Department of Neurosurgery
University of Mississippi Medical Center

2019-2020
Resident Manual

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INTRODUCTION

I wish to take this opportunity to welcome you to this Neurosurgical Residency.

You have made a serious commitment and investment in your education by entering into this residency. The challenges of the anatomy and physiology of the central nervous system are formidable. Dealing with the diseases of your patients, as well as developing neurosurgical techniques will be a continuous life long process. As Program Director and with the commitment of the faculty, I pledge to you an unceasing effort to help you develop into a highly trained surgeon. We will challenge you to explore the frontiers of neuroscience, as well as the management of neurological diseases.

I know that we are preparing you for future practices in neurosurgery with capabilities that will allow you to interface with computer technology, molecular biologic sciences as well as the ewer discoveries in the neurosciences.

This handbook was prepared to provide guidelines to assist you during your residency. Read and familiarize yourself with these guidelines; you are responsible for all materials in this manual and will be held accountable for this information. These requirements are necessary to allow us to run an orderly and effective residency program.

Sincerely,

Gustavo Luzardo, M.D.
Program Director

1. Residency Program Description

PGY 1/Intern:
For neurosurgery residents entering at the intern level, we offer a neurosurgical internship that meets the ACGME requirements of acquisition of fundamental clinical skills. Specific rotations vary from year to year based on the intern's needs and the quality of available rotations. Surgical rotations typically include ENT, Trauma and Plastic Surgery. The Neurology requirements for neurosurgery residents are met during this year with a rotation on Inpatient/Consults and Neuro Intensive Care. Neuro Intensive Care rotations are generally included within this year. In addition to rotating on ENT, Plastic Surgery or Trauma, the intern will spend three months on the Neurosurgical service.

In all cases, junior residents are expected to:

a. Work under supervision of, and in consultation with, senior residents or faculty members, and not Independently, without consultation or instructions.
b. Should be committed to continuous scheduled reading.
c. Should attend all teaching conferences.
d. Should participate and take full advantage of any opportunity to work with Faculty on scholarly activities
e. Contribute to the education medical students, fellows, rotating residents, advanced practitioners etc.
f. Unless unable, attend clinics with the relevant faculty member.
g. Participate on the regular call schedule.
h. Comply with all requirements, such as logging of duty hours, continuous medical education and hospital compliance, to participate in performance improvement projects, etc.
i. The PGY specific goals and objectives are as outlined on the Subspecialty End of Rotation Evaluation Instruments. Each resident should demonstrate progression within that framework, and performance at least "appropriate" for his / her level.
j. Residents should exhibit progression on the Neurosurgical Milestones 2.0.

PGY 2/Junior Resident:
The resident at this level spends 12 months of clinical neurosurgery on the cranial, spine/trauma and/or pediatric neurosurgery service depending on the rotation schedule, which are in six (6) month blocks. The PGY 2 resident works under the supervision of the chief resident and faculty, and not independently, at the University Hospital. During this year he/she is expected to be involved in all aspects of the patient care, including work up, diagnostic studies, treatment, post surgical management etc. Should become familiar with basic history gathering and performing physical examination, as well as to determine appropriate diagnostic studies, and able to perform basic bedside procedures (shunt tap, EVD, LP). He/she performs minor surgical procedures under direct supervision of senior residents or faculty. This resident is actively involved in intensive neurosurgical critical care, monitoring techniques and post-operative patient management under the supervision of the chief resident and faculty. He/she is involved in conference presentations and student teaching. During the pediatric rotation, the junior resident works under the supervision of the attending staff responsible for the pediatric neurosurgical patients. He/she is involved in the admission and work-up of all pediatric patients. He/she assists and performs surgical procedures in the operating room to the level of his/her abilities. This resident is responsible for the pediatric neurosurgical clinics, including craniofacial, brain tumor and spina bifida clinics.

In all cases, junior residents are expected to:

a. Work under supervision of, and in consultation with, senior residents or faculty members, and not work independently without consultation or instructions.
b. be committed to continuous scheduled reading.
c. attend all teaching conferences.

d. participate and take full advantage of any opportunity to work with faculty on scholarly activities
e. Contribute to the education medical students, fellows, rotating residents, advanced practitioners etc.
f. Unless unable, attend clinics with the relevant faculty member.
g. Participate on the regular call schedule.
h. Comply with all requirements, such as logging of duty hours, continuous medical education, and hospital Compliance, participate in performance improvement projects, etc.
i. The PGY specific goals and objectives are as outlined on the Subspecialty End of Rotation Evaluation Instruments. Each resident should demonstrate progression within that framework, and performance at least "Appropriate" for his / her level.
j. Residents should exhibit progression on the Neurosurgical Milestones 2.0.

PGY 3/Junior Resident:
The resident at this level spends 12 months on clinical neurosurgery on the cranial, spine/trauma and/or pediatric neurosurgery service depending on the rotation schedule, which are in four (6) month blocks. The PGY 3 resident continues on the above services. His/her responsibilities and expectations become somewhat more advanced as he/she develops basic competency in the care of both adult and pediatric patients. The PGY 3 junior resident will spend more time in the operating room on each service.

In all cases, junior residents are expected to:
a. Work under supervision of, and in consultation with, senior residents or faculty members, and not
b. independently without consultation or instructions.
c. be committed to continuous scheduled reading.
d. attend all teaching conferences.
e. participate and take full advantage of any opportunity to work with Faculty on scholarly activities
f. Contribute to the education medical students, fellows, rotating residents, advanced practitioners etc.
g. Unless unable, attend clinics with the relevant faculty member.
h. Participate on the regular call schedule.
i. Comply with all requirements, such as logging of duty hours, continuous medical education, hospital compliance, participate in performance improvement projects, etc.
k. The PGY specific goals and objectives are as outlined on the Subspecialty End of Rotation Evaluation Instruments. Each resident should demonstrate progression within that framework, and performance at least "appropriate" for his / her level.
l. Residents should exhibit progression on the Neurosurgical Milestones 2.0.

PGY 4 / Mid Level Resident:
The resident at this level spends at least 6 months on the neurosurgical adult service, and up to six months on rotation on NewSouth Spine / Baptist hospital. The resident assumes a leading role on the adult and pediatric neurosurgical services. This year is dedicated to development of advanced diagnosis, management skills and will more directly be responsible during the day of any surgical case that is not covered by any chief or senior level resident. The resident more directly will approach faculty directly on cases, especially during the day, although always after communicating with the Chief Resident. This resident is expected to evaluate patients, device and initiate treatment plans, and to be responsible for any operative intervention of these neurosurgical patients, after consultation with Chief Resident or Faculty. A great portion of the surgical experience could be at the "Leading Surgeon" level. During this year, the resident is expected to take a more active teaching role in the weekly basic science/board review conference. This year offers more opportunity to attend conferences held at UMMC and in the community in related disciplines such as Neurology, Neuropathology and Neuro-radiology.

In all cases, the mid level resident is expected to:

a. Work under supervision of, and in consultation with, senior residents or faculty members.
b. Should be committed to continuous scheduled reading.
c. Should attend all teaching conferences.
d. Should participate and take full advantage of any opportunity to work with Faculty on scholarly activities
e. Contribute to the education medical students, fellows, rotating residents, advanced practitioners etc.
f. Unless unable, attend clinics with the relevant faculty member.
g. Participate on the regular call schedule.
h. Comply with all requirements, such as logging of duty hours, continuous medical education, hospital compliance, participate in performance improvement projects, etc.
i.The PGY specific goals and objectives are as outlined on the Subspecialty End of Rotation Evaluation Instruments. Each resident should demonstrate progression within that framework, and performance at least "appropriate" for his / her level.
j. Residents should exhibit progression on the Neurosurgical Milestones 2.0.

PGY 5/Senior Resident:
The resident is expected to work towards completion of research projects. This is in essence, their "research" year. The resident will enjoy protection from clinical duties, except for coverage of occasional call responsibilities for absent residents, vacations etc., thus allowing time for dedicated work on scholarly activities, research projects, travel to educational conferences, etc. The residents are actually encouraged to travel to educational activities.

Residents may become involved in ongoing research or develop novel research protocols. Projects are typically carried out with mentorship and laboratory support from one of the established basic science labs at UMMC. Residents are also encouraged to initiate clinical science projects of personal interest. Clinical rotations could be arranged during this year to fulfill any existing requirements, especially if the resident has already demonstrated attainment of many of the goals set for this particular year, beforehand.

In all cases the Mid level residents are expected to:

a. Work under supervision of, and in consultation with, senior residents or faculty members.
b. Should be committed to continuous scheduled reading.
c. Should attend all teaching conferences.
d. Should participate and take full advantage of any opportunity to work with Faculty on scholarly activities
e. Contribute to the education medical students, fellows, rotating residents, advanced practitioners etc.
f. Comply with all requirements, such as logging of duty hours, continuous medical education, hospital compliance, participate in performance improvement projects, etc.
g. The PGY specific goals and objectives are as outlined on the Subspecialty End of Rotation Evaluation Instruments. Each resident should demonstrate progression within that framework, and performance at least "appropriate" for his / her level.
h. Residents should exhibit progression on the Neurosurgical Milestones 2.0.

PGY 6/Chief Resident:
Given the 1-2-1-2-1-2 character of our resident compliment, generally rotations will be assigned on an 8-month timeframe. The resident at this level spends 8-month rotations on Pediatrics, Spine and Cranial services, at the Chief level. The PGY 6 resident assumes all chief resident responsibilities as the administrative resident of the entire pediatric or adult program. Resident's responsibilities include organizing and scheduling of teaching conferences, teaching residents and medical students, and scheduling presentation of patients to attending physicians and consultants. Educational programs such as journal clubs, grand rounds, and special lectures are

the responsibility of this resident. At this level of training, the resident is expected to perform complex procedures, at the "Leading Surgeon" level. The resident is expected to be the main participant in all scheduled surgical cases.

In all cases senior residents are expected to:

a. Work under supervision of, and in consultation with, senior residents or faculty members.
b. Should be committed to continuous scheduled reading.
c. Should attend all teaching conferences, if not committed on an emergent surgical procedure.
d. Should participate and take full advantage of any opportunity to work with Faculty on scholarly activities
e. Contribute to the education medical students, fellows, rotating residents, advanced practitioners etc.
f. Unless unable, attend clinics with the relevant faculty member.
g. Participate on the regular call schedule at the senior level.
h. Comply with all requirements, such as logging of duty hours, continuous medical education, hospital compliance, participate in performance improvement projects, etc.
i. The PGY specific goals and objectives are as outlined on the Subspecialty End of Rotation Evaluation Instruments. Each resident should demonstrate progression within that framework, and performance at least "appropriate" for his / her level.
j. Residents should exhibit progression on the Neurosurgical Milestones 2.0.

PGY 7:

All residents beginning July 1, 2013 are in an accredited 7-year neurosurgery residency-training program. The 7th year will either be a chief year or if the chief year is completed prior to the 7th year, the resident may use the final year for additional enfolded fellowship training at the discretion of the program director. All residents who began their residency before July 1, 2013 may use the 7th year for additional training or may move into an instructor position at the discretion of the program director. The resident is expected to be the main participant in all scheduled surgical cases, at the "Leading Surgeon" level.

In all cases senior residents are expected to:

a. Work under supervision of, and in consultation with, senior residents or faculty members.
b. Should be committed to continuous scheduled reading.
c. Should attend all teaching conferences, if not committed on an emergent surgical procedure.
d. Should participate and take full advantage of any opportunity to work with Faculty on scholarly activities
e. Contribute to the education medical students, fellows, rotating residents, advanced practitioners etc.
f. Unless unable, attend clinics with the relevant faculty member.
g. Participate on the regular call schedule at the senior level.
h. Comply with all requirements, such as logging of duty hours, continuous medical education, hospital compliance, participate in performance improvement projects, etc.
i. The PGY specific goals and objectives are as outlined on the Subspecialty End of Rotation Evaluation Instruments. Each resident should demonstrate progression within that framework, and performance at least "appropriate" for his / her level.
j. Residents should exhibit progression on the Neurosurgical Milestones 2.0.

2. EDUCATIONAL GOALS AND OBJECTIVES

PHILOSOPHY

- Patients First.
- Medical training is not democratic. For our patients to have the best medical care, it is vital that each team member respect the authority of persons at a more senior level of training.
- Arrive and start on time for everything.
- Work to the level of your ability, delegate to the level of those junior to you when it is appropriate and never shoulder responsibility beyond your ability.
- Keep your superiors notified of your actions.
- Teach and praise
- An ounce of prevention **. . .**
- **Work under the supervision of, in consultation with, and following appropriate instructions from your senior residents and faculty.**

OVERALL EDUCATIONAL GOALS

The Accreditation Council for Graduate Medical Education via its Outcome Project has increased its emphasis on educational outcome assessment in the accreditation process. This increased emphasis is reflected in changes to Program and Institutional Requirements that require programs to:

- Identify learning objectives related to the ACGME's general competencies
- Use increasingly more dependable methods of assessing residents' attainment of these competency-based objectives; and,
- Use outcome data to facilitate continuous improvement of both resident and residency program performance.
- Use of Milestones minimal standards of achievement based on specific competencies and developmental stage in learning.

The core competencies were developed via research and a collaborative review process with broad representation. They reflect among other things, an increasing recognition of our responsibility as educators of physicians to ensure the public that we are training residents in a consistent and logical manner, to be adequately prepared to practice in a rapidly changing healthcare environment. The core competencies are meant to represent what residents should know and be able to do. Programs are expected to determine the objectives that should guide progress toward achievement of the competencies. Subsequently, outcomes assessment will be expected to follow and to assess effectiveness in meeting the objective.

The final evaluation of graduating residents is to reflect that the resident has "demonstrated sufficient professional ability to practice competently and independently". Given the emphasis on educational outcomes assessment, it is our viewpoint that the structure of the core competencies is the best framework for achieving this landmark. Goals, objectives, assessment, and improvement can all readily be framed within the competencies.

Therefore, the overall goal of the residency program is to develop in our graduating residents a proficiency level appropriate for a new and independent practitioner in the core competencies as outlined by the ACGME.

1. Patient care that is compassionate, appropriate and effective for the treatment of health problems and the promotion of health.

2. Medical knowledge about the established and evolving biomedical, clinical and cognate sciences and the application of this knowledge to patient care.

3. Practice based learning and improvement, which involves investigation and evaluation of patient care, the appraisal and assimilation of scientific evidence, followed by improvement in patient care.

4. Interpersonal and communication skills resulting in effective information exchange with patients, their families and other health professionals.

5. Professionalism manifested through a commitment to carry out professional responsibilities, adherence to ethical principles and sensitivity to a diverse patient population.

6. Systems based practice as manifested by actions that demonstrate an awareness of and responsiveness to the larger context in system of healthcare and the ability to effectively call on system resources to provide care that is of optimum value.

Each rotation is designed to contribute to the achievement of the overall goal and therefore share the common goal. In order to direct progress toward goal achievement, general and specific objectives are identified. General Objectives are purposefully common to all rotations and listed separately. Unique aspects of each rotation are outlined and specific objectives are listed under each rotation. In order to achieve our stated goal, we have purposefully mirrored the goals and objectives of the ACGME Outcome Project. Our assessment tools are designed to demonstrate progress towards these objectives by direct linking via a common format.

Residents are responsible for reviewing all general and specific goals and objectives prior to beginning each rotation/service.

GENERAL COMPETENCY LEARNING OBJECTIVES FOR ALL UMC ROTATIONS

The ACGME requires that the curriculum must have competency-based goals and objectives for each assignment at each educational milestone level and must integrate the ACGME competencies into the curriculum.

At the completion of this training program the resident will demonstrate:

Medical Knowledge

Intellectual ability as evidenced by retention, comprehension, abstraction, and discrimination & logical thinking**.**

Knowledge of field of Neurosurgery by showing evidence of the literature, methods of management, advantages and disadvantages of alternative treatments of their own patient care appraisal & assimilation of scientific evidence and improvements in patient care.

Patient care

O**.R. performance** as evidenced by exhibiting knowledge of anatomy, physiology and pathology of case. As evidenced also by an understanding of mechanics and demonstration of dexterity, efficiency, thoroughness and concern for professional O.R. atmosphere.
Caring as is evident by compassionate, appropriate & effective care of patients for the treatment of health problems and the promotion of health.
Judgment as evidence by common sense, decisiveness, ability to draw sound conclusions, willingness to admit mistakes, regard for patient's needs & life conditions.

Professionalism

Conference performance as evidenced by punctuality, organization and preparation. Showing knowledge of current literature & treatment also evidences it.
Work habits as demonstrated by initiative or the amount of prodding or supervision needed. Also as demonstrated by the degree to which they accept responsibility, the quality work, and the amount of work produced.
Relating to students as demonstrated by accepting the role of teacher, explaining and elaborating and recognizing student's interests and needs
Reliability as evidenced by acceptance of responsibility, punctuality and availability.
Integrity as evidenced by showing honesty and discretion and by showing accountability to patients, society and the profession, as well as a commitment to excellence and on-going professional development.
Appearance as evidenced by showing poise, alertness, cleanliness, and appropriateness of dress.
Ethical principles as evidenced by showing a commitment to provide or withhold clinical care as appropriate and being confidential with patient information, informed consent, and business practices.
Professional promise as evidenced by whether one would let this person treat you or your family.
Emotional stability and stress management as evidenced by performing in emergency situations, responding to opposition or frustration, and maintaining mood stability or control.
Stamina as evidenced by physical endurance, perseverance, and health.
Duty hours as evidenced by the duty hour log quarterly reports.

Interpersonal Communication Skills

Communication skills as evidenced by gathering essential & accurate information about patients and working with health care professionals to provide patient focused care.

Oral communication skills as evidenced by clarity of expression, articulateness, and proper grammar. It is also evidenced by demonstrating skills that allow for effective information exchange with patients, their families and other health professionals.
Written communication skills are evidenced by observing and documenting observations accurately and in good time. Also writes progress, operative and discharge notes completely and promptly.
Relating to patients is evidenced by being interested, honest and understanding as well as by explaining clearly to the patient's satisfaction details related to diagnosis, proposed treatment and the implications.

Systems Based Practice

Decision making as evidenced by making informed decisions about diagnostic-therapeutic treatment based on patient information, preferences, up-to-date scientific evidence & clinical judgment. Also evidenced by developing and carry out patient management plans and demonstrating investigatory & analytic thinking approaches to clinical situations.
Leadership as evidenced by the ability to elicit cooperation from nursing staff, technicians, and orderlies in the discharge of their functions in patient care.
System of health care as evidenced by the ability to demonstrate an awareness and responsiveness to the large context and system of health care as well as by the ability to effectively call on system resources to provide care for optimal value and by advocacy for quality patient care and help patients deal with system complexities.
Concern for others is evidenced by showing sensitivity to and consideration of others, tactfulness, as well as being committed to ethical principles and sensitivity to a diverse patient population (culture, age, gender, disabilities).

Practice Based Learning & Improvement

Use of information technology to manage information as evidenced by the ability to access on-line medical info to support their own education
Resourcefulness as evidenced by management of available resources. Also by demonstrating an understanding of roles of support personnel and making maximum use of their assistance and also through demonstrating resourcefulness in obtaining information about patients.
Research aptitude demonstrated through curiosity, creativity, and the ability to evaluate and analyze data. Also demonstrated by appropriate utilization of resources and working independently.
Motivation as evidenced by exhibits active, aggressive attitude toward learning**.**

Specific Educational Goals and Objectives for The Neurosurgical Residency by PGY Level

PGY 1 (Intern)

Description: The PGY 1 year consists of 3 months of neurosurgery, 3 months of structured education in general patient care, which occurs in 1-month rotations on the surgery subspecialty services, such as plastic surgery and trauma surgery; followed by 4 months of neurosurgical critical care in the neuroscience ICU. During the 3 months on the neurosurgery service, the resident attends one neurosurgery outpatient clinic per week. During the 3 months of neurosurgery service and 4 months of neuro-critical care 2 months of in and out patient neurology, the resident participates in all neurosurgery didactic conferences. Conference participation is optional during the 6 months of general patient care, but is strongly encouraged when the rotation allows.

Goals: The overall goals of the PGY 1 year are:

- To ensure the resident progresses in ability to perform under indirect supervision (with direct supervision available) beginning in the PGY 2 year, through acquisition of the knowledge, attitudes and skills needed to assess, plan and initiate treatment of patients with surgical and medical problems, including critically ill patients with neurological conditions

- To develop basic surgical skills – such as hemostasis, suturing, exposure, and retraction – through participation in routine surgical procedures

- To develop a basic fund of neurosurgical medical knowledge through rounds with the faculty, attendance at lectures and conferences, and independent reading

Competency-Based Educational Objectives:

Patient Care:

1. Performs complete & detailed history & physical examinations in a timely manner on patients with a variety of surgical conditions, including critically ill & traumatized patients
2. Orders positioning, analgesics, sedation, neuromuscular blockade, intravenous (IV) fluids & nutrition in critically ill patients
3. Diagnoses & formulates treatment plans for common pulmonary diseases
4. Use electrocardiogram (EKG) to diagnose cardiac arrhythmia; initiates hemodynamic monitoring
5. Performs history & physical examinations of comatose patients & properly assigns Glasgow Coma Scale (GCS) score
6. Evaluates poly-trauma patients & assigns Injury Severity Score
7. Evaluates, identifies, & treats patients with a variety of surgical conditions for medical comorbidities
8. Provides initial management of poly-trauma patients & patients with a variety of neurosurgical conditions
9. Provides routine pre-, intra-, & post-operative care for patients with a variety of surgical conditions
10. Detects altered neurological examinations
11. Places ICP monitors & external ventricular drains
12. Develops an understanding of surgical anesthesia, including anesthetic risks & the management of intra-operative anesthetic complications
13. Interprets laboratory results
14. Achieves competency in basic procedural skills, including:
    a. placement & removal of nasogastric tubes and Foley catheters

b. arterial puncture for blood gases
c. advanced vascular access procedures
d. repair of surgical incisions & lacerations of the skin and soft tissues
e. excision of lesions of the skin and subcutaneous tissues
f. tube thoracostomy
g. paracentesis
h. advanced airway management

Medical Knowledge:

1. Correlates neurological deficits with location of trauma, stroke, or other lesion
2. Correlates radiographic tumor location with ventricular, cranial nerve & vascular anatomy
3. Describes the pathophysiology of mass lesions & obstructive hydrocephalus
4. Describes acute symptomatic medical therapy for neoplastic mass lesions (e.g., steroids, ventricular drainage)
5. Describes intracranial pressure (ICP), cerebral confusion pressure (CPP) & cerebral blood flow (CBF) physiology
6. Describes respiratory & ventilator physiology & effects on the central nervous system (CNS)
7. Describes the pathophysiology of myocardial infraction (MI) & congestive heart failure (CHF)
8. Describes physiology of coagulation & hemostasis
9. Describes principles of nutritional support
10. Lists indications for ICP monitoring & hematoma evacuation
11. Describes cerebral autoregulation
12. Describes the embryology & functional anatomy of the basal ganglia, thalamus, and cortex
13. Describes the physical findings & differential diagnosis of common movement disorders
14. Describes the semiology & pathophysiology of common seizure disorders
15. Describes medical therapy for status epilepticus
16. Describes the anatomy of spinal cord & thalamic pathways for pain and pain modulation
17. Describes the anatomy of the brachial & lumbar plexi & major nerves of the extremities
18. Describes nerve injury classifications & the prognosis & time course for recovery of each
19. Describes the physical findings & differential diagnosis of degenerative spinal disorders (e.g., radiculopathy, neurogenic claudication, spondylotic myelopathy)
20. Describes basic principles of spinal biomechanics
21. Describes spinal cord and cauda equina anatomy
22. Describes dermatomal sensory & motor levels and patterns of spinal cord injury
23. Defines spinal stability and instability
24. Describes the pathophysiology of spine & spinal cord injuries
25. Describes intracranial and extra-cranial vascular anatomy, including vascular territories
26. Describes mechanisms of cerebral autoregulation
27. Describes clinical presentations and imaging characteristics of ischemic and hemorrhagic stroke
28. Describes the embryology and anatomy of vascular lesions (e.g., aneurysms and vascular malformations)
29. Describes the pathophysiology of intracranial and extra-cranial atherosclerotic disease

Interpersonal and Communication Skills:

1. Describes the ethical principles of informed consent
2. Describes methods to compassionately break bad news
3. Identifies elements of safe patient hand-offs and procedural pause
4. Prioritizes and conveys simultaneous critical clinical events
5. Uses Electronic Medical Record (EMR) and radiology access systems for timely reporting of clinical information

6. Creates accurate patient orders & demonstrates use of EMR dosing & drug interaction safety mechanisms

Professionalism:

1. Demonstrates honest & caring patient interactions; respects privacy and autonomy
2. Describes basic bioethical principles
3. Is punctual for conferences, rounds, pages, and operating room
4. Manages fatigue & sleep deprivation
5. Reports duty hours in a timely & accurate manner
6. Presents appropriate attire & respectful demeanor
7. Seeks patient information with reliability, industry, & confidentiality

Systems-Based Practice:

1. Identifies the range of practice variation (e.g., medication, laboratory tests, imaging, and procedures)
2. Describes U.S. health payment systems
3. Defines medical errors, near misses, & sentinel events; provides system-based examples of each.
4. Assists with transfers between hospital units or hospitals & discharges & outpatient services arrangements
5. Works in interdisciplinary teams to enhance safety & quality
6. Participates in one quality improvement project to:
    a. improve patient outcomes
    b. enhance education of medical students and/or residents or
    c. any QI project of the resident's choosing, with approval by the Program Director

Practice-Based Learning and Improvement:

1. Identifies limitations in knowledge, skills, and experience; incorporates feedback
2. Demonstrates information technology skills for evidence gathering

PGY 2

Description: The PGY 2 resident spends 6 months on the spine service and 6 month on the cranial service. It is during this year that the resident becomes involved in management of the floor patients, assists with simple neurosurgical procedures, and takes call for both the adult and pediatric services at night.

Goals: The overall goals of the PGY 2 year are:

- To develop basic neurosurgical skills by assisting in routine neurosurgical procedures and evaluating and managing neurosurgical patients.

- To develop a basic fund of neuroscience knowledge through completion of neuroscience rotations, attendance at lectures and conferences, and independent reading.

Competency-Based Educational Objectives:

Patient Care:

1. Explains risks & benefits of neurosurgical procedures for brain & spinal cord tumors
2. Interprets diagnostic studies on patients with brain tumors
3. Assists with routine brain tumor procedures (e.g., resection of non-eloquent glioma or metastasis, stereotactic biopsy)
4. Explains risks & benefits of ventilation support
5. Interprets diagnostic studies of critical care patients (e.g., chest x-ray [CXR], brain computed tomography [CT], echocardiogram)
6. Manages airway & performs endotracheal intubation
7. Inserts arterial & central venous catheters
8. Explains risks & benefits of neurosurgical procedures for TBI
9. Interprets diagnostic imaging for a neuro-trauma patient
10. Assist with routine procedures (e.g., burr hole, craniotomy for hematoma or penetrating injury)
11. Explains risks & benefits of neurosurgical procedures for epilepsy & movement disorders
12. Interprets diagnostic studies patients with epilepsy & movement disorders
13. Assists with routine components of functional procedures (e.g., burr hole, craniotomy, generator change)
14. Places stereotactic head-frame
15. Programs shunt valves & taps shunts
16. Recognizes & initiates notification & evaluation of non-accidental trauma
17. Explains risks & benefits of surgical spine procedures
18. Interprets diagnostic studies of patients with spinal disorders (e.g., imaging, EMG)
19. Initiates management of a patient with acute spinal cord injury
20. Performs cervical traction/reduction
21. Interprets CT, MR, & angiographic studies on patients with vascular disorders
22. Assists with routine components of vascular procedures (e.g., pterional craniotomy, diagnostic catheter angiography)

Medical Knowledge:

1. Describes the use of radiation & chemotherapy for brain & spinal cord tumors
2. Lists indications for biopsy or resection of brain & spinal cord tumors
3. Describes the pathophysiology & medical management of intra-cranial hypertension & cerebral edema
4. Describes modes of mechanical ventilation and management of pulmonary shunting & dead space
5. Describes prophylaxis for deep vein thrombosis (DVT)

6. Describes medical therapies for epilepsy & movement disorders
7. Lists surgical indications for patients with epilepsy or movement disorders
8. Describes imaging findings in common epilepsies & movement disorders (e.g., magnetic resonance imaging [MRI], Single Proton Emission Computerized Tomography [SPECT], & position emission tomography [PET])
9. Lists medical therapies for chronic pain (e.g., trigeminal neuralgia, brachial plexus neuritis)
10. Describes the anatomy & physical findings of common upper extremity entrapment neuropathies
11. Describes the embryology of common CNS congenital anomalies
12. Describes normal CSF physiology
13. Describes the response of the developing brain to injury
14. Describes developmental changes in cardio-pulmonary function & vital signs
15. Describes proper utilization & dosing of narcotics in children
16. Calculates circulating blood volume in infants & children
17. Describes medical & physical therapies for degenerative spinal disorders
18. Lists surgical indications & options for degenerative spinal disorders
19. Describes the medical treatment of spinal infections
20. Describes the use & types of external bracing in spinal trauma, tumor, or infection
21. Classifies spinal fractures by mechanism and imaging appearance
22. Lists indications for intravenous thrombolytic therapy in ischemic stroke
23. Lists indications for carotid endarterectomy & carotid angioplasty/stent
24. Describes the natural history of aneurysms & vascular malformations
25. Lists indications for surgical and endovascular treatment of aneurysms & vascular malformations

Interpersonal and Communication Skills:

1. Obtains & documents informed consent
2. Participates in breaking bad news to a patient or family
3. Participates in an advanced directive discussion
4. Communicates effectively with patients and families from varied cultural & socioeconomic backgrounds
5. Completes timely & accurate operative notes & ACGME Case Log entries

Professionalism:

1. Forms effective therapeutic bond with patients; receives praise from patients & families
2. Recognizes individual limits in clinical situations & ask for assistance when needed
3. Manages personal emotional, physical, & mental health

Systems-based Practice:

1. Describes the cost impact of practice variation in the context of system & national health resource utilization
2. Uses protocols & checklists for patient hand-offs, medication orders, & emergencies
3. Participates in one quality improvement project to:
    a. improve patient outcomes
    b. enhance education of medical students and/or residents or
    c. any QI project of the resident's choosing, with approval by the Program Director

Practice-Based Learning and Improvement:

1. Sets learning & improvement goals; identifies resources, & performs appropriate learning activities
2. Describes basic concepts in clinical epidemiology, biostatistics, & clinical reasoning
3. Describes the design and use of clinical registry outcomes data in practice improvement
4. Categorizes research study designs; evaluates quality & relevance

PGY 3

Description: The PGY-3 resident spends 6 months on the neurosurgical spine service and 6 months on the cranial service and takes call for both the adult and pediatric services at night.

Goals: The overall goals of the PGY 3 year are:

- To develop a basic fund of knowledge in neurological conditions through completion of elective rotations, attendance at lectures and conferences, and independent reading.

- To develop and enhance skills in neurosurgical subspecialties through completion of elective rotations.

Competency-Based Educational Objectives:

Patient Care:

1. Recognizes & initiates work-up of complications of brain tumor patients (e.g., hematoma, infection, seizure, hydrocephalus)
2. Manages intra-cranial hypertension (e.g., hyperosmolar agents, CSF drainage)
3. Diagnoses & manages spinal or hypovolemic shock
4. Performs a brain death examination & diagnoses brain death.
5. Organize emergency surgical team for TBI procedures; position for craniotomy with cervical precautions
6. Recognizes & initiates work-up of complications of TBI patients (e.g., hematoma, seizure, sepsis, monitor drift)
7. Recognizes & initiates work-up of complications of patients with epilepsy & movement disorders (e.g., hematoma, seizure, infection, device malfunction)
8. Explains risks & benefits of neurosurgical procedures for pain & peripheral nerve disorders
9. Formulates a work-up & treatment plan for patients with chronic pain or peripheral nerve disorders (e.g., trigeminal neuralgia, carpal tunnel syndrome)
10. Interprets diagnostic studies of patients with pain & peripheral nerve disorders
11. Assists with routine pain & peripheral nerve procedures (e.g., carpal tunnel release, spinal cord stimulation, intrathecal pump)
12. Recognizes & initiates work-up of complications of patients with pain & peripheral nerve disorders (e.g., hematoma, infection, device malfunction)
13. Explains risks and benefits of pediatric neurosurgical procedures to parents & older children
14. Assists with routine pediatric procedures (e.g., CSF shunt, baclofen pump, Chiari decompression)
15. Recognizes in pre-verbal children, & initiates work-up of, complications (e.g., hematoma, infection, device malfunction, acute mental status decline)
16. Interprets diagnostic studies with accurate identification of age-related variations
17. Assists with routine spinal procedures (e.g., lumbar or cervical laminectomy, lumbar discectomy)
18. Recognizes & initiates work-up of spinal complications (e.g., CSF leak, infection, radiculitis)
19. Explains risks & benefits of surgery and endovascular therapy for aneurysms, vascular malformations, & ischemic stroke
20. Recognizes & initiates work-up of complications after vascular surgery or endovascular therapy (e.g., hemorrhage, ischemic stroke, cardiovascular compromise

Medical Knowledge:

1. Categorizes brain & spinal cord tumors by age, histology, & radiographic appearance
2. Describes the non-neoplastic differential diagnosis of various mass lesions
3. Describes the natural history of common intrinsic brain tumors

4. Describes the pathophysiology & treatment of diabetic ketoacidosis (DKA)
5. Describes the etiology & imaging of traumatic intra-cranial hemorrhage & parenchymal injuries
6. Describes the principle of arc-centered stereotaxy
7. Describes sources of inaccuracy in stereotaxy (e.g., brain shift, human error)
8. Describes the clinical findings & differential diagnosis of trigeminal neuralgia
9. Lists surgical indications for patients with chronic pain or peripheral nerve disorders
10. Obtains & interprets diagnostic studies for chronic pain & peripheral nerve disorder patients
11. Describes the radiological and clinical features of hydrocephalus, benign macrocephaly, & subdural hygroma
12. Describes the physical findings & mechanisms of head shape abnormalities
13. Describes abnormal CSF physiology & anatomy in various forms of hydrocephalus
14. Describes the radiological & clinical features of CNS tumors in children of various ages
15. Describes imaging findings in degenerative spinal disorders (e.g., x-ray, MRI, myelography)
16. Describes the natural history of spinal degenerative disorders
17. Describes electromyogram (EMG) findings in spondylotic myeloradiculopathy
18. Lists surgical indications, contra-indications, & options for spinal trauma, tumor, & infection
19. Describes the natural history of primary spinal tumors
20. Describes the clinical & imaging characteristics of delayed cerebral ischemia after subarachnoid hemorrhage
21. Describes imaging findings in common cerebrovascular conditions

Interpersonal and Communication Skills:

1. Leads procedural pause
2. Uses checklists & informatics to support patient hand-offs
3. Prioritizes, conveys, & manages simultaneous critical clinical events
4. Lists the elements necessary for evaluation & management (E&M) coding at each encounter type/level

Professionalism:

1. Identifies and manages common ethical challenges during patient care
2. Seeks & accepts professional criticism

Systems-based Practice:

1. Describes principles of ethical coding (e.g., diagnostic, E&M, and procedural)
2. Effects inter-facility transfer, including records & physician communication
3. Participates in one quality improvement project to:
    a. improve patient outcomes
    b. enhance education of medical students and/or residents or
    c. any QI project of the resident's choosing, with approval by the Program Director

Practice-Based Learning and Improvement:

1. Participates in informal patient, medical student, & resident teaching
2. Contributes to the peer-reviewed neurological surgery literature
3. Incorporates evidence into routine clinical care decisions

PGY 4

Description: The PGY 4 resident spends 4 months at NewSouth NeuroSpine going to clinic and surgery with those surgeons. The other 8 months is spent doing research

Goals: The overall goals of the PGY 4 year are:

1. Develop spinal and peripheral nerve skills
2. Complete a research project and submit a paper for publication

Competency-Based Educational Objectives:

Patient Care:

1. Formulates a work-up & treatment plan for patients with brain, skull base, or spinal cord tumors
2. Independently performs routine procedures on brain tumor patients.
3. Assists with complex brain tumor procedures (e.g., resection of eloquent glioma, ventricular or posterior fossa tumor)
4. Manages complications on brain tumor patients with assistance
5. Formulates work-up & treatment plan for a comatose patient
6. Obtains confirmatory tests & make an accurate diagnosis of brain death
7. Formulates an interdisciplinary treatment plan for patients with poly-trauma
8. Selects TBI patients for operative intervention
9. Independently performs routine procedures on patients with TBI
10. Assists with complex procedures on patients with TBI (e.g., repair of vascular injury or CSF fistula, posterior fossa hematoma)
11. Manages ventricular drain
12. Formulates a work-up & treatment plan for patients with epilepsy or a movement disorder (e.g., Parkinson disease, essential tremor)
13. Independently performs routine functional procedures (e.g., DBS placement, subdural electrode placement, topectomy)
14. Assists with complex functional procedures (e.g., temporal lobectomy)
15. Independently performs routine pain & peripheral nerve procedures
16. Assists with complex pain & peripheral nerve procedures (e.g., DREZ lesions, cordotomy, neuroma in continuity, brachial plexus repair, nerve graft, nerve transfer)
17. Formulates a work-up & treatment plan for pediatric patients (e.g., hydrocephalus, synostosis, tethered cord, birth injury)
18. Independently performs routine procedures on pediatric patients.
19. Performs complex pediatric procedures with assistance (e.g., brain tumor, synostosis repair, tethered cord, ventricular endoscopy, indirect vascular bypass, craniotomy for epilepsy)
20. Manages complications of pediatric patients with assistance
21. Diagnoses brain death in infants/children
22. Formulates a work-up & treatment plan for patients with lumbar or cervical degenerative disease
23. Independently performs routine spinal procedures
24. Assist with complex spinal procedures (e.g., Anterior Cervical Discectomy and Fusion [ACDF], posterior lumbar fusion, spinal cord tumor resection, fracture stabilization)
25. Manages complications of spinal patients with assistance
26. Formulates a work-up & treatment plan for patients with aneurysms, vascular malformations, or ischemic stroke
27. Independently performs routine components of vascular procedures
28. Assists with complex vascular procedures (e.g., carotid endarterectomy, aneurysm clipping, arteriovenous malformation resection)

Medical Knowledge:

1. Describes the genetics of brain tumors & genetic markers that impact prognosis
2. Describes the use of neuro-navigation & intra-operative imaging for brain tumor surgery
3. Describes indications for electroencephalography (EEG) monitoring
4. Discusses indications for & risks of endotracheal intubation/ventilation
5. Identifies on MRI the structures targeted for movement disorder surgery
6. Describes the use of surface & invasive EEG in seizure focus localization
7. Identifies common patterns of EEG abnormality
8. Describes non-operative therapies for nerve entrapment disorders
9. Describes the anatomy & physical findings of common lower extremity entrapment neuropathies
10. Describes the natural history of congenital CNS anomalies
11. Describes the implications of spinal column development for patterns of injury & treatment choice in children
12. Describes the impact of refractory epilepsy & spastic cerebral palsy on development and function
13. Describes treatment strategies for CNS tumors in children
14. Identifies methods to limit radiation exposure in children during imaging
15. Describes the pathophysiology & imaging findings in spinal infection (e.g., discitis, epidural abscess, tuberculosis, osteomyelitis)
16. Describe the pathophysiology of degenerative spondylotic myeloradiculopathy
17. Describe & categorize degenerative spinal deformities by imaging (e.g., scoliosis, lumbar spondylolisthesis)
18. Describes methods for evaluating cerebral perfusion & blood flow
19. Lists indications for surgical & endovascular treatment of complex aneurysms & vascular malformations

Interpersonal and Communication Skills:

1. Obtains & documents informed consent in challenging circumstances (e.g., language or cultural barrier)
2. Breaks bad news to a patient or family member
3. Supervises patient hand-offs
4. Communicates effectively with physicians, health professionals, & health agencies
5. Utilizes Health Insurance Portability & Accountability Act (HIPPA) protection safeguards for Protected Health Information (PHI) and EMR

Professionalism:

1. Responds to patient needs that supersede self-interest
2. Acts as effective team leader for physicians & other health care personnel

Systems-based Practice:

1. Use health care resources responsibly (e.g., test ordering, OR efficiency, timely discharges/transfers)
2. Accurately codes diagnoses & procedures in the ACGME Case Log System
3. Participates in one quality improvement project to:
    a. improve patient outcomes
    b. enhance education of medical students and/or residents or
    c. any QI project of the resident's choosing, with approval by the Program Director

Practice-Based Learning and Improvement:

1. Utilizes data for practice improvement (e.g., systematic reviews, meta-analyses, practice guidelines, clinical outcomes data)
2. Teaches colleagues & other health professionals in both formal and informal settings

PGY 5

Description: The PGY 5 year consists of an entire year of research, with the resident free to choose, in conjunction with the Director of Neurosurgical Research, from one of the many research projects being conducted in the Department or within the School of Medicine. With approval from the Program Director, research can be conducted at another institution. The resident participates in clinical activities or duties only when required for coverage of their peers' vacations or academic meetings.

Goals: The overall goals of the PGY 5 year are:

- Achieve a passing score on the ABNS primary examination (for credit).
- Master research techniques relative to neurosurgery.

Competency-Based Educational Objectives:

Patient Care:

1. Understand indications for & interpret the meaning of routine and complex laboratory studies & imaging
2. Counsel patients on the risks, goals, limits, & alternatives to most neurosurgical procedures

Medical Knowledge:

1. Demonstrate an advanced knowledge of anatomy, physiology, & pharmacology related to inpatient & outpatient neurosurgical care
2. Demonstrate an advanced familiarity with the neurosurgical literature
3. Demonstrate the ability to evaluate & synthesize hypotheses regarding basic scientific investigations

Interpersonal and Communication Skills:

1. Communicate effectively with all members of the research team
2. Utilize communication and interpersonal skills to effectively participate in & lead research projects
3. Communicate research results effectively & persuasively through written & oral presentations

Professionalism:

1. Demonstrate a commitment to academic and scientific integrity through participation in department-sponsored educational forums on basic & clinical research
2. Participate meaningfully in ongoing professional development by submitting research for peer review to journals & national meetings

Systems-based Practice:

1. Participates in one quality improvement project to:
    a. improve patient outcomes
    b. enhance education of medical students and/or residents or
    c. any QI project of the resident's choosing, with approval by the Program Director

Practice-Based Learning and Improvement:

1. Demonstrate a high capacity for work & intensity in a basic science research environment
2. Develop problem-solving skills that can be used to design, implement, analyze, & report basic science research that is relevant to the clinical arena
3. Establish sound research & research-related problem-solving habits, including the establishment of familiarity with relevant research literature
4. Become an integral component of a research team
5. Learn significant features of outcomes research & clinical epidemiology
6. Formulates question or hypothesis, designs investigation, executes project & reports results

PGY 6 (Chief Resident)

Description: The chief resident has primary responsibility for patient management on both the pediatric and adult services, supervises junior residents and medical students, performs complex procedures and covers senior weekday and weekend call for both the pediatric and adult services. The chief resident has administrative responsibilities including assignment of residents to surgical procedures and outpatient clinics and providing feedback to the Clinical Competency Committee.

Goals: The overall goals of the PGY 6 (Chief) year are:

- To develop advanced administration and leadership skills
- Successful management of the complex adult and pediatric neurosurgical services
- To maximize assignment of residents to surgical cases that match their needs and educational goals

Competency-Based Educational Objectives:

Patient Care:

1. Independently formulates a treatment plan for the full spectrum of neurosurgical patients with comorbidities or other complicating factors
2. Independently performs the full spectrum of complex neurosurgical procedures
3. Independently manages complications in the full spectrum of neurosurgical patients
4. Adapts standard treatment plans to special circumstances in the full spectrum of neurosurgical patients
5. Diagnoses & initiates management of adult respiratory distress syndrome
6. Manages difficult & emergency airways
7. Diagnose & manages CSF leak
8. Initiates management of cardiac rhythm disturbances
9. Prioritizes the management of injuries in a poly-trauma patient
10. Independently managements CNS complications
11. Performs advanced spinal procedures with assistance (e.g., thoracolumbar or cranio-cervical reconstruction, reconstruction after infection or vertebral tumor resection)
12. Performs advanced vascular procedures with assistance (e.g., aneurysm coiling, vascular malformation embolization, extracranial-intracranial bypass)

Medical Knowledge:

1. Describes expected outcomes after surgery for brain & spinal cord tumors
2. Describes the role of radiosurgery in brain tumor therapy
3. Describes the role of palliative care for brain tumor patients
4. Describes personalized medicine approaches for brain tumor treatment
5. Describes expected outcomes after TBI & the impact of intra-cranial hypertension & of surgical intervention
6. Understands trans-cranial Doppler (TCD) sonography and its role in monitoring
7. Discusses the risks of CSF drainage, hyperosmolar therapy, and hyperventilation
8. Describes methods to assess intra-vascular volume & tissue perfusion
9. Describes expected outcomes after surgery for epilepsy & movement disorders
10. Describes responses to electrical stimulation around intended deep brain simulation (DBS) targets and in various regions of eloquent cortex
11. Describes indications for lesional vs. neuromodulatory interventions
12. Describes the role of radiosurgery for functional lesions
13. Describes indications for vagus nerve stimulation (VNS), callosotomy, & hemispherectomy

14. Describes expected outcomes after surgery for chronic pain (e.g., microvascular decompression [MVD], dorsal root entry zone [DREZ] lesions, cordotomy)
15. Describes expected outcomes after surgery for peripheral nerve disorders (e.g., neurolysis, direct anastomosis, grafting)
16. Describes the anatomy & physiology of spinal cord lesioning for pain (myelotomy, cordotomy)
17. Describes the effects of surgical diversion on CSF physiology
18. Describes the risks, screening, incidence, and management of late effects from chemotherapy & radiation for childhood CNS tumors
19. Describes the natural history of cranial synostosis & tethered cord with or without surgical intervention
20. Describes expected medical & functional long-term outcomes in patients with myelomeningocele
21. Describes expected functional & pain outcomes after surgery for spinal degenerative disease
22. Describes criteria for reoperation for degenerative spinal disease
23. Lists indications for vertebroplasty and kyphoplasty
24. Describes the genetics, pathophysiology, & imaging findings of inflammatory spinal disorders
25. Describes expected short- & long-term outcomes & complications after surgery for spinal trauma, tumor, or infection
26. Describes factors affecting outcome in spinal tumor surgery (e.g., extent of resection)
27. Describes the use of adjuncts during spinal trauma and tumor surgery (e.g., image guidance, ultrasound, monitoring)
28. Describes the role of radiotherapy for treatment of spinal tumors
29. Describes expected outcomes after surgery or endovascular therapy for intracranial and extracranial vascular disease
30. Describes the indications for medical vs. endovascular treatment of intracranial arterial stenosis
31. Describes the molecular mechanisms of ischemic protection strategies
32. Describes the genetics and inheritance of familial cavernous malformations & hereditary hemorrhagic telangiectasia

Interpersonal and Communication Skills:

1. Quantifies evidence for risk-benefit analysis during informed consent for a complex, elective neurosurgical procedure.
2. Manages & documents an unexpected outcome (e.g., patient, care team and risk management communication).
3. Leads response to an intra-operative or critical care emergency.
4. Acts in a consultative role to other physicians.
5. Creates or updates a neurosurgical care pathway & order set; implements use.

Professionalism:

1. Identifies & manages complex ethical challenges during patient care.
2. Acts as a mentor & role model to other residents.
3. Assumes leadership responsibility for clinical care team decisions and outcomes.
4. Mediates conflict amongst members of the health care team.
5. Recognizes & responds to physician impairment in self or others.

Systems-based Practice:

1. Cites peer-reviewed cost & outcomes data to support resource utilization decisions.
2. Conducts root cause or failure mode analysis of systems-based errors and effect prophylaxis.
3. Coordinates team for interdisciplinary procedure.
4. Establishes timeline and Identifies resources for transition to practice.
5. Improves care systems to achieve optimal patient care.
6. Works effectively in various health care delivery settings & systems.

7. Participates in one quality improvement project to:
    a. improve patient outcomes
    b. enhance education of medical students and/or residents or
    c. any QI project of the resident's choosing, with approval by the Program Director

Practice-Based Learning and Improvement:

1. Participates in evidence-based practice improvement.
2. Organizes educational activities at the program level.
3. Utilizes morbidity and mortality & program-level outcome data to institute systematic clinical practice changes.

PGY 7

Description: The PGY 7 year consists of an enfolded mini-fellowship, with the resident free to choose four surgical specialties to rotate onto, consisting of functional, cerebrovascular, pediatric, spine, endovascular, or skull base. The resident participates in procedures that are more complex and covers senior weekday and weekend call for both the pediatric and adult services.

Goals: The overall goals of the PGY 7 year are:

- Determining the area in neurosurgery in which the resident would like to specialize and developing advanced skills in that domain.
- Developing the administrative characteristics necessary for a successful chief residency.

Competency-Based Educational Objectives:

Patient Care:

1. Performs complex brain tumor procedures with assistance (e.g., resection of eloquent glioma, ventricular or posterior fossa tumor)
2. Manages unexpected intra-operative events during brain tumor procedures (e.g., sinus bleeding, cerebral edema)
3. Manages refractory intra-cranial hypertension (e.g., blood pressure, CPP)
4. Initiates management of pneumonia or systemic infection
5. Performs complex TBI procedures with assistance (e.g., repair of vascular injury or CSF fistula, posterior fossa hematoma)
6. Manages complications on TBI patients with assistance
7. Performs complex functional procedures with assistance (e.g., temporal lobectomy)
8. Manages complications of patients with functional disorders with assistance
9. Performs stereotactic targeting using frameless and frame-based systems
10. Performs complex pain and peripheral nerve procedures with assistance (e.g., DREZ lesions, cordotomy, neuroma in continuity, brachial plexus repair, nerve graft, nerve transfer)
11. Manages complications on pain and peripheral nerve patients with assistance
12. Formulates a plan for surgical and adjunctive therapy of a patient with spinal column neoplastic disease
13. Performs complex spinal procedures with assistance (e.g., Anterior Cervical Discectomy and Fusion [ACDF], posterior lumbar fusion, spinal cord tumor resection, fracture stabilization)
14. Performs complex vascular procedures with assistance (e.g., carotid endarterectomy, aneurysm clipping, arteriovenous malformation resection)
15. Manages complications of vascular patients with assistance

Medical Knowledge:

1. Describes the use of advanced imaging in tumor evaluation and surgical planning (e.g., magnetic resonance [MR] tractography, functional imaging, spectroscopy)
2. Describes the role of skull-base surgical approaches in tumor resection, attendant complications, and their management
3. Describes the pathophysiology and treatment of systemic critical illness (e.g., hypertension, coagulopathy, electrolyte imbalance, alcohol withdrawal)
4. Lists indications and complications for decompressive craniectomy, cerebral spinal fluid (CSF) drainage, and barbiturate coma in traumatic brain injury (TBI)
5. Describes the pathophysiology, including genetics, of the common movement disorders
6. Describes the pathophysiology and pathoanatomy of common epilepsies
7. Describes the pathophysiology of chronic pain disorders
8. Describes the findings of electromyography (EMG) and nerve conduction studies in peripheral nerve disorders
9. Describes indications for anterior vs. posterior surgical approaches to the spine
10. Describes the role of instrumentation and bony fusion in surgery for degenerative spinal disorders

11. Describes the pathophysiology and imaging findings of spinal tumors (e.g., intradural tumor, vertebral metastasis) (3)
12. Describes the role of instrumentation and bony fusion in surgery for spinal trauma, tumor, or infection
13. Describes the pathophysiology of ischemic stroke (e.g., necrotic and apoptotic cell death)
14. Describes the imaging and angiographic characteristics of cerebral vasculopathies (e.g., atherosclerotic disease, dissection, vasculitis)

Interpersonal and Communication Skills:

1. Leads and documents an advanced directive discussion
2. Designs and implements an EMR template

Professionalism:

1. Mitigates impact of cultural, ethnic, or socioeconomic differences on patient care outcomes
2. Demonstrates personal ownership of complications and patient outcomes
3. Leads accurate and effective discussions at morbidity and mortality conference

Systems-based Practice:

1. Reports problematic behaviors, processes, and devices, including errors and near misses
2. Coordinates interdisciplinary inpatient care
3. Participates in one quality improvement project to:
    a. improve patient outcomes
    b. enhance education of medical students and/or residents or
    c. any QI project of the resident's choosing, with approval by the Program Director

Practice-Based Learning and Improvement:

1. Contributes systematic clinical or scientific information to the peer-reviewed literature
2. Participates in clinical outcomes data gathering & analysis

GOALS AND LEARNING OBJECTIVES FOR ALL NEUROSURGERY SUBSPECIALTIES TO BE ACCOMPLISHED BY GRADUATION

BRAIN TUMOR AND ADULT EPILEPSY

Goals and Objectives for Neurosurgery Residents

By Graduation the Resident Should Be Able to:

PRIMARY BRAIN TUMORS - HIGH GRADE GLIOMA

1. Demonstrates understanding of the disease's natural history and pathophysiology
2. Make a differential diagnosis and further select and interpret additional studies
3. Obtain an adequate H&P
4. Acutely manage/stabilize in the ED/treat in an emergency setting
5. Define long-term plans and follow up
6. Formulate a treatment plan and give rationale
7. Execute definitive surgical approach
8. Execute a definitive procedure
9. Execute definitive surgical closure
10. Execute definitive intraoperative complication management
11. Clinically manage patient throughout course of illness, complications, troubleshooting, etc.
12. Understand Principles of Classification Systems (WHO, histology) and Clinical Scale systems (Karnofsky, MRS)
13. Understand the role of surgical resection in OS and PFSA and is able to appropriately select surgical candidates
14. Understands the concepts of eloquence, brain mapping, neurophysiological monitoring and other strategies to maximize extent or resection and is able to identify which modalities apply to different tumors based on their location
15. Understand molecular and genetic factors that influence outcomes (IDH, MGMT met+)

PRIMARY BRAIN TUMORS - LOW GRADE GLIOMA

1. Demonstrate understanding of the disease's natural history and pathophysiology
2. Make differential diagnosis and further select and interpret additional studies
3. Obtain an adequate H&P
4. Define long-term plans and follow up
5. Execute definitive surgical approach
6. Execute definitive procedure

7. Execute definitive surgical closure
8. Execute definitive intraoperative complication management
9. Clinically manage patient throughout course of illness, complications, troubleshooting, etc.
10. Understand the concepts of eloquence, brain mapping, neurophysiological monitoring and other strategies to maximize extent or resection and is able to identify which modalities apply to different tumors based on their location
11. Understand the role of surgical resection in OS and PFS and is able to appropriately select surgical candidates

SELLAR AND PARASELLAR TUMORS

1. Demonstrate understanding of the disease's natural history and pathophysiology
2. Make differential diagnosis and further select and interpret additional studies
3. Obtain an adequate H&P
4. Understand the neuro-endocrinologic implications of tumors in this region and how they relate to surgical decision-making and perioperative management
5. Acutely manage/stabilize in the ED/treat in an emergency setting
6. Formulate a treatment plan and give rationale
7. Execute definitive surgical approach
8. Execute definitive surgical procedure
9. Execute definitive intraoperative complication management
10. Clinically manage patient throughout course of illness, complications, troubleshooting, etc.

BRAIN STEM TUMORS

1. Demonstrate understanding of the disease's natural history and pathophysiology
2. Make differential diagnosis and further select and interpret additional studies
3. Obtain and adequate H&P
4. Acutely manage/stabilize in the ED/treat in an emergency setting
5. Formulate a treatment plan and give rationale
6. Execute definitive surgical approach
7. Execute definitive surgical procedure
8. Execute definitive surgical closure
9. Execute definitive intraoperative complication management
10. Clinically manage patient throughout course of illness, complications, troubleshooting, etc.
11. Able to define long-term plans and follow up

PINEAL REGION AND VENTRICULAR TUMORS

1. Demonstrate understanding of the disease's natural history and pathophysiology
2, Make differential diagnosis and further select and interpret additional studies
3. Obtain an adequate H&P

4. Understand the importance of CSF sampling, tumor marker analysis, endoscopic biopsy and implications in terms of surgical vs. medical management
5. Acutely manage/stabilize in the ED/treat in an emergency setting
6. Formulate a treatment plan and give rationale
7. Execute definitive surgical approach
8. Execute definitive surgical procedure
9. Execute definitive surgical closure
10. Execute definitive intraoperative complication management
11. Clinically manage patient throughout course of illness, complications, troubleshooting, etc.
12. Define long-term plans and follow up
13. Understand the importance of CSF sampling, tumor marker analysis, endoscopic biopsy and implications in terms of surgical vs. medical management

SECONDARY CNS TUMORS

1. Demonstrate understanding of the disease's natural history and pathophysiology
2. Make differential diagnosis and further select and interpret additional studies
3. Obtain an adequate H&P and utilize Clinical Scale systems (Karnofsky, MRS, RPA)
4. Understand the roles of surgery and radiosurgery in metastatic CNS disease and is able to appropriately select patients for different modalities of treatment
5. Acutely manage/stabilize in the ED/treat in an emergency setting
6. Formulate a treatment plan and give rationale
7. Execute definitive surgical approach
8. Execute definitive surgical procedure
9. Execute definitive surgical closure
10. Execute definitive intraoperative complication management
11. Clinically manage patient throughout course of illness, complications, troubleshooting, etc.
12. Define long-term plans and follow up
13. Understand the role of the neurosurgeon in the multidisciplinary treatment of cancer patients and the services we can offer (biopsy/surgical resection, spinal stabilization, implantation of chemotherapy delivery devices, surgical management of intractable pain, etc.)

ADJUVANT THERAPIES AND RADIOSURGERY

1. Demonstrate basic understanding of radiosurgery:
   - Principles
   - Delivery Systems: Gamma Knife vs. Linac-based
   - Indications
   - Planning
   - Complications and their management
2. Demonstrate basic understanding of radiation therapy:
   -Principles
   -Indications
   -Complications

3. Demonstrate basic understanding of Chemo Therapy:
   -Principles/Pharmacology
   -Indications

IMAGE GUIDED SURGERY AND STEREOTAXIS

1. Understand the general principles of stereotaxis
2. Recognize the differences between frame-based and frameless stereotactic techniques
3. Identify the best modality for different indications
4. Recognize pitfalls and shortcomings of different systems and troubleshoot common problems
5. Place a stereotactic frame correctly for the procedure to be performed

ADULT EPILEPSY

1. Demonstrate understanding of the disease's natural history and pathophysiology
2. Differentiate and classify epilepsy as: focal/generalized, simple/complex, defines intractability and further selects and interprets additional studies
3. Obtain an adequate H&P with emphasis on seizure semiology
4. Acutely manage/stabilize in the ED/treat in an emergency setting
5. Comprehend concepts such as seizure focus, epileptogenic zone, irritative zone
6. Demonstrate familiarity with the larger epilepsy syndromes: Lennox Gastaut, MTS, Lesional Epilepsy, Rasmussen, etc.
7. Understand the role of surgery and neurosurgeons within an epilepsy surgery program
8. Interpret preoperative imaging and functional testing (high resolution MRI, functional MRI, SPECT, PET, Wada testing, neuro-psychological testing
9. Understand the indications for phase II monitoring and different invasive monitoring modalities
10. Perform implantation of invasive intracranial monitoring devices and execute definitive surgical approach (SAH, TL, CC, topectomy, hemispherectomy, VNS implantation)
11. Perform implantation of invasive intracranial monitory devices and execute definitive surgical procedure (SAH, TL, CC, topectomy, hemispherectomy, VNS implantation)
12. Perform implantation of invasive intracranial monitoring devices and execute definitive surgical closure (SAH, TL, CC, topectomy, hemispherectomy, VNS implantation)
13. Perform implantation of invasive intracranial monitoring devices and execute definitive intraoperative complication management. (SAH, TL, CC, topectomy, hemispherectomy, VNS implantation)
14. Clinically manage patient throughout course of illness, complications, troubleshooting, etc.
15. Define long-term plans and follow up

ADULT TUMOR ROTATION ASSIGNMENTS

1. Up-to-date on reading assignments
2. Participate on a quality improvement project
3. Give a conference presentation

CRITICAL CARE
Goals and Objectives for Neurosurgery Residents

By Graduation the Resident Should Be Able to:

1. Insert an ICP monitor
2. Place an external ventricular drain
3. Perform a VP shunt tap
4. Program a VP shunt
5. Perform cervical spine traction
6. Perform placement of a CVP line
7. Provide airway management
8. Place an arterial line
9. Identify the signs, symptoms and pathophysiology of common respiratory system failure disorders: pneumonia, pneumothorax, pleura effusion and adult respiratory distress syndrome
10. Identify a respiratory failure disorder by performing an H&P examination
11. Report H&P examination of a patient with respiratory system failure both verbally and written
12. Assist in performing assistive procedures for respiratory failure: mechanical ventilation, chest tube, bronchoscopy, obtaining sputum cultures.
13. Recognize signs, symptoms and pathophysiology of common circulatory system failure disorders: hypertension, hypotension, myocardial infarction, heart failure, arrhythmias, pulmonary edema and shock
14. Report the H&P examination of a patient with a circulatory system failure both verbally and in written format.
15. Assist with performing invasive hemodynamic monitoring procedures, arterial line in a radial or femoral artery, central venous line, pulmonary artery catheter
16. Interpret echocardiogram and EKG's for treatment of circulatory system failure with appropriate medications and cardio-version or defibrillation
17. Recognize acute renal failure by performing an H&P
18. Report the H&P examination of a patient with renal system failure both verbally and in written format
19. Identify the signs, symptoms, and pathophysiology of common renal system failure: complex fluid disorders, electrolyte disorders, renal failure.
20. Assist in placement of renal dialysis catheter in an internal jugular or subclavian vein
21. Recognize increased intracranial pressure by performing an H&P examination
22. Identify the signs, symptoms, and pathophysiology of common neurological disorders: hydrocephalus, seizures, increased intracranial pressure, cerebral spinal fluid leaks, intra-cranial hemorrhage, subdural hematoma, brain tumors, epidural hematoma, subarachnoid hemorrhage, central nervous system infections, traumatic brain injury and spinal cord injury
23. Locate and interpret *"The Guidelines for the Management of Traumatic Brain Injuries", "The Guidelines for the Management of Acute Spinal Cord Injuries"* and institutional guidelines.
24. Locate and assist with monitoring and/or draining procedures: external ventricular drain in the brain, lumbar drain for a patient with nervous system disorder

PAIN AND PERIPHERAL NERVE
Goals and Objectives for Neurosurgery Residents

By Graduation the Resident Should Be Able to:

TRAUMA, BRACHIAL PLEXUS, LUMBOSACRAL PLEXUS

1. Demonstrate understanding of the injury and pathophysiology?
2. Perform clinical diagnosis, select and interpret diagnostic studies?
3. Obtain an adequate H&P
4. Define long-term plans and follow up
5. Acutely manage/stabilize in the ED/emergency setting
6. Formulate a treatment plan and express a rationale
7. Execute definitive surgical approach
8. Execute a definitive surgical procedure
9. Execute a definitive complication management
10. Clinically manage patient throughout course of illness, complications, troubleshoots, etc.

ENTRAPMENT DISORDERS OF THE PERIPHERAL NERVES, BRACHIAL PLEXUS AND LUMBOSACRAL PLEXUS

1. Demonstrate understanding of the injury and pathophysiology
2. Perform clinical diagnosis, select and interpret diagnostic studies
3. Obtain an adequate H&P\
4. Define long-term plans and follow up
5. Acutely manage/stabilize in ER/emergency setting
6. Formulate a treatment plan and express a rationale
7. Execute definitive surgical approach
8. Execute a definitive surgical procedure
9. Execute definitive complication management
10. Clinically manage patient throughout course of illness, complications, troubleshoot, etc.

PEDIATRIC NEUROSURGERY

Goals and Objectives for Neurosurgery Residents

By Graduation the Resident Should Be Able to:

PEDIATRIC BRAIN TUMORS

1. Demonstrate understanding of the disease's natural history and pathophysiology
2. Make differential diagnosis and further select and interpret additional studies
3. Obtain an adequate H&P
4. Acutely manage and stabilize in the ER/treat in an emergency setting
5. Formulate a treatment plan and give rationale
6. Execute definitive surgical approach
7. Execute definitive surgical procedure
8. Execute definitive surgical closure
9. Execute definitive intraoperative complication management
10. Clinically manage patient throughout course of illness, complications, troubleshoot, etc.
11. Define long-term plans and follow up

PEDIATRIC EPILEPSY

1. Demonstrate understanding of the disease's natural history and pathophysiology
2. Differentiate a focal vs. generalized epilepsy and further select and interpret additional studies
3. Demonstrate understanding of the disease's natural history and pathophysiology
4. Obtain an adequate H&P
5. Define long-term plans and follow up
6. Acutely manage/stabilize in the ER/treat in an emergency setting
7. Formulate a treatment plan and give rationale
8. Execute definitive surgical approach
9. Execute definitive surgical procedure
10. Execute definitive surgical closure
11. Execute definitive intraoperative complication management
12. Clinically manage patient throughout course of illness, complications, troubleshoot, etc.

PEDIATRIC PERIPHERAL NERVE

1. Demonstrate understanding of the disease's natural history and pathophysiology
2. Localize lesion/injury by exam and further select and interpret additional studies
3. Obtain an adequate H&P
4. Define long-term plans and follow up

5. Demonstrate knowledge of the timing of intervention
6. Formulate a treatment plan and give rationale
7. Execute definitive surgical approach
8. Execute a definitive surgical procedure
9. Execute definitive surgical closure
10. Execute definitive intraoperative complication management
11. Clinically manage patient throughout course of illness, complications, troubleshoot, etc.

PEDIATRIC HYDROCEPHALUS

1. Demonstrate understanding of the disease's natural history and pathophysiology
2. Make differential diagnosis and further select and interpret additional studies
3. Obtain an adequate H&P
4. Define long-term plans and follow up
5. Acutely manage/stabilize in the ER/treat in an emergency setting
6. Formulate a treatment plan and give rationale
7. Execute definitive surgical approach
8. Execute definitive surgical procedure
9. Execute definitive surgical closure
10. Execute definitive intraoperative complication management

PEDIATRIC CRANIOSYNOSTOSIS

1. Demonstrate understanding of the disease's natural history and pathophysiology
2. Make a differential diagnosis and further select and interpret additional studies
3, Obtain an adequate H&P
4. Define long-term plans and follow up
5, **D**emonstrate knowledge of associated co-morbidities that can arise with craniosynostosis (e.g. hydrocephalus, Chiari, etc.)
6. Formulate a treatment plan and give rationale
7. Execute definitive surgical approach
8. Execute a definitive surgical procedure
9. Execute definitive surgical closure
10. Execute definitive intraoperative complication management
11**.** **C**linically manage patient throughout course of illness, complications, troubleshoot, etc.

PEDIATRIC CHIARI

1. Demonstrate understanding of the disease's natural history and pathophysiology
2. Make differential diagnosis and further select and interpret additional studies
3. Obtain and adequate H&P
4. Define long-term plans and follow up

5. Acutely manage/stabilize in the ER/treat in an emergency setting
6. Formulate a treatment plan and give rationale
7. Execute definitive surgical approach
8. Execute definitive surgical procedure
9. Execute definitive surgical closure
10. Execute definitive intraoperative complication management
11. Clinically manage patient throughout course of illness, complications, troubleshoot, etc.

PEDIATRIC SPINAL DYSRAPHISM/TETHERED CORD

1. Demonstrate understanding of the disease's natural history and pathophysiology
2. Make a differential diagnosis and further select and interpret additional studies
3. Obtain an adequate H&P
4. Define long-term plans and follow up
5. Demonstrate knowledge of urgent conditions associated with myelomeningoceles and tethered cords
6. Formulate a treatment plan and give rationale
7. Execute definitive surgical approach
8. Execute definitive surgical procedure
9. Execute definitive surgical closure
10. Execute definitive intraoperative complication management
11. Clinically manage patient throughout course of illness, complications, troubleshoot, etc.

PEDIATRIC TBI/NAT

1. Demonstrate understanding of the condition and pathophysiology
2. Make a differential diagnosis and further select and interpret additional studies
3. Obtain an adequate H&P
4. Acutely manage/stabilize in the ER/treat in an emergency setting
5. Execute a definitive surgical approach
6. Formulate a treatment plan and give rationale
7. Execute definitive surgical procedure
8. Execute definitive surgical closure
9. Execute definitive intraoperative complication management
10. Clinically manage patient throughout course of illness, complications, troubleshoot, etc.

PEDIATRIC SPINE TRAUMA

1. Demonstrate understanding of the condition and pathophysiology
2. Make differential diagnosis and further select and interpret additional studies
3. Obtain an adequate H&P
4. Define long-term plans and follow up
5. Acutely manage/stabilize in the ER/treat in an emergency setting

6. Formulate a treatment plan and give rationale
7. Execute definitive surgical approach
8. Execute definitive surgical procedure
9. Execute definitive surgical closure
10. Execute definitive intraoperative complication management
11. Clinically manage patient throughout course of illness, complications, troubleshoot, etc.

PEDIATRIC CEREBROVASCULAR CONDITIONS

1. Demonstrate understanding of the natural history and pathophysiology of AVM's, strokes, Moya Moya, aneurysms, and arterial dissections
2. Make differential diagnosis and further select and interpret additional studies
3. Obtain an adequate H&P
4. Define long-term plans and follow up
5. Acutely manage/stabilize in the ER/treat in an emergency setting
6. Formulate a treatment plan and give rationale
7. Execute definitive surgical approach
8. Execute definitive surgical procedure
9. Execute definitive surgical closure
10, Execute definitive intraoperative complication management
11. Clinically manage patient throughout course of illness, complications, troubleshoot, etc.

PEDIATRIC SPASTICITY/MOVEMENT DISORDERS

1. Demonstrate understanding of the disease's natural history and pathophysiology
2. Make differential diagnosis and further select and interpret additional studies
3. Obtain an adequate H&P
4. Define long-term plans and follow up
5. Acutely manage pump failures/stabilize in ER/treat in an emergency setting
6. Formulate a treatment plan and give rationale
7. Execute a definitive surgical approach for ITBP's and SDRR
8. Execute definitive surgical procedure for ITBP's and SDRR
9. Execute definitive surgical closure for ITBP's and SDRR
10. Execute definitive intraoperative complication management for ITBP's and SDRR
11. Clinically manage patient throughout course of illness, complications, troubleshoot, etc.

PEDIATRIC ROTATION ASSIGNMENTS

1. Up-to-date on reading assignments
2. Participate on a quality improvement project
3, Give conference presentation

SPINE NEUROSURGERY

Goals and Objectives for Neurosurgery Residents

By Graduation the Resident Should Be Able to:

DEGENERATIVE DISEASE - CERVICAL

1. Demonstrate understanding of the disease's natural history and pathophysiology
2. Able to perform clinical diagnosis as well as select and interpret diagnostic studies
3. Obtain an adequate H&P
4. Formulate a treatment plan and express a rationale
5. Execute definitive surgical approach
6. Execute definitive surgical procedure
7. Execute definitive treatment for surgical complication management
8. Clinically manage patient throughout course of illness
9. Acutely manage/stabilize in the ER/emergency setting
10. Define long-term plans and follow up

SPINE: DEGENERATIVE DISEASE - LUMBAR

1. Demonstrate understanding of the disease's natural history and pathophysiology
2. Perform clinical diagnosis as well as select and interpret diagnostic studies
3. Obtain an adequate H&P
4. Define long-term plans and follow up
5. Acutely manage/stabilize in the ER/emergency setting
6. Formulate a treatment plan and express a rationale
7. Execute a definitive surgical approach
8. Execute definitive surgical procedure
9. Execute definitive treatment for surgical complication management
10. Clinically manage patient throughout course of illness, complications, troubleshoots, etc.

TRAUMA - CERVICAL

1. Demonstrate understanding of the disease's natural history and pathophysiology
2. Perform clinical diagnosis of different syndromes, as well as, select & interpret diagnostic studies
3. Obtain an adequate H&P
4. Acutely manage/stabilize in the ER/emergency setting; medical management, traction
5. Formulate a treatment plan and express a rationale
6. Execute definitive surgical approach
7. Execute definitive surgical procedure
8. Execute definitive treatment for surgical complication management
9. Clinically manage patient throughout course of illness, complications, troubleshoot, etc.

TRAUMA - THORACO-LUMBAR

1. Demonstrate understanding of the disease's natural history and pathophysiology
2. Perform clinical diagnosis of different syndromes, as well as select & interpret diagnostic studies
3. Obtain an adequate H&P
4. Acutely manage/stabilize in the ER/emergency setting; medical management, traction
5. Formulate a treatment plan and express a rationale
6. Execute definitive surgical approach
7. Execute definitive surgical procedure
8. Execute definitive treatment for surgical complication management
9. Clinically manage patient throughout course of illness, complications, troubleshoot, etc.

DEFORMITY

1. Demonstrate understanding of the disease's natural history and pathophysiology
2. Perform clinical diagnosis as well as select and interpret diagnostic studies
3. Obtain an adequate H&P
4. Define long-term plans and follow up
5. Formulate a treatment plan and express a rationale
6. Execute definitive surgical approach
7. Execute definitive surgical procedure
8. Execute definitive treatment for surgical complication management
9. Clinically manage patient throughout course of illness, complications, troubleshoot, etc.

TUMOR/ONCOLOGY

1. Demonstrate understanding of the disease's natural history and pathophysiology
2. Perform clinical diagnosis as well as select and interpret diagnostic studies
3. Obtain an adequate H&P
4. Define long-term plans and follow up
5. Acutely manage/stabilize in the ER/emergency setting
6. Formulate a treatment plan and express a rationale
7. Execute definitive surgical approach
8. Execute definitive surgical procedure
9. Execute definitive treatment for surgical complication management
10. Clinically manage patient throughout course of illness, complications, troubleshoot, etc.

CRANIO-CERVICAL JUNCTION

1. Demonstrate understanding of the disease's natural history and pathophysiology
2. Perform clinical diagnosis as well as select and interpret diagnostic studies
3. Obtain an adequate H&P

4, Define long-term plans and follow up

5. Acutely manage/stabilize in the ER/emergency setting

6. Formulate a treatment plan and express a rationale

7. Execute definitive surgical approach

8. Execute definitive surgical procedure

9. Execute definitive treatment for surgical complication management
10. Clinically manage patient throughout course of illness, complications, troubleshoot, etc.

UNDERSTANDS PRINCIPLES OF INSTRUMENTATION, FUSION AND BIOMECHANICS

S**PINE ROTATION ASSIGNMENTS**

1. Up-to-date on reading assignments

2. Participate in quality improvement project

3. Give conference presentation

STEREOTACTIC & FUNCTIONAL NEUROSURGERY
Goals and Objectives for Neurosurgery Residents

By Graduation the Resident Should Be Able to:

1. Discuss the considerations of stereotactic frame placement in regard to target localization and purpose of procedure (biopsy, craniotomy, functional, radiosurgery
2. Describe the direct and indirect basal ganglion-thalamocortical motor pathways
3. Define and distinguish tremors
4. Define and distinguish rigidity
5. Define and distinguish dystonia
6. Define and distinguish chorea
7. Define and distinguish athetosis
8. Describe the pathophysiology of Parkinson's disease and cerebellar tremor
9. Explain the primary symptoms treated by ventro-lateral (VL) thalamotomy, pallidotomy
10. Discuss the advantages and disadvantages of stereotactic biopsy compared to open biopsy procedures
11. Discuss the differential diagnosis of a newly discovered ring-enhancing intracranial mass
12. Discuss the differential diagnosis of a newly discovered non-enhancing intracranial mass
13. Describe the anatomy of the trigeminal nuclei, root, ganglion and divisions
14. Define typical trigeminal neuralgia, atypical trigeminal neuralgia, and trigeminal neuropathy
15. Explain the potential causes for trigeminal neuralgi
16. Define stereotactic radiosurgery
17. Explain the differences between radiosurgery and radiation therapy
18. List the potential indications for radiosurgery
19. List the reported complications of radiosurgery
20. Compare advantages and disadvantages of frame-based or frameless stereotactic craniotomies to non-stereotactic craniotomies
21. Describe factors guiding the choice of neuroimaging (CT, MRI, angiography) for stereotactic procedures
22. Explain the rationale for various MRI sequences used for tumor localization and functional procedures
23. Discuss the benefits and limitations of frame-based stereotactic procedures
24. Discuss patient selection for VL thalamotomy and pallidotomy
25. Discuss the advantages and disadvantages of ablative procedures
26. List the potential complications of VL thalamotomy, pallidotomy, and bilateral thalamotomies or pallidotomies
27. Discuss technical considerations to minimize the potential for an intracranial hemorrhage after a stereotactic biopsy
28. Discuss technical considerations to minimize the potential for a non-diagnostic stereotactic biopsy

29. Describe the appropriate trajectories to biopsy a lesion in the pineal region, midbrain, pons, and medulla?
30. Compare the advantages and disadvantages of radiosurgery and surgical resection for tumors and vascular malformations
31. Identify the microelectrode recordings of the thalamus and globus pallidus
32. Describe the methods used to localize and percutaneously penetrate the foramen ovale
33. List the potential advantages and disadvantages for the following trigeminal rhizotomy procedures:
    a. glycerol
    b. radiofrequency
    c. balloon compression
34. Discuss the dose-volume relationships for radiation-related complications after radiosurgery
35. Discuss potential sources of inaccuracy for stereotactic procedures
36. Discuss advantages and disadvantages of deep brain stimulation compared to ablative technique
37. Perform simple radiosurgery dose-planning
38. Perform complex radiosurgery dose-planning
39. Perform stereotactic craniotomies

TRAUMATIC BRAIN INJURY

Goals and Objectives for Neurosurgery Residents

By Graduation the Resident Should Be Able to:

1. Demonstrate understanding of the injury and pathophysiology
2. Perform clinical diagnosis, select and interpret diagnostic studies
3. Obtain an adequate H&P
4. Acutely manage/stabilize in the ER/emergency setting
5. Formulate a treatment plan and express a rationale
6. Execute a definitive surgical approach
7. Execute a definitive surgical procedure
8. Execute definitive complication management
9. Clinically manage patient throughout course of illness, complications, troubleshoots, etc.

VASCULAR NEUROSURGERY

Goals and Objectives for Neurosurgery Residents

By Graduation the Resident Should Be Able to:

ICH

1. Demonstrate understanding of the disease's natural history and pathophysiology
2. Perform clinical diagnosis, select and interpret diagnostic studies
3. Obtain and adequate H&P
4. Define long-term plans and follow up
5. Acutely manage/stabilize in the ER/emergency setting
6. Formulate a treatment plan and express a rationale
7. Execute definitive surgical/endovascular surgical approach
8. Execute definitive surgical/endovascular procedure
9. Execute definitive surgical/endovascular complication management
10. Clinically manage patient throughout course of illness, complications, troubleshoot, etc.

AVM

1. Demonstrates understanding of the disease's natural history and pathophysiology
2. Perform clinical diagnosis, select and interpret diagnostic studies
3. Obtain an adequate H&P
4. Define long-term plans and follow up
5. Acutely manage/stabilize in the ER/emergency setting
6. Formulate a treatment plan and express a rationale
7. Execute definitive surgical/endovascular approach
8. Execute definitive surgical/endovascular procedure
9. Execute definitive surgical/endovascular complication management
10. Clinically manage patient throughout course of illness, complications, troubleshoots, etc.

AVF

1. Demonstrates understanding of the disease's natural history and pathophysiology
2. Perform clinical diagnosis, select and interpret diagnostic studies
3, Obtain adequate H&P
4. Define long-term plans and follow up
5. Acutely manage/stabilize in the ER/emergency setting
6. Formulate a treatment plan and express a rationale
7. Execute definitive surgical/endovascular approach

8. Execute definitive surgical/endovascular procedure
9. Execute definitive surgical/endovascular complication management
10. Clinically manage patient throughout course of illness, complications, troubleshoots, etc.

CAROTID DISEASE

1. Demonstrates understanding of the disease's natural history and pathophysiology
2. Perform diagnosis, select and interpret diagnostic studies
3. Obtain an adequate H&P
4. Define long-term plans and follow up
5. Acutely manage/stabilize in the ER/emergency setting
6. Formulate a treatment plan and express a rationale
7. Execute definitive surgical approach
8. Execute definitive surgical/endovascular procedure
9. Execute definitive surgical complication management
10. Clinically manage patient throughout course of illness, complications, troubleshoots, etc.

STROKE

1. Demonstrates understanding of the disease's natural history and pathophysiology
2. Perform clinical diagnosis, select and interpret diagnostic studies
3. Obtain an adequate H&P
4. Define long-term plans and follow up
5. Acutely manage/ER: tPA indications, Mechanical revascularization
6. Formulate a treatment plan and express a rationale
7. Execute definitive surgical/endovascular approach
8. Execute definitive surgical/endovascular procedure
9, Execute definitive complication management
10. Clinically manage patient throughout course of illness, complications, troubleshoots, etc.

ENDOVASCULAR

1. Perform vascular access / Proficiency with Ultrasound
2. Understand the basics of catheter-based interventions
3. Perform an angiogram / describe findings
4. Perform complex interventions/express rationale

VASCULAR ROTATION ASSIGNMENTS

1. Up-to-date on reading assignments
2. Participate on a quality improvement project
3. Give a conference presentation

NEUROSURGERY MILESTONES

The milestones are designed only for use in evaluation of resident physicians in the context of their participation in ACGME-accredited residency or fellowship programs. The milestones provide a framework for the assessment of the development of the resident physician in key dimensions of the elements of physician competency in a specialty or subspecialty. They neither represent the entirety of the dimensions of the six domains of physician competency, nor are they designed to be relevant in any other context.

Milestones are knowledge, skills, attitudes, and other attributes for each of the ACGME competencies, organized in a developmental framework from less to more advanced. They are descriptors and targets for resident performance as a resident moves from entry into residency through graduation.

Each resident is expected to advance according to the goals and objectives. Although some will advance at different rates than others, some goals may be achieved at advanced levels prior to achieving all of the goals at a lower level

Explanation of Milestone Levels:

Level 1: The resident demonstrates milestones expected of an incoming resident.

Level 2: The resident is advancing and demonstrates additional milestones, but is not yet performing at a mid-residency level

Level 3: The resident continues to advance and demonstrate additional milestones, consistently including the majority of milestones targeted for residency.

Level 4: The resident has advanced so that he or she now substantially demonstrates the milestones targeted for residency. This level is designed to be the graduation target.

Level 5: The resident has advanced beyond performance targets set for residency and is demonstrating “aspirational” goals, which might describe the performance of someone who has been in practice for several years. It is expected that only a few exceptional residents will reach this level.

Brain Tumor – Patient Care

Level 1:

- Performs a history and physical examination in patients with brain or spinal cord tumors
- Provides routine perioperative care for patients with brain or spinal cord tumors
- Initiates the work-up of a patient with a brain or spinal cord tumor
- Recognizes signs of and initiates work-up for neurological deterioration

Level 2:

- Explains risks and benefits of neurosurgical procedures for brain and spinal cord tumors
- Interprets diagnostic studies
- Assists with routine procedures (e.g., resection of non-eloquent glioma or metastasis, stereotactic biopsy)
- Recognizes and initiates work-up of complications (e.g., hematoma, infection, seizure, hydrocephalus)

Level 3:

- Formulates a work-up and treatment plan for patients with brain, skull base, or spinal cord tumors
- Independently performs routine procedures
- Performs complex procedures with assistance (e.g., resection of eloquent glioma, ventricular or posterior fossa tumor)
- Manages unexpected intra-operative events (e.g., sinus bleeding, cerebral edema)
- Manages complications with assistance

Level 4:

- Independently formulates a treatment plan for patients with comorbidities or other complicating factors (e.g., systemic illness, radiation, chemotherapy)
- Independently performs complex procedures
- Adapts standard treatment plans to special circumstances (e.g., previous surgery, anticipated neurological morbidity)
- Independently manages complications

Level 5:

- Systematically reviews treatment outcomes for brain and spinal cord tumors
- Participates in quality improvement for brain and spinal cord tumors
- Participates in or lead a multidisciplinary brain tumor team or program

Critical Care – Patient Care

Level 1:

- Performs history and physical examination in critically-ill patients
- Inserts arterial and ventral venous catheters
- Manages neuro-critical care unit admissions and discharges

Level 2:

- Manages transient intracranial hypertension (e.g., hyperosmolar agents, CSF drainage)
- Assists with routine neuro-critical care unit procedures; manages airway and performs endotracheal intubation
- Recognizes and initiates work-up of routine systemic complications (e.g., pneumonia, infection, pulmonary embolus, cardiac dysrhythmia, myocardial infarction)

Level 3:

- Manages refractory intracranial hypertension (e.g., cerebral perfusion pressure directed therapy, advanced monitoring decompressive craniectomy)
- Performs routine and assists with complex neuro-critical care unit procedures; manages difficult and emergency airways
- Manages routine systemic complications and prioritizes simultaneous critical clinical events

Level 4:

- Diagnoses and initiates management of acute respiratory distress syndrome
- Performs complex and assists with advanced neuro-critical care unit procedures; manages or initiates management of surgical airways
- Manages metabolic and nutritional support for critically-ill patients

Level 5:

- Leads a multidisciplinary neuro-critical care team
- Performs advanced neuro-critical care unit procedures; performs bronchoscopy
- Manages complex critically-ill patients (e.g., septic shock, organ failure); designs care pathways for critically-ill patients

Surgical Treatment of Epilepsy & Movement Disorders (Functional) – Patient Care

Level 1:

- Performs a history and physical examination in patients with epilepsy or movement disorders
- Evaluates and treat a patient for medical comorbidities affecting functional neurological surgery
- Provides routine perioperative care for functional neurosurgical patients
- Initiates the work-up of a patient with an apparent seizure
- Recognizes and initiates treatment of status epilepticus

Level 2:

- Explains risks and benefits of neurosurgical procedures for epilepsy and movement disorders
- Interprets diagnostic studies
- Assists with routine components of functional procedures (e.g., burr hole, craniotomy, generator change)
- Recognizes and initiates work-up of complications (e.g., hematoma, seizure, infection, device malfunction)
- Places stereotactic head-frame

Level 3:

- Formulates a work-up and treatment plan for patients with epilepsy or a movement disorder (e.g., Parkinson disease, essential tremor)
- Independently performs routine functional procedures (e.g., deep brain simulation [DBS] placement, subdural electrode placement, topectomy)
- Performs complex functional procedures with assistance (e.g., temporal lobectomy)
- Manages complications with assistance
- Performs stereotactic targeting using frameless and frame-based systems

Level 4:

- Independently formulates a treatment plan for patients with comorbidities or other complicating factors (e.g., eloquent seizure focus)
- Independently performs complex procedures
- Adapts standard treatment plans to special circumstances (e.g., previous surgery, neuropsychological limitations)
- Independently manages complications

Level 5:

- Systematically reviews treatment outcomes for epilepsy and/or movement disorders
- Participates in quality improvement for epilepsy and/or movement disorders

Pain & Peripheral Nerves – Patient Care

Level 1:

- Performs a history and physical examination in patients with chronic pain or peripheral nerve disorders
- Provides routine perioperative care for patients with chronic pain or peripheral nerve disorders
- Initiates the work up of a patient with a peripheral nerve injury
- Recognizes and initiates treatment of baclofen withdrawal or morphine overdose

Level 2:

- Explains risks and benefits of neurosurgical procedures for pain and peripheral nerve disorders
- Interprets diagnostic studies
- Assists with routine procedures (e.g., carpal tunnel release, spinal cord stimulation, intrathecal pump)
- Recognizes and initiates work-up of complications (e.g., hematoma, infection, device malfunction)

Level 3:

- Formulates a work-up and treatment plan for patients with chronic pain or peripheral nerve disorders (e.g., trigeminal neuralgia, carpal tunnel syndrome)
- Independently performs routine procedures
- Performs complex procedures with assistance (e.g., dorsal root entry zone [DREZ] lesions, cordotomy, neuroma in continuity, brachial plexus repair, nerve graft, nerve transfer)
- Manages complications with assistance

Level 4:

- Independently formulates a treatment plan for patients with comorbidities or other complicating factors (e.g., recurrent trigeminal neuralgia)
- Independently performs complex procedures
- Adapts standard treatment plans to special circumstances (e.g., previous surgery, differentiation pain)
- Independently manages complications

Level 5:

- Systematically reviews treatment outcomes for pain and/or peripheral nerve disorders
- Participates in quality improvement for pain and/or peripheral nerve disorders

Pediatric Neurological Surgery – Patient Care

Level 1:

- Performs an age-appropriate history and physical examination with developmental assessment, including for non-accidental trauma
- Performs CSF shunt tap and valve programming; assists with set-up, opening, and closing for pediatric neurosurgical procedures
- Provides routine perioperative care for pediatric neurosurgical patients

Level 2:

- Explains risks and benefits of pediatric neurosurgical procedures; adapts to age-related variations
- Assists with routine pediatric neurosurgical procedures
- Recognizes and initiates work-up of routine complications, including in pre-verbal children (e.g., CSF shunt failure, seizure)

Level 3:

- Formulates a diagnostic and treatment plan for a pediatric patient; determines prognosis in severe brain injury and/or diagnosis brain death in infants and children
- Performs routine pediatric neurosurgical procedures; assists with complex pediatric neurosurgical procedures
- Manages routine complications and recognizes complex complications (e.g., hematoma, CSF leak)

Level 4:

- Adapts standard treatment plans and techniques to special circumstances (e.g., very young children and infants)
- Performs complex pediatric neurosurgical procedures; assists with advances pediatric neurosurgical procedures
- Manages complex complications

Level 5:

- Leads discussion at an interdisciplinary pediatric case conference or specialty clinic; counsels expectant parents regarding fetal anomalies
- Performs advanced pediatric neurosurgical procedures
- Utilizes patient outcome date for quality improvement; designs care pathways for pediatric neurosurgical patients

Spinal Neurosurgery – Patient Care

Level 1:

- Performs a history and physical examination in patients with degenerative, traumatic or neoplastic spinal disorders.
- Implements spinal bracing or traction; assists with set-up, opening, and closing for spinal surgery procedures.
- Provides routine perioperative care for spinal surgery patients

Level 2:

- Explains risks and benefits of spinal surgery
- Assists with route spinal surgery procedures
- Recognizes and initiates work-up of routine complications (e.g., pain, surgical site infection)

Level 3:

- Formulates a work-up and treatment plan for a patients with degenerative, traumatic, or neoplastic spinal disorders
- Performs routine spinal surgery procedures; assists with complex spinal surgery procedures
- Manages routine complications (e.g., myelopathy, cerebrospinal fluid (CSF) leak, instrument failure/malposition

Level 4:

- Adapts standard treatment plans and techniques to special circumstances (e.g., spinal deformity, post-irradiated spine, or infection)
- Performs complex spinal surgery procedures; assists with advances spinal surgery and reconstructive procedures
- Manages complex complications

Level 5:

- Leads discussion at an interdisciplinary spine case conference or specialty clinic
- Performs advanced spinal surgery and reconstructive procedures
- Utilizes patient outcome and registry data for quality improvement and treatment selection

Vascular Neurosurgery – Patient Care

Level 1:

- Performs a history and physical examination in patients with ischemic or hemorrhagic stroke or vascular neurosurgical disorders
- Manages and obtains CSF samples from external ventricular drains; assists with setup, opening, and closing for vascular neurosurgical and endovascular procedures
- Provides routine perioperative care for vascular neurosurgical and endovascular patients

Level 2:

- Explains risks and benefits of vascular neurosurgical and endovascular procedures
- Assists with routine vascular neurosurgical and endovascular procedures
- Recognizes and initiates work-up of routine complications (e.g., seizure, hydrocephalus)

Level 3:

- Formulates a diagnostic and treatment plan for a patient with ischemic or hemorrhagic stroke or vascular neurosurgical disorders
- Performs routine vascular neurosurgical and endovascular procedures; assists with complex vascular neurosurgical and endovascular procedures
- Manages routine complications and recognizes complex complications (e.g., cerebral vasospasm, herniation syndrome, intra-operative aneurysm rupture)

Level 4:

- Adapts standard treatment plans and techniques to special circumstances (e.g., vasculitis, ischemic heart disease)
- Performs complex vascular neurosurgical and endovascular procedures; assists with advanced vascular neurosurgical and endovascular procedures
- Manages complex complications

Level 5:

- Leads discussion at an interdisciplinary vascular neurosurgical and endovascular surgery case conference or specialty clinic
- Performs advanced vascular neurosurgical and endovascular procedures
- Utilizes patient outcome data for quality improvement; designs care pathways for vascular neurosurgical and endovascular patients

Traumatic Brain Injury – Patient Care

Level 1:

- Performs a history and physical examination in patients with severe TBI and assigns a Glasgow Coma Scale score
- Places an intracranial pressure (ICP) monitor; assists with set-up, opening, and closing for neuro-trauma procedures.
- Provides routine perioperative care for patients with TBI

Level 2:

- Explains risks and benefits of trauma neurosurgical procedures; evaluates patients with multiple trauma
- Assists with routine procedures for patients with TBI
- Recognizes and initiates work-up of routine complications (e.g., sinus injury, air embolus)

Level 3:

- Selects patients for operative intervention; prioritizes the management of injuries in patients with multiple trauma
- Performs routine procedures for patients with TBI; assists with complex procedures for patients with TBI
- Manages routine complications and recognizes complex complications (e.g., cerebral herniation syndrome, persistent CSF fistula)

Level 4:

- Adapts standard treatment plans to special circumstances (e.g., medical comorbidity, coagulopathy)
- Performs complex procedures for patients with TBI assists with advanced procedures for patients with TBI
- Manages complex complications

Level 5:

- Leads discussion at interdisciplinary trauma unit rounds and/or conference
- Performs advanced procedures for patients with TBI
- Utilizes patient outcome data for quality improvement; designs care pathways for neuro-trauma patients

MEDICAL KNOWLEDGE 1:
Information Gathering and Interpretation

Level 1:

- Correlates normal neuroanatomy and physiology with function
- Gathers, interprets, and reports basic diagnostic test results (e.g., serology, chest radiograph, brain and spine CT)

Level 2:

- Correlates pathological neuro-anatomy and physiology with function
- Describes indications for standard diagnostic testing

Level 3:

- Identifies anatomical and temporal patterns of disease occurrence
- Prioritizes, orders, and interprets diagnostic tests appropriate to clinical urgency and complexity

Level 4:

- Interprets unusual variations in patterns of disease occurrence
- Prioritizes, orders, and interprets complex diagnostic studies (e.g., SPECT, cerebral perfusion, MR tractography)

Level 5:

- Effectively teaches anatomic-pathological correlation
- Utilizes complex diagnostic approaches in novel situations

MEDICAL KNOWLEDGE 2:
Critical Thinking for Diagnosis & Therapy

Level 1:

- Lists a differential diagnosis for common clinical presentations
- Lists therapeutic options for common clinical presentations

Level 2:

- Provides a comprehensive differential diagnosis for a wide range of clinical presentations
- Explains advantages and drawbacks of standard therapeutic options

Level 3:

- Provides a focused differential diagnosis based on individual patient presentation
- Justifies optimal therapeutic option based on individual patient presentation

Level 4:

- Interprets anomalous presentations and rare disorders
- Adapts therapeutic choice to anomalous or rare patient presentations

Level 5:

- Studies and reports challenging diagnostic presentations
- Creates new or modifies existing therapeutic options

SYSTEMS-BASED PRACTICE 1:
Patient Safety

Level 1:

- Describes principles of patient safety; performs safe and effective hand-offs and transitions of care in routine clinical situations

Level 2:

- Recognizes and reports patient safety events; performs safe and effective hand-offs and transitions of care in complex clinical situations

Level 3:

- Discloses patient safety events; supervises hand-offs and transitions of care

Level 4:

- Analyzes patient safety events and offers error prevention strategies advocates for safe and effective transitions of care within and across health care systems

Level 5:

- Actively engages teams in process and system modification to prevent patient safety events improves care transition practices within and across health care systems

SYSTEMS-BASED PRACTICE 2:
Patient Safety

Level 1:

- Describes basic quality improvement methods and metrics

Level 2:

- Participates in local quality improvement initiatives (e.g., surgical site infection (SSI) reduction, care pathway implementation)

Level 3:

- Identifies quality improvement opportunities and assists in the development, implementation, and analysis of a quality improvement project

Level 4:

- Advances multiple quality improvement initiatives through participation in a quality improvement working group or committee

Level 5:

- Creates, implements, and assesses quality improvement initiatives

SYSTEMS-BASED PRACTICE 3:
Health Care Systems Awareness

Level 1:

- Describes principles of US health payment systems

Level 2:

- Analyzes how personal practice affects the health care system (e.g., test ordering, length of stay, readmissions)

Level 3:

- Seeks information about neurosurgical career options and identifies professional mentor(s)

Level 4:

- Prepares for transition to practice (e.g., information technology, risk management, billing and coding, financial, personnel)

Level 5:

- Collaborates with nursing and administrative teams to promote high value, quality care within a health care system

PRACTICE-BASED LEARNING AND IMPROVEMENT 1:
Evidence-Based Practice

Level 1:

- Applies institutional treatment guidelines in basic patient care: identifies and reports complications

Level 2:

- Applies published treatment guidelines in standard patient care; tracks personal clinical care outcomes

Level 3:

- Critically adapts guideline recommendations to individual patient specifics and preferences; evaluates and applies available outcomes data to improve patient care

Level 4:

- Participates in the creation and implementation of institutional guidelines or evidence-based practice protocols; analyzes and reports outcomes data

Level 5:

- Promotion evidence-based practice by publishing clinical guidelines and teaching at local or national conferences; participates in clinical outcomes registry design or administration

PRACTICE-BASED LEARNING AND IMPROVEMENT 2: Research

Level 1:

- Formulates hypotheses and investigative approaches to clinical or basic scientific problems

Level 2:

- Participates effectively in clinical or basic scientific research

Level 3:

- Contributes to peer-reviewed clinical or basic scientific literature

Level 4:

- Leads a clinical or basic scientific research effort, including application for funding

Level 5:

- Receives grant funding for clinical or basic scientific work and makes novel scientific contribution(s)

PRACTICE-BASED LEARNING AND IMPROVEMENT 3: Mentorship and Teaching

Level 1:

- Demonstrates self-awareness and identifies gaps in knowledge, skills, and experience; incorporates feedback

Level 2:

- Teaches medical students, other residents, and patients in informal settings; develops faculty mentorship of self

Level 3:

- Teaches health professionals in formal settings (e.g., nursing in-service training, residency teaching conference); mentors medical students

Level 4:

- Organizes educational activities at the program level; mentors residents and other health care professionals

Level 5:

- Designs and implements clinical rotations, curricula, or learning and assessment tools; models and teaches mentoring to others

PROFESSIONALISM 1:
Ethical Behavior

Level 1:

- Behaves ethically and professionally and takes responsibility for personal conduct

Level 2:

- Employs ethical and legal principles (e.g., informed consent, advance directives, confidentiality, error disclosure, resource stewardship) and appropriately seeks advice

Level 3:

- Performs tasks in a thorough timely, and respectful manner in complex or stressful situations and takes ownership of team outcomes

Level 4:

- Recognizes, reports, and helps rectify lapses in ethics or professionalism, including coaching others

Level 5:

- Promotes ethical and professional behavior by creating a teaching resource, addressing system-level problems, or serving on an ethics panel or Institutional Review Board

PRACTICE-BASED LEARNING AND IMPROVEMENT 3:
Well-Being

Level 1:

- Describes the importance of personal and professional well-being; manages sleep deprivation and fatigue

Level 2:

- Evaluates personal and professional well-being; seeks appropriate personal help and fatigue mitigation when needed

Level 3:

- Monitors and attempts to optimize professional well-being of the team; adjusts team assignments to mitigate fatigue and promote wellness

Level 4:

- Coaches and assists others in meeting professional expectations; recognizes and responds to physical impairment in self and others

Level 5:

- Develops a structured plan or team activity to optimize personal and professional well-being, resilience, and success; participates in a peer support program

INTERPERSONAL AND COMMUNICATION SKILLS 1: Patient and Family Communication

Level 1:

- Uses language and nonverbal behavior to exhibit respect, establish rapport, and demonstrate cultural competency

Level 2:

- Establishes therapeutic relationships in straightforward encounters using active listening and clear language

Level 3:

- Establishes therapeutic relationships, thoughtfully delivers information, and strives for consensus in challenging patient encounters

Level 4:

- Consistently models and mentors others in optimal patient and family communications

Level 5:

- Formally teaches communication skills to health care professionals

INTERPERSONAL AND COMMUNICATION SKILLS 2: Communication in Coordination of Care

Level 1:

- Accurately records information in the patient record and safeguards protected health information; coordinates care within the neurosurgical service

Level 2:

- Communicates orally and in writing in a respectful, organized, clear, concise and timely manner with all members of the inter-professional health care team; coordinates care with consulting services

Level 3:

- Effectively manages complex, team-based clinical care; coordinates care within a hospital system

Level 4:

- Models and mentors others in effective communication, including bidirectional feedback and conflict resolution; coordinates long-term care, including rehabilitation

Level 5:

- Develops or implements strategies for improving communication and teamwork within a health care system; creates care pathways at the health care system level

Neurosurgery Goals and Objectives for the PGY-1 Rotators

Neurosurgery Intern Rotation

Educational Goal

The main goal of this rotation is to provide the PGY1 resident an organized experience to enable him/her to acquire the basic knowledge and skills in the evaluation and management of patients presenting with neurosurgical complaints.

Interns rotate on this service in order to obtain a balanced experience in the preoperative, operative, and post-operative management of patients with neurologic diseases.

Rotation Description

An intern is assigned to this service. Overall supervision for the rotation is by the faculty in the Department of Neurosurgery. The service chief resident also performs supervision of junior residents and interns. Residents see patients in the Neurosurgery clinics at least weekly during this rotation. These clinics give the resident the opportunity to participate in the preoperative evaluation and work-up of patients as well as the postoperative follow-up of patients in whose care the residents have participated or similar patients. Interns are expected to learn to perform appropriate history and physical examinations for this group of patients. Appropriate management of the postoperative patient is emphasized. In addition, they are expected to make basic diagnoses and formulate appropriate treatment plans. A resident at this level should receive a basic understanding of the pathophysiology of these disease processes. An understanding of basic surgical techniques is promoted.

Residents will attend the core conferences of the Department of Neurosurgery during the course of this rotation. Formal attending rounds are made regularly. All residents are expected to be actively involved in the teaching of their fellow residents and medical students.

Specific Objectives for PGY 1 Rotators on Neurosurgery Service:

Patient Care

Become proficient in:

- Patient interview
- Comprehensive physical examination

Describe indications, contraindications, perioperative management, complications, and surgical sequence for and perform pertinent portions of:

- Lumbar puncture
- Ventriculostomy
- Minimally invasive approaches to the spine

Medical Knowledge

Be able to discuss and describe:

- Trauma to the central and peripheral nervous systems
- Fractures of the skull and spine
- Cranial and spinal cord metastases
- Cushing's disease and syndrome
- Intervertebral disc disease and its operative approaches
- CSF shunting and its operative approaches

- Cerebrovascular disease
- Chronic pain and its palliation
- Musculoskeletal biomechanics and physiology
- Shock and circulatory physiology
- Fluid and electrolyte imbalance

At the completion of this rotation the <u>PGY 1 Neurosurgery Resident</u> should be knowledgeable in the following areas and be able to:

• Perform neurosurgical patient evaluation, assessment and management.
• Review basic cranial anatomy including cranial nerve origin and function.
• Learn evaluation and treatment of neurological trauma, critical care and emergencies.
• The indications for and basic interpretation of diagnostic tests and X-rays including basic head CT And MRI imaging studies.
• Basic neurosurgical skills, technique, and wound management including simple craniotomy, dural suturing
And craniotomy closure.
• Recognition, diagnosis, and basic management of CSF leaks.
• Insertion and management of a lumbar drain.
• Management of common neurosurgical complications.
• Differentiate between stroke, TIA, and non-cerebrovascular events causing neurological symptoms And know the diagnostic techniques.
• Participate in at least 5 major procedures (cranial decompression, craniotomy, removal of pituitary adenoma).

PGY 1 – SNS BOOTCAMPS – REQUIRED

SNS Boot Camp Fundamental Skills Course July 2020 Houston, TX

Course Curriculum

Friday`	**Baylor College of Medicine**
12:00 pm	Welcome and Lunch
12:30 pm	Professionalism, Supervision, and Pearls for the Junior Resident
1:00 pm	Safety and Clinical Communications
1:30 pm	ICP Management
2:00 pm	Demonstrations (ICP Monitor, EVD, Lumbar Drain, VP Shunt Tap, Lines, Positioning)
3:00 pm	Unstable Patient Scenarios
4:00 pm	Break
4:15 pm	Small Group Emergency Case Scenarios
6:30 pm	Course Dinner at Marriott Hotel

Saturday	**Baylor College of Medicine - Rooms 414SA/415SA, 416C/422C, Rayzor Lounge**
7:00 am	Breakfast
7:30 am	Group A: Bedside Neurosurgical Procedures, Group B: Craniotomy Skills
11:00 am	Lunch
12:00 noon	Group A: Craniotomy Skills, Group B: Bedside Neurosurgical Procedures
3:30 pm	Adjourn

Bedside Neurosurgical Procedures and Equipment Stations (30 minutes per station)
VP Shunt Tap and Valve Programming/Assessment
Lumbar Puncture and Lumbar Drain/Assessment
IPC Monitor/Assessment
External Ventricular Drain/Assessment
Supine and Prone Positioning, Cranial Fixation, Cervical Traction/Assessment
Central and Arterial Lines/Assessment

Craniotomy Skills Stations
Drilling and Bone Dissection/Assessment
Clinical Decision Simulator (concurrent with drilling, Friday or Saturday)
Cranial Flaps/Assessment
Dura Closure/Assessment
Flap Fixation
Cranioplasty
Skin Closure/Assessment

The *Certificate* distributed to successful participants in the Society of Neurological Surgeons PGY1 Bootcamp Courses recognizes completion of the following professionalism, safety and fundamental skills exercises, including faculty-mentored hands on training:

Completion of this course does not certify that the resident is capable of performing the above listed procedures without supervision. The level of supervision required for the performance of these clinical duties by each resident will be determined by the resident's residency Program Director, faculty and the policies of their training institution.

Course Location:
Baylor College of Medicine, Main Campus
One Baylor Plaza
Houston, TX 77030

Questions: Should you have questions regarding this educational event, please contact: Natalee Kelaher nataleek@bcm.edu 713-798-4245

SNS Jr. Resident Bootcamp 2020

UCSD (San Diego) April 2020 under the direction of Dr. Alexander Khalessi and Dr. Joseph Ciacci
This mandatory course is for residents at the end of their PGY 1 year.

F. PGY 7 CURRICULUM

As of July 1, 2013, The University of Mississippi Neurosurgery Residency Program is certified as a 7 year training program. The ACGME program requirements for Neurosurgery state that all residents participating in a 7 year program must complete 7 years of training.

If the 7th year resident has completed their year as chief resident then the resident will spend the final year in an enfolded fellowship in the subspecialty of their choice.

Fellowship training will be in a recognized subspecialty training program either at UMC or offsite. These programs include but are not limited to endovascular, spine, pediatrics, skull base, vascular, oncology and functional neurosurgery. Fellowships can be either accredited fellowships or enfolded subspecialty training as defined by the Society of Neurological Surgeons. The goal of fellowship training is to provide a higher level of subspecialty expertise than that achieved during the usual residency training.

Learning objectives for PGY7

- Provide independent neurosurgical management of patients (MK, PC, SBP, ICS, P)
- Communicate effectively with other attending neurosurgeons and consulting services, including surgical planning that involves monthly specialty input regarding a patient with a known or suspected brain tumor (MK, PC, SBP, ICS, P)
- Plan long-term care and rehabilitation with relatives, caregivers, and appropriate outside agencies for a patient with a known or suspected brain tumor (MK, PC, SBP)
- Demonstrate cost effective hospital management and care (SBP, PC)
- Demonstrate citizenship by following all policies affecting attending physicians such as timely completion of medical records and compliant billing practices (P)

G. Spine Service/Rotation
Competency Based Goals and Objectives
For PGY 7 Spine Fellows

Description of Rotation or Educational Experience

The Spine service provides in-patient and out-patient educational experience for all house officers/fellows in Neurosurgery. The attending and house officers assigned to this service serve as the primary patient care team for patients with spine injuries, instability, disc herniation and disease-related medical issues including, but not limited to, the spine. Many spine patients are admitted with medical complications from their injury and/or diseases. Some will be admitted for diagnosis, surgical and non-surgical intervention and follow-up. The service cares for adult patients of all ages as well as varying ethnic and socioeconomic backgrounds. This rotation will provide a basic understanding of anatomy, injuries and diseases that affect the spine. It will provide an opportunity for house officers to develop treatment skills for spine injuries and diseases related to this area, along with the applicable care of patients with related processes.

Patient Care

House officers/spine fellows must be able to provide patient care that is compassionate, appropriate, and effective for the treatment of health problems and traumatic injuries. House officers/spine fellows are expected to:

PGY-7 Spine Fellows:

1. Discuss the anatomy of the cervical, thoracic and lumbar spine in details and demonstrate the use of anatomy in performing surgical approaches.
2. Obtain a thorough history of spine symptoms and perform a complete physical examination of the spine from both the musculoskeletal and neurological standpoint.
3. Diagnose & prescribe appropriate conservative treatment for all common disorders of the spine.
4. Properly order and interpret radiographs and CT scans, and MRI scans of the spine.
5. Perform w/adequate supervision, simple to moderately complex surgical procedures of the spine.
6. Instruct students in the concepts listed above

All PGY 7 Spine Fellows will be expected to demonstrate an understanding and delivery of basic patient care including respect for patient autonomy and appropriate bedside manner. They are expected to generate patient lists for the spine service, and use these lists to develop comprehensive assessments and plans for patients admitted to the service. All should be able to recognize critical lab abnormalities or clinical situations that will require a higher level of care (i.e. ICU admission or transfer).

1. The spine fellows are expected to acquire an understanding of the appropriate approach to the evaluation of the patient with suspected spine injury or disease.
2. The spine fellows are expected to be familiar with the principles of treatment decision making involving multiple modalities (Surgery, conservative, medication, physical therapy, and consultation).
3. Certain specific skills should be acquired by the spine fellow including in particular administration of medications, and physical therapy.

Medical Knowledge

Spine fellows must demonstrate knowledge of established and evolving biomedical, clinical, epidemiological, and social-behavioral sciences, as well as the application of this knowledge to patient care.

Practice- Based Learning and Improvement

Spine fellows must demonstrate the ability to investigate and evaluate their care of patients, to appraise and assimilate scientific evidence, and to continuously improve patient care based on constant self-evaluation and life-long learning.

Spine fellows are expected to develop skills and habits to be able to:

- Identify strengths, deficiencies and limits in one's knowledge and expertise;
- Set learning and improvement goals
- Use information technology to optimize learning

All spine fellows will be expected to be "active learners," asking questions routinely on rounds and demonstrating incorporation of new knowledge into their patient care plans. They will be expected to demonstrate regular use of the medical literature in determining evidence basis for recommended therapies in a variety of neurosurgical clinical scenarios. All spine fellows will be expected to answer clinical questions through use of available electronic resources.

Systems Based Practice

Spine fellows must demonstrate an awareness of and responsiveness to the larger context and system of health care, as well as the ability to call effectively on other resources in the system to provide optimal health care. Spine fellows are expected to coordinate patient care within the health care system relevant to the care of the orthopedic patient. Incorporate considerations of cost awareness and risk-benefit analysis in patient care. Work in inter-professional teams to enhance patient safety and improve patient care quality

Professionalism

Spine fellows must demonstrate a commitment to carrying out professional responsibilities and an adherence to ethical principles. Spine fellows are expected to demonstrate:

- Compassion, integrity, and respect for others
- Responsiveness to patient needs that supersedes self-interest
- Respect for patient privacy and autonomy
- Sensitivity and responsiveness to a diverse patient population, including but not limited to diversity in gender, age, culture, race, religion, disabilities, and sexual orientation

Interpersonal and Communication Skills

Spine fellows must demonstrate interpersonal and communication skills that result in the effective exchange of information and teaming with patients, their families, and professional associates. Discuss options in treatment with a patient and/or families. Spine fellows are expected to:

1. Communicate effectively with patients and families across a broad range of socioeconomic and cultural backgrounds
2. Communicate effectively with physicians, other health professionals, and health related agencies data, and an establishment of a plan or a modification or continuation of an already existent plan. The rationale for each decision is discussed, and questions regarding those principles being applied are answered.
3. Spine fellows will be asked to use available electronic resources to provide evidence-based medicine answers for clinical questions that arise on service.

Assessment Method (House officers)

Spine fellows will be evaluated at the end of their service rotation. An electronic system, MedHub® will be used for written evaluations by faculty. The attending physician will also provide verbal feedback to each spine fellow individually in review of their performance on the rotation. The areas of evaluation for each spine fellow will include:

- Patient care
- Medical Knowledge
- Communication skills
- Professionalism
- Practice based learning and improvement
- Systems based practice

Competency in these areas will be routinely assessed throughout the rotation including evaluations of house officer professionalism and communication skills completed by nursing and ancillary personnel on patient floors and their clinic setting. Specific procedural skills will be assessed by direct observation.

Spine fellows will be provided semi-annual one-on-one sessions with the program director to review their printed MedHub® evaluations by faculty. House officers are provided this to also discuss any issues they may regarding their education, service, faculty or peer issues. Final evaluations of completing spine fellows are scheduled yearly in June, prior to their completion.

Assessment Method (Program Evaluation)

The rotation and faculty will be evaluated individually by spine fellow at the end of each rotation using an electronic system, MedHub®, which will allow anonymous feedback. A review of all faculty and rotation evaluations is provided anonymously to faculty at the annual review of the program. Use of the yearly neurosurgery board exam also provides insight into needed areas of improvement. Curricular revisions will be made as needed in response to these outcome measures.

Level of Supervision

Each spine fellow is supervised closely by both the neurosurgery attending. Teaching and work rounds occur daily with the attending and/or fellow. The attending will provide continuous feedback on performance. The spine attendings are available 24-hours a day by pager.

3. RESEARCH ROTATION

A. Project Requirements

The research experience in the laboratory should be comprehensive. The resident should consult with both the clinical and research faculty to select a research project and then he or she should perform a complete and extensive review of the literature relative to the selected project. Furthermore, the resident will develop the experimental design and protocols and compile a list of equipment and supplies needed to conduct the research. In addition, all relevant institutional compliance applications will be completed and submitted for approval by the research faculty before the resident begins the laboratory rotation to expedite the start of the project.

Laboratory staff (faculty and technicians) will provide necessary assistance to help the resident conduct the research and complete the project within the scheduled period of time. The resident should conduct as much of the research project as possible in addition to preparing the manuscript of the finished work for publication. The elements of the laboratory experience are outlined in more detail below.

- The proposed research project
  Literature review of subject being studied in the research project
  Institutional compliance involves the following entities at UMMC

  IACUC - Institutional Animal Care and Use Committee
  IRB – Institutional Review Board
  IBC – Institutional Bio-safety Committee
  RSO – Radiation Safety

- Experimental Design and the research process
  Research model (in vitro / in vivo)
  Experimental and control groups
  Collection of data
  Statistical analysis of data
  Interpretation of data
  Data documentation
  Equipment and supplies

- Preparation of manuscript for publication of research

B. Project Selection

The selected project should be within the scope of the laboratory with respect to staff expertise and available equipment. The project should be of interest to the resident and have clinical relevance. In addition, the selected project should have a defined timetable that can be completed within the designated time that the resident will spend in the laboratory. The literature review should be extensive enough to give the resident a thorough background from which to approach the research topic. This background information will aid the resident in understanding the premise of the study being undertaken, and should provide insight for the development of the experimental design, selection of research model, experimental methods, data analysis, data interpretation, and the formulation of future hypotheses. The resident will be required to read and gain knowledge of the institutional compliance protocols involved in the research project.

Institutional compliance is fundamental in conducting research in an academic setting. Institutional oversight committees provide a peer review of each study to be conducted. Complying with institutional oversight ensures that the proposed research has scientific validity, and that the researcher is following institutional

guidelines with respect to safety in the use of hazardous materials, and that the welfare of both human and animal subjects is maintained.

C. Guidelines

The resident should consult with both the clinical and research faculty to select a research project and then he or she should perform a complete and extensive review of the literature relative to the selected project. This should be done several months prior to starting the research rotation.

D. Research Proposal Format

By developing the experimental design, the resident will gain an understanding of how research is conducted. First, the reason or rationale for the study is framed (i.e. to answer a question about a disease state: what is the pathophysiology? or what can be used as a treatment intervention?) resulting in a research premise.

Second, a research model of the disease state is devised. Third, experimental and control groups within the study are determine along with procedural protocols and methods of data collection and analysis are established. Fourth, the research technicians assist the resident in gathering equipment and supplies and setting up a work station. Fifth, in conjunction with the P.I. and laboratory staff, the resident establishes a schedule so he or she can begin the work on the project.

- Statement of hypothesis and rational- This statement identifies the problem or question to be investigated.
- Background - Evaluate existing knowledge, and specifically note areas that the project is intended to address. State the importance of the research described by relating the specific aims to the objectives.
- Experimental design (Specific aims and methodology) - Outline the experimentation that will be used to accomplish the specific aims of the project. Include means by which the data will be collected, analyzed, and interpreted. Discuss the potential difficulties and limitations of the proposed procedures and alternative approaches to achieve the specific aims. Provide a timetable for the investigation.
- Generation of manuscript for publication – Writing the manuscript will challenge the resident to document the research findings in a prescribed format that will meet peer review standards. The manuscript allows the writer to describe and interpret the research findings. Preparing the manuscript also allows the writer to show knowledge and understanding of the relative literature and how it relates to the current findings. In addition, the writer can state any formulated hypotheses or future follow-up studies. The manuscript usually consists of five (5) parts: the abstract; introduction; materials and methods; results, discussion and bibliography.

Introduction: The case is made for why the study was needed and why it is important. A brief statement on the background is presented along with the question or hypothesis. The construction of the bibliography (citation of references) should begin in the introduction.

Materials and Methods- This section should begin with a statement that ensures that the research was reviewed and approved by institutional compliance. This section can use subheadings that describe the study design, protocols, data collection, data analysis and the equipment & materials used.

Results – This section of manuscript presents the findings and can include tables and figures. Statements that help interpret data can also be included. Results should parallel the methods sections for clarity and consistency.

Discussion - The discussion begins by answering the question posed in the introduction, and explains how the results support the answer. The discussion addresses how the conclusions generated in the current study

relate to the existing body of knowledge. The discussion also addresses any weaknesses, discrepancies and technical pitfalls encountered in the study. It explains the importance of the findings and potential applications. The conclusion of the discussion section should sum up the discussion by stating perspectives, implications and follow-up studies if applicable.

References – The bibliography should include only relevant citations and some of these should be recent (if possible), and provide a comprehensive background of the subject.

Abstract / Summary – The abstract or summary of the manuscript states the main objective (what was studied and why?). It summarizes the most important results or key data and it gives the major conclusion and significance of the research.

E. Funding

Residents are required to submit both intramural and extramural grant proposals. These should be small start-up proposals that are funded by the resident's institution and private foundations. The department of Neurosurgery will provide alternative funding for the research project if neither intra- nor extramural grant funding is achieved.

F. Submissions *and* Presentation

Residents are required to present their research findings at a national meeting. The presentation can be oral or poster. In addition, the resident is also required to prepare a manuscript of the finished research and submit for publication.

G. Failure to Comply

If the Resident fails to comply with completing the research rotation, his or her standing in the residency program is jeopardize and graduation from the residency program may be delayed.

H. Results

At the end of the laboratory rotation the resident will have completed the research project and will have achieved the following learning and performance objectives:

- Formulate a research premise based on a clinical question.
- Formulate an experimental design to investigate and answer the clinical question.
- Develop the laboratory skills necessary to conduct the related research project
- Analyze and interpret research data.
- Communicate effectively research results through both written (manuscript) and oral presentations.
- Demonstrate a commitment to academic and scientific integrity.
- Demonstrate an understanding of policy with respect to institutional compliance.

4. CONFERENCES

Conferences are each week according to the published schedule to provide didactic and interactive teaching. All residents are to attend and to arrive early enough so that we can start exactly on time. This does not mean that you should arrive right at the starting time, but rather that you arrive before the starting time. You should stay until the end of conference unless given prior approval to leave early from the faculty member in charge.

Journal Club: Journal Club is on the second Wednesday of each month at 7:00 am during the Clinical Conference hour. Journal Club is crucial to the training program.
Everyone has to contribute to make it a success.

The primary mission of Journal Club is to prepare the resident to evaluate current literature, as well as help attending(s) keep up with new developments. JC also helps participants to evaluate the style and clarity of writing.

Residents will have seven minutes to present the article and timed. There are no excuses for not being prepared.

M & M Conference: M&M is on the last Wednesday of each month from 7:00 a.m. to 9 a.m. during the Clinical Conference. The chief resident chooses the cases and oversee this conference.

Grand Rounds: Neurology/Neurosurgery Grand Rounds is on Wednesdays at 8:00 a.m. It is the first Wednesday in September through the end of June. Residents (PGY 1-7) are required to give at least one Grand Rounds lecture per academic year. Only in special cases will Grand Rounds take place on the third Wednesday.

Resident's Basic Science/Neurobiology Lecture and Board Review: This lecture is on Wednesday at 9:00 a.m. This time is for neuro-biology with Dr. Eddie Perkins.

Neurosurgery Clinical Conference: The clinical conference is every Wednesday at 7:00 a.m. on the first and third Wednesday of each month. It includes case presentations, faculty and resident presentations. Dr. Luzardo is the faculty coordinator for this conference.

Neurosurgery Oral Board Review and Case Presentations are held every third Wednesday from 7 am to 8 am.

5. RESIDENT EVALUATION PROCESS

Expectations

- Perform all assigned operating room, clinic & ward duties for your level of training in a reasonable fashion.
- Participate in all Neurosurgery teaching conferences. Arrive early in order to start on time.
- Complete at least one research project every other year & submit publication & presentation during your residency.
- Meet all mutually agreed upon deadlines for manuscript preparation submission.
- Pursue an active course of independent reading.
- Research & present a topic (approved by the residency director) written and presentation format to the faculty and residents once academic year.
- Be responsible for checking your departmental e-mail at least once every day.
- Keep an up-to-date (weekly), complete & accurate operative case log on the ACGME web site. **Special emphasis must be given to documenting resident assistant and resident supervisor at surgery cases.**
- Stay current on your medical records. Each resident is required to review, edit, & sign completed dictations on the ESA system on at least a weekly basis.
- Obtain& maintain appropriate licensure and credentials.
- Follow the policies & procedures in the manual.
- Keep the resident work/consult rooms clean at all times.
- **Achieve appropriate milestones for each competency:**
  ***Patient Care**
  ***Medical Knowledge**
  ***Practice-based Learning and Improvement**
  ***Interpersonal and Communication Skills**
  ***Professionalism**
  ***Systems-based Practice**

Maintain a portfolio to provide evidence of learning and achievement which is used for evaluating mastery of competencies.

Evaluation Criteria

1) **Competency: Patient Care**
   Goal:
   To provide patient care that is compassionate, appropriate & effective for the treatment of health problems and
   the promotion of health.
   - Communicates effectively & demonstrates caring & respectful behavior when interacting with patients & their families.
   - Develops & carries out patient management plans.
   - Provides health care services aimed at preventing health problems

2) **Competency: Medical Knowledge**
   Goal:
   Demonstrates appropriate knowledge about established & evolving biomedical, clinical & cognate (e.g. epidemiological and social-behavior) sciences & the application of this knowledge to patient care.

- Demonstrates intellectual ability regarding retention, comprehension, abstraction, discrimination & logical thinking.
- Exhibits knowledge of anatomy, physiology & pathology in surgical cases.
- Is punctual, organized & prepared for conferences

3) Competency: Practice-Based Learning and Improvement

Goal:

Learns & demonstrates practice-based learning & improvement that involves investigation & evaluation of their patient care, appraisal & assimilation of scientific evidence, & improvements in patient care.

- Exhibits motivation with an active & aggressive attitude toward learning.
- Demonstrates field of knowledge through evidence of literature, methods of management, advantages & disadvantages of alternative treatments of their own patient care, appraisal & assimilation of scientific evidence & improvements in patient care.
- Exhibits research aptitude with curiosity, creativity, & ability to evaluate & analyze data through the utilization of resources & independent work.

4) Competency: Interpersonal and Communication Skills

Goal:

Develops & uses interpersonal & communication skills that result in effective information exchange & teaming with patients, their families, & professional associates

- Demonstrates oral communication skills through clarity of expression, articulateness, & grammar allowing effective information exchange with patients, their families & other health professionals.
- Displays written communication skills with accurate & timely documentation, progress, operative, & discharge notes are written completely and promptly.
- In relating to patients, the resident is interested, honest, understanding & explains clearly to the patient's satisfaction the details related to diagnosis, proposed treatment & its implications.

5) Competency: Professionalism

Goal:

Manifests a commitment to carrying out professional responsibilities, adherence to ethical principles, & sensitivity to a diverse patient population

- Displays integrity through honesty, discretion & a commitment to excellence & ongoing professional development.
- Ethical principles are evident through a commitment to provision or withholding clinical care, confidentiality of patient information, informed consent & business practices.

6) Competency: Systems-Based Practice

Goal:

Manifests actions that demonstrate an awareness of & responsiveness to the larger context & system of health care & the ability to effectively call on system resources to provide care that is of optimal value

- Demonstrates resourcefulness through management of available resources.
- Understands roles of support personnel & makes maximum use of their assistance.
- Demonstrates an awareness & responsiveness to the large context and system of health care.
- Has the ability to effectively call on system resources to provide care for optimal value.
- Is an advocate for quality patient care & helps patients deal with system complexities

7) Overall:

Appears to have the potential of becoming an independent & competent practicing neurosurgeon

Feedback on Results

The residents will meet with the program director semi-annually to review & discuss the semi-annual evaluations and milestone evaluations.

The resident will have the opportunity to provide feedback about their progress at that time. A written summary will be reviewed with the resident & kept in their file. The resident will also provide feedback about the program & their individual progress. Progress toward goals will be assessed at that time & adjustments in resident training made as required.

Promotion of Residents

The progress of the residents will be reviewed on a biannual basis or more frequently as needed. This will consist of a meeting of the faculty at which time the residents' progress and achieving the goals & objectives of the residency program will be evaluated. Those residents that have been successful in reaching these goals at the end of the year will be promoted to the next level as appropriate. Those residents that are not judged to have met these standards will be subject to the procedure described for probationary status, grievance, suspension, non-renewal or dismissal.

Probationary/Remediation Status, Suspension and Dismissal

Probationary/Remediation Status

Failure to comply with departmental rules & guidelines or failure to meet the goals & objectives outlined for the given stage of training in the expected manner will result in a probationary or remediation status for the resident. In addition to other behaviors listed herein & in general, unsatisfactory performance rating in two or more competency areas will be grounds for probationary status. A "needs improvement" rating in four or more competency areas will also be grounds for probationary status. The resident will be notified verbally & in writing.

The goal of probation is to provide a learning environment that will allow the resident to focus on & improve deficient areas. To achieve this goal the following will be implemented:

- Written identification of areas of deficiency & expectation for improvement
- Assignment of a mentor
- Monthly meetings of the resident & the program director to evaluate progress
- Additional didactic programs & individualized tutorials as determined by the program director.

Probationary status will be reviewed every 3 months & the resident's progress will be reviewed. The faculty may return the resident to regular status, recommend an extended period of probation, or recommend termination. The failure to remedy documented deficiencies while on probation constitutes grounds for dismissal from the residency program.

Suspension

The Chief of Staff of a participating and/or affiliated hospital where the resident is assigned, the Dean, the President of the Hospital, the Chair or Program Director may at any time suspend a resident from patient care responsibilities. The resident will be informed of the reasons for the suspension & will be given an opportunity to provide information in response.

A resident suspended from patient care may be assigned to other duties as determined & approved by the Chair. The resident will either be reinstated (with or without the imposition of academic probation or other conditions) or dismissal proceedings will commence by the University against the resident. Any suspension and reassignment of the resident to other duties may continue until final conclusion of the decision-making process. The resident will be afforded due process & may appeal as set forth below.

Non-renewal

In the event that the Program Director decides not to renew a resident's appointment, the resident will be provided written notice four months prior to termination of their current contract which will include a statement specifying the reason(s) for non-renewal. If requested in writing by the resident, the Chair will meet with the resident; this meeting should occur within 10 working days of the written request. The resident may present relevant information regarding the proposed non-renewal decision. The resident may be accompanied by an advisor during any meeting held pursuant to these procedures, but the advisor may not speak on behalf of the resident. If the Chair determines that the non-renewal is appropriate, he or she will use their best efforts to present the decision in writing to the resident within 10 working days of the meeting. The resident will be informed of the right to appeal as described below.

Dismissal

In the event of the Program Director of a training program concludes a resident should be dismissed prior to completion of the program, the Program Director will inform the Chair in writing of this decision and the reason(s) for the decision. The resident will be notified & provided a copy of the letter of proposed dismissal; & upon request, will be provided previous evaluations, complaints, counseling, letters and other documents that related to the decision to dismiss the resident. If requested in writing by the resident, the Chair will meet with the resident; this meeting should occur within 10 working days of the written request. The resident may be accompanied by an advisor during any meeting held pursuant to these procedures, but the advisor may not speak on behalf of the resident. If the Chair determines that dismissal is appropriate, he or she will use their best efforts to present the decision in writing to the resident within 10 working days of the meeting. The resident will be informed of the right to appeal as described below.

The following items are some but not all grounds for immediate suspension, probation, or dismissal:

- Abandonment of a patient or patient care duties
- Illegal or grossly unprofessional conduct
- Mal-performance of duties with potential for serious harm to patients.
- Performance of duties while under the influence of drugs or alcohol.
- Insubordination to faculty members or staff
- Absence from the program without prior approved leave.
- Misconduct as listed in the UMC Employee Handbook Rules and Regulations.

Below is the Institutional Remediation Policy:

Guidelines for Academic Remediation
Office of Graduate Medical Education
University of Mississippi Medical Center

Background: Trainees are expected to sustain reasonable progression of learning and performance throughout their training program. Occasionally, there may be a need for additional efforts to assist residents or fellows in satisfactorily meeting all competency requirements for graduation and/or to be prepared to pass their applicable board examination.

Process: Several triggers may be utilized to capture those trainees who may need remediation, including but not limited to: 1) results of the specialty-specific In-Training Exam (ITE), 2) a specific level not attained in any of the ACGME six competencies on any or multiple rotation evaluations, 3) failure to meet level-appropriate milestone targets, 4) sentinel or egregious event(s), or 5) other aspects of performance or behavior.

It is recommended that all trainees in programs that have ITEs should take the exam on an annual basis. Suggested scores that may cause a resident to enter remediation may include:

- Upper-level trainees answering less than 30-40% of questions correctly (determined by PGY year)
- First-year trainees scoring at or below the 20th percentile

Each program should set their own thresholds based on timing of the exam, national benchmarks and predictive values within their specialty area.

If more than 50% of the trainees in a program are below flagged thresholds, curriculum changes for the program are likely warranted as opposed to individual resident remediation processes.

Suggested activities for remediating trainees include:

- The Program Director must specifically identify areas for remediation: knowledge base deficits, specific competency areas, time management, test-taking skills, or other extenuating personal circumstances.
- The trainee should meet with the program director (PD) or an associate program director (APD) to discuss issues contributing to a sub-optimal performance and participate in formulating a remediation plan. This meeting should be documented in writing.
- The PD, an APD, mentor, or dedicated faculty member should supervise the resident's participation in and completion of tasks in the remediation plan.
- The trainee may benefit from meeting with an academic resources counselor for an academic assessment. (Available through UMC learning resources; contact GME Office for referral.) Ongoing counseling to enhance proficiency may be left to the discretion of the counselor or the supervising PD/APD.
- Increased attendance requirements for conferences may improve knowledge deficits.
- The trainee may develop a written personal study program. Once a plan is in place, the trainee should provide periodic reports to the supervising PD/APD, which outlines material covered. This plan may include things such as review of textbooks, work in on-line modules, reviews of cases, completion of board preparation courses, or completion of sample board question sets, as examples.

- Trainees should meet with their supervising PD/APD periodically and often enough to show progress in their participation in the plan.
- Extra required simulation training or expanded rotation exposure for certain skills may help improve any identified procedural problems in some trainees.
- In some cases, adjustment of a trainee's rotation schedule may be needed or helpful.
- Evaluation through student-employee health may be beneficial, especially for residents who appear disengaged or dysphoric.
- Complete or submit other additionally-required activities at the discretion of the PD.

Remediation is NOT punitive. All activities assigned as part of a remediation plan should have clear and apparent educational value and assist the trainee in meeting specified goals.

Conclusion: Usually remediation is undertaken before probation is considered. However, in some circumstances, the deficiencies may be so significant as to warrant more definitive action, including probation, when first recognized. Particularly when misconduct is involved, a single event may be the trigger for action, without prior warning or a history of any previous negative feedback. Any behaviors which could significantly compromise patient care and safety or create a hostile work environment may be grounds for immediate action, up to and including dismissal. Academic Probation is always at the discretion of the PD.

Trainees who fail to meet any of the stipulated requirements for their individual remediation plan may be required to extend training time to achieve certifying examination eligibility or may not be approved to sit for their boards after residency completion. Trainees may be considered to have completed the remediation protocol at the discretion of the supervising PD/APD, when all steps in their individual plan have been completed, including activities such as any assigned scholarly projects, specific numbers or types of patient encounters or procedures, or when a satisfactory score has been achieved on the next ITE.

Trainees undergoing academic remediation should not be allowed to engage in moonlighting activities.

Academic remediation is NOT considered a reportable event for future credentialing purposes, unlike formal academic probation, which usually will be.

Approved by GMEC 7.17.14

Academic Remediation Protocol Checklist

Resident Name: _____

Assigned PD/APD supervisor: _____

Specific competency areas to be remediated:_____
_____
_____

	Completion Date
Initial meeting with PD/APD to review plan	
Meet with academic counselor, if needed.	
Evaluation by student-employee health, if needed.	
Meeting with Associate/Assistant Dean for GME, if needed	
Rotation / Schedule adjustments, if needed	
Submitted written personal study or corrective action plan	
Simulation assignments	
Conference Attendance goal	
Meet with PD/APD periodically (review study / action plan) Date: _____ Achievement: _____ Date: _____ Achievement: _____ Date: _____ Achievement: _____ Date: _____ Achievement: _____	

_____ _____

Resident Signature PD/APD Signature

6.18.14

EVALUATION POLICY & GRIEVANCE ALGORITHM

Procedure for Appeal and Grievance

House staff shall have the rights of grievance procedures as detailed in the Handbook for Employees of the University of Mississippi Medical Center, the Medical Staff bylaws, Rules, and Regulations of the University Hospitals and Clinics, and in the University of Mississippi Medical Center Graduate Medical Education Evaluation Policy and Grievance Algorithm.

All trainees at the University of Mississippi Medical Center will receive both formative and summative evaluation on a period basis. Attending physicians are expected to provide feedback & constructive criticism, on all aspects of the trainee's performance, including but not limited to, clinical judgment, medical knowledge base, data gathering skills (history taking, physical exam, old record review, lab follow-up), procedural skills, humanistic attributes, professionalism, over-all patient care skills as well as all behaviors defined within the six ACGME descriptive areas of competency. *Trainees should expect direct constructive criticism and suggestions for improvement.* The Training Program Director or his/her designee will meet individually at least semiannually to review each house officer's overall performance & progress in the training program.

The details of the process of resident evaluation & grievance will vary appropriate to the requirements of the RRC or other accrediting agency for the resident's specialty or subspecialty. The process will typically include the elements described below.

The appeals process is as follows:

1. Attending Physician

If the trainee is performing at a low satisfactory or unsatisfactory level, the substandard performance should be brought to the trainee's attention as soon as possible. Performance problems should be documented with clear suggestions regarding appropriate conduct for such situations in the future. In addition to discussing the problem directly with the trainee, the attending physician should notify the program director (preferably in writing) of the nature of the problem as soon as possible. In some cases, changes in routine supervision on patient care services may be warranted. If a trainee is unhappy with an evaluation or feels it is unfair, he/she is encouraged to discuss the evaluation in detail with the attending physician. It is advisable that the resident initial and date all documentation to signify his/her awareness of the opinions & actions recorded.

2. Program Director

If after additional discussion, the trainees feel the evaluation is unjustified, he is asked to put his complaint in writing & discuss the evaluation in detail with the program director, who will serve as a mediator. In most cases, after seeking input from all involved parties & reviewing the situation in detail with both the attending physician & the trainee, the program director will dictate a report to be included in the trainee's file along with the original evaluation and the trainee's rebuttal & explanation. In some case, the attending physician may wish to file an amended evaluation. In all cases, the trainee is asked to define specific ways in which the behavior can be changed or improved. In the setting of continued marginal or unsatisfactory performance, a house officer may have clinical privileges revoked by the program director, & be asked to function in a remedial role in which all aspects of patient care must be immediately supervised by another physician including countersignature of all patient orders & notes. In general a remedial program will be established which includes reading assignments & didactic conference attendance, (and in some cases language classes) in an effort to improve performance. A specific probationary period will be defined.

3. Department Chairman

Unsatisfactory trainee performance may result in the dismissal from the program of the House Officer. This decision will be made by the Program Director in consultation with the Chairman of the Department. If a House Officer wishes to contest the Program Director's decision for termination from the training program, appeal for review can be addressed to a constituted Departmental Grievance Committee composed of selected peers and faculty.

4. Appeal from Department Chair

House Officers may appeal grievances by petitioning in writing to the Vice Chancellor for Health Affairs within fourteen calendar days of notice of termination from the program director or chairman exclusive of University of Mississippi Medical Center holidays. Upon receipt of a formal written request from a resident for review of a Department Chair's/Program Director's action, the Vice Chancellor will select a member of the Graduate Medical Education Committee to chair an appeals committee. The appeals committee chair will appoint an appeals committee of four (4) additional GMEC *or RRSC* members, including at least one (1) member of the House Staff. The appeals committee chair will promptly convene the committee to hear the appeal, generally within ten (10 business days of the Vice Chancellor's appointment of the appeals committee chair. The decision of the appeals committee will be submitted to the Vice Chancellor. The decision of the Vice Chancellor shall be final in accordance with the by-laws & policies of the Board of Trustees of State Institutions of Higher Learning.

5. Grievance Issues

a) Per the University of Mississippi Medical Center, the following issues are considered "grievances":

- Complaints against faculty
- Disciplinary actions, including dismissals, demotions & suspensions;
- Application of personnel policies, procedures, rules & regulations, ordinances & statutes;
- Acts of reprisal against employees using the grievance procedure
- Complaints of discrimination on the basis of race, color, creed, political affiliation, religion; age, disability, national origin, sex, marital status, veteran status; or
- Any matter of concern or dissatisfaction to an employee if the matter is subject to the control of institutional management.

b) Likewise, the following issues are considered "non-grievances"

- Scheduling & staffing requirements;
- Issues which are pending or have been concluded by direct appeal through an administrative or judicial procedure;
- Temporary work assignments which do not exceed 90 calendar days;
- Budget & organizational structure, including the number of assignment of employees or positions in any organizational unit;
- The measurement and assessment of work through performance appraisal, except where the employee can show that the evaluation was discriminatory, capricious, or not job related;
- The selection of an individual by a department head or designee to fill a position through promotion, transfer, demotion, or appointment unless it is a violation of UMC or Board of Trustees policy;
- Internal security practices established by the institution, department head or designee;
- Termination or layoff from duties because of lack of work, reduction of the work force, or job elimination;
- Voluntary resignation by an employee bars action under the grievance procedures;
- Any matter not within jurisdiction or control of the institution;
- Content of published UMC polices or procedures;

- An action by the institution pursuant to federal or state law or directions from the Board of Trustees of State Institutions of Higher Learning; or
- Establishment & revision of wages & salaries, position classification & general benefits.

6. Program Evaluation

The faculty will review the success of the program in meeting its goals & objectives in its regular quarterly meetings and during a single session devoted exclusively to this once a year by the Program Evaluation Committee. At least one resident representative will attend all meetings.

At least once per academic year, the faculty & residents are required to evaluate the program & the curriculum. This done through E*Value and the residents' responses are kept confidential.

The results of this review will be discussed with the entire faculty as well as the residents after the results are confidentially collated.

The following is a list of items that will be reviewed at least annually at the PEC meeting:

- Resident Performance (Milestones)
- Faculty Development Activities
- Graduate Performance on ABNS Oral Board Examination
- Program Performance on ABNS Written Examination
- Adequacy of Trainee Supervision
- Confidential Annual Evaluations of the Program by the Faculty and Residents
- Aggregate Educational Outcome Data and Evidence it is Being Used to Improve the Program
- Faculty Evaluation Plan & Process
- Letters of Education Affiliation in Place for all "Off Site" Rotations
- Annual ACGME Resident and Faculty Survey Results
- Most Recent ACGME RRC Review & Our Current Progress on Citations
- Compliance with Duty Hours Monitoring and Fatigue Mitigation
- Evaluation of the Quality of and Communication with Non-UMMC Rotations
- Competency Based Goals and Objectives for Each Service, Activity and PGY Level and that they are Distributed Annually
- Documentation on How the Program Ensures Residents Develop a Personal Plan of Learning to Foster Continued Professional Growth & Life-Long Learning Skills w/Guidance from the Faculty
- Scholarly Activity by the Faculty and Trainees
- **Program Policies On:**
    1. Duty Hours
    2. Supervision
    3. Trainee Responsibility
    4. Leave
    5. Remediation
    6. Hand-Offs
- Resident Participation in Meaningful Quality Improvement Projects
- Updates from the Society of Neurological Surgeons – if any
- RRC Program Requirements
- Graduate Surveys
- Trainee Compliance with Hospital Mandated Training/Certificate (ACLS, Health Stream, Licensure)
- Availability of Qualified Trainee Applicants

7. Policies

In addition to the policies outlined below, you are to comply with all applicable policies & procedures of the University of Mississippi Medical Center and any other affiliated clinical facilities.

Duty Hours

- All residents will have at least one day in seven free from patient care responsibilities averaged over a four-week period.
- Residents will not be scheduled for more than 80 duty hours per week, when averaged over a four-week period. Only time actually spent in the hospital when on call will count towards the weekly duty hour limit.
- First call will be no more than every third night, averaged over a four-week period
- On call duty (actual time in the hospital) will be limited to a 24-hour period with an additional 6 hour time period for continuity and transfer of care, educational debriefing & didactic activities. Any resident that exceeds this limitation should notify the program director or the on-call physician so that the call back up plan can be instituted in the order outlined as required.
- The interval for rest & personal activities after a call period should consist of a 10 hour time period.
- The second call resident will relieve the first call resident.
- The attending will relieve the second call resident if the second call resident exceeds the limits.
- Residents are actively encouraged to tell the program director if they exceed any of the duty hour guidelines or have any concerns regarding this issue. In order to ensure compliance, a log of duty hours is kept by each resident on E-Value. Weekly updates from E-Value alert the education office when residents are not keeping up with their duty hours. Also monthly reports show violations to the duty hour policy to the program director which is discussed at every monthly residents meeting with the program director. In the event that any resident exceeds 80 hour for that week, the resident(s) and program director are notified.

INSTITUTIONAL POLICY ON DUTY HOURS:

The University of Mississippi Medical Center and its affiliated hospitals are committed to providing excellent patient care and outstanding education for physicians in training. Compliance with all Accreditation Council for Graduate Medical Education policies is expected. Effective July 1, 2011, the work hours of resident physicians enrolled in programs not granted a work-hours extension are as follows:

DUTY HOURS

- **Duty hours are defined** as all scheduled clinical and academic activities related to the residency 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 such as conferences. Duty hours do not include reading and preparation time spent away from the duty site.
- **Scheduled duty hours are limited to 80 hours per week**, averaged over a four-week period, inclusive of all in-house call activities.
- **Residents are to be provided with one day in seven free** from responsibilities to the program, averaged over a four-week period, inclusive al call and free from all clinical, educational, and administrative activities. One day is defined as one calendar day.
- **Residents should have 10 hours free of duty**, & must have 8 hours off between scheduled duty periods.

  The objective of on-call activities is to provide residents with continuity of patient care experiences throughout a 24-hour period. In-house call is defined as those duty hours beyond the normal work day when residents are required to be immediately available in the assigned institution.

- **Interns (PGY-1's)** are limited to a maximum of 16 hours of continuous duty in hospital.
- **PGY-2** residents & above must be scheduled for in-house call no more frequently than every third night (when averaged over a four-week period).
- **Continuous on-site duty, including in-house call**, must not exceed 24 consecutive hours. PGY-2's must not be assigned additional clinical responsibilities after 24 hours of continuous in-house duty. In unusual circumstances, residents, on their own initiative, may remain beyond their scheduled period of duty to continue to provide care to a single patient. Justifications for such extensions of duty are limited to reasons of required continuity for severely ill or unstable patients **& must be documented** as defined in section VI.G.4.b of Specialty & Subspecialty Program Requirements. **(see forms section)**

    - **All trainees** are limited to no more than 28 hours continuous duty in the hospital (24 hours in-house call, plus 4 hours to complete post call patient care responsibilities or conferences).
    - **No new patients**, as defined in Specialty and Subspecialty Program Requirements, may be accepted after 24 hours of continuous duty.
    - **At-home call** (pager call) is defined as call taken from outside the assigned institution.
    - Time spent in the hospital by residents on at-home call must count towards the 80-hour maximum weekly limit. The frequency of at-home call is not subject to the every-third-night limitation, but must satisfy the requirement for one-day-in-seven completely free from all educational & clinical responsibilities of duty, when averaged over four weeks. When residents are called into the hospital from home, the hours residents spend in-house are counted toward the 80-hour limit.
    - At-home call must not be as frequent or taxing as to preclude rest or reasonable personal time for each resident.
    - Residents are permitted to return to the hospital while on at-home call to care for new or established patients. Each episode of this type of care, while it must be included in the 80-hour weekly maximum, will not initiate a new "off-duty period".
    - The Program Director & the faculty must monitor the demands of at-home call in their programs & make scheduling adjustments as necessary to mitigate excessive service demands &/or fatigue.

Reviewed/April 2019

RESIDENT SUPERVISION

THE UNIVERSITY OF MISSISSIPPI MEDICAL CENTER
SCHOOL OF MEDICINE
INSTITUTIONAL POLICY ON RESIDENT SUPERVISION

Preamble:
The University of Mississippi Medical Center is dedicated to medical education. To fulfill this mission, it is recognized that trainees must participate in rendering services to patients. Trainees will be supervised as they perform diagnostic and therapeutic procedures to gain the skills and experience necessary to become qualified practitioners in their chosen field. The purpose of this mandatory educational method is to assure that all trainees demonstrate a progressive increase in proficiency to enable them to ultimately become a licensed independent practitioner. However, it must be emphasized that under no circumstances will a trainee ever perform an invasive procedure for any purpose other than for the benefit of the patient or to achieve a diagnosis. This policy extends to include patients who are near death or have expired. [Post mortem examination or the securing of organs/tissue for transplantation/research purposes will require an additional (separate) consent form secured prior to those respective procedures.]
This document outlines the policy whereby the attending staff or other senior individuals will provide supervision of residents in the various clinical settings of this institution.

Definitions:
Supervision will consist of two specific levels: Direct Supervision and Indirect Supervision.

Direct Supervision is defined as the supervising physician being physically present with the resident and the patient during the encounter or procedure.

Indirect Supervision is subdivided into three levels of intensity:

- Indirect Supervision with Direct Supervision immediately available- the supervising physician is physically within the hospital or other site of patient care, & is immediately available to provide Direct Supervision if needed.
- Indirect Supervision with Direct Supervision available- the supervising physician is not physically present within the hospital or other site of patient care, but is immediately available by means of telephonic &/or electronic modalities, & is available to provide Direct Supervision.
- Indirect Supervision with Oversight- the supervising physician is available to provide review of procedures/encounters with feedback provided after care is delivered.

General Policy:
The program director of the resident & the chairman of the department to whom the resident is assigned are ultimately responsible for assuring faculty supervision of each resident. Responsibility for the supervision will usually be assigned by these leaders to an attending faculty member supervising the resident on various specific academic and clinical rotations or experiences. These assignments are reflected in monthly rotation & call schedules which clearly delineate the assigned attending faculty member, & also upper level house officers who will be assigned to provide supervision as appropriate to junior level residents. All resident clinical activities are supervised 24 hours per day, 7days per week, & 365 days per year.

Residents are members of the medical staff as defined in the hospital by-laws. They will provide assistance in the care of patients of physicians on the service to which they are assigned.
All patients receiving care at this institution are assigned to a member of the medical staff. The staff member responsible for the care of the patient will provide the appropriate level of supervision based on the nature of the patient's condition, the likelihood of major changes in the management plan, the complexity of care, & the experience & judgment demonstrated by the resident(s) being supervised. As part of the training program,

residents should be given progressive responsibility for the care of patients & to act in a teaching capacity & provide supervision to less experienced residents and students. It is the decision of the staff member, with advice from the program director, as to which activities the resident will be allowed to perform within the context of the assigned levels of responsibility. The overriding consideration must be the safe and effective care of the patient. It is expected that faculty supervision assignments should be of sufficient duration to adequately assess the knowledge and skills of each resident & delegate to him/her the appropriate level of patient care authority & responsibility.

Documentation of supervision will be by progress note or signature by the attending physician or reflected within the resident's progress notes at a frequency appropriate to the patient's condition, or as dictated by hospital policies.

Inpatient Areas: In general, patients admitted to the hospital who are in stable condition will receive indirect supervision with direct supervision available. The resident should notify the attending physician in a timely fashion of each admission, at the discretion of the attending or per program guidelines (e.g. for every patient admitted or for selected patients). The attending physician will be expected to personally see the patient & review the management plan within 24 hours of admission. Each program will utilize a specific set of guidelines to define circumstances & events in which residents must communicate immediately with appropriate supervising faculty member.

Outpatient Clinic: Residents seeing patients in an outpatient clinic will generally receive either direct supervision or indirect supervision with direct supervision immediately available. Management plans for new patients or revision of existing management plans will be reviewed during the clinic.

Emergency Room: Residents assigned to the emergency room service will receive direct or indirect supervision with direct supervision immediately available, depending on the severity of the problem & experience of the resident. Residents providing consultation or care to patients followed by their respective services receive indirect supervision with direct supervision available by the staff of their service, in most cases. Dispositions of these patients may be discussed by phone with the appropriate staff member &/or reviewed on return to an outpatient facility. If the patient is admitted, the treatment plan will be reviewed by the attending faculty within 24 hours.

Operating Room or Special Procedure Facility: Residents performing diagnostic procedures that require a high level of expertise in performance or interpretation will receive direct supervision by a faculty member depending on the experience & proficiency previously demonstrated by the resident.

Emergency Care: In an emergency, defined as a situation where immediate care is necessary to preserve life or prevent serious impairment of health, residents are permitted to perform any & all necessary actions possible to save a patient from serious harm pending arrival of more qualified staff. The appropriate faculty practitioner will be notified as soon as possible of all emergency situations.

Fee for Teaching Physician Services: In those instances in which the attending physician submits a bill for services as the teaching physician, supervision must be provided in keeping with CMS Final Rule and its subsequent revisions.

Violation of compliance with this policy by any trainee could result in (immediate) dismissal from the program.

Reviewed April 2019

DEPARTMENT OF NEUROSURGERY
POLICY ON RESIDENT SUPERVISION

Unless a resident has previously been determined to be independent for the procedure or a portion of the procedure, the attending of record will be responsible for supervision of the resident. The level of supervision will be determined by the attending based on their assessment of the resident's surgical skills.

Resident Duties

1. Junior

- Responsible for the daily care of the inpatient services
- Performs medical histories & physical examinations in the outpatient clinics, emergency departments, & for consults
- Sees & evaluates consults as requested & discusses the case with the senior resident & attending physicians
- Performs common procedures as required such as blood drawing, IV access, & wound care
- Rounds with attending physicians
- Assures that patients are ready to go to the operating room
- Participates in all assigned surgical cases in the operating room
- Follows up on patient care data & issues
- Communicates with patients & family members if assigned this duty by attending physicians
- Shares relevant patient data w/senior residents & attending physicians
- Presents cases at multidisciplinary patient management conferences

2. Senior

- Same duties as junior residents above
- Assists w/the supervision & teaching of junior residents & students
- Assists w/the coordination & scheduling of the activities of the service
- Develops the resident call schedules in concert w/the program director

Resident Distribution

1. Each faculty group will be assigned a group of residents. These residents will be available for these physicians for all scheduled clinical activities. They will be assigned to other services on days when there are no regularly scheduled activities. It is up to the attending physicians on a service as to how they want to split their assigned residents especially if they are at two different locations.

2. When there are residents with no assigned duties, those residents will be used in the following order of priority:

- Cover UMC vacations
- Consults
- Cases outside normal schedule
- OR for regularly scheduled services
- Clinic

3. If a case is added on or patients are seen in clinic on a day other than regularly scheduled, there will not be residents available unless there is an excess available. All other regularly scheduled activities will have first priority.

4. **Resident distribution conflicts will be handled solely between attending physicians**. The residents should not be expected to resolve any such conflicts should they arise.

5. Schedules will be adjusted accordingly when large #'s of residents & faculty are out to facilitate overage.

6. Preoperative evaluations will be done by the designated resident of the service for which the patient is being operated. If preoperative evaluations are scheduled to come in on a day other than your own clinic days, please provide a resident from the responsible service to perform the examination

7. Clinical use of the research resident must be approved by the program director. This must be done in advance to avoid conflict with scheduled experiments. Extreme need must be demonstrated to justify this so as to preserve the integrity of the rotation.

8. Depending on the need for additional coverage, individual residents may be temporarily reassigned to another service. **Any time residents are not actively engaged in the primary clinical care duties of your service, it is your responsibility to help out the other services without being called.**

9. All residents are expected to make weekday morning rounds at the individual hospitals unless there are no patients in the hospital for that particular service.

10. Weekend rounds may be performed for all services by the on-call team if a complete & thorough check out procedure is used.

11. No resident will be swung from another service to cover any vacations on another service except when residents are otherwise unoccupied or the schedule delineates such coverage. Therefore, it is the responsibility of the senior resident on each service to remain apprised of days out for residents and providers. The senior resident should make changes in the clinic or O.R. schedules as needed after consultation with the affected attending.

12. In order to facilitate coverage, a PG5 resident at UMC will be designated on a schedule to be determined by the residents to serve as the chief resident in this regard. This resident will be responsible at the end of each week at the latest for reviewing relevant information including days out & clinic & OR schedules for the next week to determine the availability of residents to fill in for all services which need resident coverage. This chief resident will then coordinate among the other senior residents on other services & the departmental chair to facilitate coverage. If coverage cannot be arranged, the affected attending will be notified as far in advance as possible. Any conflicts or unresolved issues should be referred to the departmental chair for advice & direction.

13. Unless you are on official leave (which requires the standard UMC forms to be completed and signed by the program director), then you are to be in the greater Jackson area & constantly accessible by pager during normal work hours 8AM-5PM. If you are on call or actively engaged in patient care, you should of course be available. You are also to be available until you have turned over all check out issues to the next resident on call or rounding for you.

Even if you are not directly assigned to patient care issues, you are to check with your fellow residents to make sure that they don't need you before you leave campus.

14. The non-otolaryngology intern is assigned to the H&N service except when otherwise specified. The senior resident on that service is responsible for directing the intern to maximize educational experience.

Procedures that a resident is allowed to perform without direct attending supervision and do not require a time out:

1. Venipuncture
2. Placement of Nasogastric tube
3. Placement of Foley catheter
4. Routine wound care including Removal of sutures and surgical drains
5. Shunt tap

Procedures that a resident is allowed to perform without direct attending supervision and <u>DO</u> require a time out: (These procedures can only be performed independently after completion of the institutional house officer procedure simulation training course or after adequate supervision by a senior level resident or attending.)

1. Arterial line placement
2. Central line placement
3. Chest tube placement or Thoracentesis
4. Lumbar puncture or lumbar drain placement
5. Placement of EVD or ICP pressure monitor

<u>Lab Coats</u>

All residents get **<u>two</u>** lab coats at the start of each year. Lab coats must be clean and present a professional appearance. Lab coats will display the appropriate monogramming & departmental identifiers. The department does **not** provide laundry service for lab coats. Additional lab coats will be provided on a case-by-case basis. At the beginning of the residency, residents will be provided one departmental jacket with embroidery of their name, department and the UMMC logo.

New/additional departmental jackets will only be purchased by the department for PGY 4's or up as needed. Residents are welcome to purchase another jacket (as long as it is the style the department has chosen) at their own expense. We currently purchase all of our lab coats and jackets at T.C.'s Uniforms. Please see the program coordinator for the correct style number.

Reviewed April 2019

Professional Attire

Men and women shall dress professionally when seeing patients in the **outpatient setting**. This will include a tie for men. This attire is required at all times when in the institution.

Scrubs should not be worn in the outpatient setting for regularly scheduled sessions. They are permissible outside the OR on days when the resident is in the OR and is not scheduled to see patients in the outpatient setting. Lab coats/Jackets should be worn over scrubs when seeing patients in the hospital.

Operating room head covers, masks, and shoe covers **should not be worn outside of the OR**.

Personal Appearance

1. Scrubs should only be worn in designated areas
2. Jewelry and perfume/cologne should be worn at a minimum or not at all
3. Earrings should be worn in a professional manner and are limited to one or two per ear With the exception of ear piercing, there will be no visible body piercing, including but not limited to tongue piercing, nose piercing and eyebrow rings/bars.
4. Hair should be clean, well groomed, and worn in such a manner that it will not interfere with patient care or job duties and will present a professional image.
5. Facial hair must be trimmed and kept clean.
6. Hats are not allowed
7. Women may wear make-up in moderation.
8. Fingernails should be kept short, clean, neatly manicured and not extended one-quarter inch past the fingertips, artificial nails and nail jewelry are prohibited Chipped nail polish is not permitted
9. There will be no visible tattoos; any visible tattoos must be covered with a bandage or clothing
10. Shoes should be closed toed and non-skid. Shoes of low or moderate heel are recommended
11. Wearing your UMMC ID badge is required.

Multiple studies have shown that the physical appearance of a physician impacts on the comfort level of the patient. The more comfortable patient is more likely to provide complete and accurate information. Characteristics deemed undesirable by patients included sandals, clogs, blue jeans and tennis shoes, regardless of the gender of the health care provider. Long hair, cologne, surgical scrubs and non-traditional hair styles in male health care providers were also undesirable. Characteristics were found desirable for both male and female providers included the wearing of a name badge, white coat, dress shoes and a traditional hairstyle. Your first goal should be to provide the best health care for your patient. Effective communication is an important part of that. YOUR APPEARANCE COUNTS AND IS A RELECTION ON THE ENTIRE PROGRAM!

Enforcement for non-compliance of the above policy on Personal Appearance will be:

1. First Violation: verbal counseling with documentation.
2. Second Violation: official reprimand in writing and sent home to change. Time away from workplace to change must be used as personal time.
3. Third Violation: official reprimand in writing & sent home again for entire day & must be used as personal time.
4. Fourth Violation: disciplinary action will be taken, up to and including termination.

Benefits **(A complete description is available from Human Resources)**

1. Medical and liability coverage are provided for the house staff free of charge. There is an additional charge for family medical coverage.

2. Optional Benefits (other less common benefits are available as well)

- Life Insurance (term, supplemental term, whole & universal)
- Accidental Death and Dismemberment
- Disability: Short Term & Long Term
- Dental & Vision
- Tax Sheltered Annuities
- Deferred Compensation Plans
- Flexible Benefits Plan (Allows certain insurance benefits & parking to be taken as pretax dollars)

Meals

The UMC and Wiser cafeterias give a 20% discount to UMC employees. Residents receive meal cards to be used **only** for the days/nights they are on call. Residents will receive one meal card for each night/weekend/holiday that they take call.

Work Environment

The work environment should foster achievement of educational goals of the program and promote high quality patient care. The general employment policies and procedures described in the House Staff Manual & in the Faculty & Staff Handbook. Several mechanisms exist for residents to raise issues of concern about the work environment. The Resident Council exists for the purpose of discussing issues related to the work environment. Other mechanisms available to residents include raising issues through resident or faculty representatives on the GMEC, through the leadership of the house officers association, through meeting with program directors or department leaders, through the monthly chief residents meetings with the Medical Director of the hospital, or through meeting with the Associate Dean for Graduate Medical Education.

Reviewed/updated April 2019

Sexual Harassment

Sexual harassment is covered under the policies of the University of Mississippi Medical Center. Sexual harassment is defined as unwelcome sexual advances, requests for sexual favors and/or other verbal or physical conduct of a sexual nature. When submission to such conduct is made, either explicitly or implicitly, a term or condition of an individual's employment, or academic performance submission to or rejection of such conduct by an individual is used as the basis for employment or academic decisions affecting such individual, or; such conduct has the purpose or effect of unreasonable interfering with an individual's work or academic performance or creating an intimidating, hostile or offensive working or educational environment. Any such conduct should be reported to the program director and/or the departmental chairman. If you are uncomfortable discussing this issue with either of these individuals or you do not feel your complaints have been or will be adequately addressed, contact the director for equal opportunity employment at 601-984-1131.

P***er UMC Handbook***

Substance Abuse and Mental Health

- The UMMC Faculty and Staff Handbook will outline the details of this policy.
- Substance abuse interferes with the skills and judgment required for appropriate patient care.
- The faculty members and program director are responsible for monitoring residents for signs of impairment from substance abuse as well as signs of stress, emotional disturbance, or mental impairment. The faculty members have been educated regarding this responsibility and the tenets of such monitoring. Any concerns are to be reported to the program director immediately.
- Any resident suspecting that they or any member of the faculty or staff may have a problem with substance abuse should report this to the program director. All reports will be confidential, and the department will be fully supportive of recovery efforts.
- Any resident with a substance abuse problem will be offered rehabilitation assistance to be arranged via the UMC Human Resources office.
- A resident with a current substance abuse problem will not be allowed to participate in patient care until the situation has been resolved.

Counseling

The Director of Student/Employee Health is available to meet with residents regarding issues pertaining to health, emotional or mental stress, substance abuse, or other related issues. The Director will make further referrals if necessary.

Department Library

No books are allowed to leave the Neurosurgery library for any purpose. Books should be put back in the bookcases when you are not using them.

Non-programmatic Activities (*Moonlighting*)

The Dept. of Neurosurgery does not allow moonlighting; however, here is the UMMC policy on moonlighting.

The ACGME Common Program Requirements reads as follows:

"Patient care activities that are external to the educational program (moonlighting) and that exceed the weekly limit on resident duty hours are often inconsistent with sufficient time for rest & restoration to promote the resident's educational experience and safe patient care. Therefore, these activities require prospective

permission from the program director and sponsoring institution. Their effect on resident performance must be monitored, and permission be withdrawn if the activities adversely affect resident performance."

The UMMC GMEC policy is as follows:

"In Mississippi, it is illegal and/or grounds for loss of temporary or limited medical licensure for any resident or fellow in training to engage in moonlighting unless in possession of an unrestricted license to practice medicine in the State. Residents are not required to engage in moonlighting; further, the University of Mississippi Medical Center (UMMC) discourages moonlighting or professional activity by residents or fellows apart from full-time UMMC-sponsored or ACGME-sanctioned postgraduate educational programs because these activities tend to interfere with the educational process and health of the physician-in-training. The program director must acknowledge in writing that a resident or fellow is moonlighting, and the information made a part of the resident's folder. The effects of moonlighting on performance in the residency program will be monitored and adverse effects may lead to withdrawal of permission to engage in moonlighting activities. The University of Mississippi Medical Center professional liability program for residents only applies to those professional activities within the course and scope of their employment while at UMMC and/or on official rotation at other hospitals or clinics. It does not apply to outside professional activities such as moonlighting. The UMMC institutional DEA number must not be used while moonlighting." The Department will abide by these guidelines. Failure to abide by the policies in this handbook or to perform at the level outlined in this manual are grounds for suspension of moonlighting privileges at the discretion of the Program Director and the Chairman. If you do choose to moonlight, a non-programmatic activity form, available from the house staff office, must be obtained, completed, and updated as prescribed. In addition, an outside activities form is required. This is the sole responsibility of the participating resident. These documents require the signature of the program director. Failure to do so in a timely or regular fashion, without prompting, will result in immediate termination of is privilege.

Reviewed/Updated April 2019

Licensure, Credentials, and Memberships

Licensure

Appropriate Mississippi medical licensure must be maintained at all times so that the resident has all rights & privileges to practice medicine and prescribe medications in all departmental practice settings. Currently, an institutional medical license satisfies these requirements.

Credentials

Credentials at participating & affiliated clinical institutions must be obtained and maintained.

Memberships

Residents will obtain and maintain resident membership in the American Association of Neurological Surgery & the Congress of Neurological Surgery.

Subscriptions

Residents will obtain in a timely fashion and maintain subscriptions to the Journal of Neurosurgery & Neurosurgery. For those journals requiring a subscription, residency education fund monies may be used.

Research Studies

Your complete cooperation is expected with all research protocols in the department. You must complete and maintain all applicable institutional educational programs regarding proper conduct of research.

Leave

Total Leave Allowable

All forms of leave (medical, family, annual, administrative) may be granted to residents at the discretion of the Program Director in accordance with UMC rules. The total of such leaves and vacation may not exceed 30 working days in any one year. If a longer leave of absence is granted in any year, the required period of graduate medical education will be extended accordingly.

Personal Leave/Vacation

- Residents are granted 15 week days of annual leave.

- All planned personal leave time exceeding one (1) day must be scheduled sixty (60) days in advance through the education administrator's office. A University of Mississippi Medical Center (UMMC) leave request form must be completed for each personal leave period requested.

- All personal leave, except that taken by the chief resident, must be discussed in advance with the chief resident, to which the resident requesting leave is assigned for the planned personal leave period (i.e., the senior resident assigned to the service during the time of the proposed personal leave). If a planned personal leave week overlaps two services rotations, the leave must be discussed in advance with the chief residents of both services that would be affected.

- The chief resident will discuss planned leave in advance with the faculty members for the affected service(s). Junior residents functioning as service chief residents (e.g. Pediatric Neurosurgery) will discuss planned personal leave in advance with the chief resident and with the faculty members of their primary service assignment (e.g., the Pediatric Neurosurgery resident(s) will discuss planned personal leave in advance with the Pediatric Neurosurgery faculty and with the chief resident).

Scheduling of Leave

In order to provide timely and reasonable care to patients and to promote resident education, a policy for scheduling leave is developed.

- Leave can only be granted by permission in writing normally or verbally for emergencies by the program director or his/her designee.

- Requests for scheduling any leave no matter what the type, even if assigned, must be submitted on the appropriate form to the education administrator for approval by the program director thirty days in advance.

- Annual leave must be taken in five-day blocks. Exceptions may be allowed with approval of the Residency Director particularly in the case of chief residents needing to interview for a position.

The requests for the three 5-day blocks of annual leave per resident will be compiled, coordinated and completed by each year, by the chief residents subject to the following guidelines:

- Annual leave must be assigned in proportion to the number of residents rotating on a service.

- No two residents may be gone on vacation from the same institution at the same time. Exceptions will not be made for this except in the instance of the major neurosurgery meetings when a large number of the faculty will be gone as well, emergencies, or in the case of chief residents interviewing.

- No vacations will be allowed in June or the first two weeks of July, the last two weeks of December or the first week of January.

- The vacation schedule is not final until all of the above criteria have been met and the program director has signed off on it.

- Changes later in the year will only be considered by the program director if they fall within the guidelines outlined.

- Incoming residents starting July 1st may not take personal leave prior to Oct. 15th of their first UMC academic year. This is because new UMC employees cannot take paid leave for 90 days and employees must build up enough time before they can take time off with pay.

- PGY-1 residents are allowed two weeks (10 week days) of personal leave during the PGY-1 year. PGY-2 and higher level residents are allowed three weeks (15 weekdays) of personal leave.

- Planned personal leave weeks are seven (7) days long, extending from Monday through Sunday. An exception is allowed for the chief resident, who may change the start and end days of their planned personal leave weeks to facilitate service coverage and continuity of patient care. Planned personal leave weeks will be scheduled on a first-come, first-served basis. Conflicts will be resolved by the chief resident and with consultation from the Neurosurgery Program Director if needed.

For scheduling of interview dates or extra days of annual leave if you had your vacation during a holiday week, the following criteria will be considered:

- Urgency of the need
- No other residents or nurse practitioners out
- Attending physicians on your service are out
- Will be assigned if the criteria cannot be met.

Graduating residents will be expected to work through the 3rd Friday in June. Graduating residents required to start a fellowship on July 1st may leave early based on need with approval by the program director.

All residents are expected to be present for visiting professor related events unless leave has been approved in advance regardless of the day or time of the week.

Holidays will be granted to those residents who are not on call according to the policy of the institution at which the resident is rotating on the day of the holiday.

Applicable leave, for purposes of residency training only, cannot be carried over to the next year.

Sick Leave

If, for whatever reason, you take sick leave, please call the office and inform the education administrator or program director. When you return, you will need to submit the appropriate paperwork detailing the exact dates that you were out. The full sick leave policy is available from the in the Faculty And Staff Handbook.

Educational Fund

- Each resident receives a $2,500 educational allowance per year. This is intended to be used for Neurosurgery related text books and/or approved neurosurgery-related educational courses/conferences. The unused balance ***cannot*** be carried over to the next year.

- All Neurosurgery residents will be reimbursed for **one** educational conference per academic year which is **not to exceed $2,500.00 per year**.

- **All travel requests must be submitted 4 weeks in advance to the education office.**

- Hotel & airlines reservations must be arranged according to UMC policies in order to ensure reimbursement of allowable travel expenses.

- Reimbursement is limited to registration, hotel, airfare or car allowance, and state per diem. Reasonable parking and local transportation costs such as taxi and subway may be reimbursed as well. **Receipts are required for these items**. **Meals will not be reimbursed above the state per-diem rate for any resident travel. Rental cars are not allowed except for special circumstances and must be pre-approved before the trip.**

- Priority for attending a desired meeting will be given, based on seniority level and whether or not you attended the year before.

- PG5 & PG6-7 may attend additional courses of their choice approved by the Residency Director.

- When attending educational meetings, you are expected to attend **all** of the meeting sessions.

Presentation Travel

1. Resident presentations may be reimbursed by the department subject to the limitations under the **Educational Fund,** above if travel funds are available. Within standards of reason and the lowest airfare must be arranged. These will be considered on an individual basis, regarding the merits of their presentation.

2. Time off and reimbursement will be limited for presentations to the day before, the day of and the day after the presentation is given. You may use your own personal leave and your personal funds if you wish to stay longer and if the time off is approved.

3. If other residents room with the resident traveling off presentation funds, all room expenses must be split evenly among those residents staying in the room.

Resident Selection

1. Applications will be accepted via ERAS.

2. Applicants will be invited for interview based on a review of the following factors:
   - performance on standardized tests,
   - medical school performance,
   - letters of recommendation,

- personal statement,
- extra-curricular activities,
- and research activities.

3. Applicants will be ranked on the basis of the preceding factors in combination with a subjective evaluation of the
applicant by the faculty.

4. Residents will be accepted via the National Residency Matching Program.

5. If the program does not fill through the usual matching process, the position will be filled outside the match from available applicants. The most qualified individuals based on the above factors will be invited for interview. The position will be offered based on a vote of the faculty.

Conflict of Interest

Any gifts from corporate sponsors accepted by residents individually should primarily entail a benefit to patients and should not be of substantial value. Accordingly, textbooks and other gifts which serve a genuine educational function are appropriate. Cash payments should not be accepted. Individual gifts of minimal value are permissible as long as the gifts are related to the resident's work (e.g., pens and note pads). Subsidies to underwrite the costs of resident
conferences or professional meetings can contribute to the improvement of patient care and therefore are permissible. Since the giving of a gift directly to a resident by a company's sales representative creates a relationship which could influence the use of the company's products, subsidies will be accepted by the program director only who in turn will deposit the money into the resident education fund to improve the quality of the conference. Payments to defray the
costs of a conference should not be accepted directly from the company by the residents attending the conference. Subsidies should not be accepted to pay for the costs of travel, lodging or other personal expenses, nor should they be accepted to compensate for the resident's time. All such support should be arranged via the program director and the use of such funds will be assigned to resident activities designated by the program director. No gifts should be accepted if there are strings attached. For example, residents should not accept gifts, if they are given in relation to the resident's prescribing practices. In addition, when companies underwrite conferences or lectures other than their own, responsibility for selection of content, faculty, educational methods and materials should belong to the organizers of the conference or lectures, who should act independently.

Lost/Stolen Pagers

The Department of Neurosurgery will pay the cost to replace the first lost/stolen Pager. All subsequent lost/stolen pagers must be paid for by the employee. **Currently, the cost to replace a pager is $50.00**.

Policy on Resident Transfers and Re-hiring

The University Medical Center understands that residents, for various reasons, may choose to change their career choice during residency training, giving rise to transfer between academic departments within the University, or re-hiring into the University after resignation or dismissal. This policy does not apply to outside applicants or to transfers or changes in position within a department such as transition into a fellowship within the same department. In addition, for residents in good standing in preliminary programs who are matched through the NRMP to another specialty, transfer into the subsequent program is an expected step in their training. In such cases, the program director of the preliminary year program should forward a letter to the accepting program director, but approval of this type of transfer is not necessary. The University of MS Medical Center understands that:

- Residents have a right to choose a program and a field of medicine in which they will be happy
- Programs have a right to choose the best applicants for their positions.
- The overall goal is to train good physicians and protect the integrity of the programs and the institution.

In accordance with ACGME Document II.C on Resident Appointment and Transfers, the program director must receive written verification of the previous educational experiences & a statement regarding the performance evaluation, including an estimate of competence, of the transferring resident prior to acceptance into the program. A program director is required to provide verification of residency education for any residents who may leave the program prior to completion of their education.

- The initial contact with a department should be, ideally, resident initiated.
- Following resident contact, the contacted department may interview the resident confidentially and discuss available positions/options, but NO assurance of employment of formal offer can be made until the transferring department is made aware of the contact and a residency director's letter is received from the resident's current or formal department. Residents may seek transfer only into open slots. The residency director's letter must contain information on the resident's academic performance/problems, interpersonal and administrative skills, professional demeanor and conduct and any disciplinary warning or actions taken. Finally, a list of rotations that were successfully completed and verification of training must be included.
- The resident may obtain letters of recommendation from other UMC faculty with whom they have worked in addition to the program director, but a letter from the PD is required.
- A release of information is not necessary for programs to access resident information in UMC files.
- All residents seeking transfer or re-hire will be made aware by the accepting program that their employee file in Human Resources at UMC is open for the program's review.
- All programs involved in resident transfers and re-hiring will advise Human Resources of the resident seeking transfer or re-hire. HR will make available information kept in the resident's HR file for review by the program director and/or Chairman. In addition, HR may assist with additional legal information kept in separate files.
- All residents seeking transfer or re-hire will be made aware by the accepting program that their resident file, and information contained therein, from the previous program may be made available to the receiving department. The receiving program may request any additional material deemed pertinent to making a decision regarding acceptance of the resident.
- While there is no breach of contract clause in resident contracts, residents will be informed that professional standards dictate a minimum of 30-day's notice be given to their present residency program.
- All offers of transfer or re-hire must be approved by the Associate Dean for Graduate Medical Education and ultimately, the Vice Chancellor. The Chairman or residency director will request approval prior to any offer being made to the resident

MUST CALL POLICY

The following guidelines for the Department of Neurosurgery outline situations where the resident "must call" to notify attending physicians of changes in a patient's status.

I. In <u>ALL</u> instances where a patient:

- has died
- is admitted to the hospital
- requires non-elective surgery
- is evaluated in a UMC emergency room
- is transferred to a higher level of care in the hospital (i.e. transferred from floor to ICU)
- suffers a sentinel event (an unexpected occurrence involving death or serious physical or psychological injury, or the risk thereof. (serious injury specifically includes loss of limb or function.)

The attending of record, covering attending or attending on call should be notified as soon as reasonably possible in instances where a patient:

II. <u>In instances where a patient</u>:

- has experienced a major neurologic deterioration

- has suffered a significant post-operative complication

- has developed a new, serious medical condition

A. and the patient remains unstable or appropriate, corrective therapy cannot be initiated the attending of record, covering attending or attending on call should be notified at a time that affords the attending an opportunity to be involved in the clinical management of that condition or change of condition**. <u>Or</u>**

B. and the condition is promptly managed satisfactorily by the house office and/or consultants the attending of record, covering attending or attending on call should be notified at the beginning of the work day if the event occurred at night or before the end of the work day if the event occurred during the day.

III. Whenever the house officer is uncomfortable with a clinical situation or if he/she desires help from the attending in order to make a decision.

VERBAL ORDERS POLICY

There have been delays in signing verbal orders. As per the policy of this institution, you must sign all verbal orders within 48 hours of the patient's discharge. You will be notified by an e-mail from the Compliance office when you have a pending verbal order that needs to be signed. Please take care of this immediately if you receive an e-mail from them.

POLICY:
Physicians' verbal orders, other than by telephone, may not be accepted unless a change in clinical status occurs that compromises patient care. Authorized pharmacists and nurses (and other healthcare practitioners in accordance with the Medical Staff By-Laws) may accept telephone orders from physicians and nurse practitioners. Such orders must be immediately recorded, and if on a patient's medical record **must be countersigned by the physician within 48 hours after discharge.**

PROCEDURE:

A. Medication orders for hospitalized patients.

1. Physician's verbal orders, other than by telephone, may not be accepted unless change in clinical status occur that compromises patient. Physicians, present on the unit, may dictate orders to anyone but must sign such dictated orders at the time they are written.

2. Nurses or pharmacists may accept telephone orders from physicians (attending staff, residents, interns and nurse practitioners) Physicians are required to countersign telephone orders within 48 hours of discharge. Nurses or pharmacists accepting such orders must verify and record the order by:
   a. Writing down and reading orders back to physician for verbal confirmation of accuracy.
   b. Entering orders with date and time on physician's order sheet.
   c. Documenting directly beneath orders as follows:

   T.O. Dr. Jones per R. Jones, R.N.

3. Nurses or pharmacists may not accept physicians' telephone orders transmitted through a third person. Nurses or pharmacists who receive the telephone orders from the physician must enter the order on the patient's chart as outlined in (2) above before other nursing or pharmacy personnel may carry out the orders.

B. Medication orders for ambulatory patients:

1. Pharmacists may accept telephone orders from physicians (attending staff, residents and interns). Pharmacists must verify and record the orders by:
   a. Writing down and reading orders back to physician for verbal confirmation of accuracy.
   b. Entering orders with date and time on physician's order sheet.
   c. Documenting directly beneath orders as follows:

   T.O. Dr. Jones per R. Jones, R.N.

<u>Only a pharmacist may accept telephone prescriptions from a physician or his designee</u>

Reviewed/Updated April 2019

CONTINUITY OF CARE/HAND-OFF POLICY

Continuity of care is important for both patients and health care providers. First and foremost, continuity of care results in better care. Second, continuity of care leads to a better understanding of what patients are going through, how to better help them, and subtleties about the disease processes. Therefore, we must insure that continuity of care is maintained. The following policy has been drawn up to insure that continuity of care is maintained at the residents' level.

1. Residents for each team are expected to personally round on each of their service's patients every weekday morning. You may split up to speed up rounds if you wish, but the senior resident is responsible for knowing all information on all patients on the service or under current consult. Attending rounds will be done at the time agreed upon with each individual attending physician. At the end of every day, a representative of the service will sign out all inpatients (both on service and consults, if active issues exist) to the primary on-call resident.

2. The primary service(s) may check out weekend and holiday rounds to the on call team if desired. This communication must occur at both the junior and senior resident level. Failure to appropriately transfer all pertinent information on a recurring basis will result in suspension of this privilege. Individual cases may require that a representative of the primary service round on the weekend at the discretion of the attending physician.

3. All residents will call or email the on-call faculty member about all patient encounters (significant phone conversations, ER evaluations, etc.) while he/she is on call. The on-call resident will be expected to dictate a note detailing the nature of the encounter.

4. If primary call is transferred to another resident on a weekend (e.g., Friday to Saturday), all inpatients and pending outpatient issues must be verbally signed out to the new call resident (sign out to the residents of the appropriate service). The senior residents may assign this task to the junior residents involved but will ultimately be responsible for knowing all transferred information.

5. Each regular weekday, the primary on-call residents for the previous day will verbally sign out to the residents of the appropriate service(s). The senior residents may assign this task to the junior residents involved but will ultimately be responsible for knowing all transferred information.

6. If you are the primary surgeon on any case that will require postoperative follow-up it is your responsibility to either perform that care or to check this care out explicitly to another resident or NP.

7. You are here to help take care of patients rather than assume complete control of their care. Attending physicians should be notified of all major treatment changes or issues on their patients at all times.

University of Mississippi Medical Center
Graduate Medical Education
Hand-Off Policy

I. PURPOSE:
The purpose of this policy is to define a safe process to convey important information about a patient's care when transferring care responsibility from one physician to another. In the course of patient care, it is often necessary to transfer responsibility for a patient's care from one physician to another. Hand-off refers to the orderly transmittal of information, face to face, that occurs when transitions in the care of the patient are occurring. Proper hand-off should prevent the occurrence of errors due to failure to communicate changes in the status of a patient that have occurred during that shift. In summary, the primary objective of a "hand-off" is to provide complete and accurate information about a patient's clinical status, including current condition and recent and anticipated treatment. The information communicated during a hand-off must be complete and accurate to ensure safe and effective continuity of care.

II. SCOPE:
These procedures apply to all UMHC physicians who are teachers or learners in a clinical environment and have responsibility for patient care in that environment.

III. POLICY:

- Hand-offs must follow a standardized approach and include the opportunity to ask and respond to questions.
- A hand-off is a verbal and/or written communication which provides information to facilitate continuity of care. A "hand-off" or "report" occurs each time any of the following situations exists for an inpatient, emergency room patient, clinic patient, observation patient, or any other patient:
- A hand-off is a verbal and/or written communication which provides information to facilitate continuity of care. A "hand-off" or "report" occurs each time any of the following situations exists for an inpatient, emergency room patient, clinic patient, observation patient, or any other patient:
  a) Move to a new unit
  b) Transport to or from a different area of the hospital for care (e.g. diagnostic/treatment area)
  c) Assignment to a different physician temporarily (e.g. overnight/weekend coverage) or longer (e.g. rotation change)
  d) Discharge to another institution or facility
- Each of the situations above requires a structured hand-off with appropriate communication.

IV. CHARACTERISTICS OF A HIGH QUALITY HAND-OFF:

- Hand-offs is interactive communications allowing the opportunity for questioning between the giver and receiver of patient information.
- Hand-offs includes up-to-date information regarding the patient's care, treatment and services, condition, and any recent or anticipated changes.
- Interruptions during hand-offs should be limited in order to minimize the possibility that information would fail to be conveyed or would be forgotten.
- Hand-offs requires a process for verification of the received information, including repeat-back or read-back, as appropriate.

V. HAND-OFF PROCEDURES:

- Hand-off procedures will be conducted in conjunction with (not be limited to) the following physician events:
  a) Shift changes
  b) Meal breaks
  c) Rest breaks

d) Changes in on-call status
e) When contacting another physician when there is a change in the patient's condition
f) Transfer of patient from one care setting to another

Hand-off procedures and information transfer forms and guidelines for physicians are developed and implemented by each service according to the needs of that service. The hand-off forms or guidelines may be in either paper or electronic format, and must include clinical information agreed upon by physicians on that service, as being integral to the provision of safe and effective patient care for that patient population.

- Each service will develop and implement a hand-off process that is in keeping with the shift or rotation change practices of its physicians and that facilitates the smooth transfer of information from physician to physician.
- Each service hand-off process must include an opportunity for the on-coming physician to ask pertinent questions and request information from the reporting physician.
- Each hand-off process must be conducted discreetly and free of interruptions to ensure a proper transfer.

VI. STRUCTURED HAND-OFF:

- Within each service, hand-offs will be conducted in a consistent manner, using a standardized hand-off form or structured guideline.
- Hand-offs, whether verbal or written, should include, at minimum, specific information listed below (as applicable):
    a) Patient name, location, age/date of birth
    b) Patient diagnosis/problems, impression
    c) Important prior medical history
    d) DNR status and advance directives
    e) Identified allergies
    f) Medications, fluids, diet
    g) Important current labs, vitals, cultures
    h) Past and planned significant procedures
    i) Specific protocols/resources/treatments in place (DVT/GI prophylaxis, insulin, anticoagulation, restraint use, etc.)
    j) Plan for the next 24+ hours
    k) Pending tests and studies which require follow up
    l) Important items planned between now and discharge
- A receiving physician shall:
    a) Thoroughly review a written hand-off form or receive a verbal hand-off and take notes
    b) Resolve any unclear issues with the transferring physician prior to acceptance of a patient
- In addition, the SBAR can be used to deliver or receive the information:
  a) **Situation**: What is the problem?
  b) **Background**: Pertinent information to problem at hand
  c) **Assessment**: Clinical staff's assessment
  d) **Recommendation**: What do you want done and/or think needs to be done?

DOCUMENTATION OF THE NEUROSURGERY HAND-OFF PROCESS

The neurosurgery residents meet every morning at 7 am and have sign outs in the neurosurgery conference room. Each patient is discussed and their status is changed on the neurosurgery patient census. i.e. (discharged to home, another facility, transferred to another service or physician). This is done so that the new 6 am-6pm shift will know about each patient and be able to answer questions that arise throughout the day about their care. The residents are expected to be in attendance.

In the evening (before the 6 pm to 6 am shift begins), the residents leaving their shift hand over the consult pager and review all the patients on the service with the incoming residents. Patients that may have issues overnight are specifically highlighted and management discussed.

Reviewed/Updated April 2019

Neurosurgery Consultation Policy

I. Purpose

To improve patient safety by defining guidelines for timely evaluation of emergency department patients and urgent in-patient needs and prevent confusion for the ER and hospital floor staff.

II. Policy

1. The PGY 2 & 3 residents will be assigned 5-day blocks each week night to carry the consult pager.
2. The consult resident will be responsible for seeing all consultations for neurosurgery from the adult ED & pediatric ED.
3. The consult resident will be responsible for emergency consults on the floor.
4. The consult resident will be required to find the night call resident to transfer the pager each night.
5. Other residents are still responsible for their own services unless there is a need (i.e. EVD)
6. The consult resident can go to on-campus clinics (no off campus clinics) but must be excused for consults/patient issues.
7. If the consult resident is post-call, then the pager goes to the on-call person.

Reviewed/updated April 2019

Policy on Supervision of Patient Care

- All patients at any participating institution are the private patients of an attending regardless of payer status. The attending physician will ultimately be responsible for all aspects of the patient's care. Residents assist attending physicians and are actively participating learners in the care of these patients. Residents should discuss all cases with attending physicians prior to instituting significant changes in patient management.

- An attending will be present or immediately available for all scheduled clinics and OR sessions. If the attending is temporarily absent, they will be available by a published pager or phone number.

- The on-call attending will be available by pager or phone (as listed by the monthly schedule) for all emergencies or urgent unscheduled visits/consults. The attending will assist the residents directly in the event that the level of expertise required is beyond the skills of the participating resident. Otherwise, the case may simply be discussed with the attending by phone to determine the management plan and the degree of supervision necessary.

- The departmental chair or his/her designee is available for additional coverage as needed.

- All consults will be discussed or seen with an attending as outlined previously.

- Billing for patient care involving residents alone will conform to institutional and departmental policies.

- Typical definition of procedures that do not require direct attending supervision (the attending is notified and available):

R***eviewed/updated April 2019***

UMMC Policy on Interactions with Industry Representatives

Purpose: The purpose of this policy is to define limits of activity for industry representatives at the University of Mississippi Medical Center (UMMC) for the protection of patients and for the benefit of faculty and staff. UMMC recognizes the importance that industry plays in new drug development and new technology. UMMC is committed to an environment that conforms to federal and state law and prevents potential conflicts of interests and prevents, detects, and resolves any instances of improper conduct.

Scope: This policy applies to all faculty and staff at the UMMC (herein referred to as "workforce"). All industry representatives are also expected to abide by this policy in order to conduct business with UMMC and while on the premises of all UMMC sites.

Policy: The activities of all industry representatives within UMMC shall be limited to include only those activities that are beneficial to the patients and the missions of the institution.

Access: UMMC is committed to providing a safe, productive and private environment to its patients and staff. As such, the following requirements apply to all industry representatives.

Portal of Entry: UMMC shall designate main portals of entry into the institution in order to maintain safety, security and maximum privacy of patients and staff members. Each industry representative is required to check-in at the designated portal of entry.

Pharmacy Portal of Entry: All pharmaceutical company representatives involved in detailing activities must register with the Department of Pharmacy Services.

Vendors Portal of Entry: All vendor representatives must register with the UMMC Purchasing Department.

Badges: Each industry representative will be issued a badge and required to sign in at the appropriate portal of entry upon each visit. Upon the conclusion of the representative's visit, he/she must return the issued badge to the portal of entry and sign-out at the end of each day, each portal of entry shall reconcile issued badges with returned badges.

Appointments: Each industry representative must schedule appointments with appropriate faculty or staff member prior to coming to the portal of entry.

Access in Patient Care Areas: Representatives must absent themselves from areas where physicians/providers are actively seeing patients. *This does not apply to vendors that are repairing or servicing equipment.*

Gifts, Meals, Trips and Promotional Brochures

Gifts:

Cash Gifts: The acceptance or solicitation of gifts of cash or cash equivalents is prohibited in all circumstances, regardless of the amount. "Cash equivalents" includes such gifts as gift certificates, stocks, bonds, or frequent-flier miles. Patients or industry representatives wishing to make such donations to the UMMC should be directed to the UMMC Development Office.

G**ifts of Substantial Value:** Unless explicitly permitted by this policy, the acceptance or solicitation of gifts of substantial Value (more than $50 per occurrence or $300 per year in the aggregate from any one source) is prohibited. If there is a question whether a gift should be accepted, the Office of Compliance should be consulted for approval.

Meals: Meals provided by industry representatives are strictly prohibited unless they are provided for educational or scientific exchange. An informational presentation or discussion may be accompanied by a modest meal provided that the venue and manner of presentation/discussion is conducive to a scientific or educational exchange. These informational presentations must be limited to in-office or in-hospital settings and may not be part of an entertainment or recreational event. All educational meals should be coordinated through the appropriate portal of entry. Failure to appropriately coordinate these activities may limit or prohibit the industry representatives from participating on the UMMC campus. For more information on educational activities, see section C in this policy.

Trips: From time to time, industry representatives compensate or defray costs associated with training, educational, or research events. It is the policy of UMMC that no trips are acceptable without legitimate business purposes. In order to be considered legitimate business, the trip should meet at least one of the following circumstances:

Training, Education, and Research Events: The US Food and Drug Administration mandates that training and education to facilitate the safe and effective use of certain medical technology. As such, many programs may occur at central locations necessitating out-of-town travel. In these instances, it is allowable for the industry sponsor to cover the costs of modest meals, travel and lodging incurred while attending such programs. In no event is it appropriate for the industry sponsor to pay for extra days (individuals staying longer than the training and educational event) or for entertainment. Nor is it appropriate for any member of UMMC's workforce to accept compensation (other than travel expense) for attending training and educational events. In no event is it acceptable for industry representatives to cover the costs of UMMC workforce family members. Such trips shall require prior approval by the Office of Compliance. Approval is not needed for events related to an Institutional Review Board (IRB) or Institutional Animal and Care Use Committee (IACUC) approved research study.

Speaking Engagements/Speaking Bureaus: UMMC's workforce who are speaking or otherwise actively participating in training and educational events may receive compensation commensurate with the time and effort spent on the engagement. The industry representative may cover the costs of attending the speaking engagement. *Caution: Speakers should ensure that the terms of the arrangements are set in advance and set forth in writing and must be pre-approved by the Office of Compliance.*

Trips to view equipment for purchase: Occasionally, when non-portable equipment is being reviewed for possible purchase, industry representatives will support trips to view the equipment at other facilities. In this circumstance only, is it acceptable for industry representatives to cover the expense (modest meals, lodging and travel) of the trip. These trips shall be reviewed and approved through the Office of compliance UMMC's workforce who are involved in institutional decisions regarding the purchase or approval of edications or equipment, or the negotiation of other contractual relationships with industry must not have any financial interest (e.g., equity ownership, compensated positions on advisory boards, a paid consultancy or other forms of compensated relationship) in the companies that might benefit from the institutional decision.

Participation in Advisory Board/Board Representation (Panels, Industry Committees, etc.): Many healthcare professionals serve as consultants to industry representatives providing valuable bona fide services, including research, participation on advisory boards, presentations at sponsored training and product collaboration. It is appropriate for industry representatives to provide reasonable compensation for performing these services as long as the following factors are met:

1. Consulting arrangements shall be in writing, signed by the parties and specify all services to be provided.
2. Compensation paid to the consultant shall be consistent with fair market value (consultant fees).
3. Agreements shall only be entered into where a legitimate need and purpose for the service is identified in advance
4. Acceptance of such arrangements shall be based on the healthcare professional's (UMMC's workforce) qualifications. Selection for participation should not be on the basis of the volume or value of business generated for the industry representative.
5. Industry Representatives may pay reasonable and actual expenses incurred by consultants in carrying out arrangements (i.e. reasonable and actual travel, modest meals and lodging costs.)
6. UMMC's workforce must complete a conflict of interest disclosure form.
7. ***Note: If one serves on such boards then he/she cannot be involved in decisions about purchase***

Promotional Brochures and Activities:

Brochures and Educational Materials: Industry representatives are not permitted to distribute, post or leave any type of printed or handwritten material, advertisements, signs or other such promotional materials anywhere on UMMC premises. Unsolicited materials may not leave any type of printed or handwritten material, advertisements, signs or other such promotional materials anywhere on UMMC premises. Unsolicited materials may not be provided to clinicians; any informational material provided by industry representatives must be explicitly requested by UMMC's workforce. Distribution of patient educational material that may be useful to our patients should be left at the appropriate portal for delivery to the appropriate department upon request. Industry representatives are strictly prohibited from providing educational material of any type directly to patients or from leaving such materials in areas accessible to or utilized by patients.

Raffles, lotteries, or contests: Raffles, lotteries, or contests which provide the winner with gifts of any value are not permitted.

Prescription pads: Pre-printed prescription pads may not be distributed by pharmaceutical sales representatives.

Non-educational and Practice Related Items: Industry representatives are not permitted to distribute items that do not advance disease or treatment education anywhere on UMMC premises. These include, but are not limited to, pens, note pads, mugs and other

"reminder" items with company or product logos. These items should not be offered even in conjunction with patient or physician education materials. Likewise items for the personal benefit of the workforce (floral arrangements, artwork, and tickets) should not be offered. It is appropriate to provide product samples for patient use in accordance with the Prescription Drug Marketing Act.

Educational Items:

Industry representatives may, on an occasional basis, offer items designed for the education of patients or the workforce if the items are not of substantial value ($50 or less) and do not have value to the workforce outside of his/her professional responsibilities.

Industry Support for Education:

Educational grants provided through industry representatives should be addressed to the UMMC and specified for the individual department. They should not be provided directly not to an individual (or department). Educational grants should be coordinated through the Division of Continued Medical Education. All workforce members involved in coordinating such activities should be knowledgeable of the Standards for Commercial Support established by the Accreditation Council for Continuing Medical Education (ACCME). All educational events sponsored by industry representatives on the UMMC campus must fully comply with the ACCME guidelines regardless of whether formal CME credit is awarded or not. Educational grants are to be used for legitimate educational purposes (conferences, books, etc.) No educational grant will be accepted if conditioned on the purchase of any product, equipment or pharmaceutical.

Rebates: Rebates (discounts or price reductions) are often given by various industries. The Federal Anti-kickback provides a Safe Harbor for discounts or price reductions when they are disclosed and accounted for appropriately. Discounts or price reductions should be detailed in writing through contractual relationships. All rebates must be approved by the purchasing department.

Industry Marketing of New Products or Pharmaceuticals:

Products: Industry representatives wishing to introduce their product must adhere to UMMC's policy regarding products. The representative should contact the UMMC Purchasing Department to schedule an appointment to discuss new products. The Purchasing Department will interact and explain UMMC's policy regarding products to the industry representative and assist in scheduling necessary appointments with faculty and staff.

Pharmaceuticals: Pharmaceutical representatives wishing to introduce their pharmaceuticals must contact the Pharmacy portal of entry to schedule an appointment. The pharmacy will interact and explain UMMC's policies and assist in scheduling necessary appointments with faculty and staff.

Violations and Sanctions:

Violations: Violations of this policy should be reported to the Office of Compliance. Reports can be made anonymously in accordance with UMMC's Compliance Plan. Reports may be made through the Office of Compliance Hotline at (601) 953-1761 or in writing.

Sanctions: The Office of Compliance will coordinate with the Human Resources Department to appropriately administer disciplinary action.

a. UMMC Workforce: UMMC's workforce is subject to the University's policies regarding progressive discipline.

Violators of this policy will be subject to the following sanctions:

First Offense: Verbal Warning
Second Offense: Written Warning
Third Offense: Termination

b. Industry Representatives: UMMC is committed to a partnership with industry representatives to further benefit its patients and its mission. As such, industry representatives are required to abide by all elements of this policy.

Violators of this policy will be subject to the following sanctions:

First Offense: Verbal or Written Warning to Industry Representative & Representative's supervisor.
Second Offense: Verbal or Written communication to Industry Representative's supervisor and Co.
Third Offense: Industry representative will not be allowed to return to UMMC campus.

Egregious (deliberate disregard of policy) violations will be subject to immediate termination of relationship.

8. Clinical Issues

Medical Record Completion

EPIC TIPS SHEETS WEBSITE:
http://epic.umsmed.edu/ClassMat.aspx?AOI=HIM

All operative notes, discharge summaries, history and physicals, and clinic visits will be dictated within 24 hours of the event. Failure to stay in compliance will result in a warning. After two warnings, you will be placed on probation. Two further warnings will be grounds for termination.

Below is the Health Information Services Policy and Procedure Handout:

Introduction: This handout has been developed for you as part of your orientation and to have as a ready reference, some of the instructions and information that are necessary for properly preparing and completing the medical record. Other support references include the House Staff Manual and the Medical Staff Rules and Regulations of the University Hospitals and Clinics.

Medical records reflect the quality of patient care given. They are the basic tool for planning patient care and for communication between physicians and other persons contributing to patient care. The content of the medical record shall be sufficient to justify the diagnosis and warrant the treatment.

A unit record is kept on each patient, thus all emergency room visits, admissions and clinic visits are in the same record. Each patient has a medical record number which identifies him for all purpose. **The patient's name and medical record number must be placed on every sheet of the record.**

GENERAL PROCEDURES:

Do not use prohibited abbreviations. The list of DO NOT USE abbreviations and symbols are available on each nursing unit and on the UMC Intranet: Departments - - Health Information Services - - Abbreviations

Make no change or deletion in the medical record except in case of error when a single line shall be drawn through the error, the correction made, dated and signed. For legal reasons, do not erase, use ink eradicator or do anything else which might be considered tampering with the record. Documents in ESA can be edited, although once electronically authenticated, a document **CANNOT** be edited, an addendum must be done.

DICTATION
Admitting service history and physical, consults, operative reports and discharge summaries may be dictated from any campus telephone by dialing 4-8080 or if outside the hospital dial l877-300-2341.

Speak slowly, distinctly and hold the receiver steadily in front of your mouth while dictating. Spell proper names and difficult words. Indicate paragraphing. Careful dictation means accurate transcription.

COMPLETING OF MEDICAL RECORDS AND GUIDELINES FOR RECORDING INFORMATION

History and Physical Examination
A specialty appropriate history and physical examination shall be dictated, signed & dated within 24 hours of admission including a statement of conclusions or impression drawn from the admission history & physical examination. The admitting service may dictate the history & physical examination. An attending physician shall countersign the history & physical examination recorded by a person other than the attending physician. If a medical staff member has recorded a complete history and physical examination within 30 days prior to the patient's admission to the hospital, a hospital medical record in lieu of the admission history and report of physical examination. In such instances, an interval admission note that includes all additions to the history and any subsequent changes or no changes in the physical findings must be recorded. The complete history & physical examination shall be recorded within 30 days prior to a scheduled outpatient procedure on the designated form. An interval note shall be recorded no more than 24 hours prior to the procedure. The interval note will document pertinent changes in the patient's condition that have occurred between the original history & physical and the procedure. If there is no interval change in the patient's condition, "no: interval change" shall be recorded. If the patient requires conversion to hospital admission status, then an updated history & physical will be required within 24 hours if the pre-history & physical is dated seven days prior to the current date.

Progress Notes
Pertinent progress notes shall be recorded at the time of observation, sufficient to permit continuity of care and transferability. Each note should be in correct chronological sequence, dated, timed and signed by its author whose signature includes his/her appropriate credentials.

An attending physician shall countersign a preoperative note recorded by a person other than the attending physician.
Whenever possible each of the patient's clinical problems should be clearly identified in the progress notes and correlated with specific orders as well as results of tests and treatment.

Progress notes shall be written at least daily on critically ill patients and those where there is difficulty in diagnosis or management of the clinical problems and at least every third day in any case.

A progress note is required by the service transferring the patient and the service receiving the patient.

A medical student writing progress notes should indicate the resident or staff attending of responsibility.

Final Progress Note
The patient's final diagnosis should be recorded in the final progress note.

Do not use abbreviations.

Principal Diagnosis: This is the diagnosis established after study to be chiefly responsible for occasioning the admission of the patient to the hospital.

Other Diagnoses and/or Complications: All conditions that coexist at the time of admission, that develop subsequently, or that affect the treatment received and/or the patient's length of stay. Diagnoses that relate to an earlier episode which have no bearing on the current hospital stay are to be excluded.

Other Diagnoses not Related to Current Hospital Stay: If appropriate to future patient care, pertinent untreated diagnoses may be listed and so noted.
Operative Procedures: The list will include all operations and diagnostic and therapeutic procedures documented.

Follow-up: Follow-up should indicate discharge instructions (medications, exercise, diet, etc.); follow-up appointments; where the patient is going immediately following discharge; & discharge notes.

Orders
All orders for treatment shall be in writing. The practitioner's orders must be written, dated and timed, and signed by the responsible practitioner. Initials are not acceptable.

Routine orders cannot be given over the telephone. The responsible practitioner shall authenticate verbal restraint/seclusion orders according to restraint/seclusion policy and all other verbal orders within 30 days of the patient's discharge for the record to be complete.

Authentication shall consist of a signature, date and time.

A medical student may write orders if cosigned by the resident or attending. The practitioner who writes the discharge order will be responsible for dictating the discharge summary unless he designates another practitioner of responsibility in the discharge order.

Consultations
Consultations shall show evidence of a review of the patient's record by the consultant, pertinent findings on examination of the patient, the consultant's opinion and the recommendations.

Consultations may be written or dictated. The consultant and the attending practitioner must sign a consultation, performed by a medical staff member. The consultation note should identify who the attending is for the day of the consult.

Operative Reports
Operative reports shall be dictated immediately upon completion of surgery and will be delinquent if not dictated within 23 hours of completion of the procedure. **Please do not use abbreviations**.

A dictated operative report is required in all general anesthesia cases. The operative report must be signed by the dictating practitioner and the attending physician.

A written note for all operative and other invasive procedures will be entered in the medical record immediately upon completion of the procedure and before the patient is transferred to the next level of care. The written note should have enough detail to facilitate continuity of patient care until the dictated report is available. Include name of the surgeon(s) (attending and residents) and assistants, the procedure(s) performed, operative findings, estimated blood loss, specimens removed, surgical appliance, postoperative diagnosis and the date and time the note is entered in the record. The dictated operative reports shall include a detailed account of the findings at surgery as well as the details of the technique. The following items should be included:

- Dictator's complete name
- Attending surgeon's complete name
- Patient's complete name
- Patient's medical record number
- Date the operation began
- Complete name of primary surgeon and assistants
- Anesthesiologist's complete name
- Type of anesthesia used
- Name of the operation
- Preoperative diagnosis
- Postoperative diagnosis
- Description of procedure (including preparation, incision, findings, any specimens removed, disposition of specimens, estimated blood loss, technique and closure) indicate the date of dictation, job number, and the dictator's initials on the white operating room record.

Discharge Summary
A discharge summary shall be dictated at the time of discharge on all hospitalized patients. The discharge summary shall be signed by the dictating practitioner and the attending practitioner.
The discharge summary should include the following items:

- Dictator's complete name
- Attending Physician's complete name
- Patient's complete name
- Patient's medical record number
- Patient's billing number
- Admit and discharge date
- Diagnoses and procedures (no abbreviations)
- Brief past history/present complaint
- Physical examination-limited to pertinent findings
- Course in hospital/operative findings
- Treatment given
- Condition of patient at discharge
- Instructions to patient to include: exercise/physical limits, diet, medications, length of disability and follow-up visit/plan.
- Indicate carbon copy to the off-site referring practitioner, list name, facility, and complete address for hardcopy distribution.
- Indicate the date of dictation, job number, and the dictator's initials on the last progress note page.

GENERAL INFORMATION

Completion of Records
The patient's medical record shall be completed at the time of discharge, including progress notes, final diagnosis and discharge summary.

DELINQUENT MEDICAL RECORDS
A medical record shall be considered delinquent if it is not completed within 14 days post discharge. Undictated operative reports will be delinquent 48 hours post procedure and will result in suspension of the attending physician's surgical privileges if not completed timely.

MEDICAL RECORD LEGAL CONSIDERATIONS

All entries must be clearly identified with signature with credentials, date, and time. The medical record is a confidential document and it is every person's responsibility to safeguard its contents whether written or electronic. No UMC medical records may be removed from the hospital except as provided for in the medical staff bylaws, rules and regulations and the UMC administrative policies and procedures. Once electronically authenticated, a document cannot be edited, an addendum must be done.

Appointment Scheduling and ER Follow-ups

- Do not send anyone to clinic without letting the clinic staff know the name, date, clinic site, and approximate time of arrival. A note or e-mail will suffice.
- Also, you are not to overbook clinics without faculty permission. Instead have patients call the clinic for their appointments when at all possible, particularly in the case of ER follow-up patients. Patients that need follow-up care for treatment you rendered will be given appointments. It is helpful if you call or e-mail the appointment scheduler so that they know that you have approved the patient being seen. They will work with the attending if an over book is required. Other patients will be required to go through normal Departmental screening procedures. You don't need to worry about it once they have been given the appropriate instructions to call the clinic.
- Trauma is not to be sent to the clinic for scheduling without permission of the attending.
- Post-op appointments are to be made at the time of pre-op whenever possible.

Identification

Inform the patient as to whom you are when you see them, and let them know the attending will be in shortly.

Hand Cleansing

You are to wash your hands or use a hand sanitizer before and after and in between seeing patients.

Billing issues

You are not to be involved in billing issues in any way. Do not discuss contract or billing issues with the patients. Refer them to the surgery schedulers, front desk, clinic manager, or attending physician. **You are not to circle diagnoses codes or E&M levels.**

Follow-up issues

It is your responsibility to follow-up on all labs and imaging on any patient you see in the clinic, any patient that you care for in the hospital, or any patient upon which you perform a procedure. You are to notify the attending of the results and document the results and plans.

Employee counseling

Please do not discipline or counsel any employee regarding their job performance. Bring any issues to the program director instead.

Phone message return

All phone messages must be returned by the end of the day with appropriate documentation. Phone calls with patients are to be documented in the medical record.

Sample pharmaceuticals

You are not to sign for any sample delivery to the clinic except for your personal use which you should take with you immediately. Attending physicians will sign for medications for the clinics when required.

Call Schedule

- It is the responsibility of the chief residents to coordinate the call schedule and have it turned in to the education administrator on or before the 20th of each preceding month.
- Holiday call will be equally distributed among junior and senior residents respectively. Only in the case of a relatively equal number of holiday and trauma call days will seniority be allowed to determine the designation of call.

ICU Bed Requests

It is the responsibility of the senior resident on the service to make sure that planned ICU bed requests have been submitted prior to the day of the surgery.

Communications with Outside Physicians

- Transfer requests will be considered in concert with an attending physician in all cases.
- It is preferred that communication with outside, referring, and attending physicians be done primarily by faculty members when possible. If the communication is in regards to the transfer of a patient from an outside facility, it must be done primarily by faculty members. However, resident physicians can assist in the transfer arrangements to facilitate the process, if needed.

Compliance

Residents are responsible for understanding and cooperating with all departmental compliance issues as detailed in the departmental and UMC policies, which will be periodically reviewed with the residents. Further details are provided in the Department Compliance document. The dictated operative record should reflect exactly the same procedures and diagnoses as written by the attending on the charge sheet. If you have an ethical problem with any aspect of this or note any deviation from our Compliance policies, please bring it to the program director's attention immediately.

Resident Case Distribution

In general, cases are to be done by residents on the service of the attending physician of the patient. The level of the resident is determined by the complexity of the case in concert with the attending physician and the senior resident. Taking cases from residents on other services is not permitted without prior approval of the residency program director and only if there is a documented need for additional training for a senior resident for that particular case type.

Rounds

- Respect your colleagues' time. Do not arrive to rounds late or unprepared. Time on rounds should be devoted entirely to the management of your patients.
- The resident on call in-house is responsible for patient care until such time as they are checked out to the UMMC team.
- The mental status, cranial nerve and motor sensory exam of your patients should be accessible from your memory and from your daily notes.
- Examine your patients completely and with a mind for all body systems.
- Patients under our care and ICU patients in consultation must have a note daily.
- Medical students' notes must be cosigned daily.

- ICU notes must be transcribed by a resident.
- Sign out rounds of patients under our care at UMMC and VAMC must be made with a resident senior to you prior to leaving.

Operating

- A resident must have the approval of the Chief Resident prior to delegating an operation to a more junior resident.
- Discuss each case with the attending surgeon in advance.
- Operative patients require a timely post-operative exam and note describing their neurological exam.

CLINICS

- Clinic is required of all residents and students not engaged with the operating room, timely procedures, or consultation.
- Patients seen in clinic should be discussed with the Chief Resident or attending staff.
- Medications should not be dispensed from clinic to patients who have not been under the care of our service; appropriate referral may be made to the patient's primary physician or the emergency room for medication concerns.
- Patients should not be scheduled in clinic without prior discussion with the chief resident or attending staff.

GENERAL CARE

- 36 degrees head of bed elevation is beneficial to most patients.
- Turn, logroll, up in chair, ambulate as possible
- Assisted cough, IPPB, Incentive spirometry
- Knee TEDS, Plexipulse
- Bowel Routine
- I/O urinary catheter routine for spinal cord injuries and PRN no void
- Remove dressings, lines, tubes etc. as soon as possible
- Nutrition begins at the time of admission: PPN, Tube Feeding, supplementation
- Less frequent vital signs and medications enable patients to sleep, and nurses to work.

  Did you know?
  - Demerol has neurotoxic metabolites and causes mental status changes
  - Nabumetone and Celecoxib do not inhibit platelet function
  - Phenothiazines, butyrophoneones, tramadol, and Imipenem lower the seizure threshold
  - Side effects of steroids include psychosis, GI bleeding and immune suppression
  - Enoxaparin in a once daily dosage prevents deep venous thrombosis.
  - Anti-Histamines have anti-cholinergic side effects including mental status.
  - Cross reactivity for allergies to Penicillin and Cephalosporins exceeds 10%

SAFETY

- Eye protection, double gloves for all cases
- Meticulous use and disposal of all 'sharps'
- Eye protection with lasers; lead apron with fluoroscopy
- Back straight, knees bent; use a patient rolling device
- **Wash your hands, examination instruments, and lab coat frequently**

HOUSEKEEPING

- Add patients to the patient list as they come onto the service

- Keep records brief, factual, and non-accusatory
- Complete medical records in a timely manner, & bring them up to date before going home on your weekend off.
- Any alterations of the call schedule must be approved by the Chief Resident

LIFESAVERS

- Blood in the head warrants neurosurgical monitoring and accompaniment at all times.
- Patients with cardiopulmonary insufficiency warrant monitoring and accompaniment at all times.
- Avoid poly-pharmacy – never miss the opportunity to eliminate a drug.
- The root cause for agitation is neurosurgical patients is rarely eliminated with sedative
- The most dangerous patient on your service is likely the intoxicated one.

SCHOLARLY ACTIVITY

All residents must have at least 1 paper published by the time they graduate. Residents are required to present their research findings at a national meeting either by poster or oral presentation. They are also required to prepare a manuscript of the finished research and submit it for publication. Residents must give at least 1 clinical conference presentation and 1 grand rounds presentation each academic year.

QUALITY IMPROVEMENT

Faculty and residents are expected to submit at least one QI project each year with a plan to carry it out.

The aims of the Neurosurgical Patient Safety and Quality program focuses on four key areas:

Clinical Effectiveness

• Reduce craniotomy and spine surgical site infections
• Reduce medication errors
• Reduce other Hospital Acquired Conditions: Post-op VTE, CA-UTI, VAP, CLABSI, HAPUs, falls
• Lower mortality observed/expected (O/E) ratios
• Improve hand hygiene rates
• Reduce 30-day readmission rates

Clinical Efficiencies

• *Improve discharge before noon*
• *Improve discharge summary completion timeliness*
• *Reduce unnecessary laboratory and radiologic testing*

Patient Experience

• Improve inpatient HCAHPS and Press-Ganey scores
• Improve outpatient HCAHPS and Press-Ganey scores

Resident Engagement

• Quality Improvement (QI) Resident Curriculum
• Resident participation in case review and ongoing departmental QI projects

• Quarterly QI Resident Lunches
• Annual participation in UCSF Graduate Medical Education QI Incentive Project

Updated April 2019

University of Mississippi Medical Center

Events Requiring Prior Attending Physician/Surgeon *APPROVAL*

- Acceptance of a transfer patient from another institution
- Accepting a patient in transfer from another UMC service
- Scheduling a surgical case including a call to OR to add a case to the schedule
- Insertion of an incisional wound vacuum
- Initial antibiotic treatment of a wound infection
- Initiation of therapeutic anticoagulation for DVT or PE
- Undertaking any invasive diagnostic study

Circumstances or Events Requiring Attending Physician/Surgeon *Prompt/Timely NOTIFICATION*

- Any time a resident/fellow believes or considers that a decision might best be accomplished after communication with an attending
- Concern of anyone, including nurses that a situation is more complicated than a resident or fellow can manage effectively
- Patient, a family member, nurse, allied professional, or a physician suggests that an attending be notified
- Decision to admit a new patient to the hospital
- Request for or Initiation of a new or unplanned inpatient consult
- Transfer to locus for a higher level of care or to ICU
- Hemodynamic instability or significant arrhythmia
- Significant neurological changes
- Critical results of lab, radiology, or cardiac diagnostic tests
- Wound complication (e.g., infection, dehiscence)
- Medication or treatment errors requiring intervention
- Blood transfusion not previously discussed with or anticipated by the attending physician
- Any issue prompting a significant change in a previously agreed upon treatment plan (e.g.. cancellation of discharge)
- Return Visit to ED within 30 days of hospital discharge
- Patient leaving hospital against medical advice (AMA)
- New application of patient restraints (Joint Commission requirement)
- Changes in code status
- Unplanned intubation or need for ventilator support
- Code Blue or Rapid Response called
- Cardiac arrest
- Patient death

LEAVE REQUEST

EMPLOYEE#:_____ NAME:_____ DATE:_____

Explanation:_____

Number of Hours	Pay Code	FROM DATE	FROM TIME	THROUGH DATE	THROUGH TIME
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____

_____ Total Hours Requested

_____
Employee Signature

Approval:_____

_____
Department Head

PAY CODE	DESCRIPTION
ADM	ADMINISTRATIVE
ANNL	ANNUAL FLOATING PERSONAL HOLIDAY (8 hrs per fiscal year (7/1/xx-6/30/xx)
DTH	DEATH LEAVE (Death in immediate family)
EDUL	EDUCATIONAL LEAVE (per Dept. Approval-maximum of 4 hours per week)
FMLM	FAMILY MEDICAL LEAVE – MEDICAL (After 1st 8 hours of FMLP leave)
FMLP	FAMILY MEDICAL LEAVE – PERSONAL (First 8 hours of Medical Leave)
FMLU	FAMILY MEDICAL LEAVE – UNCOMPENSATED (After FMLP & FMLM bal. = zero)
HOL	UMC OFFICIAL HOLIDAY
JURY	JURY DUTY (witness or party litigant)
MED	MEDICAL LEAVE (Medical illness after using 8 hours of personal leave)
MILI	MILITARY LEAVE (limited to 15 days per calendar year)
OFCM	OFF CAMPUS BUSINESS (may include PAID Sabbatical)
PER	PERSONAL LEAVE (Personal vacation leave or first 8 hours of an illness)
TRN	TRAINING (Training, Conferences, Seminars, including all mandatory training)
UNC	UNCOMPENSATED (Uncompensated absence (may include UNPAID sabbatical)
WEAT	INCLEMENT WEATHER (approved by Vice Chancellor only)

T:forms:Leave Request 2009

Documentation for a Single Incidence of Patient Care Longer than Prescribed Duty Hours

ACGME Common Program Requirements stipulate:
VI.G.4.b).(4) In unusual circumstances, residents, on their own initiative, may remain beyond their scheduled period of duty to continue to provide care to a single patient. Justifications for such extensions of duty are limited to reasons of required continuity for a severely ill or unstable patient, academic importance of the events transpiring, or humanistic attention to the needs of a patient or family.
VI.G.4.b).(4).(a) Under those circumstances, the resident must:
VI.G.4.b).(4).(a).(i) appropriately hand over the care of all other patients to the team responsible for their continuing care; and, (Detail)
VI.G.4.b).(4).(a).(ii) document the reasons for remaining to care for the patient in question and submit that documentation in every circumstance to the program director. (Detail)
VI.G.4.b).(4).(b) The program director must review each submission of additional service, and track both individual resident and program-wide episodes of additional duty.

Date of additional patient care longer than allowed number of duty hours: _____
Time of additional patient care longer than allowed number of duty hours: _____ to _____

Were all other patient care responsibilities handed over to an appropriate physician/team? _____
To whom or which team? _____

Reasons for remaining to continue care for one particular patient or circumstance after prescribed duty hours: _____

_____

_____

_____

_____

Were there any associated adverse events? _____

_____ _____
Resident Name (Print) Resident Signature

As program director or designee, I attest to being apprised of this single incidence of patient care longer than prescribed duty hours.

_____ _____
Program Director/Designee Name (Print) Program Director/Designee Signature

•Resident Roles

➢Assistant Resident Surgeon: positioning, sterile preparation, monitoring devices, microscope preparation, participation in initial (opening) or final (closing) portions of the case, and/or assisting the resident or staff surgeon(s)

➢Senior Resident Surgeon: may include aspects of all of the above and must include participation in the surgical procedures between opening and closing

➢Lead Resident Surgeon: may include aspects of all of the above and must include participation in the critical portion of the case

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RRC News: Case Log FAQs

➢To claim a case, resident **must** ‘scrub’

➢**Several residents permitted per case but each resident may claim only one role per case**

➢Only one Lead Resident Surgeon per case allowed

- Each resident may enter one or more CPT codes per case but may claim credit for only one CPT code per case

- More than one resident may claim the same CPT code for a case as appropriate and as long as the claimed roles are NOT the same

- Only cases completed in the role of senior or lead count towards the required minimum numbers

- Residents should demonstrate progressive responsibility in logging cases (i.e., assistant, senior and lead experiences should be logged)

RRC CASE LOG UPDATES:

- CPT 31575 (laryngoscopy) added to DC26: use to code intubation, since this is now bundled with anesthesia or critical care provision

- **Pediatric patient definition:** one who is less than 18 years old at the time of the procedure; a

pediatric patient who is 18 years or older at the time of a follow-up procedure must be logged as an adult patient

Graduate Medical Education
University of Mississippi Medical Center

Notice to House Officers

As mandated by the Liaison Committee on Medical Education (LCME), we are required to make all house officers aware of the following stipulation regarding interactions with medical students.

12.5 Non-Involvement of Providers of Student Health Services in Student Assessment/Location of Student Health Records

The health professionals who provide health services, including psychiatric/psychological counseling, to a medical student have no involvement in the academic assessment or promotion of the medical student receiving those services. A medical school ensures that medical student health records are maintained in accordance with legal requirements for security, privacy, confidentiality, and accessibility.

Therefore, should any house officer provide medical care to a medical student, he/she must not complete any written evaluation on said medical student's academic performance.

July 2019