**New Application: Neurological Surgery**

**Review Committee for Neurological Surgery**

**ACGME**

The questions that follow provide programs with an opportunity to systematically describe the manner in which they comply with accreditation requirements. Responses should be **concise and focused**. During the site visit, residents, faculty members, and others will be asked for comment on the information provided. **As such, those who will be interviewed should read the application prior to their meeting with the Accreditation Field Representative.**

**Oversight**

**Participating Sites**

1. Identify the ACGME-accredited programs available at the primary clinical site. [PR 1.2.a.]

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| --- | --- | --- | --- | --- | --- |
|  | **Site #1** | **Site #2** | **Site #3** | **Site #4** | **Site #5** |
| Anesthesiology |  |  |  |  |  |
| Diagnostic Radiology |  |  |  |  |  |
| Internal Medicine |  |  |  |  |  |
| Neurology |  |  |  |  |  |
| Pediatrics |  |  |  |  |  |
| Surgery |  |  |  |  |  |

1. Describe how the program director will ensure peer interaction and regular attendance of residents at joint conferences and other activities regardless of the location of their assigned rotations. [PR 1.6.b.]

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**Resources**

1. Describe the inpatient facilities available to the program. [PR 1.8.a.-1.8.a.5.]

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1. Describe the outpatient facilities available to the program. [PR 1.8.b.]

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1. Describe the space and support personnel available for research. [PR 1.8.c.]

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1. Indicate whether the following clinical services are available for the education. Site numbers must correspond to information provided in the ACGME’s Accreditation Data System (ADS). [PR 1.8.d.]

|  | **Site #1** | **Site #2** | **Site #3** | **Site #4** | **Site #5** |
| --- | --- | --- | --- | --- | --- |
| Anesthesiology | Y  N | Y  N | Y  N | Y  N | Y  N |
| Critical Care | Y  N | Y  N | Y  N | Y  N | Y  N |
| Emergency Medicine | Y  N | Y  N | Y  N | Y  N | Y  N |
| Endocrinology | Y  N | Y  N | Y  N | Y  N | Y  N |
| Ophthalmology | Y  N | Y  N | Y  N | Y  N | Y  N |
| Orthopaedics | Y  N | Y  N | Y  N | Y  N | Y  N |
| Otolaryngology | Y  N | Y  N | Y  N | Y  N | Y  N |
| Pathology | Y  N | Y  N | Y  N | Y  N | Y  N |
| Psychiatry | Y  N | Y  N | Y  N | Y  N | Y  N |
| If “NO” to any of the above, describe the resources for education of neurological surgery residents | Click or tap here to enter text. | Click or tap here to enter text. | Click or tap here to enter text. | Click or tap here to enter text. | Click or tap here to enter text. |

1. Will the program sponsor or participate in any clinical fellowship taking place within sites participating in the program? [PR 1.8.f.]  YES  NO

If “YES,” describe the fellowship's relationship to and impact on the residency. [PR 1.8.f.2.]

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**Personnel**

**Program Director**

1. Does the program require residents to sign a non-competition guarantee or restrictive covenant? [CPR 3.1.]  YES  NO

If “YES”, explain.

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**Faculty**

1. How will the program maintain documentation of faculty members’ annual faculty development activities related to resident education, including evaluation, feedback, mentoring, supervision, or teaching? [PR 2.8.f.]

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1. For each participating site, list the site director and briefly describe the site director’s clinical responsibilities at that site. Site number references should correspond to those in the prior table. [PR 2.8.g.]

| **Site** | **Site Director Name** | **Site Director Clinical Responsibilities** |
| --- | --- | --- |
| **#1** | Name | Responsibilities |
| **#2** | Name | Responsibilities |
| **#3** | Name | Responsibilities |
| **#4** | Name | Responsibilities |
| **#5** | Name | Responsibilities |

**Program Coordinator**

1. Is there a full-time designated program coordinator with dedicated time and support provided by the Sponsoring Institution? [PR 2.12.a.]   YES  NO

Explain, if “NO”.

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**Other Program Personnel**

1. Describe other personnel available for the effective administration of the program. [PR 2.13.]

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**Resident Appointments**

1. Will the program obtain Review Committee approval prior to filling a vacancy at the PGY-2 level and above? [PR 3.5.b.]  YES  NO

Explain, if “NO”.

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**Educational Program**

**Patient Care and Procedural Skills**

1. Describe how the program will ensure that residents develop competence in demonstrating sensitivity to their patients’ pain and emotional states. [PR 4.4.a.]

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1. Describe how the program will ensure that residents develop competence in discussing death honestly, sensitively, patiently, and compassionately. [PR 4.4.b.]

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1. Indicate the settings and activities in which residents will develop competence in each of the following areas of patient care. Also indicate the method used to evaluate competence.

| **Competency Area** | **Settings/Activities** | **Method(s) Used to Evaluate Resident Competence** |
| --- | --- | --- |
| Assessing post-operative recovery, recognizing and treating complications, communicating with referring physicians, and developing the physician-patient relationship  [PR 4.4.c.] | Click here to enter text. | Click here to enter text. |
| Analyzing patient outcomes  [PR 4.4.d.] | Click here to enter text. | Click here to enter text. |
| Providing health care services aimed at preventing health problems and maintaining health, including opioid addiction in the management of acute and chronic pain  [PR 4.4.e.] | Click here to enter text. | Click here to enter text. |
| Gathering essential patient information in a timely manner [PR 4.5.a.] | Click here to enter text. | Click here to enter text. |
| Synthesizing and properly utilizing acquired patient data [PR 4.5.b.] | Click here to enter text. | Click here to enter text. |
| Generating a differential diagnosis and properly sequencing critical actions for patient care, including managing complications and morbidity and mortality [PR 4.5.c.] | Click here to enter text. | Click here to enter text. |
| Generating and implementing an effective management plan [PR 4.5.d.] | Click here to enter text. | Click here to enter text. |
| Prioritizing and stabilizing multiple patients simultaneously [PR 4.5.e.] | Click here to enter text. | Click here to enter text. |
| Performing neurosurgical operative procedures, including: [PR 4.5.f.] | Click here to enter text. | Click here to enter text. |
| Adult cranial procedures, to include: [PR 4.5.f.] | Click here to enter text. | Click here to enter text. |
| Craniotomy for brain tumors, such as intra-axial, extra-axial, skull base, and trephination for biopsy of cranial or intracranial tumors[PR 4.5.f.1.] | Click here to enter text. | Click here to enter text. |
| Craniotomy EEA for sellar/parasellar tumors  [PR 4.5.f.2.] | Click here to enter text. | Click here to enter text. |
| Craniotomy/craniectomy/cranioplasty for trauma and non-tumor conditions  [PR 4.5.f.3.] | Click here to enter text. | Click here to enter text. |
| Open procedures for vascular lesions, including aneurysm, vascular malformation, ischemia, and extracranial cerebrovascular [PR 4.5.f.4.] | Click here to enter text. | Click here to enter text. |
| Endovascular procedures for vascular lesions, including aneurysm, vascular malformation, ischemia, and tumor  [PR 4.5.f.5.] | Click here to enter text. | Click here to enter text. |
| CSF diversion and intraventricular surgery  [PR 4.5.f.6.] | Click here to enter text. | Click here to enter text. |
| Procedures for cranial/extracranial Treatment of pain, including craniotomy, stereotaxy, and rhizotomy  [PR 4.5.f.7.] | Click here to enter text. | Click here to enter text. |
| Cranial/extracranial procedures for functional disorders  [PR 4.5.f.8.] | Click here to enter text. | Click here to enter text. |
| Cranial/extracranial procedures for epilepsy (adult and pediatric patients) [PR 4.5.f.9.] | Click here to enter text. | Click here to enter text. |
| Adult spinal procedures, to include: [PR 4.5.g.] | Click here to enter text. | Click here to enter text. |
| Anterior cervical approaches for spinal conditions (e.g., tumor, non-tumor, and trauma) [PR 4.5.g.1.] | Click here to enter text. | Click here to enter text. |
| Posterior cervical approaches for spinal conditions (e.g., tumor, non-tumor, and trauma) [PR 4.5.g.2.] | Click here to enter text. | Click here to enter text. |
| Thoracic/lumbar instrumentation and fusion for spinal conditions (e.g., Tumors, non-tumors, and trauma  [PR 4.5.g.3. | Click here to enter text. | Click here to enter text. |
| Lumbar laminectomy/laminotomy for spinal conditions (e.g., tumor, non-tumor, and trauma)  [PR 4.5.g.4.] | Click here to enter text. | Click here to enter text. |
| Procedures for spinal conditions (stimulation, lesion, pump, other) [PR 4.5.g.5.] | Click here to enter text. | Click here to enter text. |
| Peripheral nerve procedures [PR 4.5.h.] | Click here to enter text. | Click here to enter text. |
| Radiosurgery [PR 4.5.i.] | Click here to enter text. | Click here to enter text. |
| Peripheral device management [PR 4.5.j.] | Click here to enter text. | Click here to enter text. |
| Critical care procedures, to include:  [PR 4.5.k.] | Click here to enter text. | Click here to enter text. |
| Airway management  [PR 4.5.k.1. | Click here to enter text. | Click here to enter text. |
| Angiography  [PR 4.5.k.2.] | Click here to enter text. | Click here to enter text. |
| Arterial line placement  [PR 4.5.k.3.] | Click here to enter text. | Click here to enter text. |
| CVP line placement  [PR 4.5.k.4.] | Click here to enter text. | Click here to enter text. |
| External ventricular drain/transdural monitor placement  [PR 4.5.k.5.] | Click here to enter text. | Click here to enter text. |
| Lumbar/other puncture/drain placement  [PR 4.5.k.6.] | Click here to enter text. | Click here to enter text. |
| Percutaneous tap of CSF space/reservoir  [PR 4.5.k.7.] | Click here to enter text. | Click here to enter text. |
| Pediatric procedures, to include:  [PR 4.5.l.] | Click here to enter text. | Click here to enter text. |
| Procedures for brain tumor  [PR 4.5.l.1.] | Click here to enter text. | Click here to enter text. |
| Procedures for cranial trauma and non-tumor conditions  [PR 4.5.l.2.] | Click here to enter text. | Click here to enter text. |
| CSF diversion and intraventricular surgery  [PR 4.5.l.3.] | Click here to enter text. | Click here to enter text. |
| Spinal procedures for conditions, such as dysraphism, tethered cord, spinal tumors, spinal deformity, and trauma  [PR 4.5.l.4.] | Click here to enter text. | Click here to enter text. |
| Intradural microdissection  [PR 4.5.m.] | Click here to enter text. | Click here to enter text. |

**Medical Knowledge**

1. Indicate the activities (lectures, conferences, journal clubs, clinical teaching rounds, etc.) in which residents will demonstrate competence in their knowledge of the following areas. Also indicate the method(s) that will be used to evaluate resident competence in each area.

| **Competency Area** | **Settings/Activities** | **Method Used to Evaluate Resident Competence** |
| --- | --- | --- |
| Neurosurgical emergencies [PR 4.6.a.] | Click here to enter text. | Click here to enter text. |
| Treating neurosurgical conditions, including: [PR 4.6.b.] | Click here to enter text. | Click here to enter text. |
| Cerebrovascular disorders [PR 4.6.b.1.] | Click here to enter text. | Click here to enter text. |
| Functional neurosurgery [PR 4.6.b.2.] | Click here to enter text. | Click here to enter text. |
| Neurocritical care [PR 4.6.b.3.] | Click here to enter text. | Click here to enter text. |
| Neuro-oncology [PR 4.6.b.4.] | Click here to enter text. | Click here to enter text. |
| Pain [PR 4.6.b.5.] | Click here to enter text. | Click here to enter text. |
| Pediatric neurological surgery [PR 4.6.b.6.] | Click here to enter text. | Click here to enter text. |
| Peripheral nerve disorders [PR 4.6.b.7.] | Click here to enter text. | Click here to enter text. |
| Spinal disorders [PR 4.6.b.8.] | Click here to enter text. | Click here to enter text. |
| Trauma [PR 4.6.b.9.] | Click here to enter text. | Click here to enter text. |
| Different medical practice models and delivery systems and how to best utilize them to care for an individual patient [PR 4.6.c.] | Click here to enter text. | Click here to enter text. |
| Study design and statistical methods [PR 4.6.d.] | Click here to enter text. | Click here to enter text. |

1. How will the program manage residents who are tracking towards American Board of Neurological Surgery (ABNS) certification to ensure they pass the ABNS primary examination before completing the program? [PR 4.6.e.]

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**Practice-based Learning and Improvement**

1. Describe the planned settings/activities in which residents will demonstrate competence in incorporating evidence-based principles in their clinical practice. Also, indicate the method(s) that will be used to evaluate resident competence. [PR 4.7.g.]

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**Interpersonal and Communication Skills**

1. Describe the planned settings/activities in which residents will demonstrate effective therapeutic relationships with patients and their families, with respect for diversity and cultural, ethnic, spiritual, emotional, and age-specific differences. Also, indicate the method(s) that will be used to evaluate resident competence. [PR 4.8.i.]

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1. How does the program ensure that residents are competent in involving patients in medical decisions? Indicate the method(s) that will be used to evaluate resident competence. [PR 4.8.k.]

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**Systems-based Practice**

1. Describe the planned settings/activities in which residents will demonstrate competence in accessing, utilizing, and evaluating the effectiveness of the resources, providers, and systems necessary to provide optional neurosurgical care. Also include the method(s) that will be used to evaluate resident competence. [PR 4.9.i.]

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**Curriculum Organization and Resident Experiences**

1. Describe the planned settings/activities in which PGY-1 residents will demonstrate competence in the following fundamental skills: [PR 4.11.
2. The knowledge, attitudes, and skills needed to formulate principles and assess, plan, and initiate treatment of patients with surgical and medical problems [PR 4.11.a.]

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1. Involvement in the care of patients with surgical and medical emergencies, multiple organ system trauma, and nervous system injuries and diseases [PR 4.11.b.]

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1. The care of critically-ill surgical and medical patients [PR 4.11.c.]

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1. Pre-, intra-, and post-operative care of surgical patients [PR 4.11.d.]

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1. Basic surgical skills and understanding of surgical anesthesia, including anesthetic risks and the management of intra-operative anesthetic complications [PR 4.11.e.]

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1. If the program will have more than one resident per year, describe how the program will ensure that each resident has a full 12-month chief resident experience. [PR 4.11.f.3.]

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* 1. Describe the chief resident’s major or primary responsibilities for patient management with faculty member supervision. [PR 4.11.f.3.a.]

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* 1. Describe the chief resident’s administrative responsibilities as designated by the program director. [PR 4.11.f.3.b.]

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* 1. Describe how the program will ensure that the chief resident will have semi-autonomous responsibility for groups of patients as part of a team led by an attending physician.   
     [PR 4.11.f.3.c.]

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**Conferences**

1. Provide a schedule of the planned required didactic sessions, including teaching conferences, rounds, journal club, and other educational activities in which program faculty members and residents will participate. The schedule should include the type, frequency, and duration of the topic, the name of the individual responsible for oversight of the session, and the name of the individual presenting the session. Add rows as necessary. [PR 4.11.g.- 4.11.h.1.]

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| --- | --- | --- | --- | --- | --- | --- |
| **Type** | **Frequency** | **Duration/Hours** | **Name of Individual Responsible for Oversight** | **Name of Individual Presenting the Conference** | **Required to Attend** | |
| **Faculty** | **Residents** |
|  |  |  |  |  |  |  |
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1. Describe how conferences will be organized and monitored to ensure (a) coordination among participating sites, and (b) faculty member and resident attendance and participation. Also indicate the approximate percentage of faculty members and of residents who attend these sessions. [PR 4.11.g.1.- 4.11.g.2.]

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1. Will resident experiences include the following?
   1. Participating in the management (including critical care) and surgical care of adult and pediatric patients, which should include the full spectrum of neurosurgical disorders [PR 4.11.i.]  
        YES  NO
   2. Evaluating patients referred for elective surgery in an outpatient environment [PR 4.11.j.]  
        YES  NO
2. Describe how the program director will ensure that this experience will include obtaining a complete history, conducting an examination, ordering (if necessary) and interpreting diagnostic studies, and arriving independently at a diagnosis and plan of management.   
   [PR 4.11.j.1.]

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* 1. Making pre-operative decisions and participating in procedures, including surgical, endovascular, interventional, and radiological procedures [PR 4.11.k.]  YES  NO

1. Describe how the program director will ensure each resident will record, in the Case Log System, the number and type of each procedure performed as Assistant Resident Surgeon, Senior Resident Surgeon, or Lead Resident Surgeon.   
   [PR 4.11.k.1.]

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1. Describe how the program director will ensure that resident participation in and responsibility for procedures increases progressively throughout the educational program. [PR 4.11.k.2.]

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* 1. Post-surgical care and follow-up evaluation of patients [PR 4.11.l.]  YES  NO
  2. Clinical experience in neuroradiology, including endovascular surgical neuroradiology, and neuropathology designed specifically for neurological surgery residents [PR 4.11.m.]  
       YES  NO

1. Describe how the program director will ensure such experience takes place under the direction of qualified neuroradiologists and preferably endovascular neurological surgeons, and neuropathologists. [PR 4.11.m.1.]

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Explain any “NO” responses.

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**Scholarship**

**Program Responsibilities**

1. Describe how the program will ensure that resources are sufficient to ensure faculty members are regularly involved in scholarly activity that is disseminated through peer-reviewed publication. [PR 4.13.a.1.]

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**Residents’ Scholarly Activities**

1. Describe how the program director will ensure residents participate in the development of new knowledge, learn to evaluate research findings, and develop habits of inquiry as a continuing professional responsibility. [PR 4.15.a.]

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**Resident Evaluation**

1. Describe the frequency with which the program director will review Case Log data with each resident and ensure the balanced progress of each resident towards achieving experience with a variety and complexity of neurological surgery procedures. [PR 5.1.f.1.]

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**The Learning and Working Environment**

**Supervision and Accountability**

1. Describe how the program will determine the assignment of progressive authority and responsibility, conditional independence, and a supervisory role in patient care for each resident. This should include the specific criteria used by the program director to evaluate residents’ abilities, the timing of such evaluation(s), and how the program director ensures that each faculty member and senior resident functioning as a supervising physician uses this information to delegate portions of care to residents based on the needs of individual patients and the skills of each resident. [CPR 6.9.-6.9.c.]

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1. Describe the guidelines for circumstances and events in which residents must communicate with the supervising faculty member(s). [CPR 6.10.]

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**Clinical Responsibilities**

1. Describe how the program director will ensure residents practice across a diversity of care settings with varying degrees of primary care responsibility. These situations may vary from first call cross-coverage on the floors to possible interaction with a primary intensivist, pediatric, or hospitalist service. [PR 6.17.a.]

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1. Describe how the program director will ensure peri-operative inpatient care will be further balanced with resident participation in the operating room. Specifically describe how the following are considered: adequate coverage and provision of patient care; sufficient inpatient clinical responsibility to allow resident progression along patient care milestones; and, meaningful insulation of operative experiences from inpatient care to allow technical progress and facilitate resident development of organizational and triage skills, when assigning patient loads. [PR 6.17.b.- 6.17.b.3.]

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**Teamwork**

1. Describe how the program will ensure that residents participate as members of the interprofessional health care team and have key roles in diagnostic work-up, operative procedures, treatment decisions, measurement of treatment outcomes, and the communication and coordination of these activities with program faculty members and referring sources. [PR 6.18.a.]

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**Maximum Frequency of In-House Night Float**

1. What is the maximum number of months in each year that a resident will be assigned night float?  
   [PR 6.26.a.] [ # ]

If assigned night float exceeds four months per year, provide an educational rationale. [PR 6.26.a.]

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**INSTITUTIONAL DATA**

INSTRUCTIONS: This form must include data for all institutional cases that would have been available for the education of neurological surgery residents at each participating site for the most recently completed academic year. The CPT codes for each listed procedure category may be obtained by emailing the Senior Accreditation Administrator. Limit the report on institutional cases to the number of patients in each category, not the number of billable procedures, as the latter would artificially inflate the number of available cases. Reference site numbers as noted previously in this application. [PR 1.8.e.]

|  | **Site #1** | **Site #2** | **Site #3** | **Site #4** | **Site #5** | **TOTAL** |
| --- | --- | --- | --- | --- | --- | --- |
| **Cranial: Tumor - General** | | | | | | |
| Craniotomy/trephination for biopsy of cranial or intracranial tumor |  |  |  |  |  |  |
| Craniotomy for intra-axial tumor |  |  |  |  |  |  |
| Craniotomy for extra-axial tumor |  |  |  |  |  |  |
| Craniotomy for skull base tumor and other |  |  |  |  |  |  |
| **TOTAL Cranial: Tumor - General** |  |  |  |  |  |  |
| **Cranial: Tumor - Sellar/Parasellar** | | | | | | |
| Craniotomy for sellar/paraseller tumor | # | # | # | # | # | # |
| EEA for sellar/parasellar tumor | # | # | # | # | # | # |
| **TOTAL Cranial: Tumor – Sellar/Parasellar** | # | # | # | # | # | # |
| **Cranial: Trauma/Other** | | | | | | |
| Craniotomy for traumatic skull fracture or hematoma |  |  |  |  |  |  |
| Craniotomy for non-traumatic hematoma/cyst/abscess/infarct/other |  |  |  |  |  |  |
| Craniotomy for abscess, infarct or other brain mass |  |  |  |  |  |  |
| Craniectomy (open or endoscopic) for craniosynostosis |  |  |  |  |  |  |
| Craniofacial Procedure |  |  |  |  |  |  |
| **TOTAL Cranial: Trauma** |  |  |  |  |  |  |
| **Cranial: Vascular Open Procedure** | | | | | | |
| Aneurysm |  |  |  |  |  |  |
| Vascular malformation (AVM, AVF, Cav Mal, other) |  |  |  |  |  |  |
| Ischemia (EC-IC bypass, cranial VA decompression) |  |  |  |  |  |  |
| Other brain vascular (craniotomy or other) |  |  |  |  |  |  |
| Extracranial cerebrovascular (endarterectomy or other) |  |  |  |  |  |  |
| **TOTAL Cranial: Vascular Open Procedure** |  |  |  |  |  |  |
| **Cranial: Vascular Endovascular Procedure** | | | | | | |
| Aneurysm |  |  |  |  |  |  |
| Vascular Malformation (AVM, AVF, other) |  |  |  |  |  |  |
| Ischemia (endovascular thrombectomy, stenting, angioplasty) |  |  |  |  |  |  |
| Endovascular embolization for other (tumor, other) |  |  |  |  |  |  |
| Endovascular infusion |  |  |  |  |  |  |
| **TOTAL Cranial: Vascular Endovascular Procedure** |  |  |  |  |  |  |
| **Cranial: CSF Diversion/ETV/Other** | | | | | | |
| Shunt, all |  |  |  |  |  |  |
| ETV or other intraventricular CSF pathway surgery |  |  |  |  |  |  |
| **TOTAL Cranial: CSF Diversion/ETV/Other** |  |  |  |  |  |  |
| **Cranial/Extracranial: Pain** | | | | | | |
| Craniotomy for pain |  |  |  |  |  |  |
| Stereotaxy for pain (DBS/lesion) |  |  |  |  |  |  |
| Rhizotomy, cranial nerve, percutaneous for pain |  |  |  |  |  |  |
| **TOTAL Cranial/Extracranial: Pain** |  |  |  |  |  |  |
| **Cranial/Extracranial: Functional Disorders** | | | | | | |
| Craniotomy for functional disorder (HFS, tinnitus, other) |  |  |  |  |  |  |
| Stereotaxy for functional disorder (DBS/lesion) |  |  |  |  |  |  |
| **TOTAL Cranial/Extracranial Functional Disorder** |  |  |  |  |  |  |
| **Cranial/Extracranial: Epilepsy** | | | | | | |
| Craniotomy for epilepsy (resection, cortical grid) |  |  |  |  |  |  |
| Stereotaxy for epilepsy (LITT, DBS) |  |  |  |  |  |  |
| Vagal nerve stimulation for epilepsy, other |  |  |  |  |  |  |
| **TOTAL Cranial/Extracranial: Epilepsy** |  |  |  |  |  |  |
| **GRAND TOTAL CRANIAL CASES PER SITE** |  |  |  |  |  |  |
| **Spinal: Anterior Cervical (decompression, stabilization, other)** |  |  |  |  |  |  |
| **Spinal: Posterior Cervical (decompression, stabilization, other)** |  |  |  |  |  |  |
| **Spinal: Thoracic, Lumbar, or Sacral Instrumentation, Fusion; Other** |  |  |  |  |  |  |
| **Spinal: Lumbar Laminectomy/Laminotomy (disc, stenosis, other)** |  |  |  |  |  |  |
| **Spinal: Stimulation/Lesion/Pump/Other** | | | | | | |
| Spinal stimulation for pain/ functional disorder |  |  |  |  |  |  |
| Cordotomy/intradural spinal rhizotomy |  |  |  |  |  |  |
| Sympathectomy |  |  |  |  |  |  |
| Spinal intrathecal pump |  |  |  |  |  |  |
| Image-guided kyphoplasty/biopsy/injection |  |  |  |  |  |  |
| **TOTAL Spinal: Stimulation/Lesion/Pump/Other** |  |  |  |  |  |  |
| **GRAND TOTAL SPINAL CASES PER SITE** |  |  |  |  |  |  |
| **Peripheral Nerve** | | | | | | |
| Peripheral nerve: ablation (pain, other) |  |  |  |  |  |  |
| Peripheral nerve: stimulation (pain, other) |  |  |  |  |  |  |
| Peripheral nerve: tumor |  |  |  |  |  |  |
| Peripheral nerve: repair |  |  |  |  |  |  |
| Peripheral nerve: decompress/neurolysis/transposition |  |  |  |  |  |  |
| Peripheral nerve: other nerve or muscle procedure |  |  |  |  |  |  |
| **TOTAL Peripheral Nerve** |  |  |  |  |  |  |
| **Radiosurgery** | | | | | | |
| Radiosurgery: cranial |  |  |  |  |  |  |
| Radiosurgery: spinal |  |  |  |  |  |  |
| **TOTAL Radiosurgery** |  |  |  |  |  |  |
| **Peripheral Device Management** | | | | | | |
| Application of stereotactic frame |  |  |  |  |  |  |
| Stereotactic computer assisted navigation |  |  |  |  |  |  |
| Cervical spine traction/halo |  |  |  |  |  |  |
| Program shunt/pump; battery change |  |  |  |  |  |  |
| **TOTAL Peripheral Device Management** |  |  |  |  |  |  |
| **Critical Care** |  |  |  |  |  |  |
| **Airway Management** |  |  |  |  |  |  |
| **Angiography** |  |  |  |  |  |  |
| **Arterial Line Placement** |  |  |  |  |  |  |
| **CVP Line Placement** |  |  |  |  |  |  |
| **EVD/Transdural Monitor Placement** |  |  |  |  |  |  |
| **Lumbar/Other Puncture/Drain Placement** |  |  |  |  |  |  |
| **Percutaneous Tap of CSF Space/Reservoir** |  |  |  |  |  |  |
| **GRAND TOTAL CRITICAL CARE CASES PER SITE** |  |  |  |  |  |  |
| **Pediatric: Cranial Tumor** |  |  |  |  |  |  |
| **Pediatric: Cranial Trauma/Other (non-tumor)** |  |  |  |  |  |  |
| **Pediatric: Cranial CSF Diversion/ETV/Other** |  |  |  |  |  |  |
| **Pediatric: Spinal (dysraphism, tether, deformity, tumor, trauma)** |  |  |  |  |  |  |
| **GRAND TOTAL PEDIATRIC CASES PER SITE** |  |  |  |  |  |  |
| **TOTAL DEFINED CASE CATEGORY CASES PER SITE** |  |  |  |  |  |  |
| **TOTAL INTRADURAL MICRODISSECTION CASES PER SITE** |  |  |  |  |  |  |