



DEPARTMENT OF NEUROSURGERY  
BAYLOR COLLEGE OF MEDICINE



**RESIDENCY PROGRAM**  
**POLICIES AND PROCEDURES**

2003-2004

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## I. PROGRAM OVERVIEW

The Baylor College of Medicine Department of Neurosurgery consists of 24 full-time faculty, 30 joint, adjunct and voluntary faculty, 15 residents and more than 50 support staff. The department's five-year Neurosurgical Residency Program accepts three residents per year, making it one of the largest neurosurgical programs in the country.

Residents in the Neurosurgical Residency Program receive extensive training in all aspects of neurosurgery, including pediatric neurosurgery, neuro-oncology, stereotactic surgery, radiosurgery, spinal surgery and instrumentation, and transsphenoidal surgery. Residents also complete four-month rotations in neurology and pathology, as well as a four-month research rotation. The academic program provides regularly scheduled conferences, lectures, seminars and courses in the basic sciences as they apply to neurosurgery.

Clinical and surgical experience is gained through the department's five affiliated hospitals: The Methodist Hospital, Ben Taub General Hospital, Houston Veterans Affairs Medical Center, Texas Children's Hospital and The University of Texas M. D. Anderson Cancer Center. During the 2002-2003 academic year 16,563 neurosurgical outpatients were seen, 6,401 patients were admitted to the five affiliated hospitals and 5,875 major neurosurgical procedures were performed. Among the major neurosurgical procedures performed were 1,251 craniotomies, 132 transsphenoidal procedures, 2,824 spinal procedures, 354 peripheral nerve procedures, 261 stereotactic procedures, and 80 pediatric reconstructive surgeries. In addition, 373 patients with severe head trauma received treatment.

The goal of the Baylor Neurosurgery Residency Program is to prepare residents to become highly skilled, compassionate and ethical neurosurgeons, who will continue to learn new aspects of neurosurgery throughout their professional lifetimes, and who will contribute to the development of neurosurgery in academic and/or clinical positions.

## II. GOALS AND OBJECTIVES

Following are specific departmental goals and policies. These goals and policies are updated, distributed and discussed at the beginning of each academic year.

### A. PATIENT CARE

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#### PGY 1 GENERAL SURGERY INTERNSHIP

The goal of the general surgery internship at Baylor College of Medicine is to provide residents with an in-depth foundation of the principles and practice of surgery.

The one-year internship is comprised of six two-month rotations. The hospital experience includes rotations at The Methodist Hospital, Ben Taub General Hospital and the Veteran's Affairs Medical Center - Houston. All internships include rotations in the intensive care unit (ICU) at Ben Taub General Hospital and in anesthesia, both of which are of great educational value. The general surgery internship is a busy and demanding year and provides each neurosurgery resident with sufficient exposure to basic surgical issues. Upon completion of the internship, each resident is expected to have acquired the following:

1. Experience with complex patient histories and unusual findings on physical examination, particularly with patients from different cultures or countries and those

- speaking little or no English.
2. An understanding of physician-patient relationships, psychosocial relationships within patient families, and interpersonal relationships between colleagues and other healthcare personnel.
  3. Advanced understanding of key and frequently used medicines and their interactions.
  4. Basic surgical skills, especially careful tissue management and hemostasis.
  5. Principles of wound care and dressing management, especially for complex wound problems.
  6. A comprehensive understanding of emergency room (ER) medical management and related invasive techniques, such as the placement of central catheters.
  7. A comprehensive understanding of acute care, particularly the patient with multisystem trauma, and a command of "code-blue" care.
  8. A command of frequently used monitoring techniques, including the use of intravenous and central venous pressure lines, Swan-Ganz catheters and chest tubes.
  9. A mastery of complex fluid and electrolyte management.
  10. A mastery of complex nutritional management, e.g., total parenteral nutrition.

#### NS 1-5 (PGY 2-6): NEUROSURGICAL RESIDENCY

The goal of the Neurosurgical Residency Program at Baylor College of Medicine is to train highly skilled neurosurgeons that are competent to deal with a wide range of neurosurgical problems. In order to meet this goal, each resident rotates through different services at The Methodist Hospital, Ben Taub General Hospital, the Houston Veterans Affairs Medical Center, Texas Children's Hospital and the University of Texas M. D. Anderson Cancer Center. These services are busy and demanding, but provide the resident with ample exposure to both common and unusual neurosurgical cases. Opportunities for participation in ongoing neurosurgical clinical or laboratory-based research projects are also provided; in-depth involvement in a particular project is encouraged. The goals and objectives for each year of residency, clinical and nonclinical, are enumerated below.

#### NS 1 (PGY 2)

Common goals and objectives for all three rotations during the first year of residency are as follows:

1. Understanding of preoperative and postoperative patient management including laboratory and radiological studies.
2. Understanding of ICU management of neurosurgical patients.
3. Understanding of the spectrum of neurosurgical disease and the indications and contraindications for surgery.
4. Understanding of the range of operative techniques, including surgical approaches and equipment.
5. A command of neurological history taking and examinations.

Specific NS-1 Objectives By Hospital Rotation:

##### *The Methodist Hospital*

1. Exposure to a diverse range of neurosurgical cases.
2. Exposure to a variety of surgical techniques.

3. Basic understanding of:
  - a. Neurovascular lesions
  - b. Spinal surgery and instrumentation
  - c. Functional and stereotactic neurosurgery
  - d. Surgery for epilepsy
  - e. Radiosurgery
4. An introduction to neuroanesthesia.
5. Taking of the American Board of Neurological Surgery primary (written) examination. [Note: residents are expected to take for credit and pass the written examination in their second or third year.]

*Ben Taub General Hospital*

1. Fundamental management of patients with head injuries, including intracranial pressure (ICP) monitoring.
2. Stabilization and management of trauma to the spine, and spinal cord injury.
3. Fundamental ICU care, particularly for multisystem-injured patients.
4. Fundamental ER care of acute neurological injuries, including blunt and penetrating injuries and subarachnoid hemorrhage.
5. Outpatient management of new and follow-up patients.
6. Exposure to pediatric neurosurgical management.

*Houston Veterans Affairs Medical Center*

1. Fundamentals of general spine surgery.
2. Fundamentals of peripheral nerve surgery.
3. Functional and stereotactic surgery.
4. Management of chronic multisystem illness and geriatric problems as they relate to neurosurgical management.
5. Outpatient management of a large volume of new and follow-up patients.

NS 2 (PGY 3)

*Neurology*

1. Understanding the causal mechanisms of a wide variety of adult neurological diseases.
2. Management of acute and chronic neurologic diseases.
3. Comprehensive exposure to outpatient management of patients with neurological disease.
4. Introduction to neuro-ophthalmology and pediatric neurology.
5. Interpretation of electroencephalograms (EEGs), electromyograms (EMGs), and nerve conduction and other electrophysiological studies.
6. Interpretation of cerebrospinal fluid (CSF) and serological tests for neurological conditions.
7. Introduction to nerve and muscle biopsies and their interpretation in the diagnosis of complex neuropathies and myopathies.
8. Refinement of neurological examination and history-taking skills.
9. Exposure to neurologic research topics.

*Pathology*

1. Exposure to contemporary techniques for tissue preparation and processing.
2. Exposure to tissue examination using frozen-section and paraffin-embedding techniques, light microscopy, electron microscopy, immunohistochemical staining, laboratory and autopsy studies, and brain cutting.
3. Understanding of cellular diagnosis of normal and abnormal tissue.
4. Assimilation of patient information from history, physical examination, laboratory and pathology findings, and radiological studies for diagnosis, treatment options and prognosis.
5. Development of a research project.

*Ben Taub General Hospital*

1. Increased administrative responsibilities for entire service.
2. Responsibility for grand rounds, resident seminars, journal club, clinical conferences, and the mortality and morbidity conferences.
3. Increased operative responsibilities.
4. Increased responsibility for teaching junior residents and medical students.

**NS 3 (PGY 4)**

*The Methodist Hospital*

1. Increased administrative responsibilities.
2. Responsibility for grand rounds, resident seminars, journal club, clinical conferences and the mortality and morbidity conferences.
3. Increased operative responsibilities.

*Ben Taub General Hospital*

1. Increased administrative responsibilities for entire service.
2. Responsibility for grand rounds, resident seminars, journal club, clinical conferences and the mortality and morbidity conferences.
3. Increased operative responsibilities.
4. Increased responsibility for teaching junior residents and medical students.

*The University of Texas M. D. Anderson Cancer Center*

1. Advanced management of intracranial tumors, especially skull-base and pituitary tumors, as well as spinal, peripheral nerve and unusual tumors.
2. Exposure to experimental therapeutic protocols and clinical investigations.

**NS 4 (PGY 5): Senior Residency Year**

*Research*

1. Dedicated, protected time for a clinical or laboratory-based research project.
2. Development of study design, analytical, and manuscript preparation skills.
3. Presentation of research project at an appropriate national forum.
4. Submission of one or more manuscripts from laboratory-based research and/or or clinical series for publication by a peer-reviewed journal.

*Houston Veterans Affairs Medical Center*

1. Major responsibility for all aspects of neurosurgical service.

2. Mastery of neurosurgical principles and practices in preparation for completing the residency program.

*Texas Children's Hospital*

1. Exposure to a wide variety of pediatric neurosurgical research topics.
2. Advanced pediatric neurosurgical problem management.
3. Involvement in pediatric neurologic, neuroradiologic and neuropathologic services, including autopsies.
4. Fundamental understanding of pediatric ICU management, including basic neonatal care from a neurosurgical perspective.
5. Additional experience in pediatric ER patient management.
6. Extensive experience in pediatric brain tumors.

**NS 5 (PGY 6): Chief Residency Year**

*The Methodist Hospital (1)*

1. Administrative chief resident of entire neurosurgical service.
2. Advanced experience working with department chair on administrative and clinical duties of entire department.
3. Implementation of advanced neurosurgical problem management techniques.

*The Methodist Hospital (2)*

1. Major administrative responsibilities.
2. Advanced surgical experience working with neurosurgical service faculty on increased numbers of specialized neurosurgical conditions.
3. Implementation of advanced neurosurgical problem management techniques.

*Ben Taub General Hospital*

1. Major responsibility for all aspects of service.
2. Teaching of junior residents and medical students at the appropriate level.
3. Mastery of neurosurgery principles and practices in preparation for completing the residency program.

**B. DIDACTIC EDUCATION**

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Didactic education is provided in the basic sciences underlying the practice of neurosurgery to enhance the quality of patient care and to enable the physician to be able to follow and participate in the scientific development of neurosurgery after completing formal training. Education in basic sciences is provided by rotations on neurology and pathology in which the resident works directly with the chiefs of those clinical services, Stanley H. Appel, M.D., and J. Clay Goodman, M.D., respectively, as well as daily interaction with the chiefs of radiology at each of the affiliated hospitals.

Didactic lectures in neuropathology (Dr. J. Clay Goodman) and neuroradiology (Dr. Pedro Diaz-Marchan) are given during the November-February rotation.

The resident who is on his or her research rotation during the summer-fall rotation block (July-October) attends the Society for Neurological Surgeon's Research Update in Neuroscience for Neurosurgeons (RUNN) at Woods Hole, Massachusetts. This course focuses on fundamental neurobiology. The department supports travel, tuition and living expenses for attending this

course. In addition, the chief residents each attend one of the two major annual neurosurgical meetings, the American Association of Neurological Surgeons (AANS) meeting in the spring or the Congress of Neurological Surgeons (CNS) meeting in the fall. Residents at the third-fifth year levels are sent to the skull-base and spine surgery courses organized by the AANS or university programs. The department pays all expenses.

### C. RESEARCH

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The goal of the resident's participation in research is to obtain a deeper understanding of the techniques of modern neurosurgical research in an area compatible with the resident's own interests. The research can be done either outside or within the department, in laboratories where the techniques of neuroanatomy, neurophysiology, neurochemistry and molecular biology are used. Developing skills in the design of laboratory or epidemiologic experiments, critical review of the literature, statistical analysis of data and manuscript preparation are the goals of the research experience.

For statistical analysis and for the preparation of grants, manuscripts and presentations, residents have access to computer facilities with the latest software and technology, including scanners and black-and-white and color printers, at both The Methodist Hospital and the departmental office. Charles F. Contant, Jr., Ph.D., Cecilia K. Dearen, B.A., Winifred J. Hamilton, Ph.D., and Harvey S. Levin, Ph.D., provide advice about study design, statistical analysis of data, and manuscript, slide and poster preparation. LCD projectors and other audiovisual equipment are also available for resident use.

### D. ETHICAL AND MEDICOLEGAL CONSIDERATIONS

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#### ETHICAL ISSUES

Through lecture and computer-based instructional and examination programs, the department provides all residents with federally mandated Health Insurance Portability and Accountability Act (HIPAA) training. Issues of patient rights and privacy are addressed through formal lectures sponsored by Baylor College of Medicine. These issues, including the proper protection of patient names and information, appropriate and inappropriate case discussions and the showing of respect for each patient, are also addressed during a departmental meeting held at the beginning of each academic year. Additionally, ethics in research are addressed through a series of computer-based lessons and examinations. All residents are required to pass annual examinations on ethics and patient confidentiality.

The faculty also provide residents with education concerning socioeconomic issues through daily teachings. Didactic teachings include the following:

1. Weekly lectures during grand rounds. Of particular importance are the lectures given by Dr. Baruch Brody, director of the Center for Medical Ethics and Health Policy.
2. Lectures on the clinical care pathways and on hospital costs by members of the hospital committees on the operating room, pharmacy and clinical care pathways.
3. Lectures on maintaining a supportive and non-harassing work place environment by the legal departments of Baylor College of Medicine and The Methodist Hospital.
4. Focused discussions of the social, economic and legal issues of the cases presented at the weekly clinical conferences and at the monthly mortality and morbidity conferences.

## MEDICOLEGAL ISSUES

Throughout each academic year, mandatory lectures are held that address various medicolegal issues including federal HIPAA guidelines and malpractice insurance requirements. These lectures are usually presented by the Baylor College of Medicine Office of Risk Management or one of Baylor's general counsels.

## III. LINES OF SUPERVISION AND WORK ENVIRONMENT

The chair of the department, the chief of the neurosurgical service at each hospital, and each individual in the line of command are responsible for maintaining a dignified and ethically proper work environment for the medical staff, students and patients for whom they are responsible. The chief of the neurosurgical service at each hospital has the responsibility of assuring the quality of the patient care and teaching.

The lines of clinical responsibility and command are to be followed when any question arises concerning patient care, and with respect to consultations with and interaction among other clinical and laboratory services. The lines of responsibility are as follows:

### THE METHODIST HOSPITAL

Chief of Neurosurgical Service: Robert G. Grossman, M.D.  
Attending Faculty  
Chief Residents (2)  
Senior Resident  
Junior Resident  
Medical Student

### BEN TAUB GENERAL HOSPITAL

Chief of Neurosurgical Service: Alex B. Valadka, M.D.  
Attending Neurosurgical Faculty: Shankar P. Gopinath, M.D.  
Lynn F. Fitzgerald, M.D., Ph.D.  
Claudia S. Robertson, M.D.  
  
Chief Resident  
Senior Resident  
Mid-Level Resident  
Junior Resident  
Surgical Rotating Resident  
Medical Student

### HOUSTON VETERANS AFFAIRS MEDICAL CENTER

Chief of Neurosurgical Service: Richard K. Simpson, Jr., M.D., Ph.D.  
Attending Neurosurgical Faculty: David S. Baskin, M.D.  
Todd W. Trask, M.D.  
  
Chief Resident  
Junior Resident

### TEXAS CHILDREN'S HOSPITAL

Chief of Neurosurgical Service: Robert C. Dauser, M.D.  
Attending Neurosurgical Faculty: John P. Laurent, M.D.

Daniel Yoshor, M.D.  
Hatem S. Megahed, M.D.

Senior Resident  
Medical Student

THE UNIVERSITY OF TEXAS M. D. ANDERSON CANCER CENTER

Chief of Neurosurgical Service: Raymond Sawaya, M.D.  
Director of Training: Franco DeMonte, M.D.  
Attending Faculty  
Senior Resident  
Medical Student

Any unresolved questions are to be promptly referred to the chair of the Department of Neurosurgery, Robert G. Grossman, M.D., who is also the director of the Neurosurgical Residency Program and who has the ultimate responsibility for the quality of the residency program.

## IV. DUTY HOURS

Duty hours are set according to the regulations of the Program Requirements for Residency Education in Neurological Surgery of the Accreditation Council for Graduate Medical Education (ACGME). The requirements stress an environment that is both optimal for resident education and for patient care. Duty hours are defined as all clinical and academic responsibilities related to residency, including patient care, in-house call and scheduled academic activities such as conferences. Specific guidelines are as follows:

- Duty hours must be limited to 80 hours per week, averaged over a four-week period, inclusive of all in-house call activities.
- Residents must be provided with one day in seven free from all educational and clinical responsibilities, averaged over a four-week period. One day is defined as a continuous 24-hour period free from all clinical, educational and administrative responsibilities. There should be a 10-hour time period between all daily duty periods and after in-house call.
- In-house call must not exceed 24 consecutive hours. A resident may remain on duty for up to six additional hours to participate in didactic activities, transfer care of patients, conduct outpatient clinics and maintain continuity of medical and surgical care.
- Residents taking at home call must be provided with one day in seven completely free from all educational and clinical responsibilities, averaged over a four-week period. When residents are called into the hospital from home, the hours spent in-house are counted towards the 80-hour limit.
- Moonlighting is not permitted.

On-call coverage for each hospital is as follows:

### THE METHODIST HOSPITAL

Each junior and senior resident will take call one weekday night and one weekend day. One weekday night will be covered by the resident rotating on pathology and two by the resident rotating on neurology. Either the pathology or neurology resident must cover Friday night. The residents on the Methodist rotation will leave by 3 pm two weekdays per week, and by 5 pm when not on call other days.

#### BEN TAUB GENERAL HOSPITAL

The junior and mid-level residents will each take call two weekday nights and one weekend day. Each of these residents will leave after neurosurgical intensive care unit (NICU) rounds, and after checking out to other team members (target 8 am) two weekdays per week. The senior resident will take call the additional weekday and will back up the mid-level resident one weekend day so that the chief can be scheduled for 24 hours off. If surgery rotators are assigned to the service, this schedule will be modified to include them in the call schedule.

#### HOUSTON VETERANS AFFAIRS MEDICAL CENTER

The chief and junior residents will alternate call from home. No in-house call.

#### TEXAS CHILDREN'S HOSPITAL

The resident will take call from home. Every other weekend and all Wednesday nights will be covered by the fourth-year resident on research rotation.

#### THE UNIVERSITY OF TEXAS M. D. ANDERSON CANCER CENTER

The resident will establish a call schedule with the M. D. Anderson Cancer Center neurosurgical fellows. No more than one weekday night and one weekend day of call will be taken.

## V. VACATION

First-year neurosurgery residents are entitled to three weeks of vacation per year. A week is five business days plus the preceding or succeeding weekend. Dividing the vacation into time blocks less than one week long is discouraged. Residents may only take one week of vacation per clinical rotation. Residents may not take vacations "back-to-back."

Vacations may need to be restricted during certain periods if there are unusual shortages in the number of available residents. Vacations during the first week of a clinical rotation or during the last two weeks of June are discouraged.

During basic science elective rotations, residents may take more than one consecutive week of vacation, provided that the vacation time is approved and does not exceed two weeks at a time. The total for the year, however, remains three weeks.

Senior resident vacation coverage will be provided by the neurosurgical resident on the research rotation. If unavailable, the neurosurgical resident on the pathology rotation will cover. During vacation coverage, the neurosurgical resident on the research rotation will take up to three nights of call per week. Junior resident vacation coverage will be provided by the neurosurgical resident on the pathology rotation. Junior residents on clinical rotations may not schedule vacations simultaneously with other junior residents.

If a resident takes off a full week to present a paper at a meeting, he or she will not be able to take a vacation during that rotation, with the exception of the chief residents. All vacation and meeting requests for each four-month rotation must be submitted within the first week of the rotation; otherwise, the residency coordinator will assign vacation time. Requests for subsequent changes in vacation dates will be considered only if coverage is arranged.

No more than two senior residents or chief residents may be away from Baylor at any given time to eliminate the need for a junior resident to cover a senior resident's position. Vacations will be

scheduled on a first-come-first-served basis, based on filing with the residency coordinator.

## **VI. LEAVE**

### **A. EDUCATIONAL**

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Each chief resident will attend one of the two annual major national neurosurgical meetings (AANS or CNS). The department will pay all expenses. A resident who has a paper or poster accepted at a national or local meeting will have leave for that meeting, and all expenses will be paid by the department, including fees for courses and seminars. A copy of all papers/abstracts submitted must be given to the Residency Coordinator at the time of submission. As noted earlier, if a resident takes a full week to present a paper at a meeting, he or she will not be able to take a vacation during that rotation with the exception of the chief residents.

Junior residents on clinical rotations will be granted leave to take the United States Medical Licensing Examination (USMLE) or to present a paper at a meeting. Coverage for residents on leave to take the American Board of Neurological Surgeons (ABNS) written examination for credit will be arranged provided that the coverage resident is not taking the examination for credit.

### **B. PERSONAL**

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Three calendar days per year are provided for personal or family reasons with the approval of the department chair. Additional "personal days" for emergencies can be arranged with the chief of service. Attendance at meetings as part of the educational activity of the house staff is not considered as "leave"; such attendance is allowed with the approval of the department chair.

### **C. INTERVIEWS**

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Chief residents will be allowed up to five days for job interviews. Coverage will be arranged.

### **D. MILITARY RESERVE AND JURY DUTY**

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Leave for military reserve duty can only be taken during non-clinical rotations and must be arranged in advance by the resident and his or her commanding officer; 14 calendar days of leave for military duty are allowed and do not count against vacation time. Leave is also provided for jury duty as required by the court system.

### **E. ILLNESS OR INJURY**

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Residents are entitled to 14 calendar days of paid sick leave per academic year. Unused sick days are carried forward and are available to the residents in subsequent academic years. Sick leave may also be used for maternity-related leave.

In the event a house officer suffers a work-related illness or injury and uses all accumulated sick leave before he or she is able to return to work, additional pay will be granted to supplement any benefits available under workers' compensation in order to bring the house officer's gross pay up to his or her current stipend level.

The additional pay will end once disability insurance payments begin. Illnesses and injuries are considered work related only when a workers' compensation claim is filed and approved.

Pay for non-work related illness or injury is limited to the residents' accrued sick leave. A

physician's statement is necessary if the illness or injury extends beyond 14 consecutive calendar days. Any additional time required for program completion will be paid at the appropriate salary level.

#### F. OTHER ABSENCE

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A resident may request and take an unpaid leave of absence for up to six months with the approval of the department chair. A letter stating the purpose of the leave, arrangements made for completing the training program and the mechanism for payment of insurance premiums must be signed by both the department chair and the resident, with a copy kept on file at Baylor's Office of Graduate Medical Education. If all or any part of this level of absence is due to illness or injury, the department may require a physician's statement.

## VII. COUNSELING

During the orientation provided every June for all incoming residents, there is a discussion regarding physician impairment, including substance abuse. All residents receive a brochure on substance abuse, which is put out by the Baylor College of Medicine Department of Human Resources. One month later, the Texas Medical Association's brochures on physician impairment are mailed to residents' home addresses. These brochures include, "Do You Know A Resident Who Needs Our Help? Physician's Health and Rehabilitation Program" and "Substance Abuse Among Physicians, Early Symptoms and Future Consequences: A Guide For Medical Students, Residents and Practicing Physicians." A 24-HOUR CONFIDENTIAL HOTLINE NUMBER IS ALSO PROVIDED. In addition, Baylor College of Medicine has a Substance Abuse Assistance Council whose members may be contacted for assistance, and confidential report lines are available. The Baylor Substance Abuse Assistance Council and its subcommittees maintain confidentiality of all matters and records.

Concerns about possible impairment of residents should be promptly brought to the attention of the residency program director, who will then discuss the concerns with the resident. If appropriate, referral will be made to the Baylor Psychiatric Counseling Service or other appropriate counseling service. If the resident is felt to be too impaired to function on the clinical service, he or she may, at the discretion of the program director, be taken off the service until deemed ready to resume. It is important in dealing with an impaired resident or physician that the following occur:

1. The resident gets treatment.
2. Confidentiality is maintained.
3. Patients are not put at risk because of the impairment.

All residents are also encouraged to attend the "Impaired Physician" programs at the General Surgery Lecture Series, which is open to residents of all specialties.

## VIII. SELECTION AND EVALUATION PROCEDURES

#### A. RESIDENT SELECTION PROCESS

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The selection of residents for the Department of Neurosurgery is based upon such factors as preparedness, ability, aptitude, academic credentials, communication skills, motivation and integrity. Selection is not influenced by race, gender, age, religion, color, national origin,

disability or veteran status. The selection of neurosurgical residents is done via the Neurosurgery Matching Program (NSMP), following ranking of the applicants by the department's Neurosurgery Residency Selection and Evaluation Committee, which consists of the full-time neurosurgical clinical faculty. The process is as follows:

1. An applicant is eligible to apply if he or she is
  - a. A graduate of a medical school in the United States or Canada accredited by the Liaison Committee on Medical Education (LCME).
  - b. A graduate of a college of osteopathic medicine in the United States accredited by the American Osteopathic Association.
  - c. A graduate of a medical school outside of the United States and Canada who:
    - i. has a valid certificate from the Educational Commission for Foreign Medical Graduates (ECFMG); or
    - ii. has a full and unrestricted license to practice medicine in a U.S. licensing jurisdiction.
  - d. A graduate of a medical school outside of the United States and Canada who has completed a Fifth Pathway program provided by an LCME-accredited medical school.
2. The resident applicant must also successfully complete a PG 1 surgical internship. This is generally done at Baylor College of Medicine but can be completed elsewhere.
3. The resident applicant must apply through the Central Application Services (CAS) and the NSMP.
4. After receipt of a completed application from an eligible applicant, the application along with other completed applications is reviewed by the program director, Robert G. Grossman, M.D., and members of the Neurosurgical Residency Selection and Evaluation Committee.
5. Approximately 40 applicants are selected to visit the Texas Medical Center and meet with neurosurgical faculty and residents. In general, groups of approximately eight applicants are scheduled for a Friday-Saturday visit in the fall.
6. At that visit, four or five neurosurgical faculty, the program director, and at least six residents interview each resident applicant.
7. The program director, with the assistance of the Neurosurgery Residency Selection and Evaluation Committee, establishes the rank order of applicants for the NSMP.
8. The program director provides the selected applicants with a contract for one year of training at the PG 2 level (first year of Neurosurgery training) to be effective following the successful completion of a PG 1 surgical internship.
9. The applicant must qualify for a Texas Educational Permit or have an active Texas license to practice medicine.

The goal of the Neurosurgical Residency Selection and Evaluation Committee is to select the best-qualified applicants for the program based on factors as outlined above.

The Baylor Neurosurgical Residency Program follows the ACGME guidelines for evaluating each resident's progress, the program's faculty members and the program itself. The evaluation process for each is described below.

## **B. EVALUATION OF RESIDENTS**

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The academic progress of each resident is monitored, in part, by his or her performance on the primary written examination of the ABNS, taken each year by the junior residents. The examination is taken for credit in the NS-2 or NS-3 year.

The lines of supervision (see pages 7 and 8) provide informal day-to-day feedback on each resident's performance, which is critical to promptly addressing any deterioration in performance or other problems, such as personality conflicts.

Each resident's overall performance is systematically evaluated three times a year, following each four-month rotation. For each rotation, faculty members who have had significant interaction with a resident during that rotation are required to fill out an "End of Rotation Evaluation of Resident by Faculty/Attending Physician" form. Mean scores for each of the six competencies (patient care, medical knowledge, practice-based learning and improvement, interpersonal and communication skills, professionalism and systems-based practice) are calculated for each resident for each rotation and cumulatively, and maintained on a master spreadsheet, along with written comments, to help track each resident's strengths, weaknesses and progress. This master tracking record is prepared by the Residency Academic Coordinator, Angela Ross. Individual evaluations are reviewed by the program director, and each resident's progress is discussed by the Neurosurgical Residency Selection and Evaluation Committee, which consists of the full-time clinical faculty. In addition to the six core competencies, each resident's surgical skills, strengths and weaknesses are discussed and, if necessary, recommendations are made to address any perceived deficiencies.

In addition, operative procedure reports are prepared by the Residency Database Coordinator at the end of each rotation. These reports list procedures by the categories established by ACGME's Residency Review Committee in Neurological Surgery, along with mean numbers from our program and other neurosurgical residency programs. The residency program has developed a comprehensive system with multiple validity checks to collect operative data from each of the hospitals and from the residents. These allow detailed and ongoing analysis of each resident's operative experience.

The program director meets formally with each resident after each rotation to discuss his or her evaluations and general performance, Committee recommendations, the number and type of operative procedures the resident has performed relative to expectations, and any concerns of the resident.

The program director, who is also the chair of the department, writes a summary record of each meeting with each resident, which is retained in the resident's file.

### C. EVALUATION OF FACULTY

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At the first Mortality and Morbidity Conference following the end of each rotation, "End-of-Rotation Evaluation of the Faculty / Attending Physicians by the Residents" forms are distributed to each of the residents. Residents are instructed to fill out one or more evaluations as appropriate for the just completed rotation, fold the evaluation in half, and place the evaluation(s) in a FedEx envelope addressed to the Baylor College of Medicine's Office of Curriculum upon leaving the conference room. All residents must place at least one folded evaluation form in the envelope when leaving. The envelope is sealed and dropped into a FedEx pick-up box in the presence of one or more residents. Evaluation forms are also sent electronically as pdf files to the residents and are available at the resident mailboxes, with addressed envelopes for mailing directly to the Baylor Office of Curriculum.

No one in neurosurgery ever sees the completed evaluation forms from the residents. The Office of Curriculum collects the forms, extracts the numerical data and comments from each

evaluation, shreds the original evaluations, and sends the program director mean scores and typed comments only after a minimum of three evaluations has been received on a faculty member.

In addition, the program director evaluates the faculty who participate in the residency program according to criteria established by the faculty. These criteria include: (1) resident evaluation scores and comments; (2) teaching (operative and didactic teaching including participation in clinical conferences, journal club and the resident seminar); (3) service (including community outreach, involvement with the public hospitals, and participation in national, state and local medical organizations); (4) research; (5) professionalism; (6) communication skills; (7) administrative skills; (8) development of new clinical services; (9) grants or other funding; and (10) publications. The program director has an annual scheduled meeting with each faculty member who is involved with the residency program to discuss this evaluation.

#### D. EVALUATION OF RESIDENCY PROGRAM

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The residents formally evaluate the residency program in three ways. First, their end-of-rotation anonymous faculty evaluations, which are summarized and reported to the program director at regular intervals by the Office of Curriculum, contain valuable information about the quality of teaching, the conferences, the strength of the rotations, and other aspect of the program.

Second, the residents are encouraged to discuss the program during their regularly scheduled meetings with the program director. Residents are also polled regularly by the Residency Database Coordinator and by the Director of Educational Resources for the Residency Program regarding needs of the residents. Although these discussions usually involve physical needs such as computers or software, residents can also use this opportunity to indirectly relay to the program director any concerns or problems that need to be addressed.

Third, all fifteen residents meet annually to evaluate the program. During this meeting, one resident (usually one of the chief residents) is chosen to summarize in writing the discussion and to discuss the issues raised with the chairman and the faculty. This is a group document, which is approved by all of the residents before submittal, and which does not attribute any concerns to any residents by name.

## IX. DISCIPLINE

Major deficiencies in a resident's performance will result in the program director calling a meeting with that resident and any involved faculty members. Each particular problem will be discussed, and specific corrective steps will be laid out and documented. Persistent problems will result in the resident being formally placed on probation for a defined length of time in accord with the policies of Baylor College of Medicine. The program director will then meet with the resident on a monthly basis to review his or her performance during the period of probation. Failure of the resident to bring his or her performance to a satisfactory level by the end of the probationary period will result in non-renewal of his or her contract for the next academic year, or, in certain cases, dismissal from the program.