



CAST PROGRAM REQUIREMENTS FOR FELLOWSHIP EDUCATION IN SKULL BASE NEUROSURGERY

INTRODUCTION

Eligibility

Fellowship programs which exist within a structure of an ACGME accredited residency in neurological surgery may apply for accreditation through the Committee on Accreditation of Subspecialty Training of The Society of Neurological Surgeons.

Definition and Scope of the Subspecialty

Skull Base Neurosurgery (cranial base neurosurgery) is that subspecialty of neurosurgery that deals with the evaluation and medical and surgical treatment of diseases of the base of skull region.

Duration of Training

Post-graduate fellowships:

Prior to beginning a CAST-accredited neurological surgery subspecialty fellowship, each fellow candidate will generally have satisfactorily completed an ACGME accredited residency training program in neurological 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.
- 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.
- 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.
- It is anticipated that the standard length of fellowships will be twelve (12) months duration. Since all fellowship applications will be reviewed formally, 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 Skull Base Neurosurgery which will complement that training in the neurosurgery residency to promote further acquisition of knowledge and skills in the subspecialty.
- The fellowship will be 12 months in duration and fellowship training will be spent in a clinical skull base surgery program with 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 skull base neurosurgery. This should include comprehensive patient care, diagnostic modalities, the performance of surgical procedures, 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 skull base surgical conditions including both tumor-related, vascular, traumatic, congenital or other pathological diseases and abnormalities. Progressive responsibility in patient management should be provided.
- Clinical, anatomic, 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 12 months of clinical training.

INSTITUTIONAL ORGANIZATION

The Sponsoring Program and Institution

- The sponsoring neurosurgical residency program and its affiliated institutions must provide sufficient breadth and depth of operative procedures in skull base neurosurgery to sustain fellowship training. The sponsoring institution should be identified as a regional referral resource for patients with complex skull base diseases. Additionally, there must be 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 patients with skull base surgical conditions, it is required that within the institution(s) of the fellowship there shall exist clinical facilities and faculty in neuroradiology including interventional capabilities, otolaryngology, ophthalmology, plastic surgery, neuroanesthesiology and neuropathology.
- 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 able to provide a complete fellowship experience, with each participating institution having a clinical caseload in excess of 200 operative skull base cases per year.
- In most instances the Skull Base Neurosurgical fellowship will occur at a single institution. Depending on local circumstances, training may be spent at additional institutions which may provide special resources for training.
- The primary teaching staff must be members of the faculty of the sponsoring program.

Appointment of Fellows

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

- The presence of a faculty of national stature in skull base neurosurgery.
- 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.
- Facilities.
- The quality of fellows trained by the program.
- The impact of fellows on the clinical and educational experience of the neurosurgical residents within the 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 specified in this document. Appropriate candidates for fellowship position are senior level trainees in or graduates of ACGME accredited (or its equivalent as approved by the SNS CAST) neurosurgical training programs
- 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 program.
- The fellowship director shall be a neurologic surgeon who possesses special expertise in the evaluation and surgical, medical management of skull base neurosurgical problems and whose practice is concentrated in the area of skull base surgery.
- 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.
- 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.

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 are members of the 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 in synchrony with the RRC review of the sponsoring residency program. A review panel will be chosen from members of the North American Skull Base Society and the AANS/CNS Tumor Section who have shown leadership and commitment to the development and training of skull base surgeons. Failure of fellowship to reapply for review within six months of residency programmatic review will constitute cause for withdrawal of accreditation by CAST.

Clinical Components

- A minimum of 12 months of fellowship training must be spent in clinical activities in skull base neurosurgery.
- The responsibility or independence given to fellows in patient care must be dependent upon the fellow's demonstrated knowledge, manual skill, 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 which provides preoperative, peri-operative 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 insure direct and document proper supervision of the fellow at all times 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 skull base 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.

Procedural requirements

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

INSTITUTIONAL

Endoscopic endonasal cases (Min 60)

- Pituitary Adenoma
- Other

Anterior Skull Base Microsurgery (Min 30)

- Tumor
- Trauma
- Infection
- Congenial
- CSF leak repair

Middle Skull Base Microsurgery (Min 30)

- Tumor
- Trauma
- Infection
- Congenial
- CSF leak repair

Posterior Skull Base Microsurgery (Min 30)

- Tumor
- Trama
- Infection
- Congenial
- CSF leak repair

Craniocervical junction microsurgery (Min 10)

Open vascular skull base microsurgery (Min 10)

Skull base radiosurgery (Min 10)

Total Institutional case minimum: 200

FELLOW

A minimum total of 70 cases required; EEA and radiosurgery cases required, along with at least 10 cases needed in 3 out of the 5 starred (*) categories

Endoscopic endonasal cases (Min 10)

- Pituitary Adenoma
- Other

Anterior Skull Base Microsurgery (Min 10 *)

- Tumor
- Trauma
- Infection
- Congenial
- CSF leak repair

Middle Skull Base Microsurgery (Min 10 *)

- Tumor
- Trauma
- Infection
- Congenial
- CSF leak repair

Posterior Skull Base Microsurgery (Min 10 *)

- Tumor
- Trama
- Infection
- Congenial
- CSF leak repair

Craniocervical junction microsurgery (Min 10 *)

Open vascular skull base microsurgery (Min 10 *)

Skull base radiosurgery (Min 10)

Total Fellow case minimum: 70

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.

