technical expertise and intellectual maturity to understand and apply the material available in subspecialty training (Milestone Level 4). With that specific goal in mind, the term "senior level" has been defined by the SNS so as to occur after the successful completion of the Chief Resident year.
- Recognizing that these guidelines and definitions are more restrictive than previously utilized by some programs and subspecialties, they will not go into effect until the beginning of the academic year July 2019. Going forward thereafter, the "senior resident level" requirement for participation in all enfolded CAST accredited fellowships (other than neurocritical care and neuroendovascular surgery) will be after the completion of their Chief Resident year, ideally during PGY7 and certainly not before PGY6
- All new and renewal CAST-accredited fellowship applications approved during the coming year and thereafter will be obligated to comply with these guidelines and adhere

- to the new annual updates of the fellowship program along with specific training details of each individual graduating fellow completing that program.
- The standard length of fellowships will be of twelve (12) months duration. Since all fellowship applications will be reviewed by the accrediting bodies defined above, an application at variance from the considered standard must provide convincing evidence of its ability to satisfy the educational needs defined by the CAST.

Broad Description of the Objectives/Goals of Education in the Fellowship

- The fellowship training must provide broad educational experience in NO that will complement that training in the neurosurgery residency to promote further acquisition of knowledge and skills in the subspecialty.
- A minimum of six months of fellowship training will be spent in a clinical NO experience under the direction of specified clinical faculty. This period of time must provide the trainee with an organized, comprehensive, supervised, full time educational experience in the field of NO. This should include comprehensive patient care, diagnostic modalities, the performance of surgical procedures, stereotactic radiosurgery, and the integration of non-operative and surgical therapies into clinical patient management (see appendix specifying fellowship curriculum).
- Each fellowship should provide a broad exposure to clinical evaluation and appropriate patient selection for operative and non-operative management in both the inpatient and outpatient settings.
- Each fellow should actively participate in the operative management of a wide range of NO disorders, including benign and malignant tumors that affect the brain, skull, skull base, spine, spinal cord and peripheral nerves.
- Progressive responsibility in patient management should be provided. A broad exposure to modern radiation therapy techniques such as Gamma Knife and/or Linear Accelerator (LINAC) is considered an integral part of the NO fellowship experience and training.
- Clinical, anatomic, biomechanical, and neuroscience research constitute an integral component of the educational experience and provision should be made for the successful completion of research projects. A full-time experience in research will require an extension of the fellowship beyond the basic twelve months of clinical training. An optional year on a research rotation following the clinical training in NO is highly recommended.

INSTITUTIONAL ORGANIZATION

The Sponsoring Program and Institution

- The sponsoring neurosurgical residency program and/or comprehensive cancer center and its affiliated institutions must provide sufficient faculty, financial resources, research, and laboratory facilities to meet the educational needs of the fellowship trainee and to enable the program to comply with the requirements of accreditation
- Recognizing the interdisciplinary nature of comprehensive care for NO patients, it is required that within the institution(s) of the fellowship there shall exist clinical facilities and faculty in intensive care, neuroradiology, neurology, neuropathology, radiation oncology, medical oncology, and rehabilitation medicine.
- Support for the fellowship program by the sponsoring department/division of neurosurgery must be demonstrated in writing by the program chair at the time of application for or renewal of accreditation.

Participating Institutions

- Participating institutions shall be limited to those necessary for a complete fellowship experience, with each participating institution having a clinical caseload in excess of 320 operative NO cases per year.
- In most instances the NO fellowship will occur at a single institution. Depending on local circumstances, training may be spent at additional institutions that may provide special resources for training.
- The primary teaching staff must be members of the faculty of the sponsoring program and/or comprehensive cancer center.

Appointment of Fellows

In general, only one fellowship position per training program will be allowed at on Accreditation of Subspecialty Training. In determining the merit of additional fellowship positions, the Committee will consider:

- The presence of a faculty of national stature in NO. The quality of the educational program.
- The quality of clinical care.
- The total number and spectrum of cases.
- The quality of clinical and research programs.
- The quality of fellows trained by the program.
- The impact of fellows on the clinical and educational experience of the neurosurgical residents within a sponsoring program.
- Selection of candidates for the fellowship position must be consonant with the criteria established by the sponsoring program. The fellowship director must adhere to the criteria for fellowship eligibility that are specified in this document.
- A high rate of fellowship attrition from a program may adversely affect the fellowship accreditation status.

FACULTY QUALIFICATIONS AND RESPONSIBILITIES

Fellowship Director Qualifications

- The fellowship director must be appointed by and be responsible to the chair of the sponsoring neurologic surgery residency or fellowship program.
- The fellowship director shall be a neurologic surgeon who possesses special expertise in the evaluation and surgical, medical management of NO problems and whose practice is concentrated in the area of NO.
- The fellowship director should be certified by the American Board of Neurological Surgery or possess equivalent qualifications as judged by the RRC for Neurological Surgery.

Responsibilities of the Fellowship Director

The fellowship director must assume responsibility for the training program and devote sufficient time to the educational program including the following:

- Preparation of a written curriculum outlining the educational goals of the program with respect to knowledge, skills, and other attributes to be attained during the fellowship. This statement must be distributed to the fellow and members of the teaching staff and be available for review.

- Selection of fellows in accordance with institutional and departmental/division policies.
- Selection and supervision of the teaching staff and other program personnel at the institution(s) participating in the program.
- The supervision of the fellow through explicit written directives relative to responsibilities in patient care as well as supervisory lines. These guidelines must be communicated to all members of the program faculty. Fellows must be provided with prompt, reliable systems for communication and interaction with supervisory physicians.
- Regular evaluation of the fellow's knowledge, skills, and overall performance, including the development of professional attitudes.
- The fellowship director, with participation of members of the teaching staff, shall:
 - Evaluate the knowledge, skills, and professional growth of the fellow using appropriate criteria and procedures.
 - Communicate each evaluation to the fellow in a timely manner.
 - Advance fellows to positions of increasing responsibility on the basis of satisfactory progression in patient management, scholarship and professional growth
 - Maintain a permanent record of evaluations of each fellow and have it accessible to the fellow and other authorized personnel.
 - Provide a written final evaluation for the fellow on completion of the program. This evaluation must include a review of the fellow's performance during the final period of training and verification of the fellow's demonstrated professional abilities and competence for independent practice. This final evaluation should be part of the fellow's permanent record maintained by the institution.
 - Implement all procedures, as established by the sponsoring institution, regarding academic discipline and complaints or grievances pertinent to the fellowship trainees.
 - Monitor fellow's stress, including mental or emotional conditions affecting performance or learning and drug or alcohol-related dysfunction. Fellowship directors and teaching staff should be sensitive to the need for timely provision of confidential counseling and psychological support services to the fellow. Training situations that consistently produce undesirable stress on the fellow must be evaluated and modified.
 - Prepare accurate statistical and narrative descriptions of the program as required by the CAST
 - Notify CAST regarding major programmatic changes.

Other Teaching Faculty Qualifications and Number

- All clinical faculty members who are neurologic surgeons shall be certified by, or be in the certification process of, the American Board of Neurological Surgery or possess equivalent qualifications as judged by the RRC for Neurological Surgery.
- In addition to the program director, the teaching staff must include, at a minimum, one other board certified neurologic surgeon who has special expertise in the area of NO and who concentrates his/her practice in NO as defined above.
- The primary teaching staff should be based at the sponsoring institution or its affiliated hospitals and maintain a close affiliation with teaching staff within the program.
- All members of the teaching staff must demonstrate a strong interest in the education of fellows, sound clinical and teaching abilities, support of the goals and objectives of the fellowship, a commitment to their own continuing medical education, and participation in scholarly activities.
- If multiple institutions are approved for participation in the fellowship program, a member of the teaching staff at each participating institution must be specifically designated to assume

responsibility for the day-to-day activities of the fellowship at that institution with overall coordination by the fellowship director.

- The faculty must have regular documented meetings to review the fellowship training, the financial and administrative support of the fellowship, the volume and variety of patients available for educational purposes, the performance of members of the teaching staff, and the quality of fellowship supervision of fellowship supervision.

Other Personnel

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

LOGISTICS OF TRAINING

The Educational Program

- All educational components of the fellowship should be related to the specified goals and must not interfere with the training opportunities of residents who may be members of a sponsoring neurosurgical residency program.
- The fellowship program and/or structure must be reviewed for re-accreditation by the Committee on Subspecialty Training of The Society of Neurological Surgeons.

Clinical Components

- A minimum of six months of fellowship training must be spent in clinical activities in NO.
- A time period of 12 months in clinical activities is strongly recommended.
- The responsibility or independence given to fellows in patient care must be dependent upon the fellow's demonstrated knowledge, manual skills, experience in the complexity of the patient's illness, as well as the perceived risks of the surgical management
- A portion of the fellowship experience should be allocated to training in an outpatient clinic or office setting that provides preoperative, perioperative and postoperative continuity of patient care.

OTHER COMPONENTS

- The fellowship program should provide opportunities for the fellow to engage in research relative to the subspecialty.
- The fellow should actively participate in scholarly activities and should contribute to the education of neurosurgery residents and medical students.
- The fellowship program should have regular dedicated teaching conferences with participation of the fellow, the associated faculty, and residents of the sponsoring program. Participation of other affiliated disciplines should be encouraged.

FELLOWSHIP POLICIES

Supervision

- All patient care services must be supervised by appropriately qualified faculty in accordance with institutional guidelines.
- The fellow who has completed an accredited neurosurgery residency program may function independently as a junior staff neurosurgeon consistent with institutional and departmental/division policies.

- The fellowship director must always insure direct and document proper supervision of the fellow by attending physicians with appropriate experience for the severity and complexity of the patient's condition. The fellowship trainee must be provided with rapid, reliable systems for communication with supervisors.

Maintenance of Case Logs

- The fellowship program director must maintain accurate case logs of the spinal neurosurgery case material operated annually within the institution and the subspecialty experience of the graduating chief resident throughout his training as well as that of the fellow.
- The fellow must maintain an accurate prospective case log of his/her operative cases throughout the fellowship which documents all operative cases and the level of responsibility in the case (assistant versus primary surgeon).

Evaluations

- As specified in IIIB, 5 and 6, there shall be written evaluations and constructive discussions of the fellow by the faculty relative to performance and accomplishments of stated goals. These evaluations must occur at a minimum of two times per year and maintained in a permanent file.
- The fellow shall provide an evaluation of the faculty and fellowship program. This may be submitted either to the fellowship or program director at completion of the fellowship training. This evaluation should be maintained in a permanent file for review by the CAST if requested.

Duty Hours and Conditions of Work

- Duty hours and work conditions for subspecialty fellows must be consistent with ACGME institutional and program requirements for residency training in neurological surgery for those individuals who are in the last year of residency. Those outside of residency are not restricted in terms of work hours other than regulations which may be imposed by the sponsoring institution Neurological surgery.

Procedural requirements

Demonstrate competency with all of the procedures listed below having completed at least the minimum number identified below during the fellowship:

INSTITUTIONAL

Craniotomy for intra-axial tumor (min. 120)

- Glioma/Primary brain tumor
- Metastasis

Craniotomy for extra-axial tumor (min. 50)

- Meningioma (min. 30)
- Intra-ventricular (min. 10)

Radiosurgery (min. 60)

Biopsy/Stereotactic (e.g. LITT) (min. 20)

Craniotomy for skull base tumor (min. 20)

- Vestibular schwannoma
- Other skull base surgery

EEA/craniotomy for sellar/parasellar (min. 40)

- **Spinal Tumors (min. 10)**Intramedullary (min. 5)
- Extramedullary/metastasis (min. 5)

Total institutional case minimum: 320

FELLOW

Craniotomy for intra-axial tumor (min. 60)

- Glioma/Primary brain tumor
- Metastasis

Craniotomy for extra-axial tumor (min. 25)

- Meningioma
- Intra-ventricular

Radiosurgery (min. 30)

Additional cases from the categories below:

- **Biopsy/Stereotactic insertion (e.g. LITT)**
- **Craniotomy for skull base tumor**
 - Vestibular schwannoma
 - Other skull base surgery
- **EEA/Craniotomy for sellar/parasellar tumor**
- **Spinal Tumors**
 - Intramedullary
 - Extramedullary/metastasis

Total fellow case minimum: 150

MAINTENANCE OF FELLOWSHIP ACCREDITATION

- Each year, the program will be required to provide an annual report to CAST. CAST will offer continuous accreditation based upon review of the annual report. Although the fellowship will now have continuous accreditation with an approved annual report, factors that may impact ongoing accreditation include: any adverse actions of the Neurological Surgery Review Committee (RC) relative to the parent residency training program, changes in fellowship leadership, failure to maintain a satisfactory volume of cases, major changes in the fellowship faculty, and failure to complete required annual reports.

Please notify CAST immediately of any changes that occur.

