NEUROLOGY RESIDENT HANDBOOK

2020-2021

DEPARTMENT OF NEUROLOGY
UNIVERSITY OF ROCHESTER
SCHOOL OF MEDICINE AND DENTISTRY

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FOREWORD

This Neurology Resident Handbook is intended as a handy reference for all Neurology clinical faculty, residents and administrative staff. The handbook is divided into seven sections as follows:

- ACGME New Accreditation System: This section contains specific program goals and objectives for the neurology residency, the neurology core competencies that are part of the ACGME New Accreditation System, the Neurology Milestones, and descriptions of specific evaluation instruments used to evaluate neurology residents at the University of Rochester.
- Research Initiatives and Conferences: This section includes information about the resident research experience and descriptions of several of the neurology conference series.
- Inpatient Rotation Guidelines: This section contains guidelines for the neurology residents for all of the core inpatient rotations.
- Elective Guidelines: This section contains guidelines for the neurology residents for departmental and inter-departmental electives.
- Outpatient Rotation Guidelines: This section contains guidelines for the resident firms and the Chief Resident Faculty Practice clinics.
- Policies: This section contains all of the specific policies that involve neurology residents, as mandated by the ACGME.
- Bibliography: This section contains a bibliography for adult neurology and should be used as a guide to reading for neurology residents.
- Schedules: The final section of this handbook contains all of the rotation and clinic schedules for neurology residents and faculty for the current academic year.

The Residency Review Committee for Neurology mandates that we collate all of this information and distribute it annually to all clinical faculty and residents in our department. All neurology faculty and residents should be familiar with the goals and objectives, rotation guidelines and policies included in this handbook. A thorough understanding of these goals, guidelines and policies will help insure that our residency program runs smoothly and meets its mission of excellence in patient care, education and research.

Ralph F. Józefowicz, MD
Residency Program Director
Department of Neurology

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GOALS OF THE NEUROLOGY RESIDENCY TRAINING PROGRAM

Overall Competency-Based Program Goals

Patient Care

Residents must be able to provide patient care that is compassionate, appropriate, and effective for the treatment of health problems and the promotion of health.

Residents must demonstrate competency in the management of outpatients and inpatients with neurological disorders across the lifespan, including those who require emergency and intensive care.

Medical Knowledge

Residents 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.

Residents must demonstrate understanding about major developments in the clinical sciences relating to neurology, and must demonstrate understanding of the basic sciences through application of this knowledge in the care of their patients and by passing clinical skills examinations.

Practice-based Learning and Improvement

Residents 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. Residents are expected to develop skills and habits to be able to meet the following goals:

1. Identify strengths, deficiencies, and limits in one's knowledge and expertise
2. Set learning and improvement goals
3. Identify and perform appropriate learning activities
4. Systematically analyze practice using quality improvement methods, and implement changes with the goal of practice improvement
5. Incorporate formative evaluation feedback into daily practice
6. Locate, appraise, and assimilate evidence from scientific studies related to their patients' health problems
7. Use information technology to optimize learning
8. Participate in the education of patients, families, students, residents and other health professionals
9. Supervise other residents, medical students, nurses, and other health care personnel

Interpersonal and Communication Skills

Residents must demonstrate interpersonal and communication skills that result in the effective exchange of information and collaboration with patients, their families, and health professionals. Residents are expected to:

1. Communicate effectively with patients, families, and the public, as appropriate, across a broad range of socioeconomic and cultural backgrounds
2. Communicate effectively with physicians, other health professionals, and health related agencies
3. Work effectively as a member or leader of a health care team or other professional group
4. Act in a consultative role to other physicians and health professionals
5. Maintain comprehensive, timely, and legible medical records

Professionalism

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

1. Compassion, integrity, and respect for others
2. Responsiveness to patient needs that supersedes self-interest
3. Respect for patient privacy and autonomy
4. Accountability to patients, society and the profession
5. Sensitivity and responsiveness to a diverse patient population, including but not limited to diversity in gender, age, culture, race, religion, disabilities, and sexual orientation

Systems-based Practice

Residents 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. Residents are expected to:

1. Work effectively in various health care delivery settings and systems relevant to their clinical specialty
2. Coordinate patient care within the health care system relevant to their clinical specialty
3. Incorporate considerations of cost awareness and risk-benefit analysis in patient and/or population-based care as appropriate
4. Advocate for quality patient care and optimal patient care systems
5. Work in inter-professional teams to enhance patient safety and improve patient care quality
6. Participate in identifying system errors and implementing potential systems solutions

Overall Program Goals

1. To prepare the physician for the independent practice of clinical neurology by providing training based on supervised clinical work with increasing responsibility for outpatients and inpatients. *PC*
2. To provide a foundation of organized instruction in the basic neurosciences. *MK*
3. To provide an opportunity to develop and maintain an investigative career in the basic neurosciences and in clinical neurology. *MK*
4. To acquire an appreciation for the history of neurology and the rich traditions of our specialty. *SBP*
5. To acquire the many personal attributes necessary for becoming an effective physician, including honesty, compassion, reliability, and effective communication skills. *P, ICS*

Goals for the First Year

1. To elicit an accurate neurologic history and to perform and interpret a neurological examination on patients presenting with neurological symptoms. *PC*
2. To appropriately order laboratory studies in neurology: EEG, EMG, nerve conduction studies, evoked potentials, lumbar puncture, CT and MR imaging of the brain and spinal cord. *PC*
3. To appropriately evaluate and treat common neurological problems:
   - Neurological Emergencies: Coma and mental status changes, stroke, seizures. *MK, PC*
   - Common outpatient neurological problems: Headache, dizziness, back and neck pain, peripheral neuropathies. *MK, PC*
4. To demonstrate effective written and oral communication skills. *ICS*

Goals for the Second Year

1. To perfect the resident's history-taking skills and neurologic exam in infants and children. *PC*
2. To diagnose, evaluate and treat multiple sclerosis, Parkinson's disease and other movement disorders, neuromuscular diseases, dementia, central nervous system infections, and tumors of the nervous system. *PC, MK*
3. To interrelate abnormalities of the nervous system with normal growth and development of the nervous system. *PC*
4. To provide the resident with an exposure to and a forum for discussion of a wide variety of neurologic problems in adults and pediatric patients. *PBLI*

Goals for the Third Year

1. To independently evaluate and manage patients presenting with a wide variety of inpatient and outpatient neurological disorders. *PC*
2. To perform and interpret EMG's, Nerve Conduction Studies, EEG's and evoked potential testing. *PC, MK*
3. To supervise junior residents on the inpatient neurology services at Strong Memorial Hospital. *PBLI, SBP*
4. To participate as a laboratory instructor in the Medical Student Nervous System Course. *PBLI*

Goals for the SMH General Neurology Rotation

1. To develop skills in obtaining complete neurological histories, in performing accurate neurological examinations, and in selecting appropriate therapies on a general neurology consultation service in a tertiary referral center. *PC*
2. To acquire in-depth knowledge of major categories of neurological disease, with special emphasis on epilepsy, coma and mental status changes, movement disorders, neuromuscular disorders, demyelinating disorders, infections of the nervous system, tumors of the nervous system, head trauma and dementia. *MK*
3. To gain experience in the appropriate ordering and interpretation of neurodiagnostic tests, including head and spine CT and MR scans, EEG, Evoked Potential Testing, Neurovascular testing, and EMG and nerve conduction studies. *PC, SBP*
4. To develop and improve written and oral communication skills. *ICS*

Goals for the SMH Stroke Rotation

1. To recognize the signs and symptoms of acute ischemic stroke. *PC*
2. To utilize current treatment guidelines for ischemic stroke, especially concerning blood pressure management, anticoagulation, and use of thrombolytic therapy. *MK*
3. To identify common risk factors for stroke. *MK*
4. To utilize current recommendations for the use of anti-platelet agents and oral anti-coagulants in stroke prevention. *MK*
5. To utilize strategies for preventing and treating increased intracranial pressure. *MK*
6. To perform and record the National Institutes of Health Stroke Scale. *PC, SBP*

Goals for the SMH Chief Resident Rotation

1. To become independent in the evaluation and management of patients presenting with a wide variety of inpatient and outpatient neurological disorders. *PC*
2. To gain experience supervising junior residents on the inpatient neurology services at Strong Memorial Hospital. *PBLI, SBP*
3. To develop administrative skills with respect to organizing and scheduling teaching conferences for the department of neurology. *SBP*

Key to Core Competencies:

PK Patient care
MK Medical knowledge
PBLI Practice-based learning and improvement
ICS Interpersonal and communication skills
P Professionalism
SBP Systems-based practice

Goals for other rotations and electives are included with the specific rotation guidelines below.

ACGME NEW ACCREDITATION SYSTEM

At its February 1999 meeting, the ACGME endorsed general competencies for residents in the areas of

- Patient care
- Medical knowledge
- Practice-based learning and improvement
- Interpersonal and communication skills
- Professionalism
- Systems-based practice

Identification of general competencies is the first step in a long-term effort designed to emphasize educational outcome assessment in residency programs and in the accreditation process. As of July 2002, the ACGME's Residency Review and Institutional Review Committees have incorporated the general competencies into their Requirements. The following Neurology Core Competencies were developed by the American Board of Psychiatry and Neurology, and represent what each graduate of the adult neurology residency training program at the University of Rochester is expected to learn by the end of his/her residency. All evaluation instruments are keyed to these six core competencies.

In 2013, the ACGME adopted the New Accreditation System (NAS), effectively replacing the previous system of five-year site visits to residency programs that was focused on process and not outcomes. A key feature of the NAS will be the Milestones, which are a set of competency-based developmental outcomes (e.g., knowledge, skills, attitudes, and performance) that can be demonstrated progressively by residents and fellows from the beginning of their education through graduation to the unsupervised practice of their specialties. Milestones were developed for each specialty by committees consisting of representatives from the Specialty Boards, Residency Review Committees, Program Director Associations, and Resident and Fellow representatives. Residency programs will now undergo 10-year self-study visits that replace the traditional five-year site visits. In addition, each hospital that sponsors residency programs will undergo a Clinical Learning Environment Review (CLER) visit every 18 months, which will focus on patient safety, quality improvement, and resident work hours.

AMERICAN BOARD OF PSYCHIATRY & NEUROLOGY
NEUROLOGY CORE COMPETENCIES

I. Patient Care and Procedural Skills

A. Neurologists shall demonstrate the following abilities:

1. To perform and document a relevant history and examination on culturally diverse patients to include as appropriate:
    a. Chief complaint
    b. History of present illness
    c. Past medical history
    d. A comprehensive review of systems
    e. A family history
    f. A sociocultural history
    g. A developmental history (especially for children)
    h. A situationally germane general and neurologic examination
2. To delineate appropriate differential diagnoses
3. To evaluate, assess, and recommend effective management of patients

B. Based on a comprehensive neurological assessment, neurologists shall demonstrate the following abilities:

1. To determine:
    a. If a patient's symptoms are the result of a disease affecting the central and/or peripheral nervous system or are of another origin (e.g., of a systemic, psychiatric, or psychosomatic illness)
    b. A formulation, differential diagnosis, laboratory investigation, and management plan
2. To develop and maintain the technical skills to:
    a. Perform comprehensive neurological examination
    b. Perform screening psychiatric examination
    c. Perform lumbar puncture, edrophonium, and caloric testing
    d. Identify and describe abnormalities seen in common neurological disorders on radiographic testing, including plain films, myelography, angiography, CT, isotope, and MRI
    e. Evaluate the application and relevance of investigative procedures and interpretation in the diagnosis of neurological disease, including the following:
        i. Electroencephalogram
        ii. Motor and nerve conduction studies
        iii. Electromyography

iv. Evoked potentials

v. Polysomnography

vi. Autonomic function testing

vii. Electronystagmogram

viii. Audiometry

ix. Perimetry

x. Psychometrics

xi. CSF analysis

xii. Imaging with ultrasound (Duplex, transcranial Doppler)

xiii. Radiographic studies as outlined above

f. Identify and describe gross and microscope specimens taken from the normal nervous system and from patients with major neurologic disorders

II. Medical Knowledge

A. Neurologists shall demonstrate the following:

1. Knowledge of major disorders, including considerations relating to age, gender, race, and ethnicity, based on the literature and standards of practice. This knowledge shall include:

   a. The epidemiology of the disorder

   b. The etiology of the disorder, including medical, genetic, and sociocultural factors

   c. The phenomenology of the disorder

   d. An understanding of the impact of physical illness on the patient's functioning

   e. The experience, meaning, and explanation of the illness for the patient and family, including the influence of cultural factors and culture-bound syndromes

   f. Effective treatment strategies

   g. Course and prognosis

2. Knowledge of healthcare delivery systems, including patient and family counseling

3. Systems-based Practice

4. Knowledge of the application of ethical principles in delivering medical care

5. Ability to reference and utilize electronic systems to access medical, scientific, and patient information

B. Neurologists shall demonstrate knowledge of the following:

1. Basic neuroscience that is critical to the practice of neurology

2. Pathophysiology and treatment of major psychiatric and neurological disorders and familiarity with the scientific basis of neurology, including:
    a. Neuroanatomy
    b. Neuropathology
    c. Neurochemistry
    d. Neurophysiology
    e. Neuropharmacology
    f. Neuroimmunology/neurovirology
    g. Neurogenetics/molecular neurology and neuroepidemiology
    h. Neuroendocrinology
    i. Neuroimaging
    j. Neuro-ophthalmology
    k. Neuro-otology
    l. Child neurology
    m. Geriatric neurology
    n. Interventional neurology (basic principles only)
3. Neurologic disorders and diseases across the lifespan, including treatment for the following:
    a. Dementia and behavioral neurology disorders
    b. Epilepsy and related disorders
    c. Neuromuscular disorders
    d. Demyelinating and dysmyelinating disorders of the central nervous system
    e. Cerebrovascular disorders
    f. Infectious diseases of the nervous system
    g. Neoplastic disorders and tumors of the nervous system
    h. Nervous system trauma
    i. Toxic and metabolic disorders of the nervous system
    j. Acute, chronic pain
    k. Sleep disorders
    l. Changes in mental state second to therapy
    m. Critical care and emergency neurology
    n. Coma and brain death
    o. Headache and facial pain
    p. Movement disorders, including abnormalities caused by drugs
    q. End of life care and palliative care

r. Neurologic disorders associated with vitamin deficiency or excess

4. Patient evaluation and treatment selection, including:
    a. The nature of patients' histories and physical findings and the ability to correlate the findings with a probable localization for neurologic dysfunction
    b. Probable diagnoses and differential diagnoses
        i. In adults
        ii. In children
    c. Planning for evaluation and management
    d. Potential risks and benefits of potential therapies, including surgical procedures
5. Psychiatry, including:
    a. Psychopathology, epidemiology, diagnostic criteria, and clinical course for common psychiatric disorders, including
        i. Disorders usually first diagnosed in infancy, childhood, or adolescence
        ii. Schizophrenic and other psychotic disorders
        iii. Mood disorders
        iv. Anxiety disorders
        v. Somatoform disorders
        vi. Factitious disorders
        vii. Dissociative disorders
        viii. Sexual and gender identity disorders
        ix. Eating disorders
        x. Adjustment disorders
        xi. Delirium, dementia, amnestic, and other cognitive disorders
        xii. Mental disorders due to general medical conditions
        xiii. Neurologic presentations following emotional, sexual, and/or physical abuse
        xiv. Substance-related disorders
        xv. Disorders of higher cortical function
    b. Psychopharmacology
        i. Major drugs used for treatment, e.g., antipsychotics, antidepressants, antianxiety agents, mood stabilizers
        ii. Side effects of drugs used for treatment, e.g., acute, motor, neuroleptic malignant syndrome

iii. Iatrogenic disorders in psychiatry and neurology, changes in mental status, and movement disorders

iv. Nonpharmacologic treatments and management

6. Employment of principles of quality improvement in practice

III. Interpersonal and Communications Skills

A. Neurologists shall demonstrate the following competencies:

1. To listen to and understand patients and to attend to nonverbal communication
2. To communicate effectively with patients using verbal, nonverbal, and written skills as appropriate
3. To develop and maintain a therapeutic alliance with patients by instilling feelings of trust, honesty, openness, rapport, and comfort in the relationship with physicians
4. To partner with patients to develop an agreed upon healthcare management plan
5. To transmit information to patients in a clear and meaningful fashion
6. To understand the impact of physicians' own feelings and behavior so that it does not interfere with appropriate treatment
7. To communicate effectively and work collaboratively with allied healthcare professionals and with other professionals involved in the lives of patients and families
8. To educate patients, their families, and professionals about medical, psychosocial, and behavioral issues
9. To preserve patient confidentiality

B. Neurologists shall demonstrate the ability to obtain, interpret, and evaluate consultations from other medical specialties. This shall include:

1. Knowing when to solicit consultation and having sensitivity to assess the need for consultation
2. Formulating and clearly communicating the consultation question
3. Discussing the consultation findings with the consultant
4. Discussing the consultation findings with the patient and family

C. Neurologists shall serve as an effective consultant to other medical specialists, and community agencies by demonstrating the abilities to:

1. Communicate effectively with the requesting party to refine the consultation question
2. Maintain the role of consultant
3. Communicate clear and specific recommendations
4. Respect the knowledge and expertise of the requesting professionals

D. Neurologists shall demonstrate the ability to communicate effectively with patients and their families by:

   1. Matching all communication to the educational and intellectual levels of patients and their families
   2. Demonstrating sociocultural sensitivity to patients and their families
   3. Providing explanations of psychiatric and neurological disorders and treatment that are jargon-free and geared to the educational/intellectual levels of patients and their families
   4. Providing preventive education that is understandable and practical
   5. Respecting patients' cultural, ethnic, religious, and economic backgrounds
   6. Developing and enhancing rapport and a working alliance with patients and their families
   7. Ensuring that the patient and/or family have understood the communication
   8. Responding promptly to electronic communications when used as a communication method agreed upon by neurologists and their patients and patients' families

E. Neurologists shall maintain up-to-date medical records and write legible prescriptions. These records must capture essential information while simultaneously respecting patient privacy, and they must be useful to health professionals outside neurology.

F. Neurologists shall demonstrate the ability to effectively lead a multidisciplinary treatment team, including being able to:

   1. Listen effectively
   2. Elicit needed information from team members
   3. Integrate information from different disciplines
   4. Manage conflict
   5. Clearly communicate an integrated treatment plan

G. Neurologists shall demonstrate the ability to communicate effectively with patients and their families while respecting confidentiality. Such communication may include:

   1. The results of the assessment
   2. Use of informed consent when considering investigative procedures
   3. Genetic counseling, palliative care, and end-of-life issues when appropriate
   4. Consideration and compassion for the patient in providing accurate medical information and prognosis
   5. The risks and benefits of the proposed treatment plan, including possible side-effects of medications and/or complications of non-pharmacologic treatments
   6. Alternatives (if any) to the proposed treatment plan

7. Appropriate education concerning the disorder, its prognosis, and prevention strategies

IV. Practice-Based Learning and Improvement

A. Neurologists shall recognize limitations in their own knowledge base and clinical skills, and understand and address the need for lifelong learning.

B. Neurologists shall demonstrate appropriate skills for obtaining and evaluating up-to-date information from scientific and practice literature and other sources to assist in the quality care of patients. This shall include, but not be limited to:

1. Use of medical libraries
2. Use of information technology, including Internet-based searches and literature databases
3. Use of drug information databases
4. Active participation, as appropriate, in educational courses, conferences, and other organized educational activities both at the local and national levels

C. Neurologists shall evaluate caseload and practice experience in a systematic manner. This may include:

1. Case-based learning
2. Use of best practices through practice guidelines or clinical pathways
3. Review of patient records
4. Obtaining evaluations from patients, e.g., outcomes and patient satisfaction
5. Employment of principles of quality improvement in practice
6. Obtaining appropriate supervision and consultation
7. Maintaining a system for examining errors in practice and initiating improvements to eliminate or reduce errors

D. Neurologists shall demonstrate the ability to critically evaluate relevant medical literature. This may include:

1. Using knowledge of common methodologies employed in neurologic research
2. Researching and summarizing a particular problem that derives from their own caseloads

E. Neurologists shall demonstrate the abilities to:

1. Review and critically assess scientific literature to determine how quality of care can be improved in relation to one's practice, e.g., reliable and valid assessment techniques, treatment approaches with established effectiveness, practice parameter adherence. Within this aim, neurologists shall be able to assess the generalizability or applicability of research findings to one’s patients in relation to their sociodemographic and clinical characteristics
2. Develop and pursue effective remediation strategies that are based on critical review of the scientific literature

V. Professionalism

A. Neurologists shall demonstrate responsibility for their patients' care, including:

1. Responding to communication from patients and health professionals in a timely manner
2. Establishing and communicating back-up arrangements, including how to seek emergent and urgent care when necessary
3. Using medical records for appropriate documentation of the course of illness and its treatment
4. Providing coverage if unavailable, e.g. when out of town or on vacation
5. Coordinating care with other members of the medical and/or multidisciplinary team
6. Providing for continuity of care, including appropriate consultation, transfer, or referral if necessary

B. Neurologists shall demonstrate ethical behavior, integrity, honesty, compassion, and confidentiality in the delivery of care, including matters of informed consent/assent, professional conduct, and conflict of interest.

C. Neurologists shall demonstrate respect for patients and their families, and their colleagues as persons, including their ages, cultures, disabilities, ethnicities, genders, socioeconomic backgrounds, religious beliefs, political leanings, and sexual orientations.

D. Neurologists shall demonstrate understanding of and sensitivity to end of life care and issues regarding provision of care and clinical competence.

E. Neurologists shall review their professional conduct and remediate when appropriate.

F. Neurologists shall participate in the review of the professional conduct of their colleagues.

VI. Systems-Based Practice

A. Neurologists shall have a working knowledge of the diverse systems involved in treating patients of all ages, and understand how to use the systems as part of a comprehensive system of care in general and as part of a comprehensive, individualized treatment plan. This shall include the:

1. Evaluation and implementation, where indicated, of the use of practice guidelines
2. Ability to access community, national, and allied health professional resources that may enhance the quality of life of patients with chronic neurologic and psychiatric illnesses
3. Demonstration of the ability to lead and work within health care teams needed to provide comprehensive care for patients with neurologic and psychiatric disease and respect professional boundaries

4. Demonstration of skills for the practice of ambulatory medicine, including time management, clinical scheduling, and efficient communication with referring physicians
5. Use of appropriate consultation and referral mechanisms for the optimal clinical management of patients with complicated medical illness
6. Demonstration of awareness of the importance of adequate cross-coverage
7. Use of accurate medical data in the communication with and effective management of patients

B. In the community system, neurologists shall:
   1. Recognize the limitation of healthcare resources and demonstrate the ability to act as an advocate for patients within their sociocultural and financial constraints
   2. Demonstrate knowledge of the legal aspects of neurologic diseases as they impact patients and their families
   3. Demonstrate an understanding of risk management.

C. Neurologists shall demonstrate knowledge of different health care systems, including:
   1. Working within the system of care to maximize cost effective utilization of resources
   2. Participating in utilization review communications and, when appropriate, advocating for quality patient care
   3. Educating patients concerning such systems of care

D. Neurologists shall demonstrate knowledge of community systems of care and assist patients to access appropriate care and other support services. This requires knowledge of treatment settings in the community, which include ambulatory, consulting, acute care, partial hospital, skilled care, rehabilitation, nursing homes and home care facilities, substance abuse facilities, and hospice organizations. Neurologists shall demonstrate knowledge of the organization of care in each relevant delivery setting and the ability to integrate the care of patients across such settings.

E. Neurologists shall be aware of safety issues, including acknowledging and remediating medical errors, should they occur.

[1]Cultural diversity includes issues of race, gender, language, age, country of origin, sexual orientation, religious/spiritual beliefs, sociocultural class, educational/intellectual levels, and physical disability. Working with a culturally diverse population requires knowledge about cultural factors in the delivery of health care. For the purposes of this document, all patient and peer populations are to be considered culturally diverse.

[2]For the purposes of this document, “family” is defined as those having a biological or otherwise meaningful relationship with the patient. Significant others are to be defined from the patient’s point of view.

The ACGME Milestones Project

As the ACGME began to move toward continuous accreditation, specialty groups developed outcomes-based milestones as a framework for determining resident and fellow performance within the six ACGME Core Competencies.

What are Milestones?
Simply defined, a milestone is a significant point in development. For accreditation purposes, the Milestones are competency-based developmental outcomes (e.g., knowledge, skills, attitudes, and performance) that can be demonstrated progressively by residents and fellows from the beginning of their education through graduation to the unsupervised practice of their specialties.

Who developed the Milestones?
Each specialty's Milestone Working Group was co-convened by the ACGME and relevant American Board of Medical Specialties (ABMS) specialty board(s), and was composed of ABMS specialty board representatives, program director association members, specialty college members, ACGME Review Committee members, residents, fellows, and others.

Why Milestones?
First and foremost, the Milestones are designed to help all residencies and fellowships produce highly competent physicians to meet the health and health care needs of the public. To this end, the

Milestones serve important purposes in program accreditation:
- Allow for continuous monitoring of programs and lengthening of site visit cycles
- Public Accountability – report at a national level on aggregate competency outcomes by specialty
- Community of practice for evaluation and research, with focus on continuous improvement of graduate medical education

For educational (residency/fellowship) programs, the Milestones will:
- Provide a rich descriptive, developmental framework for clinical competency committees
- Guide curriculum development of the residency or fellowship
- Support better assessment practices
- Enhance opportunities for early identification of struggling residents and fellows

And for residents and fellows, the Milestones will:
- Provide more explicit and transparent expectations of performance
- Support better self-directed assessment and learning
- Facilitate better feedback for professional development

How will the Milestones be used by the ACGME?
Residents'/fellows' performance on the Milestones will become a source of specialty-specific data for the specialty Review Committees to use in assessing the quality of residency and fellowship programs and for facilitating improvements to program curricula and resident performance if and when needed. The Milestones will also be used by the ACGME to demonstrate accountability of the effectiveness of graduate medical education within ACGME-accredited programs in meeting the needs of the public.

Milestone Reporting

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.

Milestones are arranged into numbered levels. Tracking from Level 1 to Level 5 is synonymous with moving from novice to expert. These levels do not correspond with post-graduate year of education. Selection of a level implies that the resident substantially demonstrates the milestones in that level, as well as those in lower levels.

Level 1: The resident demonstrates milestones expected of a resident who has completed his or her first post-graduate year of education.

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 as 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.

History — Patient Care				
Level 1	Level 2	Level 3	Level 4	Level 5
• Obtains a neurologic history	• Obtains a complete and relevant neurologic history	• Obtains a complete, relevant, and organized neurologic history	• Efficiently obtains a complete, relevant, and organized neurologic history	• Efficiently obtains a complete, relevant, and organized neurologic history incorporating subtle verbal and non-verbal cues
☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐				
Comments: **Not yet rotated** ☐				

Neurological Exam — Patient Care				
Level 1	Level 2	Level 3	Level 4	Level 5
• Performs complete neurological exam	• Performs complete neurological exam accurately	• Performs a relevant neurological exam incorporating some additional appropriate maneuvers • Visualizes papilledema • Accurately performs a neurological exam on the comatose patient	• Efficiently performs a relevant neurological exam accurately incorporating all additional appropriate maneuvers • Accurately performs a brain death examination	• Consistently demonstrates mastery in performing a complete, relevant, and organized neurological exam
☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐				
Comments: **Not yet rotated** ☐				

Management/Treatment — Patient Care				
Level 1	Level 2	Level 3	Level 4	Level 5
• Demonstrates basic knowledge of management of patients with neurologic disease	• Discusses general approach to initial treatment of common neurologic disorders, including risks and benefits of treatment • Identifies neurologic emergencies	• Individualizes treatment for specific patients • Initiates management for neurologic emergencies and triages patient to appropriate level of care • Appropriately requests consultations from non-neurologic care providers for additional evaluation and management	• Adapts treatment based on patient response • Identifies and manages complications of therapy • Independently directs management of patients with neurologic emergencies • Appropriately requests consultations from a neurologic subspecialist for additional evaluation or management	• Demonstrates sophisticated knowledge of treatment subtleties and controversies
☐	☐	☐	☐	☐ ☐ ☐ ☐ ☐
Comments:				**Not yet rotated** ☐

Movement Disorders — Patient Care				
Level 1	Level 2	Level 3	Level 4	Level 5
• Recognizes when a patient may have a movement disorder	• Identifies movement disorder phenomenology and categories (hypokinetic and hyperkinetic)	• Diagnoses and manages common movement disorders • Identifies movement disorder emergencies	• Diagnoses uncommon movement disorders • Appropriately refers a movement disorder patient for a surgical evaluation or other interventional therapies • Manages movement disorders emergencies	• Manages uncommon movement disorders • Engages in scholarly activity in movement disorders (e.g., teaching, research)
☐	☐	☐	☐	☐ ☐ ☐ ☐ ☐
Comments:				**Not yet rotated** ☐

Neuromuscular Disorders — Patient Care				
Level 1	Level 2	Level 3	Level 4	Level 5
• Recognizes when a patient may have a neuromuscular disorder	• Identifies patterns of neuromuscular disease (e.g., anterior horn cell disease, nerve root, plexus, peripheral nerve, neuromuscular junction, muscle) • Identifies neuromuscular disorder emergencies • Orders NCS (nerve conductive study)/EMG (electromyography) testing appropriately	• Diagnoses and manages common neuromuscular disorders • Manages neuromuscular disorder emergencies • Interprets results of NCS/EMG testing in context of clinical presentation	• Diagnoses uncommon neuromuscular disorders • Recognizes when tissue biopsy is warranted	• Manages uncommon neuromuscular disorders • Engages in scholarly activity in neuromuscular disorders (e.g., teaching, research)
☐	☐	☐	☐	☐ ☐ ☐ ☐ ☐
Comments:				**Not yet rotated** ☐

Cerebrovascular Disorders — Patient Care				
Level 1	Level 2	Level 3	Level 4	Level 5
• Recognizes when a patient may have a cerebrovascular disorder	• Describes stroke syndromes and etiologic subtypes • Identifies cerebrovascular emergencies • Lists indications and contraindications for intravenous thrombolytic therapy	• Identifies specific mechanism of patient's cerebrovascular disorder • Appropriately refers for interventional or surgical evaluation • Manages common cerebrovascular disorders including appropriate use of thrombolytics	• Diagnoses uncommon cerebrovascular disorders	• Manages uncommon cerebrovascular disorders • Engages in scholarly activity in cerebrovascular disorders (e.g., teaching, research)
☐	☐	☐	☐	☐ ☐ ☐ ☐ ☐
Comments:				**Not yet rotated** ☐

Cognitive/Behavioral Disorders — Patient Care				
Level 1	Level 2	Level 3	Level 4	Level 5
• Recognizes when a patient may have a cognitive/behavioral disorder	• Identifies common cognitive/behavioral disorders	• Diagnoses and manages common cognitive/behavioral disorders, including cognitive effects of traumatic brain injury • Manages behavioral complications of cognitive/behavioral disorders • Appropriately refers for neuropsychological testing in evaluating patients with cognitive/behavioral disorders	• Diagnoses and manages uncommon cognitive/behavioral disorders	• Engages in scholarly activity in cognitive/behavioral disorders (e.g., teaching, research) • Demonstrates sophisticated knowledge of advanced diagnostic testing and controversies
☐	☐	☐	☐	☐ ☐ ☐ ☐ ☐
Comments:				**Not yet rotated** ☐

Demyelinating Disorders — Patient Care				
Level 1	Level 2	Level 3	Level 4	Level 5
• Recognizes when a patient may have a demyelinating disorder	• Diagnoses and manages common demyelinating disorders	• Recognizes uncommon demyelinating disorders • Manages acute presentations of demyelinating disorders	• Diagnoses uncommon demyelinating disorders	• Manages uncommon demyelinating disorders • Engages in scholarly activity in demyelinating disorders (e.g., teaching, research)
☐	☐	☐	☐	☐ ☐ ☐ ☐ ☐
Comments:				**Not yet rotated** ☐

Epilepsy — Patient Care				
Level 1	Level 2	Level 3	Level 4	Level 5
• Recognizes when a patient may have had a seizure	• Identifies epilepsy phenomenology, and classification of seizures and epilepsies • Diagnoses convulsive status epilepticus	• Diagnoses and manages common seizure disorders and provides antiepileptic drug treatment • Diagnoses non-convulsive status epilepticus • Manages convulsive and non-convulsive status epilepticus	• Diagnoses uncommon seizure disorders • Appropriately refers an epilepsy patient for surgical evaluation or other interventional therapies	• Manages uncommon seizure disorders • Engages in scholarly activity in epilepsy (e.g., teaching, research)
☐	☐	☐	☐	☐ ☐ ☐ ☐ ☐
Comments:				**Not yet rotated** ☐

Headache Syndromes — Patient Care				
Level 1	Level 2	Level 3	Level 4	Level 5
• Recognizes common headache syndromes	• Diagnoses and manages common headache syndromes • Identifies headache emergencies	• Recognizes uncommon headache syndromes • Diagnoses and manages headache emergencies	• Diagnoses and manages uncommon headache syndromes	• Engages in scholarly activity in headache syndromes (e.g., teaching, research)
☐	☐	☐	☐	☐ ☐ ☐ ☐ ☐
Comments:				**Not yet rotated** ☐

Neurologic Manifestations of Systemic Disease — Patient Care				
Level 1	Level 2	Level 3	Level 4	Level 5
• Recognizes when a patient's neurologic symptoms may be due to systemic illness • Identifies neurologic emergencies due to systemic disease	• Diagnoses and manages common neurologic manifestations of systemic diseases • Diagnoses and manages neurologic emergencies due to systemic disease	• Recognizes uncommon neurologic manifestations of systemic disease	• Diagnoses and manages uncommon neurologic manifestations of systemic disease	• Engages in scholarly activity in neurologic manifestations of systemic disease (e.g., teaching, research)
☐	☐	☐	☐	☐ ☐ ☐ ☐ ☐
Comments:				**Not yet rotated** ☐

Child Neurology for the Adult Neurologist — Patient Care				
Level 1	Level 2	Level 3	Level 4	Level 5
• Obtains basic neurologic history of infants and children	• Lists the elements of a neurological examination of infants and children • Recognizes broad patterns of neurologic disease in infants and children • Lists normal developmental milestones	• Obtains a complete and age-appropriate neurologic history of infants and children • Performs a complete and age-appropriate neurological examination of infants and children • Diagnoses common child neurologic disorders	• Initiates management of common childhood neurologic disorders • Initiates management of common neurologic emergencies in infants and children	• Diagnoses uncommon childhood neurologic disorders
☐	☐	☐	☐	☐ ☐ ☐ ☐ ☐
Comments:				**Not yet rotated** ☐

Neuro-Oncology — Patient Care				
Level 1	Level 2	Level 3	Level 4	Level 5
• Recognizes common clinical presentations of a brain or spine mass	• Identifies neuro-oncological emergencies and initiates management	• Provides differential diagnosis of brain or spine mass • Identifies neurologic complications due to cancer or the treatment of cancer	• Appropriately refers for advanced testing, including biopsy • Manages neurologic complications due to cancer or the treatment of cancer	• Engages in scholarly activity in neuro-oncology (e.g., teaching, research)
☐	☐	☐	☐	☐ ☐ ☐ ☐ ☐
Comments:				**Not yet rotated** ☐

Psychiatry for the Adult Neurologist — Patient Care				
Level 1	Level 2	Level 3	Level 4	Level 5
• Recognizes when a patient may have a psychiatric disorder • Obtains an appropriate psychiatric history	• Identifies common psychiatric disorders • Identifies psychiatric co-morbidities in patients with a neurologic disease	• Recognizes when a patient's neurological symptoms are of psychiatric origin • Recognizes when a patient's psychiatric symptoms are of neurologic origin • Identifies major side effects of psychiatric medications	• Diagnoses common psychiatric disorders • Initiates management of psychiatric co-morbidities in patients with a neurologic disease	• Engages in scholarly activity in psychiatric disorders (e.g., teaching, research)
☐	☐	☐	☐	☐ ☐ ☐ ☐ ☐
Comments:				**Not yet rotated** ☐

Neuroimaging — Patient Care				
Level 1	Level 2	Level 3	Level 4	Level 5
• Identifies basic neuroanatomy on brain magnetic resonance (MR) and computerized tomography (CT)	• Recognizes emergent imaging findings on brain MR and CT • Identifies basic neuroanatomy on spine MR and CT • Identifies major vascular anatomy on angiography	• Describes abnormalities of the brain and spine on MR and CT • Identifies major abnormalities on angiography	• Interprets MR and CT neuroimaging of brain and spine	• Identifies subtle abnormalities on angiography • Interprets carotid and transcranial ultrasound
☐	☐	☐	☐	☐ ☐ ☐ ☐ ☐
Comments:				**Not yet rotated** ☐

Electroencephalogram (EEG) — Patient Care				
Level 1	Level 2	Level 3	Level 4	Level 5
• Explains an EEG procedure in non-technical terms	• Uses appropriate terminology related to EEG (e.g., montage, amplitude, frequency)	• Describes normal EEG features of wake and sleep states • Recognizes EEG patterns of status epilepticus • Recognizes common EEG artifacts	• Interprets common EEG abnormalities and creates a report • Recognizes normal EEG variants	• Interprets uncommon EEG abnormalities • Describes normal and some abnormal EEG features of wake and sleep states in children
☐	☐	☐	☐	☐ ☐ ☐ ☐ ☐
Comments:				**Not yet rotated** ☐

Nerve Conduction Studies (NCS)/Electromyography (EMG) — Patient Care				
Level 1	Level 2	Level 3	Level 4	Level 5
• Explains an NCS/EMG procedure in nontechnical terms	• Uses appropriate terminology related to NCS/EMG	• Describes NCS/EMG data • Lists NCS/EMG findings in common disorders	• Interprets NCS/EMG data in common disorders • Describes common pitfalls of NCS/EMG • Formulates basic NCS/EMG plan for specific, common clinical presentations	• Performs, interprets, and creates a report for NCS/EMG
☐	☐	☐	☐	☐ ☐ ☐ ☐ ☐
Comments:				**Not yet rotated** ☐

Lumbar Puncture — Patient Care				
Level 1	Level 2	Level 3	Level 4	Level 5
• Lists the indications and contraindications for lumbar puncture	• Lists the complications of lumbar puncture and their management	• Performs lumbar puncture under direct supervision	• Performs lumbar puncture without direct supervision	• Performs lumbar puncture on patients with challenging anatomy
☐	☐	☐	☐	☐ ☐ ☐ ☐ ☐
Comments:				**Not yet rotated** ☐

Localization — Medical Knowledge				
Level 1	Level 2	Level 3	Level 4	Level 5
• Attempts to localize lesions within the nervous system • Describes basic neuroanatomy	• Localizes lesions to general regions of the nervous system	• Accurately localizes lesions to specific regions of the nervous system	• Efficiently and accurately localizes lesions to specific regions of the nervous system • Describes advanced neuroanatomy	• Consistently demonstrates sophisticated and detailed knowledge of neuroanatomy in localizing lesions
☐	☐	☐	☐	☐ ☐ ☐ ☐ ☐
Comments:				**Not yet rotated** ☐

Formulation — Medical Knowledge				
Level 1	Level 2	Level 3	Level 4	Level 5
• Summarizes history and exam findings	• Summarizes key elements of history and exam findings • Identifies relevant pathophysiologic categories to generate a broad differential diagnosis	• Synthesizes information to focus and prioritize diagnostic possibilities • Correlates the clinical presentation with basic anatomy of the disorder	• Efficiently synthesizes information to focus and prioritize diagnostic possibilities • Accurately correlates the clinical presentation with detailed anatomy of the disorder • Continuously reconsiders diagnostic differential in response to changes in clinical circumstances • Diagnoses brain death	• Consistently demonstrates sophisticated and detailed knowledge of pathophysiology in diagnosis • Effectively educates others about diagnostic reasoning
☐	☐	☐	☐	☐ ☐ ☐ ☐
Comments:				**Not yet rotated** ☐

Diagnostic Investigation — Medical Knowledge				
Level 1	Level 2	Level 3	Level 4	Level 5
• Demonstrates general knowledge of diagnostic tests in neurology	• Discusses general diagnostic approach appropriate to clinical presentation • Lists risks and benefits of tests to patient	• Individualizes diagnostic approach to the specific patient • Accurately interprets results of common diagnostic tests	• Explains diagnostic yield and cost-effectiveness of testing • Accurately interprets results of less common diagnostic testing • Recognizes indications and implications of genetic testing • Recognizes indications of advanced imaging and other diagnostic studies	• Demonstrates sophisticated knowledge of diagnostic testing and controversies
☐	☐	☐	☐	☐ ☐ ☐ ☐ ☐
Comments:				**Not yet rotated** ☐

Systems thinking, including cost and risk effective practice — Systems-based Practice				
Level 1	Level 2	Level 3	Level 4	Level 5
• Describes basic cost and risk implications of care	• Describes cost and risk benefit ratios in patient care	• Makes clinical decisions that balance cost and risk benefit ratios	• Incorporates available quality measures in patient care	• Engages in scholarly activity regarding cost- and risk-effective practice
☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐				
Comments: **Not yet achieved Level 1** ☐				

Work in inter-professional teams to enhance patient safety — Systems-based Practice				
Level 1	Level 2	Level 3	Level 4	Level 5
• Describes team members' roles in maintaining patient safety	• Identifies and reports errors and near-misses	• Describes potential sources of system failure in clinical care such as minor, major, and sentinel events	• Participates in a team-based approach to medical error analysis	• Engages in scholarly activity regarding error analysis and patient safety
☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐				
Comments: **Not yet achieved Level 1** ☐				

Self-directed learning — Practice-based Learning and Improvement

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

Level 1	Level 2	Level 3	Level 4	Level 5
• Acknowledges gaps in knowledge and expertise	• Incorporates feedback	• Develops an appropriate learning plan based upon clinical experience	• Completes an appropriate learning plan based upon clinical experience	• Engages in scholarly activity regarding practice-based learning and improvement

☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐

Comments:

Not yet achieved Level 1 ☐

Locate, appraise, and assimilate evidence from scientific studies related to the patient's health problems – Practice-based Learning and Improvement

Level 1	Level 2	Level 3	Level 4	Level 5
• Uses information technology to search and access relevant medical information	• Uses scholarly articles and guidelines to answer patient care issues	• Critically evaluates scientific literature	• Incorporates appropriate evidence-based information into patient care • Understands the limits of evidence-based medicine in patient care	• Engages in scholarly activity regarding evidence-based medicine

☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐

Comments:

Not yet achieved Level 1 ☐

Compassion, integrity, accountability, and respect for self and others — Professionalism				
Level 1	Level 2	Level 3	Level 4	Level 5
• Demonstrates compassion, sensitivity, and responsiveness to patients and families • Demonstrates non-discriminatory behavior in all interactions, including diverse and vulnerable populations • Describes effects of sleep deprivation and substance abuse on performance	• Demonstrates appropriate steps to address impairment in self • Consistently demonstrates professional behavior, including dress and timeliness	• Demonstrates compassionate practice of medicine, even in context of disagreement with patient beliefs • Incorporates patients' socio-cultural needs and beliefs into patient care • Demonstrates appropriate steps to address impairment in colleagues	• Mentors others in the compassionate practice of medicine, even in context of disagreement with patient beliefs • Mentors others in sensitivity and responsiveness to diverse and vulnerable populations • Advocates for quality patient care	• Engages in scholarly activity regarding professionalism
☐	☐	☐	☐	☐ ☐ ☐ ☐
Comments:				**Not yet achieved Level 1** ☐

Knowledge about, respect for, and adherence to the ethical principles relevant to the practice of medicine, remembering in particular that responsiveness to patients that supersedes self-interest is an essential aspect of medical practice — Professionalism				
Level 1	Level 2	Level 3	Level 4	Level 5
• Describes basic ethical principles	• Determines presence of ethical issues in practice	• Analyzes and manages ethical issues in straightforward clinical situations	• Analyzes and manages ethical issues in complex clinical situations	• Demonstrates leadership and mentorship on applying ethical principles
☐	☐	☐	☐	☐ ☐ ☐ ☐ ☐
Comments:				**Not yet achieved Level 1** ☐

Relationship development, teamwork, and managing conflict — Interpersonal and Communication Skills				
Level 1	Level 2	Level 3	Level 4	Level 5
• Develops a positive relationship with patients in uncomplicated situations • Actively participates in team-based care	• Manages simple patient/family-related conflicts • Engages patients in shared decision-making	• Manages conflict in complex situations • Uses easy-to-understand language in all phases of communication	• Manages conflict across specialties and systems of care • Leads team-based patient care activities	• Engages in scholarly activity regarding teamwork and conflict management
☐	☐	☐	☐	☐ ☐ ☐ ☐ ☐
Comments:				**Not yet achieved Level 1** ☐

Information sharing, gathering, and technology — Interpersonal and Communication Skills				
Level 1	Level 2	Level 3	Level 4	Level 5
• Effectively communicates during patient hand-overs using a structured communication tool • Completes documentation in a timely fashion • Accurately documents transitions of care	• Effectively communicates during team meetings, discharge planning, and other transitions of care • Educates patients about their disease and management, including risks and benefits of treatment options • Completes all documentation accurately, including use of EHR, to promote patient safety	• Effectively communicates the results of a neurologic consultation in a timely manner • Effectively gathers information from collateral sources when necessary • Demonstrates synthesis, formulation, and thought process in documentation	• Effectively leads family meetings • Effectively and ethically uses all forms of communication • Mentors colleagues in timely, accurate, and efficient documentation	• Develops patient education materials • Engages in scholarly activity regarding interpersonal communication
☐	☐	☐	☐	☐ ☐ ☐ ☐
Comments:				**Not yet achieved Level 1** ☐

DEPARTMENT OF NEUROLOGY
RESIDENT EVALUATION INSTRUMENTS

Valid evaluation systems must employ several different instruments, since no single evaluation instrument can assess each of the six ACGME Core Competencies. The following seven evaluation instruments will be used to evaluate University of Rochester Neurology Residents' mastery of the Core Competencies:

- RITE (Residency In-service Training Examination)
- Clinical Skills Evaluation
- Attending Global Assessment
- Medical Student Assessment
- Chart Review
- Resident Case Log
- 360° Assessment
- Resident Portfolio

Each of these evaluation instruments is described below. In addition, three tables delineate where the six core competencies are taught during the residency program, and how they will be evaluated.

THE RESIDENCY IN-SERVICE TRAINING EXAM (RITE)

Objective

The American Academy Neurology (AAN) Residency In-service Training Examination (RITE) is a self-assessment tool designed to gauge knowledge of neurology and neuroscience, identify areas for potential growth, and provide references and discussions for each.

Examination Features

- A carefully weighted, in-depth examination featuring questions in each of the following areas of neurology and neuroscience:
    - Anatomy
    - Behavioral/Psychiatry
    - Clinical adult
    - Clinical pediatrics
    - Contemporary issues
    - Neuroimaging
    - Pathology
    - Pharmacology/Chemistry
    - Physiology
- Graphics that include:
    - CT scans
    - MR images
    - EEG's
    - Full color pathologic representations
- A review by a committee of recognized experts to ensure:
    - Content clarity
    - Question relevance
    - Topical balance
- A scanning and scoring process conducted by a professional data systems company to ensure the highest quality data collection with an accuracy rate in excess of 99.9 percent
- A downloadable discussion and reference manual accessible to all examinees identifying:
    - Discussions of answer options and rationale for correct responses of all questions
    - References for further information

RITE Scores

- Each examinee receives an individual report of his/her scores, including percent correct, percentile rankings compared to entire examinee population, and percentile rankings compared to others in the same level of training Score reports are delivered electronically and examinees will receive an email with a password to access a secure portal to view their score reports.
- Each program director receives a composite of the individuals' scores in his/her program as well as a summary report with averages for the entire population of examinees

- Scores are released approximately eight weeks after the examination

RITE Content

Questions on the RITE are distributed according to the following blueprint:

Content Area	Number of Items	Percentage of Exam
Clinical Adult	71	18%
Physiology	48	12%
Neuroimaging	57	14%
Behavioral/Psychiatry	52	13%
Pathology	25	6%
Clinical Pediatrics	42	11%
Anatomy	45	11%
Pharmacology/Chemistry	45	11%
Contemporary Issues	15	4%
TOTAL	**400**	**100%**

Test Dates

The examination, which is computer-based, is scheduled for the second Friday and Saturday in February, and is given in two sessions during the same day. Each session lasts three and a half hours.

CLINICAL SKILLS EVALUATION

The Clinical Skills Evaluation is an Objective Structured Clinical Examination (OSCE) that has two components: a patient hour and a vignette hour. The examination takes place on two Saturday mornings in March.

- **Patient Hour:** During the patient hour, each resident is observed taking a history and performing a neurologic examination on a patient, under the direct supervision of two faculty members. The faculty members then quiz the resident as to the differential diagnosis, evaluation and treatment plan. The patient hour incorporates the ABPN Clinical Skills Evaluation of residents (see below) and counts for three of the five required patient evaluations.

- **Vignette Hour:** During the vignette hour, each resident is asked to discuss six short vignettes with two faculty members. One of these vignettes is a child neurology vignette. Some of the vignettes will evaluate the core competencies of professionalism, interpersonal and communication skills, and systems based practice.

- **Evaluation and Feedback:** A numeric grade is assigned by each faculty member for each component of the patient evaluation and for each vignette. Feedback is then provided to each resident by the faculty.

- **Failure:** Residents who fail any hour of the examination must successfully re-take and pass that hour of the examination before the end of the academic year.

ABPN CLINICAL SKILLS EVALUATION OF RESIDENTS

The American Board of Psychiatry and Neurology (ABPN) mandates that demonstration of clinical skills competency is a basic requirement in order to apply for certification in the specialties of neurology and neurology with special qualification in child neurology. Competency in these skills should be achieved during residency. The ABPN requires that residents demonstrate competency in the following areas:

- Medical interviewing
- Neurological examination
- Humanistic qualities, professionalism, and counseling skills

Demonstration of competency in evaluating a minimum of five different patients during residency training is required, as follows:

1. Critical care: One critically ill adult patient with neurological disease (may be in either an intensive care unit or emergency department setting or an emergency consultation from another inpatient service)
2. Neuromuscular: One adult patient with a neuromuscular disease (may be in either an inpatient or outpatient setting)
3. Ambulatory: One adult patient with an episodic disorder, such as seizures or migraine (most likely in an outpatient setting)
4. Neurodegenerative: One adult patient with a neurodegenerative disorder, such as dementia, a movement disorder, or multiple sclerosis (most likely in an outpatient setting)
5. Child patient: One child patient with a neurological disorder (most likely in an outpatient setting)

Three of these patient evaluations (neuromuscular, ambulatory and neurodegenerative) will be completed during the Clinical Skills Evaluation (one per year). The critical care patient evaluation will occur in the PGY-3 year during the general neurology or stroke rotations. The child patient evaluation will occur in the PGY-3 year during the pediatric neurology rotation.

NB:

- The clinical skills evaluation session must be scheduled with the attending in advance and the evaluation form must be completed by and discussed with the attending immediately following the encounter. Retrospective completion of the evaluation form by the attending is not allowed by the ABPN.

- All five clinical skills evaluations must be successfully completed prior to the end of residency training. Residency training requirements will not be considered satisfied until all five clinical skills evaluations are successfully completed.

MEDICAL STUDENT ASSESSMENT

UR medical students complete evaluation forms on neurology residents using the MedHub system. All neurology residents are evaluated by 3rd year medical students for their teaching efforts during the 3rd year neurology clerkship. In addition, the neurology chief residents are evaluated by the 2nd year medical students for their teaching efforts in the Mind, Brain and Behavior course, where the residents function as laboratory instructors and PBL tutors. The program director reviews this medical student feedback with each resident during the semi-annual evaluation meetings. This feedback is also filed in each resident's evaluation folder.

ATTENDING GLOBAL ASSESSMENT

Global rating forms are distinguished from other rating forms in that (a) a rater judges general categories of ability (e.g. patient care skills, medical knowledge, interpersonal and communication skills) instead of specific skills, tasks or behaviors; and (b) the ratings are completed retrospectively based on general impressions collected over a period of time (e.g., end of a clinical rotation) derived from multiple sources of information (e.g., direct observations or interactions; input from other faculty, residents, or patients; review of work products or written materials).

All rating forms contain scales that the evaluator uses to judge knowledge, skills, and behaviors listed on the form. Typical rating scales consist of qualitative indicators and often include numeric values for each indicator, for example, (a) very good = 1, good =2, fair = 3, poor =4; or (b) superior =1, satisfactory =2, unsatisfactory =3. Written comments are important to allow evaluators to explain the ratings.

Global rating forms are most often used for making end of rotation and summary assessments about performance observed over days or weeks. Scoring rating forms entails combining numeric ratings with comments to obtain a useful judgment about performance based upon more than one rater.

Rotation-specific Global Rating Forms have been constructed for neurology residents that incorporate a subset of relevant Milestones as well as a box for narrative comments. These must be completed by each attending at the end of his/her two-week rotation with a specific resident. These Global Rating Forms address all six Core Competencies, and are found on-line at http://urmc.medhub.com/index.mh. . The Program Director reviews the Global Rating Forms with each resident during his/her semi-annual evaluation meeting.

CHART REVIEW

Chart review can provide evidence about clinical decision-making, follow-through in patient management and preventive health services, and appropriate use of clinical facilities and resources (e.g., appropriate laboratory tests and consultations).

Each resident will select one new patient consultation or admission note, and one new outpatient clinic note semi-annually and submit these to the supervising attendings for their review. The neurology attendings will complete the form below and will also provide verbal feedback to the resident concerning the written notes.

The following items from each note will be specifically reviewed by the attending:

- Chief complaint or reason for consultation
- History of the Present Illness
- Past medical history
- Neurological examination
- Assessment and differential diagnosis
- Diagnostic and treatment plan

Department of Neurology
University of Rochester
Resident Chart Review

Resident _____ **Year in training** _____

Attending physician _____ **Rotation** _____

Patient ID number _____ **Date of review** _____

Each resident will select one new patient consultation or admission note, and one new outpatient clinic note quarterly and submit these to the supervising attendings for their review. The neurology attendings will complete the form below and will also provide verbal feedback to the resident concerning the written notes.

	Satisfactory	Unsatisfactory
Chief complaint or reason for consultation	☐	☐
History of the Present Illness	☐	☐
Past medical history	☐	☐
Neurological examination	☐	☐
Assessment and differential diagnosis	☐	☐
Diagnostic and treatment plan	☐	☐

Comments:

Attending signature _____ **Date** _____

Resident signature _____ **Date** _____

Please return to Clara Vigelette by _____

RESIDENT CASE LOG

Case logs document each patient encounter by medical conditions seen. Patient case logs involve recording of some number of consecutive cases in a designated time frame.

Logs of types of cases seen are useful for determining the scope of patient care experience. Regular review of logs can be used to help the resident track what cases must be sought out in order to meet residency requirements or specific learning objectives. Patient logs documenting clinical experience for the entire residency can serve as a summative report of that experience; the numbers reported do not necessarily indicate competence.

Residents are encouraged to create a case log of inpatients seen while they are on service in the eRecord system, including:

- ED consultations
- Hospital adult consultations
- Hospital pediatric consultations
- 5-1600 inpatients
- Highland Hospital consultations

Each resident should include a semi-annual case log summary in his/her portfolio. The Program Director will review the case logs with each resident during his/her semi-annual evaluation meeting.

360-DEGREE EVALUATION

360-degree evaluations consist of measurement tools completed by multiple people in a person's sphere of influence. Evaluators completing rating forms in a 360-degree evaluation usually are superiors, peers, subordinates, and patients and families. Most 360-degree evaluation processes use a survey or questionnaire to gather information about an individual's performance on several topics (e.g., teamwork, communication, management skills, decision-making). Most 360-degree evaluations use rating scales to assess how frequently a behavior is performed (e.g., a scale of 1 to 5, with 5 meaning "all the time" and 1 meaning "never"). The ratings are summarized for all evaluators by topic and overall to provide feedback.

A 360-degree evaluation can be used to assess interpersonal and communication skills, professional behaviors, and some aspects of patient care and systems-based practice.

Multisource feedback (also known as 360 degree feedback) is a process in which individuals are evaluated by supervisors, subordinates, peers and others. For the UR neurology 360-degree evaluation, the evaluators (observers) include nurses, other healthcare providers, and administrative staff.

The 360-degree evaluation emphasizes observable behaviors rather than attitudes or motivations. The focus is on those behaviors that support positive outcomes such as improved experience of care, increased adherence to treatment recommendations, and improved patient safety. The resulting feedback reports are expected to help our residents gain insight into their strengths and developmental needs, and lead behavioral change. In the aggregate, these feedback reports may provide a basis for evaluating system-wide strengths and weaknesses.

The SMH Customer Satisfaction Survey is used to obtain patient feedback concerning resident performance in the outpatient clinic. This 360-degree evaluation survey instrument includes 14 behavioral items rated on a five-point frequency scale, one global evaluation item, and two free-text comment areas to record behaviors that merit commendation and behaviors that may be a focus for improvement. The program director reviews the survey results with each resident individually during their semi-annual evaluation meetings in January and June.

RESIDENT PORTFOLIO

A portfolio is a collection of products prepared by the resident that provides evidence of learning and achievement related to a learning plan. A portfolio typically contains written documents but can include video- or audio-recordings, photographs, and other forms of information. The ACGME Core Competency Project includes a resident portfolio as a valid assessment method.

Reflecting upon what has been learned is an important part of constructing a portfolio. In addition to products of learning, the portfolio can include statements about what has been learned, its application, remaining learning needs, and how they can be met.

In graduate medical education, a portfolio might include a log of clinical procedures performed; a summary of the research literature reviewed when selecting a treatment option; a quality improvement project plan and report of results; ethical dilemmas faced and how they were handled; a computer program that tracks patient care outcomes; or a recording or transcript of counseling provided to patients.

Each neurology resident receives a three-ring binder with dividers at the beginning of his/her residency. The resident is responsible for maintaining the portfolio. Items to be included in the Neurology Resident Portfolio are:

- Curriculum vitae
- Neurology Grand Rounds PowerPoint presentations
- Resident research project results
- Abstracts presented at national meetings
- Papers published during the residency
- Listing of meetings attended each year
- Case Log, reported semi-annually
- RITE results
- Written one-page semi-annual self-reflection with an individualized learning plan, including answers to the following three questions:

    1. What are your strengths?
    2. What are areas for your development?
    3. What are your plans to achieve these goals?

The Neurology Residency Program Director reviews the Portfolio with the resident every six months, during his semi-annual evaluation meeting with the resident.

ACGME Core Competency Project
University of Rochester Neurology Residency Training Program
Methods of Evaluation

Competency	RITE	Clinical Skills Evaluation	Chart Review	Resident Case Log	Attending Global Assessment	360° Evaluation	Resident Portfolio
Patient Care		X	X	X	X		X
Medical Knowledge	X	X	X		X		X
Practice-Based Learning and Improvement					X	X	X
Interpersonal & Communication Skills		X	X		X	X	
Professionalism		X			X	X	
Systems-Based Practice		X			X	X	

ACGME Core Competency Project
University of Rochester Neurology Residency Training Program
Methods of Instruction - Sites

Competency	Inpatient Neurology Rotation	Inpatient Consultation Rotation	HH Rotation	ED Consultations	Neurology Firm	Chief Resident Clinics	Resident Conferences and Rounds
Patient Care	X	X	X	X	X	X	X
Medical Knowledge	X	X	X	X	X	X	X
Practice-Based Learning and Improvement	X	X	X	X	X	X	X
Interpersonal & Communication Skills	X	X	X	X	X	X	X
Professionalism	X	X	X	X	X	X	X
Systems-Based Practice	X	X	X	X	X	X	X

ACGME Core Competency Project
University of Rochester Neurology Residency Training Program
Methods of Instruction - Conferences

Competency	Morning Report	Attending and Professor Rounds	Journal Club	Resident Noon Conferences	Health Team Rounds	Grand Rounds	MBB Course
Patient Care	X	X	X	X	X	X	
Medical Knowledge	X	X	X	X		X	X
Practice-Based Learning and Improvement	X	X	X	X		X	X
Interpersonal & Communication Skills		X		X	X		X
Professionalism		X		X			X
Systems-Based Practice		X		X	X		

DEPARTMENT OF NEUROLOGY
RESIDENT MENTORING PROGRAM

The Neurology Resident Mentoring Program is a longitudinal 4-year experience that focuses on guiding residents in 3 key areas:

1. Career decisions
2. Structured development of a scholarship project
3. Defining personal and professional career goals.

The program starts with identifying mentor-mentee pairs, developing a simple structured mentoring plan, and codifying frequency of mentor-mentee meetings with annual reports to the program director.

Mentorship Program Director: Nimish Mohile, MD

Current Mentors:

Colleen Tomcik, MD
Erika Augustine, MD
Thomas Wychowski, MD
Matthew Bellizzi, MD
Debra Roberts, MD
Ania Busza, MD
Bogachan Sahin, MD
Gretchen Birbeck, MD
David Bearden, MD
Jessica Robb, MD
Ruth Schneider, MD
Michael Yurchesen, MD
Deanna Bonno, MD

Year One

- Residents complete a written assessment to identify goals, career interests and research interests.
- Residents meet individually with the mentorship director to discuss their goals and interests.
- The mentorship director will pair mentees and mentors together near the end of the academic year. The mentors are intended to help them throughout residency and may or may not be their research, content or subspecialty mentor.

Year Two

- Mentor-mentee kickoff event at the start of the year.
- Mentor-mentee pairs meet at least quarterly to discuss progress, career goals and interests. Mentees are guided on elective choice, identifying research projects and begin to work on setting goals.
- 2-3 informational sessions are held specifically to expose residents to the breadth of possible scholarship projects in the department: i.e. research projects, QI projects, education research and global health.
- At the end of the academic year, mentors begin to work with mentees to begin planning for fellowship applications.

Year Three

The focus of this year is to work on a structured and guided scholarship project to present at the annual Schwid Symposium, submit to a national meeting and culminate in a manuscript. Residents will participate in monthly meetings in which they will discuss development of their projects, learn new skills and identify resources. They will also meet individually with assigned mentors, project mentors, the mentorship director and other relevant faculty to ensure success of the project. Residents will submit a research proposal to describe their research question, hypothesis, study design and methods. Faculty and co-residents will critique and provide feedback to strengthen the project. The proposal will need to undergo final approval by the research mentor and the mentorship director prior to starting the project.

Monthly meetings will focus on the following topics:

- Finding your project and mentor
- Development of a research question
- Reviewing the literature on your topic
- Study Design
- Research Methods
- Proposal presentations and critiques
- IRB guidance and Data collection
- Statistical Methods for Data Analysis
- Writing an abstract
- Creating a poster
- Presenting your work
- Writing a manuscript

Residents will work on the scholarship project during the year with guidance of mentors, peers and senior research faculty. They will submit and present their work at the annual Schwid symposium in June. Residents are also strongly encouraged to submit the work to a national meeting. They are also encouraged to complete their scholarship project with a manuscript. This process will be guided by mentors, co-residents and will take advantage of editorial experience of departmental faculty.

Neurology Year Four

Residents are encouraged to continue their scholarship work but will be expected to make their own timelines and be more independent. They will also be expected to submit a research proposal for any new projects. The primary focus of this year is a curriculum that culminates in creation of a structured academic development plan that the resident will initiate after completion of residency.

The curriculum is focused on defining core values and understanding strengths in order to define and achieve goals. Monthly sequence of topics listed below:

- Identifying, clarifying and prioritizing your values
- CV workshop: strengthening your CV and aligning it with your values
- Developing long term goals: deciding what you want to do with your life
- Identifying the short term goals that will lead to success

- Creation of a 1 year learning contract
- Determine your personal mission and vision
- Using your time wisely and efficiently
- Building and sustaining teams
- The work of becoming a leader

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RESIDENT RESEARCH EXPERIENCE

The Department of Neurology has a strong tradition of basic, translational, and clinical research. Many internationally recognized clinician-researchers are members of the faculty. The department consistently ranks as one of the top neurology departments in the United States for extramural research funding from the National Institutes of Health.

The philosophy of the Department of Neurology is that research should be part of each resident's educational experience. The ACGME Neurology Residency Review Committee also mandates resident participation in scholarly pursuits. Accordingly, residents are required to participate in a clinical or basic research project during their residency, culminating in a formal departmental presentation at the Annual Schwid Research Symposium. Abstract submission to the American Academy of Neurology, the American Neurological Association, the Child Neurology Society, or a subspecialty meeting is also highly encouraged.

Each resident will choose a faculty mentor to support this project. In addition to overseeing the specific project, the mentor will instruct the resident in more general issues of study design, funding, implementation, and reporting relevant to the research project.

Examples of research projects include the following:

- Basic and translational science
- Clinical research
- Outcomes and health care utilization research
- Education research
- Clinical case presentation with review of the literature

Elective time may be used for research projects. Research may be conducted during a block rotation or longitudinally.

A suggested timeframe for this research experience is as follows:

- First year: Identify a faculty mentor and meet to discuss possible projects
  Inform the Program Director of your project and mentor
  Poster presentation at the Annual Schwid Research Symposium
- Second year: Begin research project during an elective block or longitudinally
  Poster presentation at the Annual Schwid Research Symposium
- Third year: Complete research project
  Submit an abstract to a national meeting
  Oral presentation at the Annual Schwid Research Symposium

Drs. Jonathan Mink and Nimish Mohile will serve as faculty coordinators for the Neurology resident research experience.

DEPARTMENT OF NEUROLOGY
RESIDENT AND FELLOW RESEARCH SYMPOSIUM

This annual Steven R. Schwid, MD Neurology/Neurosurgery Resident and Fellow Research Symposium occurs each June. The symposium highlights a very broad range of basic, translational, and clinical research performed in the departments of neurology and neurosurgery. The 2021 Schwid Symposium will take place on Friday June 18, 2021.

All Neurology residents are expected to prepare a poster presentation for this symposium, each year of the residency. All 3rd year Neurology residents are expected to prepare a platform presentation (10 minute talk).

The abstracts should follow the AAN Annual Meeting Abstract format. The abstract body should include the following headings: OBJECTIVE (should be one sentence), BACKGROUND, DESIGN/METHODS, RESULTS and CONCLUSIONS. There is a maximum of 300 words allowed per abstract. The word count includes the body only. Case reports are allowed and should use the headings that are applicable to the work. Tables and figures are not allowed. Each abstract should have the presenting resident or fellow as the first author and must include at least one faculty mentor/advisor who has reviewed the abstract prior to submission.
Each abstract will be reviewed by a member of the Schwid Symposium committee and the author will be provided with specific suggestions for revision. Details on the presentation format will be provided at a later date.

Please note the following deadlines:

- Initial Submission Due: Friday April 16, 2021 5:00 pm EDT
- Feedback provided by Monday April 26, 2021
- Revised Submission Due: Friday May 21, 2021 5:00 pm EDT
- These deadlines are firm. Please note that participation is required for all Neurology and Child Neurology Residents.

Below are some resources for writing abstracts (Accessed from https://smhs.gwu.edu/medicine-residents/scholarly-activities/abstract-writing-resources)

Resources for research abstracts

- ACP's "Writing a Research Abstract"
- Scientific Abstract Checklist
- Example of a Research Abstract
- How to Write an Abstract, by Philip Koopman, from The Carnegie Mellon University, Pittsburgh, PA

Resources for clinical vignettes

- ACP's "Writing a Clinical Vignette (Case Report) Abstract"
- Clinical Vignette Abstract Checklist
- Example of a Clinical Vignette Abstract

Funds are available to support printing charges for the residents. Prizes will be awarded for the best presentations. Please contact Dr. Jonathan Mink with questions.

DEPARTMENT OF NEUROLOGY
RESIDENT JOURNAL CLUB

Journal Club occurs monthly, usually on a Thursday at 6:30 pm. Neurology faculty members host Journal Club at their homes on a rotating basis. This enhances the practical understanding of evidence-based neurology, and also provides an informal setting for the discussion of journal articles with the active involvement of attendings.

The purpose of Journal Club is to review a clinically relevant journal article and to consider:

- Study design (clinical question and selection of germane evidence)
- Potential areas of bias and error in design and execution
- Evidence validity, impact and applicability

The first Journal Club of the year will be devoted to a review of evidence based principles. For each subsequent Journal Club, the hosting faculty member selects a journal article for discussion, in consultation with the chief resident organizing Journal Club for the year. This will be a chance for the faculty member to bring his/her own clinical interests into a forum of discussion with the neurology house staff. One resident will be asked to review the article using evidence based principles, and will be asked to prepare a one-page summary analyzing the quality of the evidence. This resident will also lead the discussion. The faculty member provides a light supper and refreshments.

The reference book for Journal Club is Biller and Bogousslavsky's *Clinical Trials in Neurologic Practice: The Blue Books of Practical Neurology #25*.

DEPARTMENT OF NEUROLOGY
HISTORY OF NEUROLOGY CONFERENCE SERIES

The specialty of neurology arose in the mid-19th century. It has a rich and varied history with contributions by many notable physicians and scientists. Our department is fortunate in that many members have made major contributions to chronicling the history of our specialty. A series of lectures is offered to the residents every year in the history of neuroscience.

GENERAL GUIDELINES FOR THE ACTIVITY OF THE NEUROLOGY RESIDENT AT SMH

Organization of the Neurology Inpatient Service (5-1600)

Organization:

- The Adult Neurology Inpatient Unit consists of twenty-four beds, which are divided among three teams: the Stroke (Red) and General Neurology (Blue) Teams (Neurology Inpatient Service), and the Strong Epilepsy Service. The Neurology Unit is responsible for the care of all patients with neurologic disorders admitted from the emergency department or transferred out of the Neuro ICU, admitted from the neurology outpatient clinics, or electively.

- The Stroke and General Teams follow all patients admitted to the neurology inpatient service, with the exception of those admitted to the Epilepsy Service for long-term video EEG monitoring. Each team consists of a neurology PGY-2, a neuroscience APP, a neurology, psychiatry or anesthesiology PGY-1, one or two 3rd year medical students and, on occasion, a 4th year neurology sub-intern. There is a neurology PGY-4 (chief resident) who supervises each of the teams. The organization of the Stroke and General Teams (Neurology Inpatient Service) is described below.

- The Epilepsy Service follows all patients admitted to the Strong Epilepsy Center for long-term EEG monitoring and treatment of seizures. The epilepsy team consists of the Epilepsy Attending, an epilepsy fellow and a neurology PGY-2 or psychiatry PGY-1.

Personnel:

- **Attending:** There are two attending neurologists who supervise the residents on their respective teams: the Stroke Inpatient Attending and the General Neurology Inpatient Attending. These Attendings are ultimately responsible for all decisions regarding the care of their patients. Subspecialty services such as Neuromuscular, Neuro-oncology, Neuroimmunology and Movement Disorders are available on a consultative basis only.

  The Stroke and General Neurology Inpatient Attendings are responsible for making daily teaching rounds for their respective teams, and for providing daily teaching, feedback and a final evaluation for each resident whom they supervise. In order to do this, they must be readily available between 7:30 am and 5:00 p.m. daily for patient care and teaching activities. Pre-scheduled meetings are to be kept to a minimum and should be easily canceled if necessary. Outpatient clinics are not to be scheduled for the attendings when they are on service.
- **Neurology Chief Resident:** The Neurology Chief Residents (PGY-4) are responsible for the smooth running of the neurology inpatient and consultation services. There will be a General Chief Resident and a Stroke Chief Resident who are responsible for overseeing the rounding and patient care on the respective inpatient teams and assisting consult residents as needed. The chief residents are also responsible for supporting the on-call residents during the evening and overnight shifts.
- **Neurology PGY-2:** The Neurology PGY-2s are responsible for all admissions to the neurology inpatient service. They receive new admissions each morning and throughout the

day based on suspected admission diagnosis (stroke vs. general), between 8:00 a.m. and 4:30 p.m., Mon - Fri. They attend the nursing huddle at 8:30 a.m. Mon - Fri to discuss patients on 5-1600. They attend afternoon nursing huddle with the charge nurse at 2:30 p.m., Mon - Fri. They are also responsible for seeing, writing notes, and caring for all patients above the 10 patient intern cap.

- **Neurology, Psychiatry and Anesthesiology PGY-1:** The PGY-1s work together with the Neurology PGY-2s on the Stroke or General Teams, and are responsible for assisting the neurology PGY-2s in managing their floor teams. The PGY-1s care for and write progress notes daily on all inpatients on their teams, up to the 10-patient cap mandated by RRC guidelines. It is the responsibility of the PGY-1 to take sign-out in the mornings from the APPs who were cross-covering overnight (using WebPaging "directory" tab, type "APP" and text page a call back number to receive sign out for Stroke/General team). Similarly, it is the responsibility of the PGY-1 to give sign-out and assign the APP as covering provider at the end of the day, 4:30pm at the earliest (again, page the APP service to give sign-out and to find out who the appropriate covering providers will be).
- **Fourth Year Medical Student Sub-Intern:** The fourth year medical externs work together with the Neurology PGY-2s on the Stroke or General Teams. They function as a substitute intern (PGY-1) and will be responsible for both new admissions and follow-up patients. They also write progress notes daily on their patients.
- **Third Year Medical Students:** The third year medical students work directly under the neurology PGY-2s. Each student is responsible for obtaining a complete history, performing a complete general and neurological examination, generating a differential diagnosis and formulating a plan of treatment for approximately three new patients per week. He/she will be responsible for completing the work-up on the same day that the patient is evaluated, and for presenting each assigned patient as needed on rounds. Progress notes are to be written daily on all inpatients that are followed by the student.

Teaching Rounds:

- Teaching Rounds are held daily, as follows:

Monday	9:00 am – 12:00 pm	Attending Rounds
Tuesday	9:00 am – 12:00 pm	Attending Rounds
Wednesday	9:00 am – 12:00 pm	Attending Rounds
Thursday	9:00 am – 11:00 am 11:00 am – 12:00 pm	Attending Rounds Professor's Rounds
Friday	9:00 am – 10:30 am 10:30 am – 12:00 pm	Neurology Grand Rounds Attending Rounds

The goals and objectives for Attending Rounds, as well as guidelines for conducting them, are included elsewhere in this handbook.

Admission Guidelines - Weekdays:

- The Stroke and General Teams accept admissions from General and Stroke consult services based on suspected admission diagnosis each weekday in the morning and throughout the day if the patient arrives to the Neurology floor prior to sign-out rounds at 4:30 p.m.

- **Elective admissions:** Elective admissions that arrive on the floor by 4:30 p.m. are admitted by the appropriate floor team based on the patient's respective diagnosis. Admissions called to the floor after 4:30 p.m. are evaluated by the on-call neurology resident and are picked up the following day by the appropriate team.

- **Call-out admissions**: Hospitalized patients who are in the ICU or on a non-neurological service may be transferred to the Neurology service. The consulting resident who knows the patient should inform the Neurology inpatient team that the patient may be called out or transferred. Once the patient has arrived in a bed covered by the Neurology inpatient team, he/she will begin to be covered by appropriate the Neurology service. If this occurs before 4:30 p.m., the Stroke or General team will assume care of the patient. If this occurs after 4:30 p.m., the patient will be covered by the on-call neurology resident until the following morning when he/she will be assigned to a neurology inpatient team. If the patient is transferred from the ICU, the accepting provider (either Stroke/General PGY-2 or on-call resident) should receive a verbal sign out from the ICU.

- **ED admissions:** Patients seen in the ED prior to 4:30 p.m. who are admitted to Neurology are covered by the appropriate floor team (Stroke or General) if they arrive on 5-1600 prior to 4:30 p.m. Patients that do not arrive on 5-1600 by 4:30 p.m. or are seen in the ED after 4:30 p.m. by the on-call neurology resident and subsequently admitted to Neurology, are covered by the on-call resident until they are picked up by the appropriate team the following day.

- The PGY-1s may leave the hospital after 4:30 pm once they have finished all of their work including signing out to the APP cross-cover and assigning the appropriate covering providers. The PGY-1s must let their PGY-2 senior know that they have signed out. PGY-2s are responsible for providing verbal handoff to the on-call Neurology residents at sign out rounds.

Admission Guidelines - Weekends:

- The neurology PGY-2, the PGY-1, and the medical students on the Stroke and General teams each have one day off every weekend. The PGY-1 residents should always come in the same day as their respective chief (i.e. the Stroke chief and stroke PGY-1 will come in on the same weekend day and vice versa for General). The Stroke/General PGY-2 and medical student will come in on the opposite day of their chief. For most weekends, the Stroke chief and PGY-1 will come in on Saturdays and the Stroke PGY-2 and medical student will come in on Sundays. The opposite is true for the General floor team. The new admissions are taken by the chief resident and PGY-2 of each respective team. For example, on Saturday, the Stroke chief will take new stroke admissions and the General PGY-2 will take new General admissions.

- If the Stroke/General PGY-2 **is on-call** (back-up shift), they will sign out his/her team to the other team's PGY-1 as soon as they are done with their work and then begin the call shift. This sign out must occur by 12pm at the latest. If the Stroke/General PGY-2 **is not on-call**, they are able to sign out to the other team's PGY-1 after work is completed and no earlier

than 12 p.m. The PGY-1 is expected to cross-cover both teams until 4:30 p.m., when he/she may sign out both teams to the APP cross cover.

Evening and Night Call:

- The Medicine APP service covers any medical emergencies on 5-1600 between 4:30 pm and 7:00 am. The neurology, anesthesia, and psychiatry PGY-1's must sign out to the APP evening team prior to leaving the hospital each evening, and receive sign out each morning prior to 7:00 am. The correct APPs need to be assigned as covering provider to every patient (except step down) each evening. In addition, the UCEF Neurology resident should be assigned as a second covering provider each evening from 4:30pm to 8pm. Neurology step-down patients are always covered by the Neurology on-call resident. The neurology on-call resident provides back-up supervision to the APP cross-cover for all Neurology inpatients on 5-1600.

Teaching Responsibilities:

- The Neurology PGY-2 is responsible for supervising any medical students assigned to their team, including reviewing their patient work-ups.

Miscellaneous Considerations:

- The neurology PGY-2 is responsible for consulting other services on patients admitted to Neurology, but may delegate this to the PGY-1.

- When the Neurology PGY-2 is in clinic, the team should be signed out to the appropriate PGY-1 for cross coverage.

- When the Neurology PGY-1 is in clinic or off-service PGY-1 is at education, the team should be signed out to the appropriate PGY-2 resident for cross coverage.

- In the unusual situation where the Neurology PGY-1 and PGY-2 are both in clinic on the same day, the chief resident of the respective team will provide cross coverage.

- The interns will be capped at 10 patients per team, due to medicine RRC program requirements. When the number of patients on the Stroke or General teams exceeds 10 patients, the neurology PGY-2 will be responsible for seeing additional follow-up patients. On the weekends, the Chief will see patients who are in excess of this cap.

Organization of the Neurology Consult Services

- **Organization:** There are two adult neurology consultation services at SMH: the General neurology consultation service and the Stroke consultation service. An attending neurologist, a neurology PGY-3, and two 3rd year medical students staff each service. There are a variety of rotators on each consult service, which vary throughout the year, including: Medicine or Medicine-pediatrics PGY-1, Ophthalmology PGY-1, PM&R PGY-1, Neurology PGY-1, and Neurosurgery PGY-3 (General consult only).

- **General neurology service:** The General neurology service provides general neurology consultations on the adult hospital wards, the R wing, the ED, WCC, and in the ICUs. These patients are first seen by the neurology PGY-3 or a PGY-1 on the General Service and are then staffed with the General neurology consult attending. The neurology PGY-3 should triage and oversee the medicine PGY-1 consults to ensure timely and appropriate medical decision making.

- **Stroke consultation service:** The Stroke consultation service provides consultations for patients suspected of having a stroke, TIA, or intracranial hemorrhage. Patients may be seen on the adult hospital wards, R wing, ED, WCC or in the ICUs. The stroke service also follows all acute stroke patients in the Neuromedicine ICU who receive thrombolytic therapy, as well as any other ICU patients with cerebrovascular disease.

- **Consultation hours:** 8:00 am - 4:30 p.m. Monday through Friday. Any consultation called to the General or Stroke neurology PGY-3 during those hours is typically seen by the resident that day. If there are multiple consults called late in the day shift, the acute consults must be seen by the day consult resident, but non-acute consults may be passed off to the evening/night shift. No more than 2 total consults should be passed off from one shift to the next.

- **Consult rounds:** Each consultation team will round with the Attending usually twice daily at a mutually convenient time (typically in AM and then early PM). All new patient consultations should be formally presented to the Attending on rounds that day. Follow-up patients may be seen by the Attending at the discretion of the PGY-3 neurology resident and the Attending on service.

- **Transfer notes and orders:** The neurology PGY-3s on each consultation service are responsible for writing a transfer accept note for any of their patients who are being transferred to 5-1600 from the ICU or another service. Transfer orders also need to be written, and may be entered by either the consult resident or the accepting team.

- **Admission notes and orders:** When a patient seen in consultation will be admitted to the Stroke or General floor team, the neurology PGY-3 consult resident is responsible for writing the admission note and orders for that patient and adding the patient to the “admitted list” in e-record. The neurology PGY-3 should then communicate the pertinent information regarding the patient’s presentation and plan to the appropriate inpatient team.

- **Cross-Coverage:** The neurology urgent care (UCEF) resident cross-covers for the Stroke and General neurology consult residents on the afternoons when either of them is in clinic.

- **Weekend coverage:** The neurology PGY-3 consult residents each come in on one day each weekend and will round on **both** consult teams providing cross coverage of the consult services. If the resident is also on-call (day float of back-up), this shift starts at 8am and they must often be on-call and rounding with attendings simultaneously. If the consult resident is not on-call, they are free to leave the hospital once all of their work is completed.

Evening, Night, and Weekend Coverage

- The neurology evening and night float residents are responsible for all adult ED patients triaged to Neurology, as well as adult and pediatric neurology consultations in the hospital, the ED, WCC, and the ICUs. They are the primary providers for all admitted SEC patients. In addition, they may be called concerning problems with patients already being followed on the consult services and provide back-up coverage to the APP service cross-covering neurology inpatients on 5-1600.
- On Saturdays and Sundays, the neurology weekend and night float residents are responsible for all neurology consultations and admissions, including direct admissions to 5-1600.
- Starting in 2020, we have added another weekend shift called the **"Back-up,"** which is essentially a second day float. This person typically has inpatient duties (floors, chief, consults). The BU is expected to start splitting consults and clinic calls (1:1) with the DF as soon as they complete their inpatient work, and no later than 12pm. They will then stay until 8pm with the day float. If the BU has no inpatient work to complete, the shift goes from 8am to 8pm.
- The night float is expected to attend morning report on Mondays, Tuesdays and Wednesdays, and the Neuroradiology Conference on Thursdays.
- Evening float, weekend call, and Saturday overnight coverage is provided by PGY-2, PGY-3, and PGY-4 neurology residents, as predetermined on the call schedule.
- The Neurology Chief Residents are responsible for constructing the Evening Float and Weekend call schedules.
- The Evening Float and Night Float resident as well as the on-call Weekend resident are responsible for triaging and returning calls for all Neurology clinics (including subspecialty and Pediatric Neurology clinic calls). If there is a Pediatric Fellow on-call, they will take the Pediatric Neurology clinic calls.

Sign-Out Rounds

Morning Sign-Out
- *Location*: Resident room
- *Time*: **630-7am**
  - Floor teams expected to get verbal sign out from NF at 630am at the latest
  - Consult teams expected to get verbal sign out from NF at 645am at the latest (if M-F, must also obtain pagers at this time)

Monday – Friday Evening
- *Location*: SEC conference room
- *Time*: **4:30pm**
- Consult, floor residents, evening float, UCEF
- Floor teams sign out to UCEF
- Consult teams sign out to Evening float
- Urgent consults that come during sign out should be taken by the EVENING FLOAT

Night Sign-Out
- *Location*: Pending location of on-call resident (communication is key)
- *Time*: **8pm**
- Evening float + UCEF vs day float + back-up, night float
- Urgent consults that come during sign out M-F will be taken by the UCEF resident

Triaging consults prior to change to change of shift:
- Consult residents (general, stroke, peds) are expected to triage consults that come late in the day prior to change of shift
- The consults should be called back by the day consult resident in order to triage acuity
- Consults that are urgent (i.e. stroke alert, status) need to be seen by the day consult resident
- Non-urgent consults should be passed off to evening shift residents along with information about how to contact the consultant, this should not exceed more than two passed-off consults per shift
- Rarely there are very non-urgent consults that can be seen the following day by the consult team, but several criteria must ALL be met:
  - Needs to be approved to be seen tomorrow by consult attending/fellow
  - Patient added to appropriate list and hand off updated to say "will be seen by day consult team in AM" in to-do section
  - Only appropriate if you are passing the consult off to yourself -- i.e.: a Friday 4pm consult is not appropriate to pass off to the Saturday day float
- Evening and night residents should also be triaging at the end of their shift -- non-urgent consults should be passed off to day/night team

Urgent Care Rotation

The Urgent Care (UC) Rotation was instituted in 2011 to address the increased volume and acuity of general neurology consultations in the afternoon and evening hours. Given the advances in stroke care and the increased complexity of neurologic consultations due to advances in transplantation medicine and oncology treatments, neurology consultations are becoming more complex and time-consuming. This rotation is planned to provide a rich educational experience for the resident, while simultaneously decreasing the workload of the residents covering the stroke and general consultation services during the evening and night shifts. The UC rotation is organized as follows:

- The resident on the UC rotation works 5 days per week, Monday through Friday, from 12pm until 10pm. The rotation is two weeks in length.
- This is a PGY-2 rotation.
- The UC resident will attend the noon conference each day.
- During the afternoon hours (1-4:30 PM), the UC resident will have the following responsibilities:
    - Provide cross coverage for the Stroke and General Neurology consult residents when they are in clinic two afternoons per week, starting at 12:00 noon.
    - Attend their own resident firm one afternoon per week. (No patients shall be scheduled after 4:00 PM)
    - The activities of the other two afternoons during the UCEF are TBD
- The UC resident will staff new patient consultations with the stroke and general neurology attendings by telephone or in person, as per current policy.
- The UC resident should participate in sign-out rounds at 4:30, taking sign out from the floor teams regarding any active patients or patients in the Neurology step-down unit and will then subsequently provide this information to the Night Float resident.
- During the evening hours (4:30pm to 10pm), the UC resident will have the following responsibilities:
    - Work together with evening float (EF) resident in performing inpatient consults. The EF will receive the consult and clinic call pages and will divide these equally with the UC resident. The UC and EF residents should both carry a consult mobile phone to facilitate direct communication.
    - The UC resident should be assigned as a second covering provider to receive pages from nurses and APP's for all 5-1600 and SEC inpatients, including newly-admitted patients until 8 pm (The APP's will still be the first-line contacts for all floor patients with acute issues.)
    - All consults, clinic calls, and acute patient issues should be evenly distributed between the EF and the UC residents to ensure timely care to patients and equal distribution of work, with the goal of having the EF leave by 9:00 PM.
    - In general, the EF resident will not see new consults after 7:30 PM. The UC resident will then be responsible for new consults and clinic calls that are called before 8:00 PM. Rarely, if the night float becomes extremely busy at the beginning of the shift, the UCEF may be asked to help with acute consults. The

UC resident can leave the hospital after work is completed and they have checked in with the night float, in general UC residents should never be leaving after midnight.

- The EF and UC resident are responsible for updating all patient lists and hand-offs to ensure appropriate sign out to the receiving consult and floor teams. A verbal sign out should b given to the night float regarding pending consults, unstable patients, acute floor issues, etc.

UCEF Rotation Hours:

12:00 – 1:00 PM	Noon conference
12:00 – 4:30 PM	Cross-cover general and stroke consult residents when they are in clinic (2 afternoons per week)
1:00 – 4:30 PM	Attend his/her resident firm (1 afternoon per week)
4:00 PM – 10:00 PM	Cover all neurology step-down, SEC, and newly admitted patients.
	Evenly divide all new consults, clinic calls, and acute patient care issues with the EF until 7:30 PM, at which point the UC resident absorbs all new tasks

Evening and Night float hours:

Night float:	Week 1: Saturday through Friday	8 PM – 8 AM (home by 9:00 AM)
	Week 2: Sunday through Friday	
	Saturday night:	Off
Evening float:	Monday through Friday:	4:30 PM – 8 PM (off by 9:00 PM)
Urgent care:	Monday through Friday:	12 PM – 10 PM
Weekends:	Saturday day float/back-up:	8 AM – 8 PM
	Saturday night float:	8 PM – 8 AM
	Sunday day float/back-up:	8 AM – 8 PM

Attending and Chief Resident Back-up:

- The General neurology inpatient attending should be notified of all patients admitted to the 5-1600 inpatient service at the time of admission.

- The General neurology consult attending or Acute Stroke attending should be notified of any new ICU consults shortly after the patient is seen.

- The General neurology consult attendings and Acute Stroke attendings should be involved with all adult patients seen in consultation by the on-call and consult residents.

- The on-call Pediatric Neurology attending or fellow must be notified of all pediatric consultations.

- The chief resident is available 24 hours a day by phone or pager to provide support to residents on-call.

Miscellaneous considerations:

- The on-call resident can order an after-hour emergency EEG in cases of suspected herpes encephalitis, and in cases of suspected status epilepticus. In these cases, the on-call resident pages the EEG attending for approval and then the EEG technician through the page office. EEG technicians are available 24 hours a day to perform the study, and the EEG attending will then read the tracings.

- The on-call resident is responsible for answering patient calls from neurology firm patients, Westfall Road general neurology patients, Bushnell's Basin general neurology patients, subspecialty neurology patients, and child neurology patients. The attending neurologist on call for each of these services is always available for consultation if necessary. An email or e-record note should be sent to each practitioner regarding patient calls after-hours.

- All patients located in the neurology step-down unit will be covered by the Neurology on-call resident as mentioned above. These patients should not be covered by the APP service.

Responsibilities of the Neurology Chief Resident

- **General Responsibilities:** The Neurology Chief Residents are responsible for the smooth operation of the Neurology Inpatient General and Stroke Services on 5-1600 as well as the consult services. Each chief should closely monitor work-up and management for all patients admitted to Neurology and their respective Stroke/General teams, assist with the evaluation of acutely unstable patients, provide support and give feedback to all 5-1600 house staff.

- **Work rounds on 5-1600:** The Stroke and General Chief Residents will attend work rounds at 9:00 AM with their respective teams.

- **Support for the on-call Resident:** The Chief resident on-call provides primary support for the neurology on-call resident. This is particularly crucial for the neurology PGY-2s, and

especially during the first six months of their residency. **The Chief Resident should specifically be notified if the on-call resident is more than 4 consults behind and/or has more than 2 acute consults within 30 minutes.** Otherwise, on-call residents are expected to call the Chief with any other concerns and the Chief is expected to provide assistance both via phone and in person as necessary.

- **Availability:** The Chief Resident who is listed on-call is expected to be available at all times, including overnight.

- **Weekends:** The Stroke and General Chief will come in on one day each weekend, these are pre-designated in the call-schedule. The intern of their respective team will come in on the same day as the chief. The chief is responsible for all new admissions for their respective team and seeing follow-ups beyond the 10-patient intern cap. The chief is responsible for providing support to all junior residents on the weekends.

- **Direct Admissions:** The chief resident is responsible for coordinating direct admissions to the Neurology service from the outpatient setting.

- **Urgent Outpatient Consultations:** The Chief Resident is responsible for arranging to see any outpatients who need to be evaluated urgently and who cannot be scheduled in the Firms within a week. He/she will have a room reserved in the Neurology clinic one afternoon each week for these patients. The General Neurology Attendings are responsible for staffing these patients with the Chief Resident.

- **Grand Rounds:** The Chief Residents are responsible for scheduling Grand Rounds, with consultation from the Chair of Neurology. The Grand Rounds Chief is also responsible for the smooth running of Grand Rounds, including introducing the speaker, moderating the discussion, and adhering to the time schedule.

- **Monday, Thursday, and Friday Resident Conferences, Grand Rounds Resident Cases, and Journal Club:** The Chief Residents are responsible for organizing and scheduling these conferences, in consultation with the Program Director.

Neurology Conference Schedule

Monday		
7:30 - 8:00 a.m.	Morning Report	5-5220
9:00 - 12:00 p.m.	Attending Rounds	5-1600
12:00 - 1:00 p.m.	Neurology Clinical Conference	5-5220
Tuesday		
7:30 - 8:00 a.m.	Morning Report	5-5220
9:00 - 12:00 p.m.	Attending Rounds	5-1600
12:00 - 1:00 p.m.	Neurology Clinical Conference	5-5220
Wednesday		
7:30 - 8:00 a.m.	Morning Report	5-5220
9:00 - 12:00 p.m.	Attending Rounds	5-1600
12:00 - 1:00 p.m.	EEG Conference	5-5220
Thursday		
7:30 - 8:00 a.m.	Neuroradiology Conference	G-3270
9:00 - 11:00 p.m.	Attending Rounds	5-1600
11:00 - 12:00 p.m.	Professor's Rounds	5-5220
12:00 - 1:00 p.m.	Neurology Clinical Conference	5-5220
Friday		
9:00 - 10:00 a.m.	Neurology Grand Rounds	K-307
10:00 - 10:30 a.m.	Resident Case Presentation	K-307
10:30 - 12:00 p.m.	Attending Rounds	5-1600
12:00 - 1:00 p.m.	Resident Lunch	5-5220

INPATIENT ATTENDING PHYSICIAN'S RESPONSIBILITIES

Teaching Responsibilities

1. The primary responsibility of the Stroke and General Neurology Attending Physicians is to teach the House Staff on the inpatient and consultation services. A focal point of this teaching are the Attending Rounds and Professor's Rounds, which occur daily according to the following schedule:

Monday	9:00 am – 12:00 pm	Attending Rounds
Tuesday	9:00 am – 12:00 pm	Attending Rounds
Wednesday	9:00 am – 12:00 pm	Attending Rounds
Thursday	8:00 am – 11:00 am 11:00 am – 12:00 pm	Attending Rounds Professor's Rounds
Friday	9:00 am – 10:30 am	Neurology Grand Rounds

2. Residents are asked to be well prepared for Attending and Professor's Rounds and to meet promptly at the appointed hour. Each resident is expected to be at Rounds unless an acutely ill patient needs immediate attention.

3. Rounds should be built around the patient's central problem with teaching directed primarily at the first year neurology residents. Patient presentations should take place at the bedside, when possible.

4. During Attending Rounds, each resident team will spend 1 ½ hours each with the stroke and general neurology attendings. Attending Rounds will include formal case presentations by the intern or medical student, bedside teaching by the attendings, and management discussions with the team.

5. Interruption of Rounds should be kept to a minimum. Where there is an acute problem needing attention, the chief resident should excuse him or herself and see the patient allowing the PGY-1 and PGY-2 to remain at Rounds.

6. Attending Rounds should be directed actively by the Attending with appropriate challenge to the residents, including give-and-take Socratic teaching. Primary data should be challenged as to their accuracy and completeness; residents should defend logically their diagnostic and therapeutic plans; and they should be stimulated to acquire new knowledge. Cost-effectiveness and evidence-based medicine should be stressed.

7. A variable approach to Rounds is encouraged which will depend on the problems the patient presents. Areas to be covered include: basic science correlation and pathophysiology of disease, clinical skills used to acquire and record clinical data, diagnostic reasoning, differential diagnosis, up-to-date description of disease entities, personal and social problems of the patient, medical ethics, discriminative laboratory utilization, appropriate use of consultants, individualized therapy and knowledge of drug action, preventive medicine, and follow-up plans for the patient.

Evaluation Responsibilities

1. The Residency Program Director is required to certify that each resident, at the end of his or her residency training, is clinically competent in each of the six ACGME Core Competencies in order to be qualified to sit for the ABPN Certifying Examinations. Ongoing evaluation is required of faculty members who teach and supervise residents.

2. Global Assessment Forms evaluating all six ACGME Core Competencies and a subset of the Milestones are available through the MedHub system and must be filled out by the Attending for each resident with whom he/she has worked for at least one week. It is important to write at least 2 or 3 sentences in the text box summarizing the resident's performance. In order to provide more accurate evaluations, the attending should keep notes on the performance of each resident throughout the attending period.

3. The attending should direct teaching not only to enhance medical knowledge and clinical judgment, but also to improve individual clinical skills. During the attending period, the PGY-1 or PGY-2 should be asked to demonstrate for 5-10 minutes at the bedside, selected interview and physical diagnosis skills.

4. At least one medical record must be reviewed by the Attending to determine the quality of record keeping, including clinical decision-making, follow-through in patient management and preventive health services, and appropriate use of clinical facilities and resources (e.g., appropriate laboratory tests and consultations). Each neurology resident will select a new patient consultation note or admission note, print this note and submit it to the attending for his/her review. The neurology attending will complete the resident chart review form and provide verbal feedback to the resident concerning the written note.

5. Feedback should be provided to the PGY-1's, PGY-2's, PGY-3's, Chief Residents, and medical students on an ongoing basis. Ideally, the attending should meet briefly immediately after Attending Rounds with the resident who presented the case. In addition, the attending is expected to meet individually with each resident and medical student at the end of his/her rotation to provide verbal feedback.

6. The Residency Program Director should be contacted personally if any particular Neurology resident is performing unsatisfactorily.

Evaluation of Attendings

Each resident is asked to evaluate the attending on the following 10 areas:

	Low 1 2 3 4 High 5
1. Interest in Teaching	_____
2. Ability to Teach Outside Own Specialty	_____
3. Demonstrating Appropriate Physician Attitudes	_____
4. Bedside Teaching of Interview and Physical Dx	_____
5. Basic Science Correlation	_____
6. Teaching Diagnostic Reasoning	_____
7. Teaching Medical Facts	_____
8. Appropriate Involvement of all on Rounds	_____
9. Stimulating Acquisition of New Knowledge	_____
10. Review of Medical Records with Comments	_____
OVERALL RATING	_____

Attendings are encouraged to review their own evaluation file kept in the Chairman's office.

HIGHLAND HOSPITAL
1st YEAR NEUROLOGY RESIDENT ROTATION

Highland Hospital
1000 South Avenue
Rochester, NY 14620

Highland Hospital is a 261-bed, full service hospital established in 1889. It became part of the University of Rochester Medical Center in 1997, and has developed centers of excellence in geriatric medicine, women's health, obstetrics, bariatric surgery, and joint replacement surgery. While it is part of a major medical center, Highland Hospital has been able to maintain its identity and important role as a smaller, patient-centered, community-based hospital. In many departments, the medical staff is comprised of physicians in private practice as well as physicians who are employed by URMC.

The URMC Department of Neurology began providing full consultative neurological services at Highland Hospital in 2004. There is no neurology attending service at Highland Hospital at this time. Several years ago, a 22-bed Neuromedicine Unit opened on East 7. In addition to East 7, many patients with neurological disorders are admitted to West 7; together, these two areas comprise Highland's stroke unit. With the exception of neonatal and child neurology, first-year residents on service at Highland should expect to encounter the full spectrum of neurological disease.

Highland Hospital is a New York State designated Stroke Center. All patients who present to the Emergency Department with symptoms of acute stroke are first evaluated by a well-trained and coordinated stroke team comprised of emergency medicine physicians, PAs, and nurses. During weekday business hours, the in-house neurology team is responsible for working up acute strokes and making acute treatment decisions with the ED providers. On nights and weekends, all acute stroke cases are staffed with the city-wide stroke attending neurologist or stroke fellow prior to initiating acute therapies. The "Stroke Team" page refers to a patient with symptoms of acute stroke either in the ED or inpatient on a medical/surgical floor. First responders to an inpatient Stroke Team page are Internal Medicine or Critical Care Physician's Assistants who are trained to perform the NIH stroke scale and evaluate patients with acute symptoms.

One goal of this rotation is to use Highland's "community hospital" atmosphere to simulate the consultative feel of the private general neurology practice environment in which most neurologists work. The resident also gains experience supervising and teaching medical students, as well as interacting with residents from other services, in particular Internal Medicine and Family Practice.

The Department of Neurology office, which includes work space and full computer access for both residents and medical students, is located in the Professional Office Building, Room 040 (on level BA, also referred to as the Garden level). The entry code for the neurology office is 4011. Keys for access to the Professional Office Building can be obtained from Christy Clary (276-5550).

Core Neurology Faculty

- Bogachan Sahin, MD, PhD, Chief of Neurology and Director, Stroke Center
- Anthony Maroldo, MD, Director, Education Site Coordinator
- Raissa Villanueva, MD, MPH, Chief, General Neurology Unit
- Megan Hyland, MD
- Michael Stanton, MD

Goals for the 1st Year Highland Hospital Rotation

1. Develop skills in the following areas: obtaining complete neurological histories, performing accurate neurological examinations, developing appropriate and complete differential diagnoses, and selecting appropriate therapies.

2. Become comfortable performing neurological consults in an emergency department setting in a timely and efficient manner.

3. Gain aptitude at communicating recommendations for evaluation and treatment of patients with neurological disease to the healthcare providers on attending medical and surgical teams, as well as working with those providers in an ongoing consultative role during a patient's hospital stay.

4. Gain in-depth knowledge of major categories of neurological disease, especially with respect to the populations represented at Highland Hospital (i.e. geriatrics, obstetrics).

5. Become familiar with changes in the neurologic exam associated with normal and abnormal aging.

6. Become familiar with special considerations in the evaluation and treatment of common neurological disorders (i.e. migraine, seizure, peripheral neurology) during pregnancy.

Expectations of Residents

1. The resident will be available to see new consults between 8 AM and 5 PM Monday through Friday, except on the afternoon that he or she sees patients in the resident firm. There is no weekend or overnight neurology resident coverage. The actual times that the workday begins and ends will vary depending on the case load.

2. The neurology resident is expected to field and triage new consultations from the requesting services; on weekends and when the resident is in clinic, the attending neurologist will be responsible for taking new consults and triaging calls.

3. The resident is expected to participate via zoom in all noon conferences and Friday morning Grand Rounds. Zoom and a webcam are installed on all three office computers, which will allow the resident and medical student to participate in these conferences.

4. The resident will educate himself or herself about the neurological disorders encountered on the consult service by reading appropriate texts, journals, and on-line materials.

5. The resident will supervise and teach the 3rd year medical student who is rotating on the inpatient consult service.

CHILD NEUROLOGY RESIDENT ROTATION

Objectives

The overall goal for the three-month rotation in Child Neurology is for the neurology resident to be proficient in obtaining histories and performing neurologic examinations on infants and children. Additional goals include learning about normal growth and development and understanding the interrelationship between development and abnormalities of the nervous system.

In order to achieve these goals, the resident should be involved in the work-up and management of infants and children of various ages in both the inpatient and outpatient settings. Furthermore, the resident should have an opportunity to discuss and read about the problems he/she is seeing.

The common neurologic problems of childhood are to be emphasized. These include:

1. Perinatal Problems in Premature and Full Term Infants
    - Perinatal asphyxia
    - Intracranial hemorrhage and hydrocephalus
    - Hypotonia
    - Seizures
    - Birth injuries to the nervous system (including to the brachial plexus)

2. Developmental Delay and Intellectual Disability
    - Global Developmental Delay
    - Delayed motor development (including cerebral palsy)
    - Delayed speech/language development
    - Delayed cognitive development
    - Abnormal social development (including autism)

3. Childhood Seizures
    - Neonatal Seizures
    - Febrile Seizures
    - Idiopathic Generalized Epilepsies (including childhood absence and juvenile myoclonic)
    - Idiopathic and Symptomatic Focal Epilepsies (including Benign Rolandic)
    - Infantile Spasms (West Syndrome)
    - Lennox-Gastaut syndrome

4. Headaches
    - Migraine and variants in childhood including:
        - Benign paroxysmal torticollis
        - Benign paroxysmal vertigo of childhood
        - Hemiplegic migraine
        - Abdominal migraine / cyclic vomiting
        - Ophthalmoplegic migraine
    - Idiopathic Intracranial Hypertension

5. Learning, Attention, and Behavioral Disorders
    - Attention Deficit Hyperactivity Disorder
    - Learning disabilities (including dyslexia)

6. Movement Disorders
    - Tics
    - Dystonia/Chorea
    - Ataxia

7. Head injuries
    - Acute and subacute care
    - Sequelae and rehabilitation

8. Neurogenetics
    - Genetic considerations in developmental disability, CNS malformation, and epilepsy
    - Chromosomal disorders
    - Inborn errors of metabolism

Ideally, there will also be opportunities for the resident to evaluate children with less common problems, including strokes in infancy and childhood, central nervous system malformations, CNS tumors, and pediatric demyelinating disorders, and the neurologic complications of both childhood systemic diseases and immunizations.

Child Neurology Rotation Overview

The Child Neurology rotation is divided into two services: inpatient/urgent, and outpatient. Each resident will spend approximately 8 weeks on inpatient/urgent and 4 weeks on outpatient.

General Expectations

- The resident is expected to actively participate in patient care, as this leads to the best learning experience.
- If, at any time during the rotation, the resident cannot be present, he/she should speak with the child neurology chief resident or attending as soon as possible to assist in establishing coverage. This includes the outpatient portion of the rotation as frequently attendings are double-booked and require a second provider.
- The resident is expected to teach medical students and residents who are rotating from other services, including pediatrics, physical medicine and rehabilitation, and psychiatry.
- The resident is expected to attend conferences including:
    - Patient of the Week (POW) Conference - held Thursdays – these are typically on Thursday at 8 AM, but times may vary so please consult the Child Neurology resident on-service. The Neurology resident will be expected to participate in discussion of complicated patient cases in a manner similar to Professor Rounds.

- Child Neurology Conference - held each Tuesday (September – June) from 8-9 PM in the Garvey Room. The Neurology resident will be expected to present at least once over the 3 months of the rotation, and should plan on attending this conference.
- Child Neurology Lecture series – held approximately every other Thursday from September through June from Noon – 1 PM.
- The resident should also attending morning report, noon conference lectures, and Grand Rounds. He/she should attend other conferences (e.g. brain cutting, Professor Rounds) when possible; however, these conferences should not interfere with the resident's clinical responsibilities.

- While on the Child Neurology service, the resident will be assigned to round on inpatient 3-4 weekends over the course of his/her pediatric rotations. Adult neurology residents rotating in Child Neurology on weekend call with have the following responsibilities:
  - Come in both Saturday and Sunday morning to round on the inpatient team (scheduled in coordination with the Child Neurology attending physician)
- The neurology resident will be expected to read about the problems he/she is seeing, both in the standard pediatric neurology texts and in the literature. A suggested reading list with links to articles is available on the Neurology intranet page under Pediatric Neurology at http://intranet.urmc-sh.rochester.edu/depts/neurology/peds/.

Responsibilities of the Neurology Resident

Inpatient/Urgent Service

Workflow

- There will be 1-2 residents working on this service. When 2 residents are present, the adult neurology resident will be first call for inpatient and ED consultations, and the child neurology resident will triage calls from primary care physicians who wish to refer patients for urgent consultation. As patients are admitted to or consulted on by the service, each resident will alternate accepting onto their team. When one resident is present, that resident will be responsible for all of the above duties. The team will round together on all patients.

Inpatient Service:

- Patients admitted to the Child Neurology service should have a daily note written by the neurology resident (it is acceptable to write an addendum to the Pediatric team intern note, but the addendum must include a neurologic exam and separate assessment and plan).
- Patients seen in consultation by the Child Neurology service should have notes written at intervals appropriate to the nature of the patient's problem.
- Work Rounds - The residents should conduct daily work rounds with the medical students. The resident is responsible for coordinating rounding time with the Pediatrics resident team – this typically takes place from 10:30 – 11 AM in the 8N conference room.

- Attending Rounds – The attending on-service will designate a time for rounding with the entire team. Rounds are usually held in the late morning and/or late afternoon, when lab values are back, tests have been done, and the team has gathered information.

Urgent Service:

- There will be two urgent clinics held each week on AC-6 – on Tuesday and Thursday afternoons. There will be up to 3 urgent patients scheduled in each clinic (1, 2, and 3 PM) when there are 2 residents on the rotation. The exact schedule for urgent patients should be confirmed with the attending at the beginning of the rotation. Each resident will be responsible for one of the two urgent clinics booked throughout the week (mainly this will be dictated by resident's firm schedules). If there is only one resident covering the service, there should be 1-2 patients scheduled on Tuesday and Thursday, and other days of the week could be utilized if needed on a case-by-case basis.
- When two residents are rotating, and one resident is covering the urgent clinic, the other resident will cover inpatient and ED consults as well as floor issues on all patients. When one resident is rotating, that resident will be responsible for both urgent patients and inpatient/ED consults in conjunction with the attending.
- The Child Neurology attending on-service will provide back-up if the resident needs assistance triaging a patient and will supervise the urgent visits.

The residents will also field phone calls from outside hospitals, including Rochester General Hospital, as well as Child Neurology clinic calls during the lunch hour.

<u>Consults</u>

- The resident is expected to work-up all patients who are admitted to the Child Neurology service, as well as all consults from the floors, pediatric ICU, neonatal ICU, and Child & Adolescent Psychiatry inpatient unit (4-9200).
- The residents may also be required to work-up and follow pediatric SEC (epilepsy) inpatients at the discretion of the epilepsy service.
- Consults should be completed on the day that the consult request is received. If a consult call is received overnight, the patient should be evaluated by the 1st call adult neurology resident who is in-house and then should be seen by the inpatient resident the following day.

<u>Sign-out / Call</u>

- In the morning, the resident should communicate with the evening/night float and/or with the pediatric neurology resident on pager call to find out about any problems, consults, or admissions from the previous night or weekend.
- At the end of the day, the resident should sign-out any patients who are ill or who need to be checked on overnight to the 1st call adult neurology resident and to the pediatric neurology resident who is on pager call (if applicable).
- Direct cross-coverage of patients admitted to the child neurology service is covered by the pediatric teams. If there is a neurological concern that arises after hours, the pediatric

residents should contact a child neurology resident on-call if available, and otherwise should contact the attending. However, occasionally the 1st call adult neurology resident may be contacted, and should staff the question with a child neurology resident or attending if needed, or may direct the pediatric resident to page the attending.

- The Adult Neurology resident (PGY-3) on Peds is listed in the paging system as on-call from 7am to 4:30pm Monday through Friday
    - From 7-7:30 am, the resident is expected to be available via pager but is not expected to be in-house until morning report at 7:30 am. IF there is an URGENT consult that comes in between 7-7:30 am and the resident is not yet in-house, he/she should notify the Chief Resident who can help see the consult. If the resident is not sure whether the consult is urgent, please call the Pediatric Neurology Fellow / Attending.
    - Peds consults that arrive between 4-4:30 pm should be triaged as described below, and all consults called prior to 4 pm will be seen by the daytime Peds team
- Triaging consults prior to change to change of shift:
    - The consult should be called back by the day consult resident in order to triage acuity
    - Consults that are deemed urgent (i.e. stroke alert, status, acute cord, GBS, etc.) will be seen by the day consult resident
    - Non-urgent consults can be passed off to evening shift residents along with information about how to contact the consultant, in general, this should not exceed more than two passed off consults total per shift
    - Rarely there are very non-urgent consults that can be seen the following day by the consult team, but several criteria must ALL be met:
        - Needs to be approved to be seen tomorrow by Peds consult attending/fellow
        - Patient added to Peds consult list and hand off updated to say "will be seen by day consult team in AM" in to-do section
        - Only appropriate if you are passing the consult off to yourself -- i.e.: a Friday 4 pm consult is not appropriate to pass off to the Saturday day float

Outpatient Service

Clinic – 200 East River Rd, 3rd Floor

- The neurology resident will receive a clinic schedule for the month that he/she is on the outpatient rotation. The resident will see patients with all of the child neurology attendings over the course of the rotation.
- The resident will not have his/her own patient schedule. Rather, he/she will see the attending neurologist's patients. The resident is responsible for looking at the schedule ahead of time and showing up on time for clinic (e.g. some clinics start at 8:30 AM and other at 9 AM).
- The resident is expected to see both new and follow-up patients, but may not be asked to see all patients on the faculty schedule.

- The resident should obtain a history, perform a physical examination, formulate a plan, and then present his/her findings and plan to the attending. The attending will review the plan and then see the patient in conjunction with the resident.
- The resident is responsible for writing a complete and timely note (within 48 hours) for each patient seen and staffed.

PSYCHIATRY ROTATION
For Neurology Residents

Director

Laurence Guttmacher, MD 275-5469

Location
SMH Psychiatry Consultation Liaison Service (PCLS)

Description

The four-week psychiatry rotation for neurology residents has been designed to teach fundamentals of psychiatry most beneficial for the practice of neurology. This rotation was established as a result of the neurology RRC guidelines, which mandate a one-month rotation in Psychiatry, under the direction of a board-certified psychiatrist.

PSYCHIATRY CONSULTATION/LIAISON SERVICE (PCLS)

Phone: 275-3592 (Constance Smith, Division Secretary)

Faculty:	Jennifer Richman, MD – Medical Director Inpatient Psychiatric Consultation Liaison Service
Clinical Coordinator:	Barbara Olesko, MS, RN, CS, NP (Pager number 3858)

On the first day of service, resident will report to the PCLS office, Room 1-8129 at 8:45 am.

Program Description

The Psychiatric Consultation–Liaison Service provides evaluation and assistance with the management of psychiatric disorders occurring in medically ill inpatients throughout SMH. During their C/L rotation, PGY-4 residents will develop skills in the assessment of psychiatric problems in a medical setting, master the understanding of the interaction and medical and neurological conditions with psychiatric disorders, and begin to develop the skills of a specialty consultant.

A wide variety of neuropsychiatric, forensic and psychosomatic problems are frequently encountered on the C/L Service, including:

- Acute confusional states and delirium
- Dementing disorders
- Depression in the elderly or medically ill
- Capacity to make informed decisions
- Suicide attempts and suicidality on the medical floors

- Somatoform and factitious disorders
- Psychogenic nonepileptic attacks (PNEA)
- Anxiety/agitation in the medically ill
- Secondary anxiety, mood and psychotic disorders
- AIDS-related secondary mental disorders
- Substance abuse

Training Objectives

Medical Knowledge

1. Develop knowledge base of psychiatric and neurologic aspects of psychiatry, psychosomatic disorders, delirium, depression and anxiety in the elderly and the medically ill patient.
2. Management of primary mental disorders and mental disorders secondary to medical conditions in the medical setting.
3. Understand potential risks/benefits of using psychotropic medications in the medically ill and geriatric patient.
4. Assessment of suicide risk and management on medical floor.

Patient Care

1. Conduct comprehensive and accurate psychiatric interviews and review of data.
2. Formulate a comprehensive differential diagnosis, case formulation, and treatment recommendation.
3. Develop and sustain effective therapeutic and ethnically sound relationships with patients.

Professionalism

1. Seek necessary consultation to interpret complex medical data.
2. Enhance communication and harmony on team and between services.
3. Advocate for best disposition plan for patients.
4. Teaching medical students at bedside and with formal didactics.

Roles and Responsibilities

Resident will:	Attending supervisor will:
Scheduling and Attendance	
Attend daily triage meeting at 9:00 a.m. (Thaler Room, 1-8136); Ader room on Wednesday.	Attend daily triage meeting at 9:00 a.m. (Thaler Room, 1-8136); 8:45 a.m. on Wednesday.
Attend afternoon rounds with attending physician and team Monday through Friday 1:00 p.m., rooms announced daily.	Attend afternoon rounds with attending physician and team Monday through Friday 1:00 p.m., rooms announced daily.
Be available Monday through Friday 8:30 a.m. – 5:00 p.m. (minimum hours) with the exception of	

core didactic time, and preceptor/supervisor time.	
Contact Barbara Olesko, RN, MS, NP, Coordinator and the PCLS secretary at 275-3592 with any conflicts, absences, etc.	
Mentorship	
Be familiar with the training objectives and expectations of this clinical rotation.	Review the training objectives and the site expectations herein with the resident at the beginning of the rotation.
Complete readings as clinically indicated and assigned.	Provide readings to resident as clinically indicated.
Meet with the attending supervisor or responsible person one half hour weekly for supervision in addition to bedside teaching.	Meet one half hour per week with resident for individual supervision in addition to bedside teaching.
Clinical Responsibilities	
Complete new consults as assigned daily, approximately 2-3 consults per day (dependent on consults requests received). Obtain daily sheet from PCLS secretary. Discuss assessment and recommendation with attending prior to putting note into chart.	Round on all new patient consultations within 24 hours. Offer feedback on interview skills, oral and written presentations.
Complete follow-up on cases at a minimum of 2 – 3 times/week.	Review and critique management recommendations.
Round with attending a minimum of once a week for follow-ups.	Round at least once a week with resident for follow-ups.
Make changes in recommendation only with attending approval.	Be available to resident for consultation as needed.
Complete transfers when indicated.	
Academic Responsibilities	
Provide supervision and bedside teaching to medical students as indicated.	Offer mentorship regarding teaching activities.
Evaluation and Feedback	
Ask for regular, ongoing oral feedback. Be receptive to feedback.	Provide regular, ongoing feedback to the resident.
At the end of the rotation, provide a written feedback to the program regarding the attending's teaching and the service as a teaching site.	Provide a written evaluation to the program at the end of the clinical rotation.

NEUROMEDICINE INTENSIVE CARE ROTATION
For PGY-2 and PGY-3 Neurology Residents

Medical Director: Debra Roberts, MD, PhD
Surgical Co-Director: Thomas Mattingly, MD
Nurse Manager: Sarah Perkins, RN, MSN
Lead Advance Practice Practitioner/Scheduler: Lindsay Marchetti MS, PA-C

NMICU Intensivists:

- Neuro Critical Care: Imad Khan MD; Ben George, MD
- Anesthesia Critical Care: Peter Papadakos MD

Advance Practice Providers:

- Jenna Gonillo-Davis MS, ACNPC-AG, CCRN
- Abby Judd, PA-C
- Catie McCann-Randall, ACNP
- Jeanette McCorry PA-C
- Kelli Outlaw-Wilder, ACNP
- Jamie Pica, ACNP
- Andrew Tsarvaris, ACNP

For schedule questions please contact: Pam Marks, Pamela_marks@urmc.rochester.edu. 585-275-9238.

Mission Statement

The NeuroMedicine Intensive Care Unit's mission is to provide state-of-the-art intensive care to critically ill neurosurgical and neurological patients.

Patient Population

The patient population includes critically ill patients with complex, potentially life-threatening neurosurgical and neurological illnesses. These illnesses include but are not limited to: ischemic stroke, hemorrhagic stroke, subarachnoid hemorrhage, ruptured AV malformations, brain herniation, status epilepticus, neuromuscular disorders requiring mechanical ventilation, head and spinal cord trauma, brain tumors, CNS infections, as well as any Neurology/Neurosurgery patient deemed critically ill and requiring a higher level of care.

Goals of the Educational Experience

The goal of the NeuroMedicine ICU rotation is to allow fellows, residents, APPs and medical students an opportunity to learn and apply neuro critical care principles in the above patient population. Unique aspects of this rotation are as follows:

- Management and post-operative care of neurosurgery patients including ICP and cerebral edema, advanced neuro-monitoring, and targeted temperature management.

- Diagnosis and management of neurological diseases that require critical care such as acute neuromuscular respiratory failure, infectious and/or autoimmune encephalopathy and status epilepticus.

- Exposure to life supporting interventions and devices including: vasopressors, arterial and central venous lines, mechanical ventilators, hypothermia, hemodynamic monitoring and Continuous Renal Replacement (CRRT).

- Identification and management of common critical care problems including, but not limited to, acute coronary syndrome, shock, sepsis, cardiac arrhythmias, adult respiratory distress syndrome (ARDS), and acute kidney injury (AKI).

- Working as part of a multidisciplinary team including critical care APPs, residents (neurology, neurosurgery, anesthesia, emergency medicine and PM&R) and critical care fellows (Anesthesiology, Surgery and Internal Medicine), nurses, pharmacist, respiratory therapy, social work, physical/occupational/speech therapy.

Description of NeuroMedicine ICU team members and responsibilities

NeuroMedicine ICU Attending

The NeuroMedicine ICU Attending is responsible for coordinating and supervising all activities within the unit. These include: patient care, education, triage of inter- & intra-hospital transfers, and communication among the ICU team and consulting services. It is the Attending who has the final responsibility in all aspects of unit function. It is expected that the NMICU Attending will be either present in the NMICU/ physician workroom or easily reachable and able to be bedside within 5 minutes of a call throughout the day. Likewise, the NeuroMedicine Attending's should be easily reachable at night and be expected to return pages within 10 minutes.

In the event there is an issue that cannot be resolved by the NeuroMedicine ICU Attending the Director of the NeuroMedicine ICU (Dr. Roberts) should be contacted immediately.

APPs: Nurse Practitioners (NPs) and Physician Assistants (PAs)

The NeuroMedicine ICU APPs are familiar with all patients admitted to the service. It is the expectation that the APP will pre-round on every patient. They should be seen as a resource and utilized for any questions residents may have as they formulate patient care plans. On rounds the APP will assign roles as to who will write orders and update the hand-off. The APP is also responsible for triaging admissions, transfers and changes in patient status, performing

procedures and keeping the attending informed of any emergent situations. They also assist with resident education when time allows.

Depending on the census, the APP may pick up patients. However, this will mainly fall to the residents as the APP chief responsibilities will be to carry the primary phone for the unit (x44569), attend to acute issues that arise with patients throughout the day and cover the fellow responsibilities when the fellow is not on the schedule or has educational requirements.

NeuroMedicine ICU Residents

The resident, under the direct supervision of the NeuroMedicine ICU attending, is the primary practitioner responsible for the care of patients (usually not more than 6) during the daytime. This includes pre-rounding each morning, presenting assigned patients (see format below), following up on the daily plan for their patients and assisting with family discussions, and performing supervised procedures (when appropriate). When not presenting on rounds, residents are expected to write orders or complete the electronic handoff for patients.

Residents are also responsible for admitting the majority of patients covered by the NMICU. This includes writing the H&P, placing orders, discussing case with attending and/or APP and creating an “interim hospital course summary” note. The interim summary should be updated daily by the covering resident.

When a patient is ready for transfer out of the ICU the resident is expected to complete their “interim hospital course summary” note and give verbal sign-out to the accepting provider team.

Residents will carry an assigned phone at all times when on the NMICU service. Each morning the resident should update the white board by the bar with the room numbers of the patients they are covering and the phone they are carrying that day. This assists the ICU nurses knowing who to call regarding questions about a patient.

The resident should be present and prepared for sign-out at 0600, attending rounds at 0830. They will also participate in afternoon rounds around 1630, and give report to the night team at 1800 on the unit. Residents will be encouraged and allowed to attend pre-determined mandatory lectures, conferences and meetings. Residents are expected to notify the team and sign out their patients prior to leaving for education and other clinical obligations (outpt clinic).

NeuroMedicine ICU Critical Care Fellow

The Critical Care Fellow, under the supervision of the NeuroMedicine Critical Care Attending, is responsible for supervising and coordinating the care of all patients in the ICU. They may be asked to be the “covering provider” for patients depending on staffing and census fluctuations. The fellow is also responsible for keeping the attending informed as to admissions, transfers and patient status. The fellow may be asked to assist and supervise procedures and/or family meetings. The fellow may lead daily rounds, as appropriate and to be determined by the attending on service.

Because of the full time presence of the APPs in the NMICU, the off-service fellow should utilize the APPs as a resource for learning Neuro-critical care procedure and treatment algorithms. The APPs will cover the fellow responsibilities when the fellow is not on the schedule or has educational requirements (i.e. conference) that will not allow the fellow presence in the ICU and vice versa.

When the fellow leaves the unit for the conference they must inform the APP and charge nurse of when they plan to return. The fellow will be expected to answer the pager for patient questions when on duty. The fellow will sign his patient out to the appropriate APP when finishing the shift. Sign out occurs on the unit at 1800.

Third and Fourth Year Medical Students/Sub-intern/APP students

The Medical students and APP students on the NeuroMedicine ICU service will be assigned patients to admit, evaluate, and present at morning rounds. Patient evaluation and procedures may be done by the student under appropriate supervision by the resident and/or Fellow or Attending.

Nursing Staff

A strong professional working relationship and communication with the nursing staff is of the utmost importance. The bedside nurse, using the structured format below, will lead rounds and they are encouraged to participate in formulation of the care plans for their patients. In addition to the bedside nurse, rounds are to include the charge nurse and/or care coordinator. Nursing will also attempt to avoid interrupting rounds for routine matters. Emergent issues should be brought to the team's immediate attention.

Daily Routine of the NeuroMedicine ICU

Sign Out Rounds – 0600 daily

The incoming day practitioners will obtain a report from the night provider at 0600 regarding the overnight events, care plans and possible transfers in/out of the NMICU. This should be done as a "walking sign-out" from room to room. This has several benefits: the bedside nurse can participate, electronic handoff can be updated, and it allows the team to see each patient and obtain a consistent exam. All sign in/out activities will follow a structured format that adheres to the URMC GME Guidelines.

Morning Rounds – approximately 0830 daily

Bedside rounds with the NeuroMedicine ICU Attending will begin at approximately 0830 unless extenuating circumstances prevail – in which case the attending should make every effort to communicate with the charge RN and the team about the start time for rounds. Rounds are conducted using an interdisciplinary rounding style detailed in the attached "Rounding guide" and "Anatomy of a Presentation". During rounds, if you are not presenting the patient, then you are either placing orders or updating the electronic handoff on that patient. Playing on your cell phone is not acceptable and will not be tolerated.

Evening Sign-out – 1800 Daily

The night provider(s) arrive at 18:00. Evening sign-out is conducted in exactly the same way as morning sign-out.

Notes

An admission or progress note will be written daily on every patient written and is the responsibility of the assigned resident responsible for that patient. *A medical student's note is not considered the daily patient note and may NOT be copied for use in a provider note.* An Attending physician should cosign all notes written by a resident and fellow in a manner consistent with compliance guidelines.

Note Writing Templates

These are the only templates that should be used for Admission or Progress notes on NMICU patients. All sections must be completed including "Principle Diagnosis".

Progress notes	Admission Notes
.NMICUProgress	.NMICUHP

Discharge and Interim Summaries

NMICU "interim hospital course summary" note will be written by the provider assigned responsible for that patient within 24 hours of admission and should be updated daily. This should then be converted into a discharge or transfer summary when the patient expires or moves out of the NMICU. In addition, a verbal sign out is expected between the NMICU and the receiving team at the time of transfer. If applicable discharge orders/plans should be verified with the team that will follow the patient after discharge.

Electronic Handoff

Electronic handoff should be updated each shift while rounds are occurring on the patient. These are then updated to reflect any new information/changes in care plan that may occur throughout the shift. The handoff is organized into several sections, which are outlined below along with their accompanying smart-phrases.

- Descriptive Sentence - .descriptivenmicu
    - 1 – 2 lines with significant PMH and diagnosis
    - current neuro exam (focus primarily on level of alertness and any focal findings)

- Active Issues - .activenmicu
    - Active issues/diagnosis only in a System by System format – This is **NOT THE CARE PLAN**. This is basically a fast reference for the overnight team if they need to know if "something is new"

- To Do:
    - All orders, plan changes and items that require follow up which were discussed on rounds are to be documented as a checklist
    - **DO NOT** delete items when completed, check them off so night providers know what has occurred and what needs follow-up.

    - The list should be deleted the next morning on rounds and the new day's plan updated.

- Anticipatory Guidance:
    - Include important high risk events to watch for and/or ongoing follow up items
    - This section is also where the night team puts in any events or changes that happen overnight

Consulting Services

The Neuromedicine ICU is a closed unit but communication among the ICU staff and consulting services is absolutely essential to the smooth function of the unit. The quality of patient care depends on the lines of communication being open and used frequently.

While admitted to the unit, the NMICU will act as the primary provider team. Consulting services can make recommendations, but orders must be placed by the NMICU and approved by the NeuroMedicine Attending. Significant changes in care plans, a patient's exam and/or their level of status should be communicated as soon as possible. Anticipated discharge of a patient from the ICU must be communicated in a timely fashion. Emergent admissions or discharges will be handled as judiciously as possible.

Any conflicts in the management of patients between the consulting services and the critical care team that cannot be resolved in a timely fashion should be brought to the attention of the Director of the NeuroMedicine ICU (Dr. Roberts) immediately.

Quality Assurance

The NeuroMedicine ICU reviews all Morbidity and Mortality cases monthly. A quarterly M&M is held for review of NMICU—Stroke cases. NMICU—Neurosurgery M&M cases are reviewed every 2 weeks at Neurosurgery Friday conference. A list of NMICU morbidity cases maintained on the Charge computer and is reviewed monthly.

Unit Meetings

- NMICU provider meetings: first Thursday of the month at 5:00 pm – 7:00 pm
    - Teaching Lectures/Case Conference
    - Unit Business Meetings
    - Research Meeting
    - Mortality and Morbidity
- Neurocritical Care Journal Club: 1 hour weekly, day of week varies based on schedules
    - Residents will be assigned a paper to present and will be discussed by the group
- Critical Care Teaching sessions: Monday-Friday 3-4 pm
    - Rotating sessions giving by faculty from all of the ICUs, Pharmacy and Ethics focusing on high yield critical care topics, given at the resident level.

Research

A number of clinical trials are in the works. In addition considerable effort is going into the creating and maintenance of a comprehensive neuro-critical care research database in order to facilitate future research efforts. The residents/fellows and APPs are welcome to discuss research opportunities.

Recommended Reading

1. Jose I. Suarez: Critical Care Neurology and Neurosurgery. Springer 2010.

2. Jenifer A Frontera. Decision Making in Neurocritical Care. Thieme Medical 2009.

3. Wijdicks EFM, The Clinical Practice of Critical Care Neurology (2nd ed.), Oxford University Press, USA, 2003

4. Wijdicks EFM, Catastrophic Neurologic Disorders in the Emergency Department (2nd ed.), Oxford University Press, 2004

5. Claude Hemphill & Alejandro Rabinstein. The Practice of Neurocritical Care. Neurocritical Care Society 2015

6. Kiwon Lee. The Neuro ICU Book. McGraw Hill Professional 2011.

NMICU Rounding Expectations:

Pre-rounds:

- Talk to the nurse/RT/social work prior to rounds for any updates/needs/ concerns
- Notify charge nurse and APP each morning before 0830 of any "call outs".
    - You will need to know the service, attending, and level of care.

During Rounds:

- When presenting, present to the ***whole*** team
- If you are not presenting, pull up imaging, fill out the handoff, or enter orders.
    - One person will place orders
    - Another will complete the handoff and pull up any new imaging
    - ***State what you are doing just prior to the start of the presentation so the rest of the team knows***
- Anatomy of the presentation is described on following pages
    - Goal is to be thorough and thoughtful, but not redundant
    - When presenting events and data, provide context and tell a story, why is this data and its change/stability important.
    - Don't state things in the plan that were discussed in the date (or vice versa).
    - Standing medications & orders are in the plan.
    - ***Do NOT present with the idea that a plan will be told to you. It is absolutely okay to be off the mark. Just share what you are thinking and why. You are here to learn. We can do that best if we know what you know.***

Outside of rounds:

- OWN your patients. You should run changes by or ask for help from the APP/Fellow (x44569) or attending but if nursing comes to you with concerns you are comfortable with feel free to address them.
- Have the Neurology and Neurosurgery residents in close contact. Update them in real time with changes in neuro exams and pertinent plan changes
- Do not blindly implement recommendations of consultants. The vast majority of the time they will be helpful, but they may conflict with the big picture or fail to consider some crucial data/ information.
- Keep families up-to-date. ALWAYS know who their surrogate/ proxy/ point person is. If you see them in the room, say hello, introduce yourself, and offer to answer any questions.
    - One word of caution: sometimes visitors are NOT part of the family. Before relaying information about the patient, be sure you are speaking to the correct person. If they are not the point person, politely inform them who in the family is being kept up to date and that they should speak with that person for information.

Anatomy of the Presentation:

Introduction:

Provider **Nursing**

1. Patient introduction
2. Events since rounds the prior day
3. 24hr pertinent data
4. Imaging since evening sign out
5. Additional 24hr information
6. Neuro exam
7. Neuro exam
8. Rates of current infusion

Assessment and Plan

- We round moving through body systems in the following order:

1. NEURO	5. GASTROINTESTINAL
2. PULMONARY	6. ENDOCRINE
3. CARDIOVASCULAR	7. HEME
4. RENAL	8. INFECTIOUS DISEASE

- Each system will be addressed individually using the outline below:

Provider **Nursing**

1. Introduction of body system (aka "Respiratory")
2. Physical exam if applicable
3. Observations and subjective data (aka secretions, urine color, IV access)
4. Diagnoses
5. Current device settings and anticipated changes (ICP monitor, Ventilator, CRRT, etc)
6. input from consultant services
7. Proposed plan
8. Feasibility of plan

Summary

1. Review of lines, lab frequency
2. Review of orders
3. Review of nursing plan & expectations

Body systems data:

This is a list of the most commonly seen data points we look for in each system. Not all data will exist for each patient and there may be relevant information not mentioned below. Please use your clinical judgment when deciding what needs to be presented.

1.Neuro

- ***Examination*:**
  - Level of Consciousness
  - Cranial Nerves / pupils
  - Language
  - Motor
  - Sensory
  - Tone / Reflexes
  - Coordination / Gait

- **24-hour data**
  - EVD (level, output)
  - ICP Range
  - CPP Range
  - ICP Waveform
  - Pbt O_2 range
  - Brain temp range
  - CSF results
  - AED levels
  - Sedatives / analgesics / Anti-psychotic PRNs
  - Shivering meds
  - TCDs
  - EEG results
  - Neuroimaging

2. Pulmonary

- ***Examination*:**
  - secretions
  - breath sounds

- **24-hour data**
  - Vent or noninvasive O_2 needs
    - Tidal volume, PEEP RSBI, RR, FiO_2
  - $EtCO_2$
  - SpO_2
  - ABG (with FiO_2 and Vent settings when drawn)
  - CXR
  - Bedside (ICU) Lung U/S
  - Respiratory / Secretion PRN Meds

3. Cardiovascular

- **24-hour data**
  - Rhythm, HR
  - BP/MAP range
  - Cardiac gtt requirements
  - BP PRNs given
  - Echo Results
  - EKG results
  - Troponins:
  - Lactate ranges

4. Renal/ Fluids/ Electrolytes

- **24-hour data**
  - IVF (type, rate)
  - Tube Feeds (type, rate)
  - U/O (mL/kg/hr)
  - Net I/O over 24hrs
  - Daily weight
  - Abnormalities on BMP
  - Osmols
  - Urine studies

5.GI/ Nutrition/ Endo:

- **24-hour data**
  - Residuals
  - Last BM
  - Bowel Regimen PRNs given
  - LFTs, Lipase, Prealbumin
  - Swallow Evaluation Result
  - Glucose range:
  - 24 insulin need
  - Hb A1c
  - Thyroid Studies

6.Heme

- **24-hour data**
  - H/H
  - Platelets
  - Coags
  - Vascular Doppler results
  - VTE prophylaxis

7.Infectious Disease

- **24-hour data**
  - T_{max}
  - Temp range
  - WBC trend
  - Culture results
  - Antibiotic Level

INTEGRATED NEUROMUSCULAR DISEASE/EMG ROTATION

Overview of the Rotation

PGY-4 Neurology Residents typically spend two 4-week blocks on the Neuromuscular/ EMG rotation. Those residents who are interested in a further neuromuscular disease or EMG experience are encouraged to spend an additional 4 weeks on this rotation, resulting in a 3-month integrated Neuromuscular Disease/EMG rotation. For the 2020-2021 year, some residents will only have one 4-week rotation, though the goals and objectives remain the same. There is some flexibility to tailor the rotation to a more clinical focus or a more EMG focus depending on resident interest.

Faculty and Staff

- Emma Ciafaloni, MD (Neuromuscular Medicine Fellowship Program Director, Co-Director Muscular Dystrophy Association Clinic)
- Peter Creigh, MD
- Johanna Hamel, MD
- Chad Heatwole, MD
- David Herrmann, MD (Neuromuscular Unit Chief, Peripheral Neuropathy Clinic Director)
- Eric Logigian, MD (Clinical Neurophysiology Program Director, University of Rochester EMG Laboratory Director)
- Phillip Mongiovi, MD (Neuromuscular/EMG Rotation Director)
- Michael Stanton, MD
- Rabi Tawil, MD (Neuromuscular Pathology Laboratory Director. Co-Director Muscular Dystrophy Association Clinic)
- Charles Thornton, MD
- Michele Ferguson (EMG Lab Manager)
- Sherry Estes (EMG technician)
- Adriana Marino (EMG technician)
- Lisa Martinez (EMG technician)
- Julie Thon (EMG technician)

General Overview of the 1-Month Rotation

The following components will run concurrently for the rotation:

1. EMG laboratory – 4-5 half days/week

2. Neuromuscular clinics – 4-5 half days/week

3. Thursday lunchtime neuromuscular conference at least 1 week per month

4. Weekly EMG conference - Friday 11 AM mornings - 1 hour didactic teaching in EMG

5. Sign out conference in the EMG lab - daily 4 – 5 PM. (Applicable when resident is scheduled in EMG for the afternoon)

6. To document improvement in knowledge base, two brief written examinations are given at the beginning and end of the rotation.

7. Continuity experience:

    a. Residents who rotate through neuromuscular/MDA and Peripheral Neuropathy clinics will participate in and perform electromyography studies on their clinic patients (from the morning), the same afternoon where possible.

    b. Residents will interact with many members of the neuromuscular faculty both in neuromuscular clinic and EMG during their rotations.

Overall Goals of the Neuromuscular/EMG Rotation

1. To learn the clinical presentation of the major neuromuscular diseases, and to perform a neuromuscular history and examination.

2. To learn the detailed spatial anatomy of the peripheral nervous system with reference to surface landmarks.

3. To localize peripheral nerve lesions precisely, and to determine their pathophysiology, severity and prognosis.

4. To gain a basic understanding of the electrical signature of the various neuromuscular diseases affecting anterior horn cell, nerve, neuromuscular junction, and muscle.

5. To learn to perform nerve conduction studies for common nerves using surface electrodes and percutaneous nerve stimulation.

6. To learn basic needle electromyography techniques and motor unit analysis.

7. To gain familiarity with neuromuscular ultrasound and its diagnostic utility in disorders of nerve and muscle.

Objectives of the EMG Laboratory Component

1. Learn as much peripheral anatomy as possible.

2. Learn the basic physiology of nerve conduction and EMG.

3. Understand the strategy to rule in or out:

    a. Myopathy

b. Disorder of muscle membrane

c. Disease of NMJ

d. Polyneuropathy

   i. Axonal

   ii. Demyelinating

   iii. Sensory, motor, autonomic

e. Mononeuritis multiplex

f. Entrapment neuropathy

g. Plexopathy

h. Radiculopathy

i. Motor neuron disease

j. Sensory neuronopathy

4. Be able to perform basic nerve conduction studies independently but understand advanced conduction studies, late responses, reflex studies, and repetitive stimulation.

5. Begin to perform needle electromyography and recognize common abnormal waveform patterns.

Detailed Description of the EMG laboratory Component

Patients are seen in EMG laboratories at University of Rochester Medical Center and at Westfall Road daily. Patients are typically seen in 60-90 minute time slots.

The goals of each electrophysiologic study are to localize the lesion precisely, and determine its pathophysiology, severity and prognosis. This is accomplished as follows: A directed history and a neurological examination are performed and recorded. A diagnostic hypothesis is generated, and an individualized electrodiagnostic study is then planned and performed. Nerve conduction studies are performed first, followed by needle electromyography. As the results of the study come in, the hypothesis may be changed and the study may be redesigned as necessary. At the end of the study, the electrophysiologic abnormalities must be internally consistent and correlate closely with the patient's signs and symptoms.

It follows that clinical electrodiagnosis requires knowledge of neuromuscular diseases, detailed knowledge of anatomy of the peripheral nervous system, understanding of normal and abnormal electrophysiology of nerve and muscle, technical expertise in performing the various tests and

ability to differentiate abnormal from normal electrical signals. The resident rotation in EMG is designed to teach the fundamentals in these various areas.

During the EMG rotation, residents will begin to learn the detailed spatial anatomy of the peripheral nervous system with reference to surface landmarks. In addition, they will gain a basic understanding of the electrical signature of the various neuromuscular diseases affecting nerve, neuromuscular junction, and muscle. They will begin to learn to perform nerve conduction studies using surface electrodes and percutaneous nerve stimulation.

Residents will have the opportunity to perform common nerve conduction studies on patients referred to the laboratory, under direct supervision, and only after they pass a test documenting basic knowledge of peripheral anatomy, electrophysiological abnormalities of the most important neuromuscular diseases, and demonstrate that they are technically competent in placement of electrodes, stimulation of nerves, needle electromyography, and use of the EMG machine.

In addition to the supervised evaluation of patients, there are other teaching opportunities. There is a daily EMG sign-out at which time pertinent cases from the day are reviewed. There is also an EMG conference once per week from 11:00 am to noon on Fridays (occasionally 8:00 am to 9:00 am). This is a recommended didactic lecture series, given by EMG/Neuromuscular staff and Fellows, in which the basic principles of electrodiagnosis, and the clinical and electrophysiologic findings of the major neuromuscular diseases are reviewed.

Resident Responsibilities and Expectations in the EMG Laboratory

First Week

1. Observe for 1-2 days

2. Read introductory chapters in Preston & Shapiro, Chapters 1-4.

3. Learn surface anatomy for nerves and muscles in the arm (See Aids to the Examination of the PNS).

4. Read chapter 10: Routine Upper Extremity Nerve Conduction Techniques.

5. Practice on self/Fellows/Technicians: learn to perform median, ulnar, tibial, and peroneal motor and sensory nerve conduction studies and F responses.

6. Take initial exam

Second Week

1. Practical test.

2. Read chapter 8: Artifacts and Technical factors.

3. Read Chapter 11: Routine Lower Extremity Nerve Conduction Techniques.

4. Perform median, ulnar, peroneal, and tibial nerve conduction studies with supervision in patients with carpal tunnel syndrome, ulnar neuropathy, cervical radiculopathy, peripheral neuropathy, and lumbosacral radiculopathy.

5. Read relevant chapters in Preston & Shapiro on each patient seen.

Third Week

1. Continue to practice and perform routine nerve conduction studies.

2. Read Chapter 6: Repetitive Nerve Stimulation, and perform 3 Hz repetitive stimulation of the ulnar nerve if available.

3. Read chapters 12, 13, 14 on needle EMG; view recordings of EMG activity.

4. Begin needle examination with supervision.

Fourth Week

1. Continue to practice and perform routine nerve conduction studies.

2. Read chapter 15: Clinical and Electrophysiologic Correlations: Overview and Common Patterns

3. Take Final Exam

Months 2 and 3

1. Residents will be assigned cases in the electromyography laboratory, and will perform all aspects of the electrodiagnostic evaluation on their cases.

2. Residents will be given cases of increasing complexity during the latter part of the rotation.

3. Residents will learn to perform independent electrodiagnostic examinations for cases of low-moderate complexity.

4. Residents perform electrodiagnostic examinations on cases they refer from the neuromuscular clinics.

Description of the Neuromuscular Clinic and Muscle/Nerve Pathology Component

Residents will spend at least three half-days of the week rotating through the neuromuscular/MDA/ALS and peripheral neuropathy clinics at University Rochester Medical Center during their rotation. Residents will participate fully in these clinics and conduct both new patient and interesting follow-up patients in conjunction with a neuromuscular attending. When possible, residents will also be involved in any electrodiagnostic testing that is conducted on these patients during the rotation. Residents will be responsible for following up on patients seen during the rotation under the supervision of a neuromuscular attending.

Learning Objectives of the Neuromuscular Clinic and Muscle/Nerve Pathology Component

1. To expose the resident to a wide variety of acquired and inherited disorders of muscle, nerve, neuromuscular junction and anterior horn cells.

2. To develop a comfort level in the clinical evaluation, selection and interpretation of diagnostic testing and management of neuromuscular disorders.

3. To develop a comfort level in decision making in neuromuscular disorders – e.g. when to admit a myasthenic patient, when to use plasma exchange or IVIg in myasthenia gravis.

4. To gain experience in the use and indications for various immune therapies in neuromuscular disorders (steroids, azathioprine, methotrexate, mycophenolate, IVIg, plasma exchange).

5. To gain experience in the supportive management of patients with chronic neuromuscular disorders (e.g. ALS, CMT, muscular dystrophy, neuropathy).

6. To learn basic histopathology of common neuromuscular disorders.

7. To develop a sound theoretical knowledge base in neuromuscular disorders through targeted reading, clinical exposure and faculty teaching.

Neuromuscular/EMG Rotation Schedule

	Monday	Tuesday	Wednesday	Thursday	Friday
AM	Neuropathy Clinic	NMD clinic or EMG SMH	NMD/MDA/ALS Clinic	Neuropathy Clinic	Grand Rounds EMG Lecture
PM	NMD clinic or EMG SMH	EMG SMH	NMD/MDA/ALS clinic	EMG SMH	EMG SMH or Westfall

Residents will participate in their own continuity clinic rather than on the NMD/EMG rotation on their assigned firm ½ day.

Rotation Conclusion

A multiple choice examination will be administered to test knowledge of neuromuscular disorders, neuroanatomy and principles of electromyography.

CLINICAL NEUROPHYSIOLOGY and EPILEPSY ROTATIONS FOR 1st, 2nd and 3rd YEAR NEUROLOGY RESIDENTS

Faculty:
James Fessler, M.D.
Michel Berg, M.D.
Evelyn Berman, M.D.
Gretchen Birbeck, M.D., M.P.H.
Deana Bonno, MD
Michael Chilungu, M.D.
Robert Gross, M.D., Ph.D.
Inna Hughes, M.D., Ph.D.
Lynn Liu, M.D.
Olga Selioutski, D.O.
Laurie Seltzer, D.O.
Trenton Tollefson, M.D
Thomas Wychowski, MD

Psychosocial Faculty:
John Langfitt, Ph.D.
Dalin Pulsifer, Ph.D.
William Watson, Ph.D.
Michael Privitera, M.D.

The Clinical (central) Neurophysiology Laboratory is part of the epilepsy unit and is under the leadership of Michel Berg, MD. The laboratory structure is highly integrated with the clinical operation. The neurophysiology laboratory includes out-patient and in-patient EEG and EP laboratories, intraoperative monitoring and long term EEG monitoring services. Lynn Liu, MD supervises the fellow and residency training.

SEC Resident Rotations: General Guidelines

- Each of the first year neurology residents (PGY-2) spends a 2 two-week blocks on the inpatient SEC service. They will also have the opportunity to spend 2 weeks in the EEG lab and read some EEGs with the clinical neurophysiology fellow and attending.

- Each of the second year neurology residents (PGY-3) may spend a 2-4 week block on the EEG service and is directly supervised by the clinical neurophysiology fellow and attending.

- Each of the third year neurology residents (PGY-4) optionally spends a 6-8 week block on the advanced neurophysiology rotation, which may consist of a mixture of the clinical epilepsy service and/or the EEG service.

- While on the EEG service the residents have no other epilepsy service clinical responsibilities (specifically they have no outpatient or in-patient direct care responsibilities), except for their weekly outpatient resident firm or Westfall Road Clinic.

- Performance is evaluated at the end of each resident rotation by the supervising attending, based on the direct observation of the resident to achieve the goals of the rotation.

First Year Neurology Resident (PGY-2) SEC Rotation

Description:

The neurology resident on the SEC service is responsible for care of all epilepsy service inpatients with the Epilepsy Fellow and the SEC attending. During this rotation the resident will be introduced to the field of epilepsy and basic EEG.

Objectives:

1. Describe the characteristics of seizures and epilepsy syndromes including differentiating types and determining appropriate treatment options.

2. Discuss basic understanding of the etiologies and pathophysiology of seizures and their clinical implications.

3. Demonstrate competency in the evaluation and management of patients with epilepsy, including all aspects of neurophysiological, medical, psychosocial, and surgical approaches.

4. Display a thorough understanding of the psychosocial implications and limitations of a diagnosis of epilepsy and develop an empathetic approach towards these patients.

5. Participate in the diagnosis and treatment of psychogenic events (conversion disorders), by learning the etiologies, psychosocial dynamics, and approaches to interactions.

6. By the end of the rotation, be competently able to formulate and implement treatment plans for patients with seizures, epilepsy and the differential diagnoses of paroxysmal events.

Responsibilities:

<u>Daily Management of SEC inpatients:</u>

- Pre-round around 8:30 - 9:00 AM to assess how the patient has done overnight and if there have been any episodes.

- Sign-in rounds (LTM Room 5-2530) with the SEC and LTM attending between 9:30-10:00 AM Monday-Thursday and at as arranged on Fridays) and make a plan for the day – reduce medications, additional provocative actions, other tests, etc. Then you will round with the attending and share the plan with the patients.

- Document in a daily progress note in eRecord and send the note for co-signature by the SEC attending and write any necessary orders. *.secprogip*

- Document the EEG results of the last 24 hours in the progress note under the section: Interim video-EEG long term Monitoring (LTM) report: ***.

- For intracranial monitoring cases, make sure they have antibiotics every day. Check vital signs more frequently. Check the plan for steroids with neurosurgery. Do not touch the dressing. CSF leak and pain management issues should be addressed to neurosurgery.

- Sign out rounds are between 4-6 PM mostly for hand off between the attendings.

Weekend rounding responsibilities

- Come in one weekend day a week. You should have one weekend day off per week. (Work with the attending or fellow whether it be Saturday or Sunday)

- Round with attending and write daily progress notes on all SEC admitted patients

Admission Duties

- Admit any scheduled admissions to 5-1600 or 8North (see peds section), write the admission note *.secadmit* and place any admission orders with medication reconciliation in E-Record.

- Discuss case, plan, and recommendations with the attending.

- Use the Epilepsy Order Set, it should walk you through: Seizure precautions, vital signs daily for the adults, Rescue benzodiazepine, Pain meds (acetaminophen or ibuprophen), and diphenhydramine for the itching of the electrodes.

- See urgent inpatient or outpatient SEC consultations. Evaluate and discuss the plan for the patient with the SEC attending.

- Handoff at the end of the day for each patient.
  - Write the one liner about the patient and add *.gagsec* (general anticipatory guidelines)
  - Customize specific rescue plan for each patient
  - Then assign a covering provider who you can find under web paging:
  - Neurology First call: evening 4-8 PM and nights 8 PM-8 AM

Discharge Duties

- Attend discharge discussion to know the conclusion of the monitoring evaluation and the patient's and their families understanding. Document in the *discharge instructions/avs*.

- Complete the discharge instructions and discharge summaries in E-Record for the patients. Send a copy to the PCP and the referring neurologist and SEC physician (If there is one – when E-Record able). *.secdcavs* and *.secdischargesummary*

- If the patient was diagnosed with PNEA, there is a specific template: *.pneadc* (AVS) and *.pneadcsummarycourse.* There is even a Spanish version of the AVS: *.pneaspan*

- To schedule a follow up appointments in about 6-8 weeks at the Strong Epilepsy Clinic at Westfall call the physician line at 341-8970. Remember to give time for Patient Review Conference (PRC) discussion for surgical patients (coordinate with Sara Ludwig 5-3681)

Miscellaneous Considerations

- As cases allow, attend:
  - Observe at least one LTM patient hook-up, and review LTM data with the technologists and the LTM fellows.
  - Intraoperative electrocorticography during craniotomy for epilepsy surgery
  - Brain mapping sessions in patients with subdural grids admitting for monitoring
  - Intracarotid amobarbital procedures (Wada tests) for memory and language localization

- Attend Wednesday Noon Clinical Neurophysiology conferences (Garvey Room)

- As time permits, attend Wednesday 3:00 PM Patient Review Conference (PRC) discussion of patient being evaluated for surgical resection (Garvey Room).

Recommended Reading List:

Initial Management of Epilepsy. J.French and T. Pedley, NEJM; Volume 359:166-176

Second Year Neurology Resident (PGY-3) EEG Elective

Description:

The purpose of the Second Year EEG rotation is to provide an introduction to EEG and other neurophysiological procedures.

Objectives:

1. Describe the basic neurophysiological generators of the EEG patterns.
2. Differentiate normal adult and child recordings and their various patterns in all normal states.
3. Recognize common abnormal EEG patterns including:
    - Gross focal features and asymmetries
    - Encephalopathy and coma
    - Epileptiform discharges and ictal patterns
4. Identify EEG recording techniques and equipment in all age groups and conditions. Understand the variety of sources responsible for artifacts.
5. List other applications of EEG and Evoked Potentials (e.g. intraoperative).
6. Generate normal and abnormal EEG reports using ACNS guidelines.

Responsibilities:

All Neurology Residents should have access to the Citrix server and access to Natus the EEG reading software. If you do not, contact Steve Erickson or Ramona Cramner. Contact Jeanette Griebel to arrange access to EEG reading room. If you have any concerns about your EEG rotation, contact Lynn Liu.

During the first two weeks:

1. Attend from start to finish at least one:
    - Inpatient EEG adult and child
    - Have an EEG done and demonstrate reactivity of occipital rhythm, mu rhythm, lambda waves, and stimulus evoked K-complexes.
    - Portable EEG (Coma, r/o status epilepticus, ECI)
    - Neonatal EEG
    - Evoked potential study
2. Introduction to the EEG machine
    - Learn to run a study with one of the EEG technologist
    - Learn electrode placement system on mannequins
    - If interested, place electrodes on a human with the assistance of an EEG technologist
3. Writing Reports
    - Write reports on EEGs assigned by the EEG fellow
    - Receive feedback on each report from an Neurophysiology attending
    - Read about the EEG finding and associated epilepsy syndrome or clinical condition

During the entire session:

1. Learn basic approach to EEG interpretation; study daily outpatient and inpatient EEGs with EEG fellows and attending.
2. As cases allow, attend at least:
    - One intraoperative monitoring during carotid endarterectomy, tilt table test with EEG or electrocorticography
    - One intraoperative EP recording during complex spine surgery
3. Attend weekly conferences:
    - Monday through Friday daily LTM conference 9:30 AM - LTM room (5-2530)
    - Wednesday 3:00-5:30 PM Patient Review Conference (PRC) – Garvey room
    - Wednesday Noon Clinical Neurophysiology - EEG conference - Garvey room
4. Spend all other time in the EEG reading room.

Recommended reading list:

1. Handouts
    - ACNS Guidelines for writing an EEG report

2. Ebersole, Current Practice of Clinical Encephalography:

Chapters 2: Electrical Fields & Recording Techniques
Chapters 4: Artifacts
Chapters 6: An Orderly Approach to Visual Analysis: Characteristics of the Normal EEG of Adults & Children
Chapters 8: Benign EEG Variants & Patterns of Uncertain Clinical Significance
Chapters 9: An Orderly Approach to the Abnormal EEG

3. Niedermeyer, Electroencephalography, Clinical Application, and Related Fields:

Chapters 5: EEG recording and operation of the apparatus
Chapters 6: The EEG signal: Polarity and Field Determination
Chapters 45: Neonatal EEG

Third Year Neurology Resident (PGY-4) SEC Rotation
Advanced SEC/ Neurophysiology

Description:

- The third year neurology resident may work either as a junior fellow on the SEC service or in the EEG lab.

- On the SEC service, the resident will be responsible for direct supervision of inpatient care in consultation with the Epilepsy Fellow and the SEC attending.

- In the neurophysiology lab, the resident is expected to improve EEG skills by reviewing daily EEGs and focus on increasingly difficult EEGs and act as a junior fellow in the EEG lab reading and writing EEG reports under the supervision of the EEG fellow and attending.

Objectives:

1. Solidify knowledge of seizures and epilepsy (improve on all the objectives expected for PGY-2 year).

2. Improve basic foundation of reading and interpreting EEG or LTM.

3. Demonstrate competence in generating normal and abnormal EEG reports.

4. Expand skills in the evaluation of patients with seizures and epilepsy.

5. Participate in diagnosis and treatment of psychogenic seizures (conversion disorders), learning the etiologies, psychosocial dynamics, and approach to interactions.

6. By the end of the rotation, be able to competently formulate and institute treatment plans for patients with seizures, epilepsy and related conditions.

Responsibilities on the SEC service:

<u>Daily Management of SEC inpatients:</u>

- Pre-round around 8:30 - 9:00 AM to assess how the patient has done overnight and if there have been any episodes.
- Sign-in rounds (LTM Room 5-2530) with the SEC and LTM attending between 9:30-10:00 AM Monday-Thursday and at 11 AM on Fridays) and make a plan for the day – reduce medications, additional provocative actions, other tests, etc. Then you will round with the attending and share the plan with the patients.
- Document in a daily progress note in eRecord and send the note for co-signature by the SEC attending and write any necessary orders. *.secprogip*
- Document the EEG results of the last 24 hours in the progress note under the section: Interim video-EEG long term Monitoring (LTM) report: ***.
- For intracranial monitoring cases, make sure they have antibiotics every day. Check vital signs more frequently. Check the plan for steroids with neurosurgery. Do not touch the

dressing. CSF leak and pain management issues should be addressed to neurosurgery.

- Sign out rounds are between 4-6 PM mostly for hand off between the ICU and SEC attendings.

Weekend rounding responsibilities

- Come in one weekend day a week. You should have one weekend day off per week. (Work with the attending or fellow whether it be Saturday or Sunday)
- Round with attending and write daily progress notes on all SEC admitted patients

Admission Duties

- Admit any scheduled admissions to 5-1600 or 8N (see peds section), write the admission note *.secadmit* and place any admission orders with medication reconciliation in E-Record.
- Discuss case, plan, and recommendations with the attending.
- Use the epilepsy order set, it should walk you through: Seizure precautions, vital signs daily for the adults, Rescue benzodiazepine, Pain meds (acetaminophen or ibuprophen), and diphenhydramine for the itching of the electrodes.
- See urgent inpatient or outpatient SEC consultations. Evaluate and discuss the plan for the patient with the SEC attending.
- Handoff at the end of the day for each patient.
    - Write the one liner about the patient and add *.gagsec* (general anticipatory guidelines)
    - Customize specific rescue plan for each patient
    - Then assign a covering provider who you can find under web paging:
    - Neurology First call: evening 4-8 PM and nights 8 PM-8 AM

Discharge Duties

- Attend discharge discussion to know the conclusion of the monitoring evaluation and the patient's and their families understanding. Document in the *discharge instructions/avs*.
- Complete the discharge instructions and discharge summaries in E-Record for the patients. Send a copy to the PCP and the referring neurologist and SEC physician (If there is one – when E-Record able). *.secdcavs* and *.secdischargesummary*
- If the patient was diagnosed with PNEA, there is a specific template: *.pneadc* (AVS) and *.pneadcsummarycourse.* There is even a Spanish version of the AVS: *.pneaspan*
- To schedule a follow up appointments in about 6-8 weeks at the Strong Epilepsy Clinic at Westfall call the physician line at 341-8970. Remember to give time for Patient Review Conference (PRC) discussion for surgical patients (coordinate with Sara Ludwig 5-3681)
- Complete the Discharge Instructions and Summaries summarizing the events of the hospitalization and the preliminary EEG conclusions as they were discussed with the patient. Follow up appointments are scheduled 6-8 weeks (adjusting for a surgical PRC if necessary) after admission with the outpatient SEC attending. Call 341-7500 to make the appointment.
- See urgent inpatient or outpatient SEC consultations. Evaluate and discuss the plan for the

patient with the SEC attending.

- Daily review LTM with the LTM fellow and the LTM attending.
- Observe at least one LTM patient set-up and several hours of LTM playback with the Technologist and LTM Fellow.

Responsibilities on the EEG rotation:

All Neurology Residents should have access to the Citrix server and access to Natus the EEG reading software. If you do not, contact Steve Erickson or Ramona Cramner. Contact Jeanette Griebel to arrange access to EEG reading room. If you have any concerns about your EEG rotation, contact Lynn Liu.

1. Daily reading of EEGs with EEG fellow and Neurophysiology attending:
    - Daily review of outpatient and inpatient EEGs as directed by EEG fellow.
    - Review the study with the Neurophysiology attending.
    - Generate EEG reports of normal and abnormal EEGs using ACNS guidelines.
2. Attend at least:
    - One intraoperative electrocorticography monitoring during a craniotomy for resection
    - One intracarotid amobarbital procedure (Wada test) for memory and language lateralization
    - One intraoperative monitoring during carotid endarterectomy or tilt table test with EEG or PET scan if available
    - One intraoperative EP recording during complex spine surgery
3. Attend LTM, PRC & EEG Conferences.

Recommended reading list:

Ebersole, Current Practice of Clinical Encephalography:

Chapter 5: Physiological Basic of the EEG
Chapter 7: Electroencephalography of the Newborn
Chapter 10: Epilepsy and Syncope
Chapter 11: Focal Brain Lesions
Chapter 12: Diffuse Encephalopathies
Chapter 13: Organic Brian Syndromes and Dementias
Chapter 14: Coma, Other States of Altered Responsiveness and Brain Death
Chapter 15: Drug Effects
Chapter 16: Long-Term Monitoring
Chapter 17: Chronic Intracranial Recording and Electrocorticography
Chapter 23: Intraoperative Monitoring

Niedermeyer, Electroencephalography, Clinical Application, and Related Fields:

Chapter 9: The Normal EEG of the Waking Adult
Chapter 10: Sleep and EEG
Chapter 11: Maturation of the EEG: Development of Waking and Sleep Patterns

Pedley/Engel or Wyllie chapters on seizures and epilepsy, as directed by the SEC attending

GUIDELINES FOR THE RESIDENT FIRMS

Philosophy of the Firms

The neurology resident firms were established in 1987 to provide the best possible patient care and resident education in a hospital-based neurology continuity clinic. The firms were set up in such a way as to simulate, as much as possible, a private-practice setting. Continuity of patient care and resident education were a high priority in the design of the firms. Hence, residents are assigned to a specific firm, headed by two attending neurologists, for their entire four years of their residency. Also, the patients are maintained as much as possible in the same firm, even though residents change every four years. In this way, the firm attendings will be familiar with the more complex firm patients and smooth the transition of resident turnover.

We view the firms as the most important outpatient activity for the neurology residents, since they provide a continuity experience for learning how to care for a cohort of patients. In addition, a unique mentoring relationship develops between the residents and the firm attendings over four years.

In order to ensure that the firms operate as efficiently as possible, the following guidelines have been developed:

Appointments

Patient appointments for the Neurology Resident Firms at Strong Memorial Hospital are scheduled from 1:00 - 5:00 p.m. during the week. Appointments are made by the Scheduling Center in the Department of Neurology, according to the following rules:

- PGY-1 residents are allotted one hour for both new and follow-up patients from July through September. Starting in October, they will be allotted one hour for new patients and 30 minutes for follow up patients, and will have a 30-minute unavailable slot in their schedule to complete administrative tasks or to use at their discretion to add an urgent follow up appointment.
- PGY-2, PGY-3 and PGY-4 residents will be allotted one hour for new patients and 30 minutes for follow up patients with a 30-minute unavailable slot in their schedule to complete administrative tasks or to use at their discretion to add an urgent follow up appointment.

Appointment length summary:

New	60 minutes
Follow-up	30 minutes (60 minutes for PGY-1's for the first 3 months)
Un-Admin	30 minutes for all levels

Residents may not change their schedules without prior, written approval from their firm attending. Once a change is approved, please email the staff with the change and the name of the person covering.

Residents are expected to personally follow in their own firm those patients they treated as inpatients or in the ED. However the resident clinic support team member can assist with other options if no slots are available. The neurology resident must personally schedule a follow-up clinic appointment in his/her firm for any 5-1600 inpatient or ED patient who needs follow-up at

the time of discharge. The resident needs to ensure that follow up appointments are made prior to the patient's discharge or if after hours, the next business day. Residents should also send an in-basket message to the Neurology Resident Scheduling Pool with the name of the patient, the name of the resident with whom the patient should be scheduled, and when the patient needs to be seen.

It is the responsibility of the resident to see patients in a timely manner. Residents should inform waiting patients if they are running late. Patients should not be turned away because a resident is running behind schedule.

Every effort is made to obtain the medical record and/or medical information for every patient. Occasionally no information is available at the time of the visit (but this should be a rare occurrence). Patients are to be seen whether or not a medical record is available at the time of the appointment.

No appointments can be scheduled for patients with private insurance unless they have a valid referral number or they have signed a waiver. This includes patients being scheduled for follow-up after a 5-1600 admission. No exceptions can be made. The patients' primary care physicians provide referral numbers.

Follow-up appointments are scheduled at checkout at the convenience of the patient. If the hour is late and an appointment cannot be scheduled at checkout, please ask the patient to call the scheduling office (access center) at 275-1200 the following day for an appointment.

Automated reminder calls or texts are made to each patient 4 days prior to a regularly scheduled appointment.

Test scheduling: An order must be placed in e-record by the resident before any test can be scheduled. Checkout staff cannot schedule tests without a properly entered order for a test. The patient note must be completed within 24 hours so that authorization for the test can be obtained. Note must be completed stat for all stat orders.

Messages

Routine patient messages and messages concerning prescription renewals are sent to the in-basket of the resident as soon as they are received. Residents are responsible for checking and addressing their in-basket messages throughout the day. All non-urgent messages and medication refills should be addressed within 24 hours.

The resident will be messaged through e-record and paged with any urgent messages. Being paged to the office should alert the resident that it is necessary to personally respond to a message. This page should be returned as soon as possible. The resident must also return the patient's call personally. The support staff is not medically qualified, and therefore cannot relay urgent messages to the patient for the resident.

Phone Numbers

The patient appointment number is: 275-1200.

Other useful numbers:

Support staff/schedulers	1-7450
Direct line to secretaries (not for patient use)	1-7450
Check-in	5-1247 / 5-7198
Check-out	5-1247 / 5-7198
Administrator	1-7429 or 764-9038
Nurse manager	5-8796
Staffing room	5-1202 5-7199
Fax	756-5189

Correspondence/Forms

All mail (in-house and out-of-hospital) should be placed in the mail bin located in the front office. All inter-office mail should go in a blue envelope or in a large tan interoffice mail envelope. Please do not use pre-stamped envelopes for inter-office mail.

Please complete all forms (DMV, Disability, etc.) in a timely fashion. Forms awaiting completion are filed in your folder in the staffing room and must be checked regularly. Once completed, please place the forms in the completed paperwork folder in front of your personal folder in the staffing room. A copy of the completed form will be faxed, mailed and scanned into the record by the support staff.

There are various consent/ release of information forms (i.e., hospital to patient, physician's office to hospital, etc.) Be sure that you are using the correct form for a timely response to the request.

All patient notes must be entered electronically into the medical record using e-record. The HPI and Assessment and Plan should be complete, organized and typed in prose into the electronic patient record. The medications, allergies, and PMH must also be entered into e-record for all new patients and should be updated at each visit.

Medication reconciliation: Medication reconciliation is a hospital and Joint Commission requirement. The purpose of medication reconciliation is to avoid medication errors, which include errors of omission, duplication of therapy, and drug-drug and drug-disease interactions. Medication lists in e-record should be reviewed by the resident to insure that they are correct and that all medications prescribed are appropriate (patients will get a print-out of their meds on arrival to the clinic to make any changes so the provider or medical technician can enter these into the record). Changes should be noted in the clinic note. Updated medication lists will be listed on the After Visit Summary (AVS) that will be printed at check-out desk and handed to the patient at the completion of the visit. These lists will be audited and the resident will be notified if the lists are incomplete. Whenever any new medication is prescribed, the patient needs to receive a handout about the drug and this fact needs to be documented in e-record.

Problem List: It is a hospital and Joint Commission requirement for ambulatory care areas to maintain an updated problem list for each patient that contains significant medical diagnoses, and operative and invasive procedures. Please review and update this list at each visit.

Allergies: All allergies need to be documented in the medical record.

Visit Navigator:
Patient Instructions: This area of the visit navigator should be completed prior to the patient leaving so that these can be provided on the AVS.
LOS and Follow Up: Resident must assign a visit diagnosis and a level of service in the visit navigator prior to the patient leaving the office.

Imaging

CD's containing neuroimages that need to be uploaded into the Imagecast system should be placed in the folder in the physicians' work room with the appropriate form completed. The back office staff will deliver the CD's to the radiology department for uploading. Please note that the radiology office staff does not return CD's.

Vacations and Cancellation of Clinic

According to department policy, residents receive four weeks of vacation per year. This includes one week of conference time. All vacations must be scheduled annually in advance, and all vacation requests must be approved by the Program Director. Vacations may not be taken during the first year SMH inpatient rotations, second year general neurology, stroke, pediatric neurology or psychiatry rotations, or during the third year chief resident or MBB rotations.

A resident's clinic should only be canceled in the event of an emergency. If a resident requests that his/her clinic be rescheduled for any reason other than a true emergency, the residency program director must be notified and must approve the schedule change. The resident needs to take an active part in rescheduling the patients, working collaboratively with the scheduling office staff, and should open up a non-clinic day to reschedule patients if necessary.

Coverage

Residents must arrange for coverage of their patients whenever they are away. In general, coverage is best provided by another resident in the same firm, and that resident should be attached to your in-basket. The support staff and firm attending must both be informed by email as to which resident is providing coverage. The covering resident must monitor and respond appropriately to in-basket messages for the resident whom he/she is covering, including any medication renewals.

Scheduling Errors

A scheduling error may occur on occasion, resulting in a patient arriving in clinic without an appointment. If this occurs, the patient will be informed of the error and will be given the option of rescheduling the appointment or being seen later that afternoon by a resident as soon as a time slot is available. The clinic chief and firm attending will decide which resident will see that patient. They will decide the best way to accommodate the patient.

Policy for Providers when Patients Arrive Late for Appointment

Patients who arrive within 20 minutes of their scheduled appointment will be given the opportunity to be seen by their provider. If the patient arrives late, the patient will be given the option to be worked in at a different time if possible or to be rescheduled to a different date.

Patients who have been “lost” in the medical center will be given special consideration. Patients who travel from a distance will also be given special consideration. Patients who are more than 15 minutes late may need to be rescheduled. If at all possible the provider should be the one to talk with the patient if he/she cannot be seen. If concern is expressed over the emergent nature of the visit, the provider will discuss this directly with the patient.

Patient Cancellations

If a patient cancels a clinic appointment, every effort is made by the scheduling staff to fill the open slot. If the schedule that you receive the day before clinic has an open slot, please do not assume that this time slot will be free the next day. Every effort is made to insure that clinics are fully booked. Please note that an open slot on a resident’s schedule may be filled as late as 12:00 noon on the clinic day. If an open clinic slot on a clinic day is to be filled after 12:00 noon, clinic staff must first check with the provider before scheduling the patient.

Chief Resident (PGY-4) Faculty Practice/Subspecialty Clinics

University of Rochester Neurology
919 Westfall Road, Bldg C, Suite 220
Patient Telephone: 341-7500
Front Desk Secretary: 341-7513
Scheduling Secretary: 341-7512
Fax: 341-7510

- **Chief Resident Clinics:** Third year neurology residents will have two afternoon clinics per week: a resident firm and a Faculty Practice/Subspecialty clinic. The Faculty Practice Clinics are located at University of Rochester Neurology at Westfall Road. The Subspecialty Clinics are located at three sites: SMH Neurology OPD, University of Rochester Neurology at Westfall Road, and UR Neuromedicine at Sawgrass Drive.
- **Faculty Practice Clinics:** Third year residents will be assigned to work with a particular WR attending or in a subspecialty clinic for a three-month period. The resident will see new patients only, and these will be scheduled for 1 hour and 10 minutes – 1 hour for the resident to see the patient and 10 minutes for the resident to review the patient with the attending. The attending will have this 10-minute block of time prescheduled to review the patient with the resident. The first new patient is scheduled at 1:20 PM. All residents will have three patients scheduled for each afternoon. The acting chief resident will not have a faculty practice/subspecialty clinic.
- **Attending absence:** If a faculty practice attending is away on vacation or at a meeting, the resident assigned to that attending will have no WR patients that day.
- **Patient notes:** The resident will be responsible for the e-record note on the patient, and this note must be done before the resident leaves for the day.
- **Attending's responsibilities:** The patient is considered the attending's private patient, and not the resident's. All telephone calls, messages, communications with the referring physician, review of laboratory data and paperwork concerning the patient will be the responsibility of the attending physician. The attending should nonetheless provide an update to the resident about patients whom they have seen together.
- **Follow-up appointments:** In general, follow-up appointments are to be scheduled with the attending physician, and not with the resident. If the resident is still working with the same attending when the follow-up visit is scheduled, the resident may see the patient in follow-up with the attending.

HEADACHE ELECTIVE
For 2nd and 3rd year Neurology Residents

Faculty

- Caren Douenias, MD
- Heidi Schwarz, MD
- Raissa Villanueva, MD

Description

Headaches of all types, both primary and secondary, play an important role in the practice of general neurology. A solid understanding of the primary headache disorders and some of the more common secondary headache disorders and their treatments is an invaluable skill for any neurologist planning to practice clinical neurology.

The goal of this rotation is to teach residents how to effectively diagnose and treat various headache disorders and to learn about the underlying pathophysiology of these disorders. Headache is a specialty within neurology that is rapidly expanding in terms of our understanding of the pathophysiology of migraine and other primary headaches. It is also a very rewarding specialty because there is an opportunity to make a significant impact upon the quality of life of your patients. The majority of the patients you will see in a specialized headache practice are chronic and have difficult to treat migraines and other primary headache disorders. You will have an opportunity to learn how to do botulinum toxin injections for the treatment of migraines as well as various nerve blocks for acute treatment of severe headaches.

Learning Objectives

1. Become familiar with the headache classification system
2. Learn how take an effective headache history
3. Learn when further work-up is needed for certain headache types and what work-up is indicated.
4. Become familiar with the diagnosis of migraine with and without aura and the appropriate preventive and acute treatment strategies
5. Become familiar with the diagnosis of cluster headaches and other trigeminal autonomic cephalalgias and learn the appropriate acute treatment and preventive treatment strategies
6. Become familiar with other primary headache disorders such as: new daily persistent headache, hemicrania continua, exertional headaches, hypnic headache and thunderclap headache.
7. Learn the treatment protocol for botulinum toxin injections for chronic migraine
8. Learn how to perform occipital nerve block, auriculo-temporal nerve blocks and supra-orbital nerve blocks, trigger point injections

Resident Responsibilities

1. The resident will attend clinic at the URMC Headache Center. Half-day sessions will occur on Mondays, Tuesdays and Thursdays with procedure days on Monday afternoons and Fridays. Clinic hours are from 8am to 12 noon and 1pm to 5pm for half-day sessions.
2. Call Schedule: There is no call on this rotation.

Evaluation

Your evaluation will be completed on the standard form provided by the Department of Neurology, and will be heavily weighted upon your level of interest and involvement and your ability to demonstrate knowledge in headache specialty care.

Required Reading

1) Wolff's Headache. Silberstein, Lipton and Dodick.
2) International Headache Society Classification of Headache Disorders version 3- ICHD-3
3) Comprehensive Review of Headache Medicine. Morris Levin.
4) Journal articles to be decided during the rotation depending up on the interests of the resident

MEMORY CARE PROGRAM ELECTIVE
For 2nd and 3rd year Neurology Residents

Location: Clinton Crossings, 919 Westfall Road, Building C, Suite 210
585-273-5454

Director: Fred Marshall, M.D. (Neurology; pager 3836)

Faculty:

- Marie Bilinski, NP (Psychiatry Nurse Practice)
- Lisa Boyle, MD (Psychiatry)
- Michael Hasselberg, NP (Psychiatry Nurse Practice)
- Anton Porsteinsson, MD (Psychiatry)
- Carol Podgorski, PhD (Marriage and Family Therapy)
- Susan Ruhlin, LMSW (Social Work)

Description

The Memory Care Program is a multidisciplinary out-patient practice devoted to the diagnosis and management of patients with a variety of dementias. Residents will gain exposure to a wide range of neurobehavioral syndromes and will benefit from the varying clinical perspectives of the MCP faculty. During the elective, residents will focus on the clinical assessment of patients, development of treatment plans, counseling and coordination of patient care. The importance of care-givers in the provision of patient care, familiarity with community support services, and collaboration with the Alzheimer's Association will be stressed. In addition, residents will become familiar with the array of natural history studies, translational studies, and clinical experimental therapeutic trials currently conducted by program faculty.

Learning Objectives

1. Understand the differential diagnosis, epidemiology and diagnostic criteria for common dementing illnesses.
2. Outline the appropriate use of imaging, electrophysiology, laboratory, and formal neuropsychological testing in the evaluation of individuals presenting with cognitive disorders.
3. Identify the indications and limitations of the cognitive-enhancing medications, and demonstrate familiarity with their prescribing information.
4. Recognize the importance and variability of psychological, social, and familial factors in the care and management of patients with dementing illness.

Responsibilities of the Resident

The resident will initially participate as an observer in the outpatient clinic, evaluating patients and meeting with families along with the primary MCP clinician(s) assigned. In this capacity, the resident will have an opportunity to round with each of the disciplines represented within the MCP (neurology, psychiatry, neuropsychology, nurse-practice, social-work and family-therapy). Once familiar with the assessment approach and care-team model, the resident will perform independent outpatient assessment of MCP patients and formulate diagnostic and treatment plans with close faculty supervision.

General Guidelines

The rotation is intended to be two to four weeks in duration. Reading should include the following, as well as appropriate literature searches triggered by specific patients evaluated.

Evaluation

Your evaluation will be completed on the standard form provided by the Department of Neurology, and will be weighted on your level of interest and involvement.

References

1. Richard L Strub and F William Black (eds.). The Mental Status Examination in Neurology, 4th Edition. FA Davis; 2000
2. Nancy L Mace and Peter V Rabins. The 36-Hour Day: A Family Guide to Caring For Persons with Alzheimer Disease, Related Dementing Illnesses, and Memory Loss, 5th Ed. Johns Hopkins Press; 2011
3. John O'Brien, Ian McKeith, David Ames, Edmond Chiu (eds.). Dementia with Lewy Bodies and Parkinson's Disease Dementia. Taylor & Francis; 2006
4. Michael S Gazzaniga, Richard B. Ivry, George R Mangun. Cognitive Neuroscience: the Biology of the Mind, 3rd Ed., Norton; 2009
5. Murial Lezak, Diane B Howeison, David W Loring. Neuropsychological Assessment, 4th Ed., Oxford; 2004

Selected Journal Articles for Review

<u>Alzheimer Disease</u>

1. McKhann G, Drachman DA, Folstein M, Katzman R, Price DL, Stadlan EM: Clinical diagnosis of Alzheimer's disease—report of the NINCDS–ADRDA work group under the auspices of Department of Health and Human Services Task Force on Alzheimer's disease. *Neurology* 34. 939-944.1984

2. Dubois B, Feldman HH, Jacova C, et al. Research criteria for the diagnosis of Alzheimer's disease: revising the NINCDS-ADRDA criteria. Lancet Neurol 2007:6:734-746.

Dementia with Lewy Bodies

3. McKeith IG, Dickson DW, Lowe J, et al. Diagnosis and management of dementia with Lewy bodies. Third report of the DLB consortium. Neurology 2005;65:1863-1872

Frontotemporal Dementia:

4. Rascovsky K, Hodges JR, Knopman D, et al. Sensitivity of revised diagnostic criteria for the behavioural variant of frontotemporal dementia. Brain 2011:134;2456-2477
5. Seelaar H, Rohrer JD, Pijnenburg YAL, et al. Clinical, genetic and pathological heterogeneity of frontotemporal dementia: a review. J Neurol Neurosurg Psychiatry 2011;82:476-486.

Vascular Dementia/ Vascular Cognitive Disorder

6. Roman GC, Sachdev P, Royall DR, et al. Vascular cognitive disorder: a new diagnostic category updating vascular cognitive impairment and vascular dementia. J Neurol Sci. 2004:226;81-87.

Parkinson Dementia

7. Barton B, Grabli D, Bernard B, et al. Clinical validation of Movement Disorder Society-recommended diagnostic criteria for Parkinson's disease with dementia. Movement Disorders 2011;27:248-253.

MOVEMENT DISORDER ELECTIVE
For 1st, 2nd and 3rd Year Neurology Residents

Faculty

- Jamie Adams, MD
- Richard Barbano, MD, PhD
- Karlo Lizarraga, MD
- Frederick Marshall, MD
- Peter Morrison, DO
- Irene Richard, MD
- Ruth Schneider, MD
- Christopher Tarolli, MD
- Blanca Valdovinos, MD
- Miriam Weber, PhD

Overview of Movement Disorders

Movement Disorders can refer to a physical sign of an abnormal movement (e.g., tremor, chorea, dystonia, tics, or myoclonus) or can be used to describe the syndrome that causes the abnormal movement (e.g. Parkinson's disease or Huntington's disease).

In general, movement disorders involve abnormalities of the form, velocity or control of movement. Many diseases are associated with more than one type of abnormal movement (tremor, rigidity and bradykinesia in Parkinson's disease) or abnormal movements may be the only manifestation of the disease (e.g., essential tremor). Movement disorders are typically conceptualized as either hypokinetic (paucity of voluntary and automatic movement) or hyperkinetic (excess movement).

Diagnosis of a patient with a movement disorder includes:

- Identifying the type and pattern of the movement (noting the specific distribution, relation to posture or action, speed, rhythmicity and supressbility)

- Determining whether it is primary movement disorder (e.g., Parkinson's disease), a secondary movement disorder (e.g., drug-induced parkinsonism),or if the abnormal movement or movements are a symptomatic of another condition movement disorder or is associated with other neurological signs (e.g. myoclonus in CJD), and

- Determining the probable etiology (e.g., hereditary, sporadic, drug-induced)

Essential tremor is the most common movement disorder, followed by Parkinson's disease, dystonia and drug-induced movement disorders. Other movement disorders include Parkinson's plus syndromes (such as multisystem atrophy, progressive supranuclear palsy, corticobasal ganglionic degeneration, dementia with Lewy bodies), Tourette's syndrome, Huntington's disease, restless legs syndrome, paroxysmal dyskinesias painful legs and moving toes and Wilson's disease. Some would also consider the ataxic disorders (such as spinocerebellar atrophies) within the realm of a movement disorder specialist.

Learning Objectives

1. Become familiar with the diagnosis, prognosis and treatment options for Parkinson's disease and other parkinsonian syndromes, essential tremor, tic disorder, dystonia and Huntington's disease

2. Become familiar with the medications typically used to treat common movement disorders as well as non-medical approaches including botulinum toxin injections and deep brain stimulation surgery

3. Become familiar with other areas of impairment experienced by patients with movement disorders (psychiatric, cognitive, gait/balance, speech/swallowing) and when to refer for further evaluation and treatment (e.g. neuropsychological evaluation, physical therapy, speech therapy)

Resident Responsibilities

Most of the clinical activity during the movement disorders elective will take place in the outpatient setting at 919 Westfall Road, Building C, Suite 100. There are generally no inpatient activities and there will be no call responsibilities. There is a noon-time fellow's conference on Fridays which residents on elective are welcome to attend (except for the first Friday of the month when we have our unit meeting).

Clinic

- Movement disorder clinics currently take place Monday, Tuesday, and Thursdays all day and Wednesdays (generally pm except once/month Ataxia). Residents are expected to attend unless they are scheduled for their own continuity clinic.

- The general clinics will involve a mix of new evaluations and follow-up visits for patients with PD and related disorders, ET, tic disorders and other conditions (e.g., RLS, myoclonus, ataxia)

- HD clinic takes place several ½ days per month (Tuesday or Thursdays, am or pm depending on attending - Drs. Adams, Marshall, Schneider)

- Botulinum toxin injections are performed Tuesday and Thursdays all day, and some Wednesday afternoons (Drs. Adams, Barbano, Morrison and Schneider); include patients treated for dystonia, tremor, tics and occasionally other conditions (e.g., tardive dyskinesia)

- Deep brain stimulation multidisciplinary clinic (1st and 3rd Tuesday of the month) includes evaluation of new patients being considered for surgery and programming of implanted stimulators. Any scheduled off/on medication evaluations (part of the pre-operative evaluation process) generally take place Thursdays at 8 am. The resident should also plan to observe a DBS surgery if one is scheduled during the rotation (Monday mornings at SMH)

Research

Residents are welcome to join attendings for clinical research trial related activities which will vary based on scheduled study visits, etc.

Evaluation

Your evaluation will be completed on the standard form provided by the Department of Neurology, and will be heavily weighted upon your level of interest and involvement.

Recommended Reading

Movement Disorders (overview)

A practical approach to movement disorders: Diagnosis and Management. Fernandez, Hubert et al. Demos Medical Publishing 2014 Proquest Ebook Center (available online, Miner Library)

Continuum (Minneap Minn). 2016 Aug; 22 (4 Movement Disorders). This issue of Continuum is a good resource for an up-to-date overview of several Movement Disorders

Parkinson Disease

Kalia LV, Lang AE. Parkinson's disease. Lancet 2015; 386:896-912

Postuma RB, Berg D, Adler CH, et al., The new definition and diagnostic criteria of Parkinson's disease. Lancet Neurol. 2016; 15 (6):546-8

Fox SH, Katzenschlager R, Lim SY, et al. International Parkinson and MDS evidence-based medicine review: Update on treatments for the motor symptoms of Parkinson's disease. Mov Disord. 2018; 33(8):1248-1266 [Erratum in: Mov Disord. 2018; 33(12):1992]

Seppi K, Chaudhuri, K, Coelho M, et al. on behalf of the MDS Evidence-Based Medicine Committee. Update on treatments for nonmotor symptoms of Parkinson's disease-an evidence-based medicine review. Mov Disord. 2019 Feb; 34(2):180-198[Erratum in: Mov Disord. 2019 May;34(5):765].

Ba F, Martin WR. Dopamine transporter imaging as a diagnostic tool for parkinsonism and related disorders in clinical practice. Parkinsonism Relat Disord 2015 Feb; 21(2):87-94

Atypical/Parkinson's Plus Syndromes

Diagnosis and management of dementia with Lewy bodies. Fourth consensus report of the DLB Consortium. Neurology 2017; 89:88–100

Armstrong MJ, et al. Criteria for the diagnosis of corticobasal degeneration. Neurology 2013; 80:496-503

Fanciulli A, Wenning GK. Multiple-system atrophy. NEJM 2015; 372(3):249-6
Lopez G, Bayulkem K, Hallett M. Progressive supranuclear palsy (PSP): Richardson syndrome and other PSP variants. Acta Neurol Scand. 2016; 134(4):242-9

Bhidayasiri R, Sringean J, Reich SG, Colosimo C. Red flags phenotyping: A systematic review on clinical features in atypical parkinsonian disorders. Parkinsonism Relat Disord. 2019; 59:82-9

Dystonia

Albanese A, et al. Phenomenology and classification of dystonia: a consensus update. Mov Disord 2013; 28(7): 863

Jinnah HA, Factor SA. Diagnosis and treatment of dystonia. Neurol Clin. 2015; 33(1):77-100

Tourette's syndrome

Kurlan, R. Clinical Practice. Tourette's Syndrome. N Engl J Med. 2010 Dec 9; 363(24):2332-8

Pringsheim T, Okun MS, Müller-Vahl K, et al. Practice guideline recommendations summary: Treatment of tics in people with Tourette syndrome and chronic tic disorders. Neurology. 2019 May 7; 92(19):896-906 [Comprehensive systematic review summary pages 907-915]

Essential Tremor

Ferreira JJ, Mestre TA, Lyons KE, et al. MDS Task Force on Tremor. MDS evidence-based review of treatments for essential tremor. Mov Disord. 2019 May 2. doi: 10.1002/mds.27700. [Epub ahead of print]

Marina P, Alfonso F. Recent advances in Essential Tremor: Surgical treatment. Parkinsonism and Rel Disord 2016; 22 (suppl): S171-S175

Huntington Disease

A Physician's Guide to the Management of Huntington's Disease. Available for free download from www.hdsa.org.

Tardive Syndromes

Savitt, D, Jankovic J. Tardive syndromes. J Neurol Sci 2018; 389: 35–42

Bhidayasiria, R, Jitkritsadakula, O, Friedman JH, Fahn C. Updating the recommendations for treatment of tardive syndromes: A systematic review of new evidence and practical treatment algorithm. J Neurol Sci 2018; 389: 67–75

Ataxia

Subramony SH. Approach to ataxic diseases. Handbook of clinical neurology. 2012; 103:127-34

Theresa A. Zesiewicz TA, Wilmot G Kuo S-H Comprehensive systematic review summary: Treatment of cerebellar motor dysfunction and ataxia. Report of the Guideline Development, Dissemination, and Implementation Subcommittee of the AAN. Neurology 2018; 90:464-471

Movement Disorders (miscellaneous)

Elias WJ, Shah BB. **Tremor** JAMA 2014; 311(9):948-954

Bhatia KP. **Paroxysmal dyskinesias**. Mov Disord. 2011 May; 26(6):1157-65

Baizabal-Carvalloa JF, Jankovica, J **Autoimmune and paraneoplastic** movement disorders: An update. J Neurol Sci 2018; 385: 175–184

Czarnecki K, Hallett M. **Functional (psychogenic)** Movement Disorders. Curr Opin Neurol 2012; 25:507-512

DBS for Movement Disorders, 2015 and Beyond. Fasano A and Lazono A. Curr Opin Neurol 2015, 28:423–436

Lozsadi D. **Myoclonus**: a pragmatic approach. Practical Neurology 2012; 12:215-224

John W. Winkelman JW, Armstrong MJ, Allen RP, et al. Practice guideline summary: Treatment of **Restless Leg Syndrome** in adults. Report of the Guideline Development, Dissemination, and Implementation Subcommittee of the AAN. Neurology 2016; 87:2585–2593

NEURO-ONCOLOGY ELECTIVE
For 2nd and 3rd year Neurology Residents

Faculty

- Nimish Mohile, MD
- Joy Burke, MD
- Andrea Wasilewski, MD

Description

The practice of neuro-oncology involves the diagnosis and treatment of primary and metastatic intracranial tumors as well as the neurological complications of cancer. The most common malignant tumor in adults is glioblastoma, and treatment of patients with this disease can be challenging. In addition patients with cancer present with a gamut of neurological diseases and symptoms. Patients with primary brain tumors and neurological complications are seen in both the inpatient and outpatient setting.

The goal of this rotation is to introduce residents to a growing field in neurology. Residents are encouraged to evaluate patients independently, and formulate assessments and plans for treatment on their own. They will do this under the guidance of the attending on-service, and our plan is to be readily available so that patients are discussed and seen together, and feedback is immediate. Residents are encouraged to read relevant literature and when appropriate, pertinent texts or papers will be provided.

Learning Objectives

1. Become familiar with the diagnosis, prognosis and treatment options for gliomas and other primary brain tumors.
2. Become familiar with the diagnosis, prognosis and treatment options for brain metastases.
3. Become familiar with the diagnosis and management of common neurological complications of cancer including neuropathy, seizures, cord compression, radiation necrosis, and steroid myopathy.
4. Become familiar with appropriate palliative interventions and treatments.
5. Gain experience with discussing prognosis, goals of care, and advance directives with patients and families.

Resident Responsibilities

1. Inpatient: Residents will see new inpatient and ED consults during the day (8am-4pm), and staff them with the attending on-service. They will also see follow-up consults as needed.
2. Outpatient: The resident will attend neuro-oncology clinic on Tuesdays and Wednesdays at the James P. Wilmot Cancer Center. Priority will be given to seeing new patients or follow-up patients with active problems and unique diagnoses.

3. Call Schedule: There is no evening, weekend or overnight call on this rotation.
4. Conferences: Residents will attend the weekly multi-disciplinary Brain Tumor Conference on Thursday mornings at 8:00 am. They are also encouraged to attend the academic conferences at 11AM and 12PM on Thursdays.
5. Readings: There will be assigned readings covering major topics and particular interests of the residents. These will be discussed weekly with the attending physician.

Evaluation

Your evaluation will be completed on the standard form provided by the Department of Neurology, and will be heavily weighted upon your level of interest and involvement.

Suggested Reading

Glioblastoma Multiforme

1. Stupp R. Chemoradiotherapy in malignant glioma: Standard of care and future directions. Journal of clinical oncology. 2007;25(26):4127.
2. Stupp R. Radiotherapy plus concomitant and adjuvant temozolomide for glioblastoma. New England Journal of Medicine, The. 2005;352(10):987.
3. Hegi ME. MGMT gene silencing and benefit from temozolomide in glioblastoma. New England Journal of Medicine, The. 2005;352(10):997.
4. Keime-Guibert F. Radiotherapy for glioblastoma in the elderly. New England Journal of Medicine, The. 2007;356(15):1527.
5. Brandsma D. Molecular targeted therapies and chemotherapy in malignant gliomas. Current opinion in oncology. 2007;19(6):598.
6. Stupp R. Maintenance Therapy with Tumor-Treating Fields Plus Temozolomide vs. Temozolomide alone for Glioblastoma. JAMA 2015; 314(23):2535-2543

Anaplastic Oligodendroglioma and Low grade Gliomas

7. van den Bent, Martin J. Adjuvant procarbazine, lomustine, and vincristine improves progression-free survival but not overall survival in newly diagnosed anaplastic oligodendrogliomas and oligoastrocytomas: A randomized European organisation for research and treatment of cancer phase III trial. Journal of clinical oncology. 2006;24(18):2715.
8. Cairncross G. Phase III trial of chemotherapy plus radiotherapy compared with radiotherapy alone for pure and mixed anaplastic oligodendroglioma: Intergroup radiation therapy oncology group trial 9402. Journal of clinical oncology. 2006;24(18):2707.
9. Macdonald DR. Successful chemotherapy for newly diagnosed aggressive oligodendroglioma. Annals of neurology. 1990;27(5):573.
10. Jakola, AS et al. Comparison of a Strategy Favoring Early Surgical Resection vs. a Strategy Favoring Watchful Waiting in Low-Grade Gliomas. JAMA 2012; 308(18); 18881-1888

11. Buckner, J et al. Radiation plus Procarbazine, CCNu and Vincristine in Low Grade Glioma. New Eng J Med 2016; 374:1344-1355
12. The Cancer Genome Atlas Research Network. Comprehensive, Integrative Genomic Analysis of Diffuse Lower-Grade Gliomas. N Engl J Med 2015;372;2481-2498

Brain Metastases

13. Patchell RA. A randomized trial of surgery in the treatment of single metastases to the brain. New England Journal of Medicine, The. 1990;322(8):494.
14. Patchell RA. Radiosurgery plus whole-brain radiation therapy for brain metastases. JAMA. 2006;296(17):2089.
15. Andrews DW. Whole brain radiation therapy with or without stereotactic radiosurgery boost for patients with one to three brain metastases: Phase III results of the RTOG 9508 randomised trial. Lancet, The. 2004;363(9422):1665.
16. Aoyama H. Stereotactic radiosurgery plus whole-brain radiation therapy vs stereotactic radiosurgery alone for treatment of brain metastases: A randomized controlled trial. JAMA. 2006;295(21):2483.

Primary CNS Lymphoma

17. Abrey LE. Treatment for primary CNS lymphoma: The next step. Journal of clinical oncology. 2000;18(17):3144.
18. Ferreri, Andres J.M et al. How I treat primary CNS lymphoma. Blood: July 21, 2001

Metastatic Epidural Spinal Cord Compression

19. Patchell RA et al. Direct decompressive surgical resection in the treatment of spinal cord compression caused by metastatic cancer: a randomised trial. Lancet 2005; 366: 643–48

Reference Texts

20. DeAngelis LM, Gutin PH, Leibel SA and Posner JB Intracranial Tumors. Diagnosis and Treatment.. Martin Dunitz, 1995
21. DeAngelis LM and Posner JB Neurologic Complications of Cancer (2nd ed.) Oxford University Press, 2009

NEURO-OPHTHALMOLOGY ELECTIVE
For 2nd and 3rd year Neurology Residents

Director:
Zoë R. Williams, MD

Faculty:

Steven E. Feldon, MD, MBA	275-1126
Zoë R. Williams, MD	275-6180

Location:
Flaum Eye Institute, Strong Memorial Hospital Department of Ophthalmology

Description

About 1/3 of brain structure is related to the afferent or efferent visual pathways, or the cortical processing of visual input. Therefore, an understanding of neuro-ophthalmology is crucial for a neurologist. Neuro-ophthalmic disorders can occur with diseases at any level of the nervous system, including CNS, PNS, neuro-muscular junction and muscle. There is also considerable interface with general medicine, pediatrics, neurosurgery, endocrinology and a myriad of other clinical specialties.

The faculty in the Neuro-ophthalmology section at U of R is multifaceted. Dr. Feldon, Department Chair and Dr. Williams are both ophthalmology-trained. Dr. Feldon practices Neuro-ophthalmology and Oculoplastics. Dr. Williams' practice includes strabismus surgery. They have different clinical and research interests.

Dr. Feldon is a world expert in thyroid eye disease and its surgical management. He also performs basic science research on the pathophysiology of thyroid eye disease.

Dr. Williams' primary research interest is visual recovery in afferent visual system disorders. She was the principal site investigator for the multinational trial for acute treatment of NAION (non-arteritic ischemic optic neuropathy) and for the surgical arm (SIGHT) of the IIHTT (Idiopathic Intracranial Hypertension Treatment Trial). She was also the principal site investigator for a multicenter study of the visual outcome of venous sinus thrombosis. She is involved in collaborative research with the Departments of Neurology and Brain and Cognitive Sciences on visual recovery after ischemic stroke, and with the Departments of Neurosurgery and Brain and Cognitive Sciences on visual recovery after pituitary tumor removal.

In addition, there are many research faculty members interested in vision disorders related to the nervous system, thus offering exposure to the field from unique perspectives.

Learning Objectives

1. Perform a neuro-ophthalmic history and examination, focusing on examination techniques that are useful in a general neurologic practice (rather than emphasizing the use of ophthalmic equipment that is generally unavailable to neurologists).
2. Learn to differentiate optic nerve disease from other ophthalmic causes of visual loss based on the history and exam.
3. Become proficient in identifying normal optic nerve anatomy, optic disc edema, and optic atrophy.
4. Become familiar with ophthalmic terminology and documentation.
5. Gain exposure to the techniques and interpretation of manual and automated visual field testing.
6. Learn about common neuro-ophthalmic disorders including optic neuritis, idiopathic intracranial hypertension, internuclear ophthalmoplegia, nystagmus, ischemic optic neuropathy, visual field defects, pupillary abnormalities, and diplopia including cranial neuropathies.
7. Observe surgical procedures relevant to neuro-ophthalmology (e.g., optic nerve sheath decompression, trans-antral orbital decompression, strabismus, eyelid procedures and temporal artery biopsies)

Responsibilities of the Resident

1. Serve as the initial examiner for new and follow-up patients.
2. See in-patient hospital neuro-ophthalmology consultations initially, and discuss with the attending physician.
3. Attend neuro-ophthalmology conference (Tuesdays at 7-8 AM)
4. Attend other conferences in the ophthalmology department that are relevant to neuro-ophthalmology, if scheduled during the rotation (e.g., Grand Rounds).
5. Follow neuro-ophthalmology inpatients with neurology service, as appropriate.
6. In the last week of the rotation, the resident should plan to present an interesting patient seen on the rotation with an overview of their diagnosis and management for the resident neuro-ophthalmology conference (Tuesdays 7-8 am).

General Guidelines

The rotation is 4 weeks in duration and primarily involves outpatient neuro-ophthalmology. The residents will see patients with Drs. Feldon and Williams and attend neuro-ophthalmology conferences. Prior to scheduling the rotation, the resident should contact Dr. Williams to make sure that there is not a major conflict with faculty travel during that time block. It is expected that after a day or two of observation, the resident will start seeing patients as the initial examiner and will be able to perform most of the relevant ophthalmic examination.

The resident should plan to read one of the following recommended textbooks while on service:

1. Miller NR, Newman NJ, Biousse V, Kerrison JB. Walsh and Hoyt's Clinical Neuro-Ophthalmology : The Essentials. 2nd ed., Lippincott Williams & Wilkins, 2008.

2. Leigh J and Zee D, The Neurology of Eye Movements. 4th ed., Oxford University Press, New York, 2006.

3. Pane A, Burdon M, Miller NR. The Neuro-Ophthalmology Survival Guide, Mosby, 2006.

A Manual for the Beginning Ophthalmology Resident, published by the American Academy of Ophthalmology, is also helpful for understanding various ophthalmic procedures and examination techniques that will be encountered on service.

Other reading material, including journal articles, will be incorporated as relevant to patient exposure.

Neuro-Ophthalmology Rotation Schedule

Monday	8 AM – 5 PM	Outpatient clinic	Dr. Williams
Tuesday	7AM – 8 AM	Teaching conference	
	8 AM – 12 PM	Outpatient clinic	Dr. Williams
	12:45 – 5 PM	Outpatient clinic	Dr. Feldon
	1PM- 5 PM	Neuro-op resident clinic	Dr. Williams
Wednesday	8 AM – 5 PM	Satellite clinic	Dr. Williams
Thursday	8 AM – 12 PM	Outpatient clinic	Dr. Feldon
	8 AM-12 PM	Surgery (2nd and 4th Thursdays)	Dr. Williams
Friday	1 PM-5 PM	Outpatient clinic	Dr. Williams
Inpatient consults	Dr. Williams		

Evaluation

The evaluation will be completed on the standard form used by the department and will be heavily weighted on level of interest, quality of work-ups and presentations, ability to generate a neuro-ophthalmic diagnosis and treatment plan, motivation and effort, and patient rapport.

NEUROPATHOLOGY ELECTIVE
For 2nd and 3rd Year Neurology Residents

Director:

Mahlon Johnson MD PhD 276-3087

Description

During this elective, the neurology resident will acquire a basic understanding of the reactions of the central nervous system and will formulate a diagnosis for the most common and classical neuropathologic lesions encountered at autopsy and in neurosurgical pathology with attention to the diagnosis of brain tumors, cerebrovascular diseases, neurodegenerative disease and common neuromuscular diseases. The neurology resident will gain insight into the prognostic information pathological analysis provided including new molecular tests.

Learning Objectives

Brain cutting conferences

1. To become familiar with the gross neuroanatomical landmarks and areas to be sampled.
2. To describe the gross abnormalities using pathologic terminology.
3. To understand the basic concept of tissue processing (i.e. what happens from the bench to the slide).
4. To review the slides upon their completion prior to the sign-out.
5. To recognize and articulate the microscopic abnormalities and formulate a clinical pathologic diagnosis on each case.

Neurosurgical Specimens

1. To understand the process of intraoperative evaluation of tissue samples.
2. To formulate a differential diagnosis based on the clinical history and CT/ MR imaging findings, and to correlate this with the gross and histologic specimens during intraoperative evaluation.
3. To participate in the evaluation of the cytologic and histologic preparations at the time of the examination of the specimen with the attending.
4. To formulate a diagnosis prior to the reviewing the slides with the attending.
5. To manage the cases from the medical and cost effective point of views; to learn which specialized techniques such as immunohistochemistry or electron microscopy should be used to help formulate/solidify a diagnosis.
6. To interpret the special studies which have been requested on specific neurosurgical or autopsy brain cases.

Responsibilities of the Resident

- Review neuropathologic autopsy and surgical slides and formulate diagnoses independently prior to meeting with the attending and then review with the attending.
- Review the next day's OR schedule and look up history on potential neurosurgical cases that may require intraoperative evaluation and then review the history/ imaging with the attending on call.
- Attend calls for intraoperative evaluation of neurosurgical cases during weekdays from 8 am-5 pm.
- Attend Brain-cutting Conference.

Evaluation

Your evaluation will be completed on the standard form provided by the Department of Neurology, and will be weighted for your level of interest and involvement.

References

1. R. A. Prayson, Neuropathology: A Volume in the Foundations in Diagnostic Pathology Series (2005)
2. Ellison D, Love S, et al. Neuropathology: A Reference Text of CNS Pathology (hardcover) Mosby; 2 ed (2003)
3. Louis DN, Ohgaki H, et al. WHO Classification of Tumours of the Central Nervous System (paperback) (2007)
4. Love S, Louis DN, Ellision DW. Greenfield's Neuropathology, 8th Edition (2 Volume) (hardcover) Oxford University Press, USA (2008)

NEURORADIOLOGY ELECTIVE

Neuroradiology Faculty

- Jeevak Almast, M.D.
- Shehanaz Ellika, M.D.
- Ali Hussain, M.D.
- Ed Lin, M.D.
- Anthony Portanova, M.D.
- Michael Potchen, M.D.
- Akm Rahman, D.O.
- Henry Z. Wang, M.D., Ph.D.
- P-L Westesson, M.D., Ph.D., D.D.S.

The administrator for the neurology elective in neuroradiology is the neuroradiology division secretary, Belinda De Libero (x5-1839).

Learning Objectives

1. Residents will gain familiarity with indications and contraindications for ordering CT and MR of the head, neck and spine.
2. Residents will gain familiarity with indications and contraindications for ordering angiography of the head, neck and spine as well as myelography.
3. Residents will understand the limitations of each neuroimaging study.
4. Residents will gain appreciation for the risks and consequences of invasive studies.
5. Residents will develop an ability to preliminarily interpret an imaging study on an emergency basis.
6. Residents will gain exposure to neuroimaging research and future neuroimaging techniques.

Neurology Resident Responsibilities

- Attend morning and afternoon read-out sessions.
- Attend weekly and monthly neuroradiology conferences
- Observe invasive procedures including myelography, and diagnostic and interventional angiography.
- Review one paper for presentation at neuroradiology journal club.

Daily Schedule

8:45 am - 12:00 noon	Morning read-out/observe procedures
1:00 - 5:00 pm	Afternoon read-out session

Weekly Conferences

Conferences and Meetings in Diagnostic and Interventional Neuroradiology

Monday	Tuesday	Wednesday	Thursday	Friday
12:00-12:45 *Radiology Resident Conference* *Neuroradiology* 1st, 3rd, 4th, (5th) Monday each month IS Conference Room G-3302	8:00-9:00 *Child Neurology Conference* 1st Tuesday each month Garvey Room 5-5220 Noon-1:00 *Pediatric Oncology Conference* Every other week Neurosurgery Conference Room 2-8130	7:30-8:30 *Interesting Case Conference* Neuroradiology Conference Room 1-4719	7:30-9:00 *Department QA Meeting* (4th Thursday of each month) Location varies 7:30-8:15 *Clinical Neuroscience Conference* IS Conference Room G-3302 8:30-9:15 *Multi-Disciplinary Neuro-Oncology Conference* IS Conference Room G-3302 5:30-6:30 *Multidisciplinary Head & Neck Tumor Board* Wilmot Cancer Center Room 2-0727	9:00-10:30 *Neurology Grand Rounds* Room K-307 (3-6408) 12:00-1:00 *Neuro-endovascular Conference* Neurosurgery Conference Room 2-8130

Evaluation of Residents

A written evaluation form from each attending will be completed for each neurology resident at the end of each neuroradiology elective.

Bibliography

http://www.amazon.com/Neuroradiology-Requisites-3e-Radiology/dp/0323045219/ref=sr_1_1?s=books&ie=UTF8&qid=1369163124&sr=1-1&keywords=neuroradiology+requisites

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PAIN MANAGEMENT ELECTIVE
For 2nd and 3rd year Neurology Residents

Director:		**Faculty:**
Joseph Poli, MD	242-1300	Joel Kent, MD Rajbala Thakur, MD Annie Philip, MD Albert Koh, MD Sarah Kralovic, MD Mark Williams, MD Adam Carinci, MD

Description

The Pain Management elective is conducted in the Pain Treatment Center practice. This is a multidisciplinary practice that currently consists of anesthesiologists, physiatrists and psychologist.

The Pain Treatment Center is located at 180 Sawgrass Drive. Residents will gain exposure to a broad range of nociceptive and neuropathic pain conditions. The educational experience will focus on the clinical assessment of these patients and developing treatment plans tailored to address each patient's individual needs. Treatments provided to these patients include medication management, interventional therapies and behavioral therapy as is indicated based on the patient's presentation.

Learning Objectives

1. Understand diagnostic and treatment strategies for managing common chronic pain conditions.

2. Identify indications for interventional and surgical therapies for chronic pain conditions.

3. Develop familiarity with common fluoroscopy-based procedures including epidural interventions, radiofrequency ablation, spinal cord stimulation, and intrathecal drug delivery for the treatment of pain.

4. Recognize the varied psychosocial factors that play a role in initiating, maintaining, and exacerbating chronic pain from the perspective of providers with varied backgrounds.

Responsibilities of the Resident

The resident will initially participate as an observer in the outpatient clinic. Once familiar with the assessment approach, the resident will perform independent outpatient assessment of chronic pain patients and formulation of treatment plans with close faculty supervision.

The resident will be exposed to basic pain management procedures. The resident will assist in the performance of basic injection and ablation techniques.

General Guidelines

The rotation is intended to be four weeks in duration, and should include time with each of the faculty in order to ensure a sufficiently broad clinical exposure. Your reading should include a review of the pain center's manual and summary journal articles provided at the start of the rotation, selected review of a clinical text, and participation in the conferences offered at the center.

Evaluation

Your evaluation will be completed on the standard form provided by the Department of Neurology, and will be heavily weighted upon your level of interest and involvement.

References

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2. Burchiel K. Surgical Management of Pain. Thieme; 2002.

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Selected Journal Articles for Review

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2. Dreyfuss P. Halbrook B. Pauza K. Joshi A. McLarty J. Bogduk N. Efficacy and validity of radiofrequency neurotomy for chronic lumbar zygapophysial joint pain. Spine. 25(10):1270-7, 2000 May 15.

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7. Woolf CJ. American College of Physicians. American Physiological Society. Pain: moving from symptom control toward mechanism-specific pharmacologic management. Annals of Internal Medicine. 140(6):441-51, 2004 Mar 16

PALLIATIVE CARE ELECTIVE
For 2nd and 3rd year Neurology Residents

Palliative Care Division, Department of Medicine
Room 1-6305, URMC (near Miner Library)
Phone: (585) 273-1154
Fax: (585) 275-7403
www.urmc.rochester.edu/palliative

Palliative Care Program Faculty

Rob Horowitz, MD, Chief
Amy An, MD
Adam Cardina, MD
Tom Carroll, MD
Erin Denney-Koelsch, MD
Rachel Diamond, MD
Ron Epstein, MD
Bob Holloway, MD
Joel Kent, MD
Benzi Kluger, MD, MS, FAAN (Adult Neuropalliative)
David Korones, MD
Aaron Lampkin, MD
Timothy Quill, MD
Fahad Saeed, MD
Jefferson Svengsouk, MD
Rajbala Thakur, MD
Paul Vermilion, MD (Pediatric Neuropalliative)
Cheryl Williams, MD

Marcia Buckley, NP
Judy Brustein, NP
Darlene Harmor, NP
Laura Hogan, NP
Lorraine Kirchhoff, NP
Ann Syrett, NP
Elaine Townsend, NP

Palliative Care Fellows
Gabriela Palacio, MD
Paul Vermilion, MD
Brandon Wilcoxson, MD

ACGME Competencies for Palliative Care Rotation
Learning Objectives and Assessment Methodologies

Prior to completion of this rotation, the resident will:

Principle Educational Objective	Assessment Methods
Patient Care: • Apply opioid conversion principles to the care of specific patients • Complete the palliative care eRecord template on all new patients • Review medical evidence as needed when it applies to patients • See an outpatient with neurologic illness using the neuropalliative care checklist	- Demonstration of competence and case discussion on daily rounds - Review completion of eRecord template by PC attending - Demonstration of competence with elements of neuropalliative care checklist including advance care planning - End of rotation evaluation

Medical Knowledge: • Demonstrate knowledge about opioid conversions and the management of other common symptoms • Read the Palliative Care Primer and complete the associated workbook • Read about the cases seen on the consult and outpatient services • Read essential neuropalliative care articles	-Completion and review of pain calculations in weekly conference -Discussion on daily rounds and in clinic -End of rotation evaluation
Practice-Based Learning: • Work with the attending to identify gaps in palliative care knowledge as it applies to patients seen, and fill those gaps	-Discussion on rounds, clinic and in the weekly palliative care conference - End of rotation evaluation
Interpersonal Skills and Communication: • Demonstrate the ability to talk with and listen to severely ill patients about their physical, psychological, social and spiritual suffering • Demonstrate the ability to talk with patients about Goals of Care, DNR, prognosis, risks and benefits of aggressive treatment versus hospice • Demonstrate self-awareness about one's personal responses to working with severely ill patients and their families	-Observed behavior on rounds interacting with patients, family, staff -Discussions on daily rounds with the attending physician and nurse practitioners -Discussions on rounds and in the scheduled educational conferences -End of rotation evaluation
Professionalism: • Demonstrate sensitivity and responsiveness to the unique personal and cultural situation of each patient, and provide care respecting each patient's personal values and goals • Demonstrate respect, compassion, integrity and altruism in relationships with patients, families, and colleagues in all health professions • Develop plans to integrate palliative care principles into your ongoing care and future career	-Assessment of behavior at beside, during rounds and in multidisciplinary conferences by palliative care attendings, nurse practitioners and other professionals -Discussion of primary palliative care in neurology and potential neuropalliative care career paths -End of rotation evaluation
Systems-Based Practice: • Function as a member of the multidisciplinary palliative care and neuropalliative care teams • Utilize members of those teams to address particular needs of patients • Participate in case management activities including discharge planning	-Observation on rounds and in multidisciplinary team meetings -Feedback from members of the multidisciplinary team -End of rotation evaluation

Schedule

- The Palliative Care Program will email you with instructions on when/where to arrive on your first day. Unless arrangements are made in advance, your *Palliative Care Primer* and associated Workbook will be given to you on your first day of service.
- Dr. Kluger will email you information about neuropalliative care clinics and other activities (e.g. lectures) that will be occurring during your elective

- On the first day, meet with Palliative Care NP in a location to be shared in a pre-rotation email, in order to review and discuss:
    - Rotation schedule: Rounding, patient assignments and Palliative Care Primer review sessions.
    - Consult documentation requirements in e*Record.
    - Any absences for clinic or other activities.
    - Any additional learning objectives you may have identified for the rotation. It will be important to discuss these with your attending as well, to help facilitate your learning. If you want to complete a Mini-Clinical Evaluation Exercise (CEX) during the rotation (as Medicine residents are encouraged), please discuss this with your attending and arrange a time to do it.

Core Activities

Team Rounds - Daily Monday – Friday. By consensus, we aim to round on the 4-1200 Palliative Care Unit by 10:30AM daily, but variations in individual schedules may mandate an alternative time, as agreed upon by team. Usually individual rounding on your patients occurs in morning (typically starting by 8AM). It is important to huddle with the NP on your team at the start of the day, and with the NP and/or the attending at the end of the day to ensure all important tasks have been addressed.

Neuropalliative Care Clinics – Days and Times vary over the course of the month and may include general neuropalliative care clinic (Friday afternoons), or neuropalliative care embedded in neuro-oncology (2nd and 5th Tuesday morning), movement disorders (3rd Wednesday AM), neuromuscular (1st Tuesday AM), and neuroimmunology (4th Monday AM). Please check in with Dr. Kluger prior to clinic to make sure patients are scheduled and to be debriefed on which patients may be appropriate for seeing directly versus shadowing.

Interdisciplinary Team Meeting – Wednesdays, 8am – 9 am, on the 4th Floor Playdeck, or elsewhere if indicated. Be prepared to: 1. formally discuss your 4-1200 patients; and 2. informally share an interesting, moving or challenging aspect of one of your other patients with the team. This is a great opportunity to engage in deeper exploration about the unique pleasures and challenges of caring for seriously ill patients and their families.

Review Sessions - *Week 1and Week 2: times/places to be emailed by Education Coordinator*
Please read the first half of the Palliative Care Primer and complete the relevant workbook chapters **prior** to the first session, and the second half prior to the second session. In addition to reviewing these questions, this group of medical student(s), resident(s) and non-Palliative Care fellow(s) will also discuss challenges you have confronted during the rotation.

Palliative Care Pharmacy Session – On some Wednesdays following the team meeting,Kate Juba, Pharm D., will teach and discuss pharmacology issues. You will be notified if/when/where

these sessions will occur. Attendees should bring one patient case or pharmacotherapy question to discuss with the palliative care pharmacist and pharmacy trainees.

End of Rotation Review - Please meet with your attending supervisor sometime late in your rotation to receive and give feedback about the rotation (15-20 minutes).

Monthly "Noon Conference" Series:

1st Wednesday	Clinical Ethics Conference, K-207
2nd Friday	Medical Humanities Conference, K-307
3rd Wednesday	Schwartz Center Conference, Whipple Auditorium (2-6424)
4th Wednesday	Palliative Care Grand Rounds, K-207
5th Wednesday	Spiritual Care Conference, K-207 (2-3 times per year)

Other Activities

Ethics Committee Meeting – 3rd Monday of each month, 11:45-1 pm. Lunch is provided.

Mini-Clinical Evaluation Exercise (CEX) – This has been a standard expectation in the Medicine residency program. For Neurology residents, this may be done at your discretion, in which case please request this observation from the Palliative Care attending or NP and provide the Mini-CEX form.

Medical Grand Rounds – Tuesdays, noon-1PM (Class of '62 Auditorium), except summer.

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1. Quill TE, Arnold RM, Platt F. "I wish things were different": expressing wishes in response to loss, futility, and unrealistic hopes. *Annals of Internal Medicine.* 2001;135:551-5.

2. Meier DE, Back AL, Morrison RS. The inner life of physicians and care of the seriously ill. *JAMA*. 2001; 286:3007-14.

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4. Mercadante S, Ferrera P, Villari P, Marrazzo A. Aggressive pharmacological treatment for reversing malignant bowel obstruction. *Journal of Pain & Symptom Management.* 2004;28:412-6.

5. Quill TE, Cassel CK. Nonabandonment: A central obligation for physicians. *Annals of Internal Medicine.* 1995;122:368-74.

6. Luce JM, Luce JA. Perspectives on care at the close of life. Management of dyspnea in patients with far-advanced lung disease: "once I lose it, it's kind of hard to catch it."*JAMA.* 2001;285:1331-7.

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15. Holloway RG, Gramling R, Kelly AG. Estimating and communicating prognosis in advanced neurologic disease. Neurology 2013;80:764-772.

SLEEP MEDICINE ELECTIVE
For 2nd and 3rd year Neurology Residents

Director:

Michael Yurcheshen, MD 341-7575

Faculty:

Michael Yurcheshen, MD	341-7575
Donald W. Greenblatt, MD	341-7575
Jennifer Marsella, MD	341-7575
Joseph E. Modrak, MD	341-7575
Heidi Connolly, MD	341-7444
Jonathan Marcus, MD	341-7575
Laura Tomaselli, MD	341-7444

Location:

Strong Sleep Disorders Center
2337 Clinton Avenue South
Rochester, NY 14618

Pediatric Sleep Medicine Services
2180 Clinton Avenue South
Rochester, NY 14618

Description

The Sleep Medicine rotation is conducted in a multidisciplinary outpatient sleep clinic.

The UR Medicine Sleep Disorders Center is an outpatient clinic and a 14-bed diagnostic laboratory located at 2337 South Clinton Avenue, in the Westfall Park Medical Center Complex. The pediatric patients are evaluated at a separate facility as listed above. At these facilities, faculty members from the Departments of Internal Medicine, Neurology and Pediatrics assess pediatric and adult patients with potential sleep disorders. Dr. Joseph Modrak and Dr. Michael Yurcheshen are the co-directors of the center.

Learning Objectives

1. Understand the clinical features of sleep disorders and the modalities used for their diagnosis and treatment. Become familiar with the diagnostic nomenclature of the International Classification of Sleep Disorders-3 (ICSD-3).

2. Understand the physiological substrates involved in normal and pathological sleep.

3. Develop sufficient familiarity with the Polysomnogram (PSG), Home Sleep Test (HST), and Multiple Sleep Latency Test (MSLT) to allow basic recognition of sleep stages and fundamental sleep disorders.

Responsibilities of the Resident

1. Initial participation as an observer in the outpatient clinic. This should progress to independent outpatient assessment as deemed appropriate by the clinical faculty.

2. Directed review of polysomnographic studies, progressing to sleep scoring and interpretation as deemed appropriate by the clinic faculty.

General Guidelines

The rotation is intended to be two weeks in duration, and should include time with each of the faculty, in order to ensure a sufficiently broad clinical exposure. Your reading should include a review of summary journal articles provided at the start of the rotation, selected review of a clinical text, and review of the International Classification of Sleep Disorders, version 3.

During the rotation, the resident should take the opportunity to review the journals Sleep and Journal of Clinical Sleep Medicine. Additional references for the rotation are listed below.

Evaluation

Your evaluation will be completed on the standard form provided by the Department of Neurology, and will be heavily weighted upon your level of interest and involvement. Your performance on the self-assessment exam will not be included in the final evaluation.

References

1. Iber, C, Ancoli-Israel, S, Chesson, AL, et al. The AASM Manual for the Scoring of Sleep and Associated Events. American Academy of Sleep Medicine, Westchester, IL 2007.
2. American Academy of Sleep Medicine. The International Classification of Sleep Disorders, 3rd Edition: Diagnostic Coding Manuel. Westchester, IL 2014.
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5. Sheldon SH: Evaluating Sleep in Infants and Children. Lippincott-Raven; Philadelphia, PA, 1996.

Selected Journal Articles for Review

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2. Hening WA, Allen RP, Earley CJ, Picchietti DL, Silber MH, Restless Legs Syndrome Task Force of the Standards of Practice Committee of the American Academy of Sleep Medicine. An update on the dopaminergic treatment of restless legs syndrome and periodic limb movement disorder. Sleep 2004;27:560-83.

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4. Kushida CA, Littner MR, Hirshkowitz M, et al. Practice parameters for the use of continuous and bilevel positive airway pressure devices to treat adult patients with sleep-related breathing disorders. Sleep 2006;29:375-80.

5. Kushida CA, Morgenthaler TI, Littner MR, et al. Practice parameters for the treatment of snoring and Obstructive Sleep Apnea with oral appliances: an update for 2005. Sleep 2006;29:240-3.

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7. Schenck CH, Mahowald MW. REM sleep behavior disorder: clinical, developmental, and neuroscience perspectives 16 years after its formal identification in SLEEP. Sleep 2002;25:120-38.

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UR NEUROLOGY AT PITTSFORD ELECTIVE
For 2nd and 3rd year Neurology Residents

Faculty:
Harold Lesser, MD, PhD
Seth Kolkin, MD
Louella Vivino, MD

Location:
Bushnell's Basin Neurology Office
Meadowgate Office Park
101 Sully's Trail, Bldg 20
Pittsford, NY 14534
585-544-7979 / 585-544-7901 (Fax)

Description

The residency program in Neurology at Strong Memorial Hospital emphasizes academic and research neurology. Practice at in an off-site outpatient setting is more limited.

The resident will evaluate patients with a variety of neurological disorders in an office-based practice. Ancillary activities include observing EEG, EMG and nerve conduction studies. The resident will participate in the Friday morning teaching conferences of the Department of Neurology at Strong Memorial Hospital as well as his/her weekly afternoon Firm.

Learning Objectives

1. See an alternate, small office outpatient Neurology practice environment

2. Experience the diversity of patient encounters.

3. Learn how a nurse practitioner can be fully integrated into an outpatient Neurology practice.

Responsibilities of the Resident

1. Visit the Bushnell's Basin site for a period of up to 2 weeks. See and staff both new and follow up visits with Drs. Lesser, Kolkin and Vivino. Observe EMGs.

2. Plan to be at the office at 8:00 AM Monday through Friday

Evaluation

The resident evaluation will be completed on the standard form used by the department.

Department of Neurology
Policy on Selection of Residents

Graduates of LCME-accredited US or Canadian medical schools applying for a Neurology residency at the University of Rochester are selected on the basis of the following:

- Performance in medical school, as evidenced by their official transcript
- Performance in the basic and clinical science years, as evidenced by the Medical Student Performance Evaluation (MSPE)
- Performance on the USMLE Step 1 and Step 2 examinations
- A letter of reference from the Chairman of Neurology at their medical school
- Two additional letters of reference from faculty at their medical school
- Personal and professional traits, based on an interview with the Program Director and several other faculty and residents in the Department of Neurology at the University of Rochester.

International Medical Graduates applying for a Neurology residency at the University of Rochester are selected on the basis of the same criteria as above. In addition, they must have the following:

- ECFMG certification at the time of application to the residency program
- Only J-1 visas are accepted for training

The Neurology Residency Selection Committee, consisting of the Residency Program Director, the Associate Residency Program Director, a neurology Chief Resident and two ad-hoc faculty members, reviews all information on candidates and constructs the match list, subject to approval by the Department Chair.

Department of Neurology
Policy on Resident Supervision

All patients admitted to the neurology inpatient unit and seen on the consultation services are directly supervised by full-time neurology faculty, who round daily with the residents on their patients. These attendings are readily available to the residents via pager on evenings, nights and weekends.

In compliance with accreditation standards of the New York State Health Code, resident patient care activities are supervised by a senior resident or attending physician. These activities are appropriately covered by the "General" designation, which is defined as follows: The supervising physician needs to be physically present when a procedure is performed except when the resident:

- Has documented adequate training (i.e., has been credentialed) to do the procedure, and
- Has permission of the supervising physician to perform the procedure.

In the clinical learning environment, each patient has an identifiable, appropriately-credentialed and privileged attending physician who is ultimately responsible for that patient's care. Residents and faculty members should inform patients of their respective roles in each patient's care.

Supervision may be exercised through a variety of methods. Some activities require the physical presence of the supervising faculty member. For many aspects of patient care, the supervising physician may be a more advanced resident or fellow. Other portions of care provided by the resident can be adequately supervised by the immediate availability of the supervising faculty member or resident physician, either in the institution, or by means of telephonic and/or electronic modalities. In some circumstances, supervision may include post-hoc review of resident delivered care with feedback as to the appropriateness of that care.

Levels of Supervision

To ensure oversight of resident supervision and graded authority and responsibility, our residency program uses the following classification of supervision:

- Direct Supervision – the supervising physician is physically present with the resident and patient.
- Indirect Supervision:
    - *With direct supervision immediately available* – the supervising physician is physically within the hospital or other site of patient care, and is immediately available to provide Direct 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 and/or electronic modalities, and is available to provide Direct Supervision.

- Oversight – The supervising physician is available to provide review of procedures / encounters with feedback provided after care is delivered.

The privilege of progressive authority and responsibility, conditional independence, and a supervisory role in patient care delegated to each resident is assigned by the program director and faculty members, as follows:

- The program director evaluates each resident's abilities based on specific criteria. Evaluation is guided by specific national standards-based criteria.

- Faculty members functioning as supervising physicians delegate portions of care to residents, based on the needs of the patient and the skills of the residents.

- Senior residents or fellows serve in a supervisory role of junior residents in recognition of their progress toward independence, based on the needs of each patient and the skills of the individual resident or fellow.

Each resident must know the limits of his/her scope of authority, and the circumstances under which he/she is permitted to act with conditional independence.

Neurology-specific procedures:

TPA, Critical Care, End-of life decisions: Residents must communicate with appropriate supervising faculty members when TPA is to be administered to a patient presenting with an acute stroke, when a patient is to be transferred to an intensive care unit, and when end-of-life decisions are being contemplated.

Lumbar punctures: Residents can only perform lumbar punctures without direct supervision if they have been credentialed to do so. Credentialing to perform lumbar punctures without direct supervision requires the performance of five successful lumbar punctures supervised by a physician credentialed to perform this procedure.

Department of Neurology
Policy on Progressive Responsibility for Patient Management

Neurology residents assume progressive responsibility for patient care as they progress through the residency program due to the structure of the program:

- PGY-2 residents primarily work in a supervised inpatient setting.
- PGY-3 residents primarily work on the consultation services, where they have more autonomy.
- PGY-4 residents serve as chief residents, overseeing the inpatient teams and the more junior residents, and also coordinate medical student teaching.

Decision making is shared by the residents and attending physicians, with residents becoming more autonomous in their decision making as they proceed through the residency program.

Department of Neurology
Policy on Hand-offs

Inpatient Teams:

All sign-outs in the EMR for neurology inpatients should include the following components:

1. Summary: A brief summary of the patient, including the reason for admission and important details of the PMH.
2. Baseline examination: Current neurological exam including any neurological deficits or pertinent negatives.
3. Active Issues: Active hospital issues undergoing treatment. Brief bullet points by problem and summary of work-up done. Please do not copy the plan from the progress notes.
4. To Do List: Follow-ups for the on-call residents should be designated as such
5. Anticipatory guidance: A bulleted list of anticipated events that the cross-cover APP or on-call resident may be notified about, including guidance about how to manage the problem (e.g. acute neurologic change in a stroke patient suggestive of hemorrhagic transformation, delirium including which medications to use and which to avoid, breakthrough seizure activity, pain issues, hypertension).
6. Code status: MOLST should be updated in the paper chart.

Change of Shift Procedures:

Inpatient Teams:

At the end of each day, the upper level resident and the intern on each inpatient team will "run the list" to finalize a plan for all patients on their team and to ensure that any outstanding issues (test results, patient or family questions, attending requests) have been addressed. Any items that need to be followed up by the APP cross-cover should also be noted. The hand-off tab needs to be updated daily in each patient's EMR for all patients on each team.

Any patients admitted during the day who are to be signed out to APP cross-cover should also have an updated sign-out in the EMR.

Any patients admitted to the neurology step-down unit should be signed out to the UCEF resident, both verbally and with an updated written hand-off in the EMR. The UCEF resident will be the covering provider for the patients in step down (4:30-8 pm). Overnight, the Night Float resident will be the covering provider for any step-down patients (8 pm-8 am).

Consult Teams:

At the end of each day, each consult resident is responsible for reviewing each patient on the list and assuring an appropriately updated electronic handoff with anticipatory guidance as appropriate. New neurology admissions from the day that are not yet covered by an inpatient Neurology team, must have a handoff updated in the *primary team tab and verbal sign out should be given to the oncoming UCEF or evening float resident.

Evening/Night Float:

Any patient seen by the EF or NF should be placed on the appropriate list at the end of each shift: Stroke, General, or Peds Consult list vs Admitted list. Each patient also needs a completed handoff in the EMR. This should be completed in the Neurology tab for patients on the consult lists and the *Primary team tab for patients on the admitted list. If the patient needs to be staffed with an attending, “NEW TO STAFF” should be written at the top of the to-do list. No patient should be left on the working list after the night float shift. If there is a patient with pending work-up that determines their ultimate disposition, this patient should be placed on the appropriate consult list in the morning and the plan/pending tests signed out to the oncoming day consult resident who can follow up the results and communicate/plan disposition.

Sign Out Rounds:

Verbal hand off must be completed between shifts. We have designated times for these sign outs, which are detailed below. At a minimum, these hand offs should include active patients, pending tasks/work-up, and anticipatory guidance for complicated patients.

Morning Sign-Out
- *Location*: Resident room
- *Time*: **630-7am**
  - Floor teams expected to get verbal sign out from NF at 630am at the latest
  - Consult teams expected to get verbal sign out from NF at 645am at the latest (if M-F, must also obtain pagers at this time)

Monday – Friday Evening
- *Location*: SEC conference room
- *Time*: **4:30pm**
- Consult, floor residents, evening float, UCEF
- Floor teams sign out to UCEF
- Consult teams sign out to Evening float
- Urgent consults that come during sign out should be taken by the EVENING FLOAT

Night Sign-Out
- *Location*: Pending location of on-call resident (communication is key)
- *Time*: **8pm**
- Evening float + UCEF (weekdays) vs day float + back-up (weekends) and the night float
- Urgent consults that come during sign out M-F will be taken by the UCEF resident

Triaging consults prior to change to change of shift:
- Consult residents (general, stroke, peds) are expected to triage consults that come late in the day prior to change of shift
- The consults should be called back by the day consult resident in order to triage acuity
- Consults that are urgent (ie stroke alert, status) need to be seen by the day consult resident
- Non-urgent consults can be passed off to evening shift residents along with information about how to contact the consultant, in general, this should not exceed more than 2 passed off consults total per shift

- Rarely there are very non-urgent consults that can be seen the following day by the consult team, but several criteria must ALL be met:
    - Needs to be approved to be seen tomorrow by consult attending/fellow
    - Patient added to appropriate list and hand off updated to say "will be seen by day consult team in AM" in to-do section
    - **Only appropriate if you are passing the consult off to yourself** -- ie: a Friday 4pm consult is not appropriate to pass off to the Saturday day float
- Evening and night residents should also be triaging at the end of their shift -- non-urgent consults should be passed off to day/night team

Special Considerations for Peds Consult Residents:

- The resident assigned for Peds M-F will receive pages from 7am to 4:30pm
- From 7-7:30am, the Peds resident (PGY-3) is expected to be available via pager but is not expected to be in house until morning report at 7:30
- IF there is an URGENT consult that comes in while the Peds resident is not in house, the Chief resident should be notified to help see the consult (this is really only applicable to Peds Stroke Alerts and possibly status epilepticus, but the Peds ED is well equipped to manage status)
- If you are not sure whether the consult is urgent, please call the Peds Fellow
- Peds consults that arrive between 4-4:30pm should be triaged as described above, all consults called prior to 4pm will be seen by the daytime Peds team

Covering Providers:

All patients must be assigned a covering provider at all times.

- Admitted SEC patients: The UCEF and NF should assign themselves as the “covering provider” for the admitted SEC patients.
- Floor patients: 51600 and 53600 floor patients are assigned to the APP team from 4:30 until AM sign out. From 4:30 to 8pm the UCEF should also be assigned to these patients (2^{nd} covering provider).
- 51600 and 53600 step down patients are assigned to the UCEF resident and night float at the start of each shift
- Newly admitted patients: Assigned to on-call resident until arrival on 51600 and taken over by inpatient team

Any sign-outs completed by medical students should be reviewed and addended by the intern or resident.

Department of Neurology
Policy on Resident Work Hours

The Department of Neurology is fully committed to maintaining high standards of patient care and resident education, and realizes that monitoring and regulating work hours are key aspects of this standard of care. The Department also expects to be in full compliance with the New York State 405 Work Hours Regulations. The following policy on Resident Work Hours has therefore been established:

- A resident may not work more than 80 hours in a single week. Activities included in these 80 hours are all time spent in the hospital in the care of both inpatients and outpatients, all educational conferences and rounds, and all time on-call during which the resident is involved in the care of patients.
- Each resident will have a 24-hour period off each week.
- Each resident must have 10 hours off between shifts.
- No resident may work more than 24 consecutive hours involved in direct patient care.
- A 3-hour grace period is allowed post-call for residents to sign-out patients seen overnight. No new patient responsibilities can be assumed during this 3-hour grace period.

Resident work hours are monitored twice yearly with a survey by the Graduate Medical Education Committee.

Department of Neurology
Policy on Evaluation and Promotion of Residents

The following is the Department of Neurology policy on Evaluation and Promotion of Residents:

- The evaluation system for neurology residents is designed to assess educational outcomes in all six of the ACGME core competencies: patient care; medical knowledge; practice-based learning and improvement; interpersonal and communication skills; professionalism; and systems-based practice.
- Specific Neurology Core Competencies have been developed by the ABPN and are included in this syllabus. All neurology residents are expected to achieve mastery of these competencies at the time of completion of the training program.
- The following evaluation instruments will be used to evaluate mastery of these six competencies: RITE; clinical skills examination; chart review; resident case log; attending global assessment; 360° assessment; and resident portfolio. These evaluation instruments are described elsewhere in this syllabus.
- Neurology residents receive regular formal and informal feedback that is both quantitative and qualitative. Written documentation of each individual feedback meeting is filed in each resident's performance folder.
- All neurology residents take the Residency In-service Training Examination (RITE) each year. The program director reviews each resident's performance on this examination at the June evaluation and feedback meeting.
- A clinical skills examination is administered yearly to all of the residents. The program director reviews each resident's performance on this examination at the June evaluation and feedback meeting.
- Written faculty global assessments are obtained on each resident following each rotation or elective and are keyed to the Milestones. Each resident is assessed as to his knowledge, skills and attitudes, and achievement of the six core competencies and the specific goals for each rotation. Written evaluations are also obtained on each resident in the outpatient firm and the faculty practice clinic experience (for PGY-4's). The faculty member meets with each resident following each rotation to discuss the evaluation with the resident. The completed evaluation is then sent to the program director for review.
- The Program Director meets semi-annually with each resident to review their progress and to discuss career planning. A written summary of this meeting is provided to each resident for his review and signature, and is filed in the resident's evaluation folder.
- A clinical competency committee, consisting of the program director, associate program director and three additional faculty members, meets in December and June of each year to review each resident's progress in the program and to assign ACGME neurology Milestones for each resident. In addition, at its June meeting, the committee determines if the resident is qualified to advance to the next year of training. Advancement is contingent upon progressing at an appropriate pace through the Milestones, meeting the specific objectives for each year of training, as well as the specific objectives for each individual rotation or elective.

- A resident who is deemed unqualified to advance to the next year of training, based upon not meeting the specific objectives noted above, will be given a program of remediation. If remediation is unsuccessful in the allotted period of time, the resident may be asked to repeat the year.
- The Department Chair meets with each resident at least annually to review progress and to provide career planning.

Department of Neurology
Policy on Evaluation of Faculty and the Residency Program

- Faculty members are regularly evaluated in writing by all residents following each rotation. The program director and chair then review these written evaluations. The chair meets at least yearly with each faculty member to discuss this feedback. Faculty members receiving poor feedback as to their teaching methods are given specific suggestions for improvement.

- The program director meets monthly with all residents to discuss program structure.

- Residents and faculty complete an on-line questionnaire regarding the residency program at the end of each academic year. This questionnaire is structured to provide feedback regarding clinical rotations, electives, teaching conferences, program administration and suggestions for change. The results are collated and summarized in a written report, and the report is distributed to all clinical faculty and residents and discussed at a meeting of the neurology program evaluation committee as well as at a general faculty meeting.

- The program evaluation committee, consisting of four clinical faculty, four residents, the program director, and the associate program director, meets quarterly to discuss the residency program. The neurology residents select the resident members on this committee. This committee reviews the structure of the residency program on a regular basis and suggests changes in program structure, based on feedback from the residents and faculty. Minutes from these meetings are distributed to all residents and faculty members.

- A Department of Neurology Education Retreat is held biennially to discuss specific aspects of the residency program. All clinical faculty members and residents attend this retreat. Formal minutes are taken and distributed to all clinical faculty members and residents.

Department of Neurology
Policy on Moonlighting

Professional activities outside the neurology training program are prohibited to the extent that they may interfere with training program responsibilities.

Prior to seeking such employment, Neurology residents who wish to engage in outside activities (moonlighting):

- Are required to have written approval from the Neurology Department Chair and Program Director
- Should seek written assurance of malpractice and workers' compensation coverage from any outside employer
- Must have a valid New York State medical license and Federal DEA number.

Please keep the following points in mind when considering moonlighting:

- Moonlighting is not allowed for first year neurology residents.
- When residency responsibility and moonlighting activities are combined, the following conditions must be met:
    - Residents must spend at least 1 full day out of 7 away from clinical work.
    - Combined night-call duty may not occur more frequently than an average of every third night.
    - Total working hours per week may not exceed an average of 80 hours.
    - Each resident must have at least 10 hours off between shifts.
    - No resident may work more than 24 consecutive hours involved in direct patient care.
- Resident working hours are monitored by the GME Office. The number of hours devoted to moonlighting activities must be added to the training program work hours and must be reported on the GME office work hours survey.
- Residents should be aware that University of Rochester malpractice insurance does <u>not</u> cover moonlighting activities.

Department of Neurology
Policy on Resident Professional Expenses

- The Department of Neurology will provide $1000 annually for each Neurology Resident to cover professional expenses that include:
    - Examination and license fees: USMLE Step 3, medical license, board certification
    - Neurology related textbooks, e-books, journals.
    - Neurology educational meetings: registration fees and travel.
    - Medical equipment: ophthalmoscope, reflex hammer, tuning fork, stethoscope, etc.
    - iPads

- This stipend accrues from year to year ($4000 total)

- Due to department policy, the resident expense account cannot be used to purchase iPhones.

- Due to University compliance with tax exempt purchases, all textbooks must be purchased through the UR Barnes & Noble Bookstore.

- Due to University compliance with security and confidentiality, all computers and iPads must be ordered and approved through the Neurology Neuromedicine IT office.

- It is the resident's responsibility to arrange for resident coverage for any clinical responsibilities while he/she is away from the Medical Center for travel to a scientific meeting. Written documentation of such coverage must be approved by the Program Director.

Department of Neurology
Program Evaluation Committee

- The Department of Neurology Program Evaluation Committee is an advisory committee of the Department that reviews the structure of the residency program on a regular basis and suggests changes in program structure, based on feedback from the residents and faculty.
- Committee membership:
    - Four (4) neurology residents, at least one from each year of training. The neurology residents select the resident members on this committee.
    - Four (4) clinical neurology faculty, selected by the faculty.
    - The Committee is chaired by the program director.
    - The Chair of Neurology is an ex officio members of the Committee.
- The residency program coordinator provides administrative support to the committee and takes minutes.
- Minutes from committee meetings are distributed to all residents and clinical faculty members.
- The Committee meets quarterly.

Department of Neurology
Clinical Competency Committee

The Department of Neurology Clinical Competency Committee is tasked with evaluating the clinical performance of each resident and assigning ACGME Milestones for each resident based on their review. The committee membership includes the Program Director, the Associate Program Director, and three additional faculty members who have significant clinical contact with the residents. The program coordinator is an ex officio member of the committee. The committee is chaired by the Associate Program Director. The committee meets semi-annually, usually in December and in June.

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PGY-2 RESIDENTS

2020-2021

	Barbosa, William	Carrier, Jordan	Curry, Patrick	Doyle, Cara	Jensen, Kelsey	Shah, Nami	Sielski, Neil	Wielgus, Oscar	Hernandez, Cindy	Johnson, Jessica
7/1/2020	NMICU	HH	MVT	UC/EF	STROKE	GEN	NM/HA	NF	GEN	STROKE
7/20/2020	UC/EF	NM/HA	STROKE	NF	HH	MVT	GEN	SEC	STROKE	GEN
8/3/2020	NF	GEN	NMICU	SEC	UC/EF	VAC	STROKE	HH	NMD	VAC
8/17/2020	VAC		NM/HA	HH	NF	STROKE	UC/EF	NI/MVT	EP/NO	N-PATH
8/31/2020	N-RAD	UC/EF	NMD	STROKE	SEC	NMICU	NF	GEN	HH	PED OP
9/14/2020	NMICU	NF	UC/EF		HH	GEN	SEC	VAC	PED OP	ST/MC
9/28/2020	STROKE	VAC	NF	UC/EF	Basic EEG	HH	GEN	PALL	PED ELECT	NMICU
10/12/2020	GEN	NI	SEC	NF	HH	NO-NO	STROKE	NMICU	VAC	UC/EF
10/26/2020	STROKE	SEC	HH	VAC	NI/MVT	NM/HA	NMICU	GEN	UC/EF	NF
11/9/2020	NI/MVT	NMICU		PALL	NM/HA	UC/EF	SEC		NF	STROKE
11/23/2020	GEN	STROKE	VAC	N-RAD	VAC	NF	UC/EF	HH	NMICU	SEC
12/7/2020	MVT	HH	STROKE	GEN	UC/EF	SEC	NF	NMICU	GEN Outpt	PED
12/21/2020	HH	UC/EF	GEN	NMICU	NF	STROKE	VAC	SEC	Basic EEG	VAC
1/4/2021	UC/EF	NF		NI/MVT	NMICU		HH	SLEEP	PED	SEC
1/18/2021	NF	BEH	SEC	UC/EF	GEN	NMICU	HA	STROKE	HH	GEN Outpt
2/1/2021	SEC	NO-NO	NMICU	NF		Basic EEG	N-ONC			UC/EF
2/15/2021	NM/HA	SEC	UC/EF	VAC	STROKE	NRAD	GEN	HH	PED OP	NF
3/1/2021	HH	GEN	NF	NI	MVT	SEC	STROKE	NM/HA	UC/EF	NMICU
3/15/2021	NO-NO	NI/MVT	VAC	STROKE	NMICU	HH	Basic EEG	UC/EF	NF	GEN
3/29/2021	SEC	VAC	STROKE	GEN	UC/EF	HA	HH	NF	VAC	EP/NO
4/12/2021	VAC	STROKE	Basic EEG	NM/HA	NF	GEN	UC/EF	VAC	SEC	HH
4/26/2021	STROKE	Basic EEG	NI/MVT	GEN	VAC	UC/EF	NF	NMICU	PED OP	
5/10/2021	GEN	STROKE	UC/EF	SEC	N-RAD	NF	VAC	MVT	ST/MC	
5/24/2021	UC/EF	NMICU	NF	Basic EEG	SEC	VAC	HH	STROKE	GEN	PED OP
6/7/2021	NF	UC/EF	NO-NO	HH	GEN	NI/MVT	NMICU	Basic EEG	STROKE	NM/HA
6/21/2021	Basic EEG	NF	GEN	HA	STROKE	HH	NI/MVT	UC/EF	SEC	PED OP

PGY-2 RESIDENTS

2020-2021

KEY:

Basic EEG	Required EEG rotation
BEH	Behavioral neurology elective
EEG	EEG elective
EP/NO	Epilepsy/Neuro-oncology ambulatory block
GEN	General inpatient service
HA	Headache elective
HH	Highland Hospital
MVT	Movement disorders elective
N-RAD	Neuroradiology elective
NF	Night float
NI	Neuroimmunology elective
NI/MVT	Neuroimmunology/Movement disorders ambulatory block
NMD	Neuromuscular disorders elective
NMICU	Neuromedicine ICU
NO-NO	Neuro-ophthalmology/Neuro-otology elective
PED	Pediatric inpatient service
PED OP	Pediatric outpatient
SEC	Strong Epilepsy Center
SLEEP	Sleep disorders elective
ST/MC	Stroke/Memory care ambulatory block
STROKE	Stroke inpatient service
VAC	Vacation

PGY-3 RESIDENTS

2020-2021

	Chunga Iturry, Natalia	Corcoran, Jennifer	Dupree, Matthew	Huang, Andrew	Ibarra, Michael	Li, Diana
7/1/2020	STROKE	PED	NO-NO	NF	GEN	EP/NO
7/20/2020	GEN		NF	NMICU	SLEEP	STROKE
8/3/2020	NF	PED OP	PED	STROKE	GEN	VAC
8/17/2020	NMICU				NF	GEN
8/31/2020	RES	GEN	NF	N-ONC	STROKE	PED
9/14/2020	VAC		EP/NO	NF		
9/28/2020	STROKE	VAC	GEN	RES	PED	NF
10/12/2020	GEN	NF	VAC	STROKE		HA
10/26/2020	NF	GEN	PED OP	PED	EP/NO	STROKE
11/9/2020	N-RAD	STROKE			NF	GEN
11/23/2020	PED		ST/MC	EP/NO	GEN	NMD
12/7/2020		NO-NO	STROKE	ST/MC	VAC	GEN
12/21/2020	PED OP	STROKE	GEN	VAC	NRAD	PED
1/4/2021		EEG	N-ONC	GEN	STROKE	
1/18/2021	Elect - Peru	PED	GEN	N-RAD		ST/MC
2/1/2021	STROKE		HA	GEN	ST/MC	SLEEP
2/15/2021	ST/MC	VAC	STROKE	PED	NMICU	GEN
3/1/2021	VAC	Elect - Peru	SLEEP		GEN	STROKE
3/15/2021	PED	STROKE	GEN	PED OP	HA	VAC
3/29/2021					VAC	NMICU
4/12/2021	GEN	EP/NO	NMICU	VAC	PED	STROKE
4/26/2021	EEG	ST/MC	STROKE	GEN		N-RAD
5/10/2021	STROKE	NMICU	VAC		PED OP	PED
5/24/2021	GEN	PED	STROKE	NO-NO		BEH
6/7/2021		PALL	PED	STROKE	EEG	PED OP
6/21/2021	EP/NO	GEN		NMICU	STROKE	

PGY-3 RESIDENTS

2020-2021

KEY:

BEH	Behavioral neurology elective
EEG	EEG elective
EP/NO	Epilepsy/Neuro-oncology ambulatory block
GEN	General consult service
HA	Headache elective
N-ONC	Neuro-oncology elective
N-RAD	Neuroradiology
NF	Night float
NMICU	Neuromedicine ICU
NO-NO	Neuro-ophthalmology/Neuro-otology elective
PALL	Palliative care elective
PED	Pediatric inpatient service
PED OP	Pediatric outpatient
SLEEP	Sleep medicine elective
ST/MC	Stroke/Memory Care ambulatory block
STROKE	Stroke consult service
VAC	Vacation

PGY- 4 RESIDENTS

2020-2021

	Cohen, Michael	Donohue, Kelly	Hemminger, Lauryn	Modica, Joseph	Rooney, Patrick	Womeldorff, Matthew
7/1/2020	CHF STK	CHF GEN	VAC	EMG	VAC	EEG
7/13/2020			RES		NO-NO	
7/20/2020					PSYCH	
7/27/2020			NPATH			
8/3/2020	VAC	RES		CHF GEN	CHF STK	VAC
8/10/2020	MBB	MBB	MBB	CHF	MBB	MBB
8/17/2020				MBB	CHF	
8/24/2020					CHF	
8/31/2020		CHF			MBB	
9/7/2020		CHF				
9/14/2020		MBB	CHF			
9/21/2020			MBB			CHF
9/28/2020	CHF					MBB
10/5/2020	CHF					
10/12/2020	CHF STK	VAC	SLEEP	MVT	EMG	CHF GEN
10/19/2020		RES		VAC		
10/26/2020	EEG	EMG	CHF STK	NRAD	CHF GEN	PSYCH
11/2/2020						
11/9/2020			CHF GEN	NO-NO	PSYCH	CHF STK
11/16/2020						
11/23/2020	EMG	EEG	VAC	CHF STK	CHF GEN	PSYCH
11/30/2020			HA			
12/7/2020			PSYCH		NPATH	CHF GEN
12/14/2020						
12/21/2020	CHF GEN	VAC	CHF STK	BEH	EEG	VAC
12/28/2020		CHF STK	VAC			NI

PGY- 4 RESIDENTS

2020-2021

	Cohen, Michael	Donohue, Kelly	Hemminger, Lauryn	Modica, Joseph	Rooney, Patrick	Womeldorff, Matthew
1/4/2021	CHF GEN	N-RAD	PSYCH	VAC	EEG	CHF STK
1/11/2021				BOTOX		
1/18/2021	NSURG	CHF STK	EEG	PSYCH	SPAIN	CHF GEN
1/25/2021						
2/1/2021	CHF GEN				EMG	MVT
2/8/2021						
2/15/2021	SLEEP	PSYCH	EMG	CHF GEN	VAC	CHF STK
2/22/2021						
3/1/2021	VAC			VAC	CHF STK	CHF GEN
3/8/2021	NO-NO			EEG		
3/15/2021	PSYCH	CHF GEN	VAC			EMG
3/22/2021			N-OPH			
3/29/2021		CHF STK	NI		CHF GEN	
4/5/2021						
4/12/2021	PALL	VAC	CHF STK	CHF GEN	NI	VAC
4/19/2021	AAN	AAN	AAN	AAN	AAN	AAN
4/26/2021	POLAND	POLAND	CHF	POLAND	POLAND	POLAND
5/3/2021						
5/10/2021			POLAND	CHF		
5/17/2021						
5/24/2021	N-RAD	VAC	CHF STK	CHF GEN	VAC	BOTOX
5/31/2021		NMICU			HA	
6/7/2021	NPATH	N-RAD	CHF GEN	VAC	CHF STK	VAC
6/14/2021	VAC			NPATH		NONC
6/21/2021		NO-NO		CHF STK	SLEEP	N-RAD

PGY- 4 RESIDENTS

2020-2021

	Cohen, Michael	Donohue, Kelly	Hemminger, Lauryn	Modica, Joseph	Rooney, Patrick	Womeldorff, Matthew

KEY:

AAN	AAN Conference week
CHF GEN	General Neurology Chief on Service
CHF STK	Stroke Neurology Chief on service
EEG	Required EEG block
EMG	Required EMG blcok
HA	Headache Elective
MBB	Mind Brain Behavior course
MVT	Movement disorders elective
N-OPH	Neuro-ophthalmology elective
N-RAD	Neuroradiology elective
NI	Neuroimmunology elective
NMICU	NMICU/Critical care
NO-NO	Neuro-ophthalmology/Neuro-otology elective
NPATH	Neuropathology elective
NSURG	Neurosurgery elective
PALL	Palliative care elective
PSYCH	Required psychiatry block
SLEEP	sleep medicine elective
VAC	Vacation

PGY-4 CHILD NEUROLOGY RESIDENT SCHEDULE
2020 - 2021

Resident Name	7/1-7/19	7/20-8/2	8/3-8/16	8/17-8/30	8/31-9/13	9/14-9/27	9/28-10/11	10/12-10/25	10/26-11/8	11/9-11/22	11/23-12/6	12/7-12/20	12/21-1/3	1/4-1/17	1/18-1/31	2/1-2/14	2/15-2/28	3/1-3/14	3/15-3/28	3/29-4/11	4/12-4/25	4/26-5/9	5/10-5/23	5/24-6/6	6/7-6/20	6/21-6/30
Stella Deng	INPT/URG	OUTPT	INPT/URG	OUTPT / VAC	INPT/URG	OUTPT	INPT/URG	NMD	INPT/URG	OUTPT	INPT/URG	OUTPT	VAC	OUTPT	GEN/DEV	INPT/URG	OUTPT	VAC	OUTPT		INPT/URG	PP	INPT/URG	OUTPT	INPT/URG	OUTPT
Nicola Ross	OUTPT	INPT/URG	NONC/PALL	INPT/URG	OUTPT	INPT/URG	OUTPT	VAC	OUTPT	INPT/URG	OUTPT		INPT/URG	GEN/DEV	INPT/URG	OUTPT / VAC	OUTPT		INPT/URG	NEONATAL	OUTPT	INPT/URG	VAC / OUTPT	INPT/URG	OUTPT	INPT/URG

<u>Vacations</u>:
Stella – 8/24-8/30 (1 week); 12/14-12/27 (2 weeks); 3/8-3/14 (1 week)
Nicola – 10/19-10/25 (1 week); 2/8-2/21 (2 weeks); 5/10-5/16 (1 week)

PGY-5 CHILD NEUROLOGY RESIDENT SCHEDULE
2020 - 2021

Resident Name	7/1-7/19	7/20-8/9	8/10-10/11	10/12-11/8	11/9-12/6	12/7-1/3	1/4-1/31	2/1-2/28	3/1-3/28	3/29-4/25	4/26-5/23	5/24-6/13	6/14-6/30
(# of weeks)	2 ½	3	9	4	4	4	4	4	4	4	4	3	2 ½
Justin Rosati	RES / VAC	NPATH	MBB	INPT/URG / EEG	NRAD	CHILD PSYCH	EEG	RES / VAC / RES	INPT/URG / EEG	VAC / OUTPT / NONC/PALL	POLAND / EEG	NMD	GEN/DEV
Emily Walsh	NPATH	EEG	MBB	RES / VAC	CHILD PSYCH	NPSYCH	SLEEP / OUTPT	EEG / INPT/URG	SEC	INPT/URG / GEN/DEV	POLAND	VAC	EEG

<u>Vacations</u>:
Justin – 7/6-7/19 (2 weeks); 2/15-2/21 (1 week); 3/29-4/4 (1 week)
Emily – 10/26-11/8 (2 weeks); 5/24-6/6 (2 weeks)

NEUROLOGY RESIDENT VACATION SCHEDULE 2020-2021

PGY-2 Adult Neurology Residents

Name	Vacation dates	# of Weeks
William Barbosa	8/17/20 – 8/30/20	2
	4/12/21 – 4/25/21	2
Jordan Carrier	9/28/20 – 10/11/20	2
	3/29/21 – 4/11/21	2
Patrick Curry	11/23/20 – 12/6/20	2
	3/15/21 – 3/28/21	2
Cara Doyle	10/26/20 – 11/8/20	2
	2/15/21 – 2/28/21	2
Kelsey Jensen	11/23/20 – 12/6/20	2
	4/26/21 – 5/9/21	2
Nami Shah	8/3/20 – 8/16/20	2
	5/24/21 – 6/6/21	2
Neil Sielski	12/21/20 – 1/3/21	2
	5/10/21 – 5/23/21	2
Oskar Wielgus	9/14/20 – 9/27/20	2
	4/12/21 – 4/25/21	2

NEUROLOGY RESIDENT VACATION SCHEDULE
2020-2021

PGY-3 Adult Neurology Residents

Name	Vacation dates	# of Weeks
Natalia Chunga	9/14/20 – 9/27/20	2
	3/1/21 – 3/14/21	2
Jennifer Corcoran	9/28/20 – 10/11/20	2
	2/15/21 – 2/28/21	2
Matthew Dupree	10/12/20 – 10/25/20	2
	5/10/21 – 5/23/21	2
Andrew Huang	12/21/20 – 1/3/21	2
	4/12/21 – 4/25/21	2
Michael Ibarra	12/7/20 – 12/20/20	2
	3/29/21 – 4/11/21	2
Diana Li	8/3/20 – 8/16/20	2
	3/15/21 – 3/28/21	2

NEUROLOGY RESIDENT VACATION SCHEDULE 2020-2021

PGY-4 Adult Neurology Residents

Name	Vacation dates	# of Weeks
Michael Cohen	8/3/20 – 8/9/20	1
	3/1/21 – 3/7/21	1
	6/14/21 – 6/30/21	2
Kelly Donohue	10/12/20 – 10/18/20	1
	12/21/20 – 12/27/20	1
	4/12/21 – 4/18/21	1
	5/24/21 – 5/30/21	1
Lauryn Hemminger	7/1/20 – 7/12/20	1
	11/23/20 – 11/29/20	1
	12/28/20 – 1/3/21	1
	3/15/21 – 3/21/21	1
Joseph Modica	10/19/20 – 10/25/20	1
	1/4/21 – 1/10/21	1
	3/1/21 – 3/7/21	1
	6/7/21 – 6/13/21	1
Patrick Rooney	7/1/20 – 7/12/20	1
	2/15/21 – 2/28/21	2
	5/24/21 – 5/30/21	1
Matthew Womeldorff	8/3/20 – 8/9/20	1
	12/21/20 – 12/27/20	1
	4/12/21 – 4/18/21	1
	6/7/21 – 6/13/21	1

NEUROLOGY RESIDENT VACATION SCHEDULE 2020-2021

PGY-3 Child Neurology Residents

Name	Vacation dates	# of Weeks
Cindy Hernandez	10/12/20 – 10/25/20	2
	3/29/21 – 4/11/21	2
Jessica Johnson	8/3/20 – 8/16/20	2
	12/21/20 – 1/3/21	2

PGY-4 Child Neurology Residents

Name	Vacation dates	# of Weeks
Stella Deng	8/24/20 – 8/30/20	1
	12/14/20 – 12/27/20	2
	3/8/21 – 3/14/21	1
Nicola Ross	10/19/20 – 10/25/20	1
	2/8/21 – 2/21/21	2
	5/10/21 – 5/16/21	1

PGY-5 Child Neurology Residents

Name	Vacation dates	# of Weeks
Emily Walsh	10/26/20 – 11/8/20	2
	5/24/21 – 6/6/21	2
Justin Rosati	7/6/20 – 7/19/20	2
	2/15/20 – 2/21/20	1
	3/29/21 – 4/4/21	1

DEPARTMENT OF NEUROLOGY
UNIVERSITY OF ROCHESTER
FIRM ASSIGNMENTS FOR 2020-2021

FIRM	ATTENDINGS	RESIDENTS	YEAR
Monday	Seth Kolkin	Michael Cohen	PGY 4
	Harold Lesser	Natalia Chunga	PGY 3
		William Barbosa	PGY 2
		Patrick Curry	PGY 2
		Shubhdeep Ahden	PGY 1
		Felicia Cooper	PGY 1
Tuesday	Phillip Mongiovi	Kelly Donohue	PGY 4
	Larry Samkoff	Jennifer Corcoran	PGY 3
	Heidi Schwarz	Cara Doyle	PGY 2
	Christopher Tarolli	Kelsey Jensen	PGY 2
		Kathryn Eszes	PGY 1
		Maxime Jean	PGY 1
Wednesday	Seth Kolkin	Lauryn Hemminger	PGY 4
	Anthony Maroldo	J. Matthew Dupree	PGY 3
		Nami Shah	PGY 2
		Christina Perri	PGY 1
Thursday	Joy Burke	Joseph Modica	PGY 4
	Andrew Goodman	Andrew Huang	PGY 3
	Megan Hyland	Neil Sielski	PGY 2
		David Sandness	PGY 1
Friday	Ralph Józefowicz	Patrick Rooney	PGY 4
	Karen Odrzywolski	Matthew Womeldorff	PGY 4
	Trenton Tollefson	Michael Ibarra	PGY 3
	Colleen Tomcik	Diana Li	PGY 3
	Blanca Valdovinos	Jordan Carrier	PGY 2
		Oskar Wielgus	PGY 2
		Andrew Thierman	PGY 1
		Carlos Sollero	PGY 1

DEPARTMENT OF NEUROLOGY
UNIVERSITY OF ROCHESTER
AMBULATORY BLOCK ROTATIONS FOR PGY-2 RESIDENTS
2020-2021

Neuroimmunology / Movement Clinic Block

	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
AM	Neuroimmunology	Movement *	Neuroimmunology	Movement*	Grand Rounds
PM	Neuroimmunology	Movement *	OFF	Movement *	Neuroimmunology

* 919 Westfall Road

Neuromuscular / Headache Clinic Block

	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
AM	Neuromuscular	Headache*	Neuromuscular	Neuromuscular	Grand Rounds
PM	Headache*	Headache*	Neuromuscular	Headache*	OFF

* 919 Westfall Road

First year residents also have a weekly afternoon Firm. The Firm assignments are listed below. The Firm takes precedence over a subspecialty clinic.

NEUROLOGY PGY-2 RESIDENT FIRMS

MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
William Barbosa Patrick Curry	Cara Doyle Kelsey Jensen	Nami Shah	Neil Sielski	Jordan Carrier Oskar Wielgus

DEPARTMENT OF NEUROLOGY
UNIVERSITY OF ROCHESTER
AMBULATORY BLOCK ROTATIONS FOR PGY-3 RESIDENTS
2020-2021

Epilepsy / Neuro-oncology Clinic Block

	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
AM	Epilepsy*	Neuro-oncology**	Neuro-oncology**	Epilepsy*	Grand Rounds
PM	Epilepsy*	Neuro-oncology**	Neuro-oncology**	Epilepsy*	OFF

* 919 Westfall Road **Wilmot Cancer Center

Stroke / Memory Care Clinic Block

	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
AM	Stroke***	Memory Care*	Memory Care*	Stroke***	Grand Rounds
PM	Stroke***	OFF	Memory Care*	Stroke***	OFF

* 919 Westfall Road ***2180 South Clinton Avenue

Second year residents also have a weekly afternoon Firm. The Firm assignments are listed below. The Firm takes precedence over a subspecialty clinic.

NEUROLOGY PGY-3 RESIDENT FIRMS

MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
Natalia Chunga	Jennifer Corcoran	J. Matthew Dupree	Andrew Huang	Michael Ibarra Diana Li

DEPARTMENT OF NEUROLOGY
UNIVERSITY OF ROCHESTER

FACULTY PRACTICE / SUBSPECIALTY CLINIC SCHEDULES FOR PGY-4 RESIDENTS
2020-2021

- All clinics are located in the SMH neurology OPD unless indicated otherwise.
- Third year residents have a weekly afternoon Firm and a weekly afternoon Faculty Practice or subspecialty clinic. These clinics are listed below. The Resident Firm takes precedence over all Faculty Practice or Subspecialty Clinics.
- The acting chief resident has no Faculty Practice or Subspecialty Clinics, including during the Mind, Brain and Behavior Course (8/10/20 – 10/9/20).

NEUROLOGY PGY-4 RESIDENT FIRMS

Monday	Tuesday	Wednesday	Thursday	Friday
Michael Cohen	Kelly Donohue	Lauryn Hemminger	Joseph Modica	Patrick Rooney Matthew Womeldorff

NEUROLOGY PGY-4 RESIDENT FACULTY PRACTICE/SUBSPECIALTY CLINIC SCHEDULE

	Michael Cohen		Kelly Donohue		Lauryn Hemminger		Joseph Modica		Patrick Rooney		Matthew Womeldorff	
JUL-SEP	Tu	Stroke**	Mo	Stroke**	Tu	Botox*	We	NMD	Mo	MS	Mo	Movement*
OCT-DEC	Th	Sleep***	Th	MS	Tu	Epilepsy*	Tu	Botox*	Tu	Movement*	Tu	MS
JAN-MAR	We	Botox*	We	Neuro-onc	Th	Movement*	Tu	Epilepsy*	We	EMG	Mo	Stroke**
APR-JUN	Tu	Epilepsy*	Mo	Epilepsy*	Mo	MS	Mo	Burke*	We	NMD	Th	Sleep***

*919 Westfall Road **180 Sawgrass Drive ***2337 South Clinton Avenue

DEPARTMENT OF NEUROLOGY
UNIVERSITY OF ROCHESTER
AMBULATORY BLOCK ROTATIONS
2020-2021

AMBULATORY BLOCK ROTATIONS FOR CHILD NEUROLOGY RESIDENTS

General Neurology Clinic Block

	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
AM	Tomcik*	Maroldo*	Kolkin*	Maroldo*	Grand Rounds
PM	Tomcik*	Maroldo*	Kolkin*	Maroldo*	OFF

* 919 Westfall Road

Epilepsy / Neuro-oncology Clinic Block

	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
AM	Epilepsy*	Neuro-oncology**	Neuro-oncology**	Epilepsy*	Grand Rounds
PM	Epilepsy*	Neuro-oncology**	Neuro-oncology**	Epilepsy*	OFF

* 919 Westfall Road **Wilmot Cancer Center

Neurology Attending Block Schedule
2020-2021

	General Consult	General Inpatient	Acute Stroke	Stroke Inpatient	Telestroke	Highland
Tue, 7/7/2020	SHardy	JMarsella	THolmquist	JBurdett	JRisco	CTomcik
Tue, 7/14/2020	DBonno	AWasilewski	ITitoff	ABusza	THolmquist	RJozefowicz
Tue, 7/21/2020	RHolloway	JBurch	BSahin	ITitoff	AKelly	CTarolli
Tue, 7/28/2020	JRisco	SHardy	THolmquist	MHalterman	MChilungu	MBellizzi
Tue, 8/4/2020	RJozefowicz	JBurdett	AKelly	CBenesch	ITitoff	BValdovinos
Tue, 8/11/2020	AWasilewski	JRisco	BSahin	JBurdett	THolmquist	MStanton
Tue, 8/18/2020	NMohile	CTomcik	ITitoff	MChilungu	JBurch	TTollefson
Tue, 8/25/2020	MWhite	JMarsella	JBurdett	CBenesch	JRisco	MHyland
Tue, 9/1/2020	RTawil	JBurdett	BSahin	AKelly	MChilungu	MBellizzi
Tue, 9/8/2020	JRisco	PMorrison	CBenesch	ITitoff	MChilungu	CTomcik
Tue, 9/15/2020	AWasilewski	MBellizzi	JBurch	THolmquist	JBurdett	MStanton
Tue, 9/22/2020	NMohile	PMongiovi	MChilungu	ITitoff	ABusza	BSahin
Tue, 9/29/2020	RBarbano	TWychowski	THolmquist	JBurdett	CBenesch	AMaroldo
Tue, 10/6/2020	JHamel	SHardy	JBurch	JRisco	AKelly	GSchifitto
Tue, 10/13/2020	MBerg	KLizarraga	BSahin	MHalterman	JBurdett	JRobb
Tue, 10/20/2020	MBellizzi	MChilungu	JRisco	CBenesch	AKelly	MStanton
Tue, 10/27/2020	KLizarraga	ITitoff	JBurch	JBurdett	ABusza	RHolloway
Tue, 11/3/2020	BKluger	JRisco	MChilungu	MHalterman	THolmquist	PCreigh
Tue, 11/10/2020	AWasilewski	MChilungu	JBurdett	JBurch	ITitoff	MBellizzi
Tue, 11/17/2020	AKelly	PMongiovi	THolmquist	MChilungu	CBenesch	KMunger
Tue, 11/24/2020	GSchifitto	MBellizzi	JRisco	JBurch	BSahin	JBurke
Tue, 12/1/2020	JBurdett	ITitoff	AKelly	ABusza	JRisco	AMaroldo
Tue, 12/8/2020	MWhite	SHardy	CBenesch	MChilungu	THolmquist	PMongiovi
Tue, 12/15/2020	NMohile	JRisco	JBurdett	ITitoff	AKelly	BSahin
Tue, 12/22/2020	SHardy	FMarshall	MChilungu	MHalterman	CBenesch	LSamkoff
Tue, 12/29/2020	JAdams	RJozefowicz	JBurdett	JRisco	AKelly	AMaroldo

Neurology Attending Block Schedule
2020-2021

	General Consult	General Inpatient	Acute Stroke	Stroke Inpatient	Telestroke	Highland
Tue, 1/5/2021	RHolloway	JBurch	THolmquist	MChilungu	ABusza	JMarcus
Tue, 1/12/2021	SGoldman	MChilungu	CBenesch	JRisco	BSahin	PCreigh
Tue, 1/19/2021	MChilungu	AWasilewski	JBurch	AKelly	JBurdett	JHamel
Tue, 1/26/2021	MChilungu	MWhite	ITitoff	THolmquist	JRisco	BSahin
Tue, 2/2/2021	GSchifitto	AWasilewski	ABusza	CBenesch	JBurdett	PMongiovi
Tue, 2/9/2021	ITitoff	MWhite	AKelly	MChilungu	THolmquist	JBurke
Tue, 2/16/2021	MChilungu	BValdovinos	JRisco	JBurdett	BSahin	KMunger
Tue, 2/23/2021	MYurcheshen	AWasilewski	THolmquist	JBurch	ITitoff	RSchneider
Tue, 3/2/2021	SHardy	JBurdett	AKelly	BSahin	MChilungu	KMunger
Tue, 3/9/2021	ITitoff	MWhite	JRisco	MChilungu	JBurch	MBellizzi
Tue, 3/16/2021	MChilungu	LSamkoff	THolmquist	JBurdett	CBenesch	BValdovinos
Tue, 3/23/2021	AKelly	AWasilewski	ITitoff	BSahin	JBurch	CTomcik
Tue, 3/30/2021	MWhite	SHardy	JBurdett	RHolloway	CBenesch	CTarolli
Tue, 4/6/2021	AWasilewski	SGoldman	BSahin	MChilungu	JBurch	PMorrison
Tue, 4/13/2021	JBurdett	MYurcheshen	AKelly	ABusza	JRisco	MBellizzi
Tue, 4/20/2021	JBurch	LLiu	MChilungu	MHalterman	ITitoff	PMorrison
Tue, 4/27/2021	JBurdett	JAdams	BSahin	THolmquist	AKelly	MBellizzi
Tue, 5/4/2021	JBurke	ITitoff	ABusza	JRisco	MChilungu	JHamel
Tue, 5/11/2021	JBurdett	KLizarraga	CBenesch	BSahin	THolmquist	MBellizzi
Tue, 5/18/2021	JBurke	JBurch	JRisco	JBurdett	ITitoff	MHyland
Tue, 5/25/2021	KLizarraga	RBarbano	ABusza	BSahin	CBenesch	JRobb
Tue, 6/1/2021	FMarshall	MBellizzi	JBurch	MChilungu	ITitoff	RSchneider
Tue, 6/8/2021	PCreigh	OSelioutski	JBurdett	THolmquist	JRisco	BValdovinos
Tue, 6/15/2021	MBellizzi	MChilungu	CBenesch	AKelly	BSahin	CHeatwole
Tue, 6/22/2021	SHardy	MChilungu	ITitoff	JBurch	JBurdett	CTarolli
Tue, 6/29/2021	BKluger	JBurdett	CBenesch	ABusza	THolmquist	JMarcus

2020–2021 Child Neurology Attending Schedule

July 6 – July 19	Mink
July 20 – Aug 2	Myers
Aug 3 – Aug 16	Stone
Aug 17 – Aug 30	Hughes
Aug 31 – Sept 8	Paciorkowski
Sept 9 – Sept 10	Lee
Sept 11 – Sept 13	Paciorkowski
Sept 14 – Sept 27	Tomaselli
Sept 28 – Oct 11*	Connolly
Oct 12 – Oct 25*	Myers
Oct 26 – Nov 4	Lee
Nov 5 - Nov 6	Paciorkowski
Nov 7 – Nov 8	Lee
Nov 9 – Nov 22	Connolly
Nov 23 – Dec 6	Paciorkowski
Dec 7 – Dec 20	Bearden
Dec 21 – Jan 3	Stone
Jan 4 – Jan 17	Seltzer
Jan 18 – Jan 31	Paciorkowski
Feb 1 – Feb 14	Mink
Feb 15 – Feb 28	Nguyen
Mar 1 – Mar 14	Tomaselli
Mar 15 – Mar 28	Vermilion
Mar 29 – Apr 11	Bearden
Apr 12 – Apr 25*	Nguyen
Apr 26 – May 9	Lee
May 10 – May 24	Connolly
May 25 – June 6	Vermilion
June 7 – June 20	Mink
June 21 – July 5	Stone

Child Neurology Weekend Coverage 2019-2020

Dates	Attending	Resident
JULY		
7/4-7/5	Stone	Corcoran/ Walsh
7/11-7/12	Mink	Deng
7/18-7/19	Mink	Corcoran/ Ross
7/25-7/26	Myers	Deng
AUGUST		
8/1-8/2	Myers	Ross
8/8-8/9	Stone	Dupree/ Walsh
8/15-8/16	Stone	Deng
8/22-8/23	Hughes	Dupree/ Rosati
8/29-8/30	Hughes	Ross
SEPTEMBER		
9/5-9/7	Paciorkowski	Li/Rosati
9/12-9/13	Paciorkowski	Deng
9/19-9/20	Tomaselli	Ross
9/26-9/27	Tomaselli	Li/Walsh
OCTOBER		
10/3-10/4	Connolly	Ibarra/Ross
10/10-10/11	Connolly	Deng
10/17-10/18	Myers	Ibarra/Rosati
10/24-10/25	Myers	Deng
10/31-11/1	Lee	Huang/Ross
NOVEMBER		
11/7-11/8	Lee	Deng
11/14-11/15	Connolly	Huang/Walsh
11/21-11/22	Connolly	Ross
11/26-11/29	Paciorkowski	Deng
DECEMBER		
12/5-12/6	Paciorkowski	Chunga Iturry/ Ross
12/12-12/13	Bearden	Walsh
12/19-12/20	Bearden	Chunga Iturry/ Rosati
12/25-12/27	Stone	Ross

Dates	Attending	Resident
JANUARY		
1/1-1/3	Stone	Li/Deng
1/9-1/10	Seltzer	Rosati
1/16-1/18	Seltzer	Walsh
1/23-1/24	Paciorkowski	Ross
1/30-1/31	Paciorkowski	Corcoran/ Rosati
FEBRUARY		
2/6-2/7	Mink	Deng
2/13-2/14	Mink	Corcoran/ Walsh
2/20-2/21	Nguyen	Huang/Deng
2/27-2/28	Nguyen	Walsh
MARCH		
3/6-3/7	Tomaselli	Huang/Ross
3/13-3/14	Tomaselli	Rosati
3/20-3/21	Vermilion	Ross
3/27-3/28	Vermilion	Chunga Iturry/ Rosati
APRIL		
4/3 – 4/4	Bearden	Walsh
4/10-4/11	Bearden	Chunga Iturry /Deng
4/17-4/18	Nugyen	Ibarra/Ross
4/24-4/25	Nguyen	Deng
MAY		
5/1-5/2	Lee	Ross
5/8-5/9	Lee	Ibarra/Deng
5/15-5/16	Connolly	Li/Rosati
5/22-5/23	Connolly	Deng
5/29-5/31	Vermilion	Rosati
JUNE		
6/5-6/6	Vermilion	Ross
6/12-6/13	Mink	Dupree/Walsh
6/19-6/20	Mink	Deng
6/26-6/27	Stone	Dupree/Ross

Department of Neurology Residency Program

Important Dates for 2020-2021

Department Winter Ball	Saturday, January 16, 2021
RITE	Friday, February 12, 2021 Saturday, February 13, 2021
Clinical Skills Examination	Saturday, March 13, 2021 Saturday, March 20, 2021
AAN Annual Meeting (Toronto)	April 17-23, 2021
Resident & Fellow Poster Session	Friday, June 18, 2021
Resident Graduation	Saturday, June 19, 1021

2020-2021 Neurology Chief Resident Responsibilities

Grand Rounds	Michael Cohen
Journal Club	Kelly Donohue
Noon Conferences and lunches	Matthew Womeldorff
Block schedules	Lauryn Hemminger and Patrick Rooney
On-call schedules	Lauryn Hemminger and Patrick Rooney
Clinic liaison	Joseph Modica
SIGN liaison	Joseph Modica
Wellness and Social Chair	Kelly Donohue

2020-2021 Neurology Resident Committee Assignments

Residency Selection Committee	Kelly Donohue
Program Evaluation Committee	Matthew Womeldorff
Clerkship Grading Committee	Lauryn Hemminger
GMEC representative	Patrick Rooney
Resident Council	Michael Cohen