Neurology Residency Handbook 2020-2021

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Foreword

This handbook encompasses the basic information for our neurology residency program and is updated annually. The handbook is in three parts, the first is Policies, Procedures and What is Expected of Learners; the second section is the Goals & Objectives; and the third is rotation specific information and other items (How We Do Things).

This handbook is in harmony with the GME Policy and Procedure Manual (gme.kumc.edu/school-of-medicine/gme/policies-and-procedures.html). Where there is a discrepancy, this stricter policy takes precedence. For example, while moonlighting is possible within certain GME imposed restrictions it is not allowed for neurology residents.

The Neurology Residency Review Committee mandates that this is distributed annually to all clinical faculty and residents in our department. All 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 helps our residency program runs smoothly and meets its missions.

Mamatha Pasnoor, MD
Professor and Program Director
Department of Neurology

Part 1 Policies and Procedures and What is Expected of Learners

Mission Statement, Department Goals and Objectives

Departmental Mission Statement

The mission of the Department of Neurology is to provide the best possible clinical care for patients and the best possible education for medical students, residents, and fellows while engaged in world-class research in the neurosciences. These goals are accomplished through the high caliber faculty, house officers, and support staff employed by the department and with the support of The University of Kansas Health System (TUKHS), the Kansas City Veterans Affairs Medical Center, and Children's Mercy Hospital.

Departmental Goals

- To provide general and subspecialty neurology clinical services to patients from the greater Kansas City metropolitan area and to the state of Kansas and surrounding areas.
- To provide the training so that our house officers excel in clinical care and in research.
- To provide instruction in the basic and clinical neurosciences to medical students, allied health students, and to house officers in other disciplines.
- To promote and support basic science and clinical research in the neurosciences.
- To achieve national recognition of our clinical and research endeavors.

Educational Mission Statement

The educational mission of the Department of Neurology is to provide an optimal educational environment to prepare the neurology resident for the independent practice of clinical neurology. An experienced faculty with board certification by the American Board of Psychiatry and Neurology, with subspecialty expertise in all major disciplines of neurology, assures, through close supervision, that neurology residents receive extensive exposure to the basic neurosciences and clinical skills. The program director and neurology faculty ensure that patient care responsibilities are balanced with teaching to enhance the educational experience of the neurology resident. Our residents are trained to communicate effectively with their patients and families in a caring and respectful manner. Residents are trained to apply knowledge of study designs and statistical methods to the appraisal of clinical studies, assessing diagnostic and therapeutic effectiveness. They learn how to practice cost-effective health care and allocate resources without compromising care quality.

Educational Goals

The educational goals of the Neurology residency program are to:

- Train clinicians for independent practice of Neurology,
- Provide the educational background for lifelong learning in Neurology,
- Encourage participation in clinical research during training, and throughout the careers of our graduates, and
- Train our residents to provide compassionate care for their patients, and the families of their patients.

Educational Objectives:

The Neurology resident will:

- Through supervised clinical work, become proficient in the care of the neurological patient
- Assume increasing responsibility for the evaluation and management of neurology patients in the hospital and in the clinic
- Through lectures, and independent study, develop a foundation of knowledge in the basic neurosciences

Graduate Medical Education Policy & Procedure Manual;

The Neurology resident can access the policy and procedure manual for the Office of Graduate Medical Education (GME), here: http://www.kumc.edu/school-of-medicine/gme/policies-and-procedures.html

Expectations of Learners

These are both the explicit and implicit (hidden curriculum) for Neurology residency. The competencies for each expectation are in the parentheses:

1. Show up on time. (Prof.)
    a. To not is unprofessional and expresses your disdain and disregard for others. This is for all lectures, conferences, team huddle and rounds.
2. Be prepared (Patient Care, Prof.)
    a. Do the background reading
    b. See patients before rounds, pre-rounding electronically is not enough.
    c. Review patient charts before clinic
    d. Know what is going on by the morning Huddle
3. Arrive ready and willing to learn (Medical Knowledge)
    a. Learning is an active process
    b. Your study time away from the hospital is when you learn the facts
    c. Rounds and lectures are places to learn concepts and how to put things together
    d. You are expected to spend at least one hour a day on your own on didactics.
    e. Minimum score on RITE is 40th percentile for rank.
4. Be engaged (Prof.)
    a. Your activities are directed to the task at hand
    b. Accessing information beyond the background reading, before a presentation or even during is good
    c. Using a digital device to do something else is not
    d. Make eye contact with the teacher, ask and answer questions, participate
5. Don't pretend to know what you don't (Prof. Interpersonal Communication Skills)
    a. For factual data (e.g. a laboratory result) admit it if you don't know the answer.
        i. Make sure you know the answer the next time, and every time after that
    b. Guessing is encouraged, just be honest. If you don't know the mechanism of a disease or a treatment, speculate. "*Luck favors the prepared*" Edna Mode (**The Incredibles** 2004) "*Fortune favors the prepared mind*." Louis Pasteur
6. Completion of notes (Pt. Care, Prof, ICS, Systems Based Practice)
    a. Inpatient notes are to be completed by end of that business day.
    b. Clinic notes are completed within three days (TUKHS rule)
    c. Consult notes are started before the patient is seen by the attending physician and completed by the end of the business day that the patients is seen by staff.
    d. ED consultations should be completed before you leave the ED. A brief note within 30 minutes of staffing the patient, a complete note within five hours.
    e. Notes from stroke activation calls are completed by the end of the activation.
    f. Do not copy and paste your notes or plagiarize the notes of others. You may copy appropriate history forward. Any examination that you document **must be the examination that you did that day**.
7. Administrative tasks (Prof.)
    a. Duty hours are always up to date

b. Evaluations are completed within two days of assignment.
c. Vacation and elective requests are completed at least 60 days in advance
d. Administrative tasks are completed promptly
    i. Pages are answered

What is an honors level resident?

1. All of the above plus:
2. Be prepared (Patient Care, Med, Know., Prof.)
    a. Seeks out additional background reading. For example, in Journal club they read not only the article, but seek out the background articles on the outcome assessment tool (e.g. UPDRS)
3. Proof of learning (Medical Knowledge)
    a. RITE score above 80th percentile for rank.
4. Be engaged (Prof. ICS, SBP)
    a. Actively involved in participation in rounds
    b. Teaches other learners (residents and students) in an exemplary fashion.
    c. Knows when to be quiet to give someone else a chance.
5. Notes (Pt. Care, Prof, ICS, Systems Based Practice)
    a. Notes are complete, are not only concise, are accurate and prepared ahead of time,
    b. Notes contain concise, pertinent, differential diagnosis showing their thought processes and a discussion of therapeutic options
    c. Discharge summaries are concise and have clear instructions for what needs to be done (test results, scheduled therapies, follow-up appointments)
6. Administrative tasks (Prof.)
    a. Never needs reminders to perform administrative tasks.
    b. Keeps tracks of, and renews licenses, DEA permit, BLS and ACLS.

The Next Accreditation System (NAS) and Grades

The 29 milestones in Neurology are mapped onto the six competencies. The levels of the milestones are based on Dreyfus model of learning. (Dreyfus 1980) These stages are analogous to Levels 1-5 in the milestones but are not equivalent to post graduate year (or level) of training (PGY). Each level requires mastery of the one below.

A **novice learner** knows the rules, applies them without explicit responsibility and must do everything by rote. They require constant supervision

A **proficient learner** knows the rules, accepts limited responsibility yet needs close supervision or oversight. They can filter out unnecessary elements in their presentations, but still need to do most everything in their evaluations

A **competent learner** is able to filter out the unnecessary elements quickly in their clinical encounters and presentations. They not only grasp the nuances of common presentations of common disease, but also the common presentation of uncommon disease. They prioritize their evaluation based on the likelihood of the disorders in their differential and re-evaluate frequently

An **expert learner** quickly grasps the nuances of the situation. They develop a hypothesis, test it on the fly with questions, examination and tests and constantly re-evaluate and adjust accordingly.

A **master learner** likes surprises. They seek out the exceptions to the rules and thus expand our overall knowledge of a subject. They challenge assumptions and in doing so advance the field. They are actively engaged in research in their discipline.

For example, if a resident can correctly identify a patient as having progressive supranuclear palsy (level 3 or 4), yet state that deep brain stimulation is the preferred treatment for a patient with the recent onset of Parkinson's disease (failed level 3), they are performing at level 2, as long as they can tell the difference between hyper and hypokinetic disorders (level 2).

Strongly Suggested Textbooks:

PGY2

- Neuroanatomy Through Clinical Cases, 2nd Edition,2011 (Hal Blumenfeld)
- Adams and Victor's Principles of Neurology 10th Edition Hardcover – 2014 Allan Ropper, Martin Samuels, Joshua Klein
- Manter and Gatz's Essentials of Clinical Neuroanatomy and Neurophysiology, 10th Edition (Gilman and Newmann), 2002
- Introduction to Neuropsychopharmacology. Iversen, Iverson Bloom and Roth, 2008

PGY3 and PGY4

- Escourolle & Poirier's Manual of Basic Neuropathology, 5th Edition, 2013 (Francoise Gray, Charles Duyckaerts, and Umberto De Girolami editors)
- Principles of Neural Science, Eric Kandel, 5th Edition
- Osborn's Brain: Imaging, Pathology, and Anatomy, Anne Osborn, 2012

Worth buying if you can find it:

- Core Text of Neuroanatomy, Malcom Carpenter, 1991

Your annual book budget is adequate to purchase all of these in PGY2

Part 2 ACGME Milestones and Neurology Core Competencies

Over 10 years ago the American Council on Graduate Medical Education (ACGME) announced the six core competencies as part of an overhaul of post-graduate training for residents. In 2012 the next step, aptly termed the Next Accreditation System (NAS) went into effect for many disciplines. The competencies were the lofty goals to be achieved through training; the NAS incorporates milestones that must be achieved during the residency program. The milestones, while specialty specific are based on the Dreyfus Model of Skill Acquisition (Dreyfus SA, Dreyfus HI. A Five Stage Model of the Mental Activities involved in Direct Skill Acquisition. UC, Berkeley).

The *Novice* is taught a set of rules before they acquire experience. This is the medical student and intern. *Competent:* the learner applies the rules to the situation. This is the beginning neurology resident. *Proficient:* this learner can handle more than one situation at a time, and is able to appropriately and independently exclude irrelevant details. This is the advanced resident. *Expert*: learner is able to intuitively grasp the situation and to do the appropriate steps or actions. This is the resident who is about to complete their training. *Master:* in this stage the performer (or physician, or athlete…) no longer has to self-monitor their activities and they can transcend their performance at the expert level by using freed resources from self-monitoring into the task at hand. The master seeks out unusual and difficult situations and welcomes surprises. This is the experienced clinician who has developed style. The labels have been changed over time and in the current ACGME learner model, master is level four and expert is level five. The take home messages are that the levels are not equivalent to PGY and that a learner can perform at different levels for different milestones in their training. The first proposed milestone is:

History– Patient Care				
Level 1	**Level 2**	**Level 3**	**Level 4**	**Level 5**
Obtains a neurological history	Obtains a complete and relevant neurological history	Obtains a complete, relevant and organized neurological history	Efficiently obtains a complete, relevant., and organized neurological history	Efficiently obtains a complete, relevant, and organized neurological history incorporating verbal and non-verbal clues

As of July 1, 2014, the milestones are used as the basis for evaluations. When you review the milestones, you will note that they are divided into the six competencies.

ACGME Core Competencies:

Patient Care: Residents must be able to provide patient care that is both appropriate and compassionate and that is effective for the promotion of health and the treatment of health problems and disease. Residents must:

- Use all sources to gather essential and accurate information about their patients, including medical interviews, medical examinations, and medical records.
- Make informed recommendations to patients and their families regarding treatment plans and recommended diagnostic and therapeutic interventions that are based upon patient preference, scientific evidence, and clinical judgment.
- Develop and carry out patient management plans, counsel and educate patients and their families, and collaborate with other health care professionals (including those from different disciplines) to provide patient-focused care.
- Competently perform all essential medical and invasive procedures.

Medical Knowledge: Residents must demonstrate knowledge about current and established clinical, biomedical, epidemiological, and social-behavioral sciences and will apply this knowledge to patient care. Residents must:

- Learn the clinical aspects of adult and pediatric neurological disorders and the basis for working up these conditions.
- Utilize readings to learn the causes of neurological conditions and apply this knowledge in a clinical setting.
- Learn the appropriate use of diagnostic procedures used to detect common and uncommon neurological disorders.

Practice-Based Learning and Improvement: Residents must be able to use information technology, scientific methods, and scientific evidence to evaluate, investigate, and improve patient care. Residents must:

- Use information technology, scientific methods, and scientific evidence to evaluate, investigate, and improve patient care.
- Identify areas for self-improvement and facilitate learning among students and other health care professionals.
- Implement strategies to enhance patient care.
- Analyze practice experience and perform practice-based improvement activities using a systematic methodology.
- Find and evaluate evidence from scientific studies related to patient health problems and incorporate findings into patient care.
- Obtain and utilize information about their population of patients as well as the larger population from which their patients are drawn.

Interpersonal and Communication Skills: Residents must demonstrate interpersonal and communication skills resulting in effective communication with patients, families and other medical professionals. Residents must:

- Create and sustain a therapeutic and ethically sound relationship with patients
- Use listening, nonverbal, explanatory, questioning and writing skills to effectively provide information to and elicit information from patients, families and other medical professionals.
- Work effectively with health care teams and other colleagues as a member or as a leader.

Professionalism: Residents have an obligation to professionalism and sensitivity and must adhere to ethical principles within a diverse patient population. Residents must:

- Demonstrate accountability, respect, integrity, and empathy toward patients and their families and to society.
- Demonstrate openness and sensitivity to the culture, age, gender, disabilities, socioeconomic status, beliefs and behaviors of patients, patients' families, and professional colleagues.
- Adhere to ethical principles concerning the withholding of clinical care, confidentiality of patient information, informed consent, and business practices

- Be able to communicate with patients, families, members of the health care team, and colleagues in clear, English, using and understanding North American and Midwestern idiomatic English.
- At all times residents must interact with patients, their families, and the staff with a pleasant demeanor, in a calm fashion, and with respect. Inappropriate behavior is not tolerated.
- Residents must work with each other to provide cross coverage for hospital and clinic patients and for education activities.

Systems-Based Practice: Residents must be responsive and aware of the larger health care system and framework and will effectively utilize system resources to provide superior patient care. Residents are expected to:

- Practice cost-effective health care and resource allocation that does not compromise the patient's quality of care or the health care system.
- Assist patients and their families who are navigating complex health care systems.
- Know the different types of health care systems and be able to work with other medical professionals to improve system performance.
- Understand how their patient care affects the patient and the patients' families, society, the health care system and other medical professionals. Realize how the system components affect their practice.

The master spreadsheet of milestones mapped onto rotations is below.

The residents and supervising faculty are sent the goals and objectives along with the evaluation tool just before the beginning of reach rotation. It is their joint responsibility to review these at the beginning of the block (or week for inpatient rotations at TUKHS and to go over the evaluation of the resident by the faculty member at the end of each rotation.

Part 3 Work Environment

From the GME House staff manual (Ver. 7/1/2017) section 5.8.3

5.8.3 The University of Kansas Medical Center will:

- provide a stipend and benefits to the resident as stipulated in the applicable Resident Agreement;
- use its best efforts, within the limits of available resources, to provide an educational training program that meets the ACGME's accreditation standards;
- use its best efforts, within the limits of available resources, to provide the resident with adequate and appropriate support staff and facilities in accordance with federal, state, local, and ACGME requirements;
- orient the resident to the facilities, philosophies, rules, regulations, procedures and policies of the Medical Center, School, Department and Program and to the ACGME's and RRC's Institutional and Program Requirements;
- provide the resident with appropriate and adequate faculty and Medical Staff supervision and guidance for all educational and clinical activities commensurate with an individual resident's level of advancement and responsibility;
- allow the resident to participate fully in the educational and scholarly activities of the Program and Medical Center and in any appropriate institutional medical staff activities, councils and committees, particularly those that affect Graduate Medical Education and the role of the resident staff in patient care subject to these policies and procedures;
- through the officers of the program and the attending medical staff, clearly communicate to the resident any expectations, instructions and directions regarding patient management and the resident's participation therein;
- maintain an environment conducive to the health and well-being of the resident;
- within limits of available resources, provide:
- adequate and appropriate food service and sleeping quarters to the resident while on-call or otherwise engaged in clinical activities requiring the resident to remain in the Medical Center overnight;
    - ii) personal protective equipment including gloves, face/mouth/eye protection in the form of masks and eye shields, and gowns. The Occupational Safety and Health Administration (OSHA) and the Centers for Disease Control (CDC) assume that all direct contacts with a patient's blood or other body substances are infectious. Therefore, the use of protective equipment to prevent parenteral, mucous membrane and non-intact skin exposures to a healthcare provider is recommended;
    - iii) patient and information support services;
    - iv) security; and
    - v) uniform items, limited to scrub suits and white clinical jacket;
- through the Program Director and Program faculty, evaluate the educational and professional progress and achievement of the resident on a regular and periodic basis. The Program Director shall present to and discuss with the resident a written summary of the evaluations at least semi-annually;

- provide a fair and consistent method for review of the resident's concerns and/or grievances, without the fear of reprisal;
- provide residents with an educational and work environment in which residents may raise and resolve issues without fear of intimidation or retaliation including the following mechanisms:
    - The GME office ensures that all programs provide their residents with regular, protected opportunities to communicate and exchange information on their educational and work environment, their programs, and other resident issues, with/without the involvement of faculty or attending. Such opportunities include, but are not limited to, confidential discussion with the chief residents, program director, program chair, core program director, and/or core program chair. Other intradepartmental avenues to confidentially discuss any resident concern or issue occur during the Annual Program Evaluations completed by each resident and/or through discussion with the resident representative during the required Annual Program Review (Annual Program Evaluation);
    - The periodic/special review process, during which residents in each program are afforded the opportunity to discuss their concerns about their programs with a resident from another program and have them presented confidentially to the GMEC;
    - The Assistant Dean for GME Administration, or any other member of the GME staff, including the Executive Vice Chancellor, Senior Associate Dean and the Associate Dean, who are available for the residents to bring any issues raised in these protected resident meetings, or any other issues a resident may need to address;
    - Peer leadership and membership of the University of Kansas School of Medicine Resident's Council, who are available to confidentially receive any resident concern and present their concerns to the Graduate Medical Education Committee and GME Staff;
    - Praise and concern comments can be sent through MedHub 'Messaging' directly and confidentially to program directors or the DIO. This can be accessed through any resident's MedHub home page.
    - ACGME Resident Survey, administered directly to all residents in ACGME-accredited Programs. This survey provides summary and anonymous feedback to Program and GME Leadership. For programs with less than four residents the GME Resident Survey, which is a confidential, anonymous survey organized by the GME office, is administered annually;
    - a grievance process, as outlined in section 13 of this Manual, which provides the resident with a formal mechanism for addressing serious concerns within their programs;
    - ACGME Department of Resident Services at residentservices@acgme.org is available if the above described avenues have not satisfactorily addressed a specific resident issue. The ACGME Resident Services representative will work with the DIO to resolve issues surrounding concerns. Valid complaints are processed by Resident Services and will require a response from the program

director and attestation to the response by the DIO, and review by the relevant review committee.

- upon satisfactory completion of the Program and satisfaction of the Program's requirements and the resident's responsibilities delineated herein, furnish to the resident a Certificate of Completion of the Program;
- annually review and approve the number of residents and funding sources for each program and discuss these quotas and sources of funding with the chairs and Program Directors in a timely fashion to facilitate the recruitment and retention of residents;
- provide the agreed upon levels of financial support, subject to the terms of the resident contract; and
- exercise all rights and responsibilities expressed and implied by the “Institutional Requirements” of the ACGME.

Part 4 – Didactics

Neurology Conference Schedule

Residents are expected to attend at least 70% of the lectures during their residency. The 70% benchmark takes into account vacation and sick leave, NICU where the resident is excused from their regular lectures to attend lectures in the NICU and Pediatric Neurology where residents are excused from Dr. Dubinsky's reading conference March through December. Residents are expected to arrive on time for all lectures and conferences. Residents are free to leave lectures at 8:30 am Monday through Thursday and Friday at 9:00 to attend their assigned rotations, *even if the lecture or conference is running over allotted time.*

Archiving of Didactics

Certain didactic sessions are recorded for later viewing for residents who were not able to attend or to review the subject matter

Lecture and Conference Schedule:

Monday	7:30–8:00 am	Morning report with Dr. Gronseth
	8:00–8:30 am	Handoff or Lecture
	5:30 pm	Neuro-Oncology tumor board
Tuesday	7:30–8:00 am	Core Curriculum Lecture
	8:00–8:30 am	Core Curriculum Lecture
		Or
	6:30–7:30 am	Second Tuesday, monthly core competency lecture at KUH
Wednesday	7:30–8:30 am	Core Curriculum
		Monthly Neuro-Ophthalmology lecture
Thursday	7:30–8:00 am	Morning report with Dr. Pasnoor
	8:00–8:30 am	Core Curriculum Lecture
Friday	7:00–8:00 am	Neurology and Neurosurgery Case Conference
	8:00–9:00 am	Neurology and Neurosurgery Grand Rounds

Core Competency Lectures

Core competency lectures are provided monthly through the Graduate Medical Education Committee. These are from 6:30 am until 7:30 and breakfast is provided. Attendance is required, either at the time of the lecture or viewing the podcast remotely through CHALK. Residents are required to attend or to view **ALL OF THESE LECTURES** during their training.

Neurology Conferences:

Academic productivity is one of the metrics that are used to measure both residents and faculty. Towards that end, we have developed a weekly series of conferences and lectures. Residents take more responsibility for formal teaching as they progress through their training.

Morning Report

On Monday and Thursday mornings morning report is held at 7:30 am in the conference room on the 6th floor of the Cambridge A Building. The residents on call over the weekend, or on Wednesday night are to be present to present their cases. The faculty lead the discussion about the cases. On holidays the Monday morning report is delayed until the next regular business day.

Curriculum Lectures

These lectures are on a two-year cycle covering most of neurology. Each topic incorporates the basic science, anatomy, neurophysiology, genetics, neuropharmacology and clinical aspects of a sub-discipline of neurology. Lectures are 30 minutes long and are given the faculty and by the residents. Topics include neuro-degenerative disorders, multiple sclerosis and similar disorders, epilepsy, neuromuscular disorders, movement disorders, neuropsychological assessment, Evidence Based Medicine (utilizing the American Academy of Neurology EBM Toolkit©) and other topics.

Emergency Neurology Lectures

These lectures are designed to get the PGY2 resident up to speed and are held in July and August of each Academic Year. Unlike the more in-depth two-year curriculum lectures, these are geared towards the urgent evaluation and management of common neurological disorders and emergencies. Both faculty and senior residents give thirty-minute long lectures. These are now viewed as podcasts.

Reading Conference

Each Thursday morning Dr. Dubinsky holds his reading conference. A background reading, such as a textbook chapter or an article from Continuum is assigned and are read in advance of the conference. These are held in the format of a graduate level seminar or what is now termed the Flipped Classroom. The resident learns the core material on their own and masters the key concepts and uses them during seminar activities, such as a case discussion, quiz, or patient management problem. From late December through February, Dr. Dubinsky replaces these lectures with preparation for the Resident In Training Examination.

Journal Club

Each month Dr. Gronseth presents one or more articles for Journal Club. The most important aspect of Journal club is for residents to develop the skills needed to quickly assess the medical literature to answer focused clinical, patient-based questions. The question is oftentimes stated in the PICO format: Patient, Intervention, Comparison, and Outcome. One example would be in patients with suspected carpal tunnel syndrome are nerve conduction studies superior to peripheral nerve ultrasound for diagnostic accuracy. Journal clubs utilize the precepts of evidence-based medicine, which are continually taught to the residents throughout their training.

Case Conferences:

Each Friday from 7:00 am until 8:00 am there is a combined Neurosurgery and Neurology case conference. Usually the first case is presented by Neurosurgery, followed by a Neurology Case conference. These are assigned in advance and the resident is expected to

prepare a 20-25 minute presentation. The format is usually a brief history of the case, a discussion led by a faculty member on the localization and differential diagnosis, followed by the rest of the talk. Residents are encouraged to seek out a faculty member, who is a topic expert to assist them in the presentation and discussion. The slide set should be sent to Santiago Escobar one week in advance for review and feedback from either Dr. Gronseth or Dr. Pasnoor.

Grand Rounds

Each Friday from 8:00 until 9:00 am there is combined Neurosurgery and Neurology Grand Rounds. Lectures are given by faculty members in both departments, other faculty on this campus and visiting professors and faculty candidates; highlighting their research and clinical focus. Towards the end of their senior year, residents present a Grand Rounds lecture.

Part 5 Training Overview

PGY 1

The first year of training is spent with Internal Medicine learning the basics of caring for patients. In AY 2015-16 five blocks are spent at the University of Kansas Hospital (KUH and seven blocks at the Kansas City Veteran's Affairs Medical Center (VAMC).

PGY1 Learning Objectives

- Gather accurate, essential information from all sources, including medical interviews, physical examinations, medical records, and diagnostic/therapeutic procedures.
- Make informed recommendations about preventive, diagnostic, and therapeutic options and interventions that are based on clinical judgment, scientific evidence, and patient preference.
- Develop, negotiate, and implement effective patient management plans and integration of patient care.
- Perform competently the diagnostic and therapeutic procedures considered essential to the practice of internal medicine.
- Access and critically evaluate current medical information and scientific evidence.
- Develop clinically applicable knowledge of the basic and clinical sciences that underlie the practice of internal medicine and apply this knowledge to clinical problem solving, clinical decision-making, and critical thinking.
- Identify areas for improvement and implement strategies to enhance knowledge, skills, attitudes, and processes of care.
- Apply evidence-based, cost-conscious strategies to prevention, diagnosis, and disease management.
- Collaborate with other members of the health care team to assist patients in dealing effectively with complex systems and to improve systematic processes of care.
- To take the USMLE 3 or COMLEX 3 examination.

PGY 2

During the first formal year of neurology training the resident divides their time between the ward and consult services at KUH, the clinic and consult services at the KC VAMC, and subspecialty Neurology Clinics at the Landon Center on Aging and our Fairway Clinics. Call is taken at their assigned institutions.

The first year of Neurology is weighted toward teaching the resident patient care responsibilities. The resident learns how to perfect their neurological exam. Three to four inpatient blocks are spent on the ward service, and one block on the consult service, one block on the stroke service and two to three blocks on night float/clinics at KUH. Three blocks are spent at the Kansas City Veterans Administration Medical Center (KC-VAMC) with primary clinic responsibilities and some consult responsibilities. Two blocks are spent on Night Floats/Clinics. Here the resident covers the inpatient services from 7 pm to 7 am, six days a week for two weeks, then rotates through the clinics at the Landon Center on Aging and our Fairway location

for the other two weeks. During the clinic half of their night float/clinic block the residents receive a broad exposure to the full-time subspecialty faculty and start to become proficient at the evaluation and management of the clinic patient.

PGY2 Learning Objectives:

- To develop proficiency in the neurological interview and examination.
- To use these findings to generate a broad differential diagnosis starting with the most likely diagnosis.
- To understand the appropriate use of clinical and laboratory testing; and their indications, cost, specificity, and sensitivity. They also learn how to prioritize the tests based upon the ordering of their differential diagnosis, the prevalence of disease states and the likelihood ratio of the tests.
- To triage, stabilize and manage patients presenting to the ER with acute neurological disease.
- To learn how to evaluate and manage ICU patients.
- To learn how to coordinate and supervise a clinical team as well as partner with allied health team members to optimize patient care.
- To conduct appropriate literature searches and understand electronic patient information systems.
- To explain to the patient and family in a clear and respectful manner, information about the patient's disease and prognosis.
- To present a case presentation with review of the literature at the Annual Resident Research Day.
- Demonstrate a commitment to ethical principles pertaining to provision or withholding of clinical care, patient confidentiality, and informed consent.

Description PGY3:

The second year of neurology training continues to refine the resident's abilities in patient care and educates the resident about the specialized skills required of a neurologist. Residents spend time on the consultation services at KU and KC-VAMC. One block is spent in the Neuro-Sciences Intensive Care Unit (NSICU), one block supervising the KUH ward service, three blocks of pediatric neurology and three blocks of elective. One block is spent on Night Float/Consults

PGY3 Learning Objectives:

- To further refine the neurological interview and examination and to demonstrate a problem focused approach.
- To demonstrate a broadening fund of knowledge in neurological disease.
- To acquire proficiency in reading CT, MRI, and plain film studies.

- To understand gross and microscopic pathology and correlate it with clinical and neuroimaging information.
- To teach and manage a clinical team with medical students and residents from other programs rotating on service.
- To demonstrate knowledge of the principles of evidence-based medicine.
- To learn the basic principles of research under the guidance of a faculty mentor.
- To make informed decisions about diagnostic and therapeutic interventions based on patient preferences, current scientific evidence and clinical judgment.
- To competently perform lumbar punctures and basic electro diagnostic studies.
- To demonstrate sensitivity to pediatric patients and their families and understand the different needs of the pediatric patient and their parents.
- To work effectively as a neurologic consultant and be responsive to the patient's referring physician(s).
- To develop and to sustain a therapeutic and ethically sound relationship with patients.

Description PGY4:

The final year of training is weighted towards rounding out the resident's education with a mandatory one block rotation in psychiatry, one to two blocks of additional consult duty at KUH and KC-VAMC, one block in NSICU, one block supervising the ward service at KUH, one block of Night Float/Clinics and three block of elective time. Elective time is individualized based on the resident's career plans.

PGY4 Learning Objectives:

- To demonstrate an increasing ability to function independently as a neurologist.
- To demonstrate an extensive fund of knowledge of common neurological disorders, some familiarity with rare disorders, and the ability to research the differential of a rare disorder based upon his or her own clinical evaluation.
- To provide advanced teaching of neurological disorders and exam techniques and to mentor junior neurology residents.
- To understand the utility of EEGs, Evoked Potentials and EMG/NCS.
- To recognize unusual patterns of disease and to learn when to request neurology subspecialty consultations
- To complete a research project with faculty guidance and present it in a scholarly fashion.
- To apply the methods of evidence-based medicine to the analysis of medical literature.
- To learn and make best use of different services provided by ancillary members of the pediatric health care team, including developmental specialists, geneticists, and behavioral psychologists.

- To develop his or her career path through seeking and evaluating job opportunities in fellowships and in practice.

Pediatric Neurology Fellow

The pediatric neurology fellow, or fellows, rotates at KUH functioning as a PGY2 resident in Neurology. The differences are that they do not rotate at the VAMCs, they spend six blocks on inpatient services, three blocks in outpatient clinics and have three blocks of adult neurology electives.

Scope of Practice:

The role of a resident is rigidly defined, as are the roles of nurses, therapists, attending physicians and all members of the health care team. Neurology residents are not to go beyond their scope of practice. For example, neurology residents are not to adjust ventilators or IV pumps.

Part 6 How we Do Things

Case Presentation

The neurology game consists of what is wrong, where is the lesion, and what to do about it. Thus, the presentation of a case, whether on the wards, clinic, over the phone when on call, or at morning report, is vital to exchange the proper information in a formal fashion. The order of presentation is:

- History of current neurological problem
- Relevant past medical history
- Current medications
- Neurological examination:
    - Vital signs
    - Mental status examination
    - Cranial Nerve examination (in order please)
    - Motor examination: includes muscle bulk, tone, strength and subtle signs of weakness (e.g. pronator drift)
    - Sensory examination including the peripheral modalities (light touch, pin prick, pressure, temperature, vibration, proprioception) and when appropriate central modalities (finger identification, stereognosis, graphesthesia, etc.)
    - Coordination: this includes hand movements, trunk and leg movements, stance, gait and postural stability
    - Muscle stretch reflexes: biceps, triceps, knees, ankles, and pathological reflexes (present or absent)
    - Abnormal movements: tremor, etc.

Then you should have a three-sentence summary of the case:

> This is a seventy-four-year-old, right-handed male, who is a retired minister with a history of essential tremor and Parkinson's disease. His current problems are end of dose dyskinesias, daytime hallucinations that are very bothersome to him and to his family. He is currently taking carbidopa/levodopa, ropinirole and quetiapine.

KUH Inpatient Rotations

At the University of Kansas Hospital our department has a primary ward service, a stroke service, a consult service, an Epilepsy Monitoring Unit (EMU) and the Neurological, Neurosurgical Intensive Care Unit (NICU). On the ward team two PGY2 residents, a pediatric neurology fellow, and rotating residents from Neurosurgery and Psychiatry care for the neurology inpatients. They are supervised by a senior (PGY3 or PGY4) neurology resident and one of several neuro-hospitalists, who cover the service for a week at a time. Morning rounds are held daily. On the weekends and holidays, residents are assigned to short and to long call to provide for continuity of care.

The stroke service is staffed by a neurology resident, a nurse practitioner, at times the vascular neurology fellow and is led by a vascular neurologist. The stroke service cares for patients admitted for acute cerebrovascular disease and they respond to all stroke calls.

The consult service, consisting of one or more neurology residents, and rotating residents from Internal Medicine respond to all consults from the hospital and the Emergency Department (ED). Daily sit-down rounds are held by the neurology attending physician prior seeing the consult patients.

Residents assigned to the KU ward, stroke, and consult services take in house weekend and holiday call at the University of Kansas Hospital. This is separate from the Night Float/Clinic rotation.

Kansas City VAMC Clinic and Consult Services

At the Kansas City VAMC two residents staff the clinic nine half days a week and the more senior sees the consults. The residents also learn about and how to perform clinical neurophysiological tests. The clinic patients include consults from other services and physicians and patients with neurological disorders whose care is provided by the Neurology clinic. Residents are responsible for the evaluation and treatment of patients in the Emergency Department.

The residents at the KC-VAMC divide the call, which is taken from home.

Night Float / Clinic Rotation

Residents from all three levels take part in combined Night Float / Clinic blocks, with more blocks during PGY2. Two weeks are spent on night float and two weeks in the clinic. From August through January of PGY2 the resident is assigned to the different general and subspecialty clinics by the program director. From January through June the PGY2 resident may select specific clinics and that rotation must be approved by the program director. The same is true to for OGY3 and PGY4 residents during the clinic half of this block.

Longitudinal Clinics

All residents in PGY2–4 have a weekly half day clinic at the Landon Center on Aging. These occur on Thursday and Friday mornings and afternoons. The clinics are composed of residents from all three levels and are staffed by neurology faculty. The typical workload for a PGY2 resident is one new and two return patients and two to three new patients and two to three follow-up patients for more senior residents.

Patients are seen in follow-up from the Emergency Department, Neurology ward and consult services. Patients are also referred to our clinics by other departments and by community physicians. The resident is responsible for caring for their patients throughout the course of their illness. Residents will rotate between their longitudinal clinic & sub-specialty clinic starting the 2nd half of the PGY-2 academic year.

Other Mandatory Rotations

Neuropathology / Neuroradiology

During PGY4 our residents spends one block working with both neuro-radiology and neuro-pathology. This is typically spent as a half day with each discipline.

NICU

Residents in PGY3 and 4 spend one block in the Neurological and Neurosurgical Intensive Care Unit (NICU). On the rotation residents provide care for patients with severe and life-threatening neurological problems. Intensive care physicians from the Departments of Neurology and Anesthesia staff the NICU. These attending physicians rotate every week and should be contacted for any questions regarding patient care. Residents are on call in rotation with anesthesia, neurosurgery residents and mid-level providers. Advanced Registered Nurse Practitioners are also used to provide continuity of care during the evenings.

Residents are encouraged to take their Emergency / Critical Care Neurology NEX during this rotation. According to the ABPN rules, and our policies, this must be signed off by an ABPN board certified neurologist and not a by an anesthesiologist.

Pediatric Neurology

During PGY3 the adult neurology resident spends three consecutive blocks in pediatric neurology at Children's Mercy Hospital. This is about 10 minutes away on the Hospital Hill campus of the University of Missouri-Kansas City. Under the supervision of faculty pediatric neurologists, and working with the pediatric neurology fellows, the adult neurology resident takes care of the evaluation and management of children with neurological disorders in the clinic and on a consult service. Our residents are not responsible for the overall care of pediatric patients.

Residents on this rotation are on rotating call from home under the supervision of the faculty pediatric neurologists.

Supervising resident KUH wards

During PGY3 and PGY4 neurology residents spend one block each year supervising the KUH ward service. They are responsible for the day-to-day management of the service, care of the neurology patients, and teaching of the residents and medical students on the service. They take over the patient management for residents who have gone home after call or who are in their longitudinal clinic. They pitch in to help cover when a resident is post call or in their longitudinal clinic.

Residents on this rotation take part in the call rotation at KUH.

Psychiatry

Our residents take an ABPN required, one-block rotation in Psychiatry during PGY 4. This block is spent on the psychiatry in-patient consult service at KUH under the supervision of KU faculty psychiatrists.

In addition to the Neurology didactic lectures, the neurology resident also attends the Psychiatry didactic lectures Tuesday from 9:00–noon and Psychiatry Grand Rounds on Friday from 11:00–noon.

Elective Guidelines

Clinical Electives:

Residents are encouraged to develop block long clinical rotations covering many subspecialty neurology clinics or focusing on a major area. Dr. Pasnoor must approve each elective. It is the responsibility of the resident to have the faculty that they will work with sign off on the clinical responsibilities for each half day during the week. Some possibilities are:

EEG

Each resident may choose to complete a one-block rotation that concentrates on the technical aspects of EEG and the management of patients with epilepsy or suspected epilepsy. They read EEGs daily, admit, evaluate, manage and discharge the Epilepsy Monitoring Unit (EMU) patients, with the faculty epileptologist for that week.

EMG

Each resident may choose to complete a one-block rotation that concentrates on the technical aspects of nerve conduction studies and electromyography (NCS and EMG) and in the evaluation and management of clinic and hospital consult patients with neuromuscular, or suspected neuromuscular disorders.

Neurobehavior

Residents work with the faculty clinicians, ARNPs, and researchers in the clinical evaluation and management of patients with cognitive impairment and behavioral problems

Headache Elective

Residents can structure an elective to spend time in adult headache clinics and in the pediatric Headache Clinic with Jennifer Bickel, MD. During this block they can arrange for training with Dr. Dubinsky on the injection of Botox® (onabotulinum toxin) for the treatment of chronic daily headache (formerly known as chronic migraine headache).

Neuro-ophthalmology Elective

The resident works directly with Thomas Whittaker, MD, JD in the evaluation and management of patients with neuro-ophthalmological disorders.

Sleep Medicine Elective

The resident works with M. Suzanne Stevens, MD, and the sleep disorders fellow in the evaluation and treatment of patients with sleep disorders. This includes both clinic and the interpretation and scoring of polysomnographic sleep studies.

Movement Disorders Elective

The resident works with Drs. Pahwa, Dubinsky and Sharma seeing patients with a wide variety of hypokinetic and hyperkinetic movements disorders. They also participate in chemodenervation clinic.

Research Elective

Residents may develop an elective for one block, or longer, in either clinical or basic science research. Dr. Pasnoor must sign off on the elective before it starts. The resident is required to have a research mentor, a project, and a product to present at the end of the rotation.

Design your own elective

In conjunction with a faculty member and the program director a resident may design their own one-block elective in an area not covered above. One such custom elective is an Evidence Based Medicine resource elective, where the resident on elective searches the literature to determine research answers to clinical questions from the Hospital Services.

Away Electives

At the moment, on a case-by-case basis, electives are possible at institutions outside of our core hospitals. Planning for an away rotation is an arduous task that must begin many, many months prior to the planned rotation. It is uncertain that funding for away rotations will be available in the future. The resident must be involved in hands-on patient care during an Away Elective. Not being involved in active patient care or research is an observership ***and is vacation, not an elective.*** ***Due to present pandemic situation, the University has made a decision to restrict any away rotations until December 2021.***

Residents interested in an away research elective during their senior year should apply for the VMA scholarship at the end of their PGY3.

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Hand-Offs

Transitions in care are difficult. Every effort must be made by our residents for smooth transitions in care. The key elements in care transitions are:

- The patient knows who is providing care for them at the resident and at the faculty levels.
    - The resident introduces them self to the patients when they first meet, and when another resident takes over.
    - The faculty introduce themselves to the patient when they first meet.
- Service hand-off is handled in person at the start of each call day and at the end of the day the residents check out to the on-call resident. Hand-off is supervised by the

attending for that service. After it has been determined that the residents are capable, unsupervised hand-off can occur in the mornings.

- Faculty are present for the morning and the afternoon huddle, and service handoff to the night resident occurs during the afternoon huddle, which takes place in person.
- A service census is available through the KUH electronic health record (O2, for Optimal Outcomes). Using the O2 hand-off tool a resident generates the checkout sheet. This has the pertinent demographic information, urgent test results to be followed up and current treatment. If a paper copy is used it must be placed in a shred box when done.

Night Float and Hand-Offs

Two residents each block are assigned to Night Float/Clinic Rotation. For the first half of the block one resident is on night float and the other is assigned to the clinic, and then they switch. Night float coverage is 7 pm to 7 am Monday evening through Sunday morning. A senior resident is on 24-hour call Sunday 7 am until Monday 7 am and on holidays

The inpatient and consult teams must be physically present and get check out from the night resident before 7:00 am.

The Special gets hand-off from the three teams at 4:30 pm, takes care of consults (ED and inpatient) until 7:00 pm when they hand off to the night float resident.

Transitions in Care

Important transition in care occurs at transfer between services and at discharge form the hospital. Transfers to and from the NICU are handled by hand-off between attending physicians and hand-off between the residents. Attending physician on inpatient service will complete an EPA Handoff evaluation in MedHub at least twice per block to evaluate the transition in care between residents.

Planning for discharge transition starts at the time of admission. Planning is reviewed and acted upon daily during the morning and afternoon huddles. The morning huddle is intra-disciplinary.

Transitions in care also occur at the end of residency training. Patients are assigned to the supervising attending, until that patient is seen in the resident clinic. The attending will be assigned any pending laboratory or clinical studies.

Notes

Adequate chart documentation is important for patient care and patient safety. It allows others to look at the medical record, determine what has happened, what is currently happening and what the plans are for the immediate future. ***Do not cut and paste notes***. This is unprofessional behavior and hinders rather than helps communication. Copying someone else's note, be it a resident or an attending is plagiarism, ***which will lead to disciplinary proceedings and possible dismissal from the program***. Templates are perfectly acceptable, and some examples are in the Appendices.

Residents may not enter anything into someone else's note. If the plan changes during rounds, a member of the resident team should document this in a separate note rather than changing the note of a resident who is not available.

Do not fight in the medical record. This is also unprofessional behavior. If a member of a health care teams has documented multiple attempts to contact you, start your note as 'I received a page at 7:10 pm to perform a neurology consult for a question of…..'

Weekend Rounds at KUH and Division of work

The resident on overnight (night float or 24-hour call resident) divides the most current weekend patient list (service census) into thirds for rounding, with assignments for the two on-call residents and the night float resident. This list includes the initials of the rounding attending, the initials of the resident who will write note. If attending A is on consults then resident A should be assigned to write consult notes and be pre-assigned to round with this attending by the night float resident, same applies to the inpatient stroke/wards service. The night float resident should include patients that they admitted or consults that they performed, into their third, but do not include patients that were discharged. This list is prepared by 7am by the night float resident, allowing check-out to begin promptly at 7am. Patients from the consult service, for whom we are awaiting for test results, or the need to follow-up, should be included in the weekend patient list, and assigned to the consults resident or kept by the night float resident. Notes usually do not need to be written on these patients and they are not included in the one third division of work. The night float resident must communicate any important details from chart review to the consults on-call resident.

Inpatient wards service on continuity clinic days:

Morning clinic: You are expected to pre-round on your patients before you attend clinic and give a verbal checkout to your co-resident regarding any pending orders or emergent issues affecting your patients. You are expected to write notes on your patients for the duration of the block, you may begin your note before clinic and update it upon your return in the afternoon by speaking to the attending regarding any changes to the plan of the day.
Afternoon clinic: You are expected to pre-round and round as usual. Inform your attending of your afternoon clinic to ensure your patients are given priority and rounds on your patients are completed before leaving for clinic. You are expected to write notes on your patients and complete them before the end of the workday.

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Part 7 Evaluations

The Next Accreditation System (NAS) and Levels

The 29 milestones in Neurology are mapped onto the six competencies. The levels of the milestones are based on Dreyfus model of learning. (Dreyfus 1980) These stages are analogous to Levels 1-5 in the milestones but are not equivalent to post graduate year (or level) of training (PGY). Each level requires mastery of the one below.

A **novice learner** knows the rules, applies them without explicit responsibility and has to do everything by rote. They require constant supervision

A **proficient learner** knows, the rules, accepts limited responsibility yet needs close supervision or oversight. They can filter out unnecessary elements in their presentations, but still need to do most everything in their evaluations

A **competent learner** is able to filter out the unnecessary elements quickly in their clinical encounters and presentations. They not only grasp the nuances of common presentations of common disease, but also the common presentation of uncommon disease. They prioritize their evaluation based on the likelihood of the disorders in their differential and re-evaluate frequently

An **expert learner** quickly grasps the nuances of the situation. They develop a hypothesis, test it on the fly with questions, examination and tests and constantly re-evaluate and adjust accordingly.

A **master learner** likes surprises. They seek out the exceptions to the rules and thus expand our overall knowledge of a subject. They challenge assumptions and in doing so advance the field. They are actively engaged in research in their discipline.

For example, if a resident can correctly identify a patient as having progressive supranuclear palsy (level 3 or 4), yet state that deep brain stimulation is the preferred treatment for a patient with the recent onset of Parkinson's disease (failed level 3), they are performing at level 2, as long as they can tell the difference between hyper and hypokinetic disorders (level 2).

The complete Neurology Milestone Matrix is in the Appendix.

Program Evaluation

Our program is continually evaluated through the twice-yearly meetings of the Program Education Committee (PEC), bi-monthly faculty meetings, formal evaluations through MedHub and informal evaluations and discussions. A formal report is filed through WebAds (ACGME, NAS Milestones) and for the institution through REDCAP.

Program Education Committee:

Background: The PEC is required by the Common Program Requirements in 2013.

Charge: The PEC is charged with administration and maintenance of an education program that produces competent physicians capable of practicing independently without supervision at the end of trainings.

Membership: One member from each level is appointed by their peers to the PEC, Chief Residents, Program Director, Associate and Assistant Program Directors, chair, education vice-chair, and one faculty member from the KC-VAMC. All core clinical faculty are invited to participate

Meetings: The PEC meets twice a year and conducts the annual review in August following the close of each academic year.

Responsibilities:

- Planning, developing, implementing and evaluating educational activities of the program, including, but not limited to: Annual Program Evaluation (APE), recruitment, RITE performance, recruitment and match analysis, ACGME faculty and resident survey reporting, and resident scholarly activity oversight
- Reviewing and making recommendations for revision of competency-based curriculum, goals and objectives, and milestone-based assessments
- Overseeing the development and execution of policies and procedures consistent with institutional standards and addressing areas of non-compliance
- Reviewing program annually using evaluations of faculty, residents, and others
- Perform the WebADS annual update

Evaluation and Tracking Protocols:

- Residents Performance
    - Milestone Assessments
    - RITE performance
- Faculty Development:
    - CME Activity
    - Scholarly Activity
- Graduate performance
    - Proportion of residents taking ABPN examination over the last five years (minimum 80%)
    - Five year rolling average of first time ABPN pass rate (minimum 75%)
- Program quality
    - ACGME Resident and Faculty survey results
    - Annual confidential written evaluations of the program (including rotations/assignments) by residents and teaching faculty
    - Annual confidential written evaluations of the teaching faculty

Annual Program Evaluation (APE)

- The PEC, with guidance from the central KU GME office, will document a formal, systematic evaluation of the curriculum and render a written APE due annually in September
- The written APE documents action plans to improve resident performance, faculty development, graduate performance, and program quality, as well as delineate how they will be measured and monitored.
- The APE reviews and updates the status of the previous year's action plans and identify new action plans for the upcoming year as appropriate
- The APE, including all action plans, is reviewed and approved by the PEC and documented in meeting minutes
- The APE is tethered to Major Program Changes in WebADS
- The program director uses the PEC feedback to inform the completion of the annual WebADS Update.

Clinical Competency Committee

As part of the Next Accreditation System (NAS) we have formed a Clinical Competency Committee for residents in PGY2–4. The Clinical Competency Committee of the Department of Medicine, at KUMC, evaluates PGY1 residents.

Membership:

- Mamatha Pasnoor, MD, the program director and chair of the CCC:
- Richard Dubinsky, MD, MPH, the senior education consultant
- Gary Gronseth, MD Department Chair
- Yunxia Wang, MD, Vice-Chair for Education, and Head of Hospitalist Division
- Drs. Maali, Assistant program director
- Dr. Sachen, who oversees the Resident Longitudinal Clinic
- Muhammad Nashatizadeh, MD, hospitalist
- Tara Logan, education coordinator, as staff support.

This committee meets each Academic Year (AY) in December and in June. Resident evaluation scores are shared along with the aggregate scores on all 29 milestones. A consensus is reached on the level for each of the 29 milestones. The results are shared with the resident at their biannual evaluation with the program director.

This committee advises the program director as to the competency of each resident. The program director has the ultimate decision and reports progress of the milestones to the ACGME through WebAds.

Responsibilities:

The CCC:

- Review all resident evaluations semi-annually
- Prepare and ensure the reporting of Milestones evaluations of each resident semiannually to the ACGME
- Advise the program director regarding resident progress, including promotion, remediation and dismissal

Semiannual Resident Evaluation Process:

- The CCC meets in December and June to review all resident evaluations
- Members of the CCC review, in confidence, the summary of milestone scores for each resident for the previous six months. These include, but are not limited to:
    - Faculty evaluations of each resident
    - 360-degree evaluations (peer, nurses, patients, medical students)
    - Longitudinal clinic evaluations
    - Conference evaluations
    - Any applicable correspondence
- At the CCC meeting each resident and their progress and discussed, faculty members are expected to be present for the entire two-hour review session
- Dates for the CCC meetings are announced before the beginning of each academic year as faculty attendance is mandatory for all assigned CCC meetings

ACGME Reporting

- The CCC completes the ACGME required milestone reporting during the resident evaluation review
    - Consensus is sought for all milestone levels for every resident
- The final reporting is the responsibility of the program director

Remediation and Promotion:

- The CCC can determine when a resident requires remediation and advise on the remediation plan including:
    - Duration
    - Areas to be covered
    - The faculty member who is responsible for the remediation.
- The CCC can determine the milestone achievements are necessary for promotion and for promotion to supervisory level
    - These standards are to be reviewed on a yearly schedule
- The CCC can determine what milestone achievements are necessary for graduation to the unsupervised practice of neurology
    - These standards are to be reviewed on a yearly schedule
- Supplemental meetings:
    - Given the high stakes decisions such as promotion and graduation, additional meetings of the CCC may be held in throughout the year

Resident Evaluations

Resident Evaluation Tools

The forms used for resident evaluations are based in the NAS milestone and are in Appendix 1. Please see Appendix 2 for rotation Goals & Objectives.

Residency In-service Training Examination

The American Academy of Neurology Resident In-Service Training Exam (RITE) is administered in late February or early March each year. The performance of each resident is reviewed by the program director to target educational areas that need to be strengthened in the curricula. Residents who perform in an unsatisfactory fashion on their clinical rotations or on this test are assigned a faculty mentor for remedial one-on-one tutoring.

A score of 65% correct as a senior is strongly predictive of passing the American Board of Psychiatry and Neurology (ABPN) written neurology examination on the first try.

ABPN Clinical Skills Evaluation of Residents

To graduate and to take the ABPN examination each resident must pass the five Neurological Evaluation Examinations (NEX). These are patient encounters that are witnessed by a board-certified neurologist, or neurologists and last 45 minutes. During this time the resident is to take the history, perform an appropriate examination and then to discuss their

assessment and plan with the patient, even though they are not assuming care of the patient. The neurologists grade the resident's performance using the NEX forms (see Appendix 2). Five examinations must be passed at the level of a graduate neurology to graduate from the program and to take the ABPN examination. They are: neuromuscular, neurodegenerative, ambulatory, pediatric neurology, and critical care / emergency neurology. It is the duty of the resident to arrange for these examinations during the appropriate rotations. The examinations must be given and signed by a board-certified adult neurologist or pediatric neurologist.

Three of these witnessed examinations are given during Orals Examinations, which are usually held the first Saturday in May. In front of a faculty and community neurologist, each resident examines a patient over 45 minutes. Afterwards their performance is discussed with the senior neurologists. The residents are evaluated over several domains and assigned a numeric score. The most important is the overall score, which involves these questions: Did the resident pass at their current level of training? And, did they pass at a graduate level? Most often for PGY2 and PGY3 residents pass at their level of training, but not at the level of a graduate. It is possible, though rare, for a resident to pass at a graduate level while a PGY2.

The NEX may be taken as often as needed for the resident to pass, but they must pass by the end of their residency, otherwise they can't sit for the ABPN examination. While according to the ABPN rules the NEX may be taken after graduation, our program is under no obligation to provide these for you after graduation. Thus far we have charged former graduates $750 per exam to complete these post residency. You have seven years from the date of your last NEX to pass the ABPN written examination, if not you start over again.

These are set pieces, like a recital, to prove that you can do the necessary parts of an examination. Thus they are a minimal standards test and the majority of the documentation provided by the examiners is on what the resident failed to do, rather than what they did well.

Assessment by Medical Students

Starting in AY 2013-14 medical students evaluate resident through the E-Value system. The students self-select residents to evaluate based upon their contact with the residents.

Chart Review

In addition to the NAS Milestones from the Neurology Residency Review Committee (RRC) are Entrustable Professional Activities (EPAs). These are elements of the practice of medicine and neurology that once mastered a resident should be able to always execute properly. One of these is chart documentation. Periodically throughout residency the trainee will be asked to select several charts for review by the program director or associate program director to determine their ability to document clinical encounters.

Resident Case Log

The Neurology RRC does not require case logs. **However almost all hospital credentialing committees do require case logs and procedure logs.** It is your responsibility to keep track of these or to try to obtain them through the Electronic Health Record (EHR).

360° Evaluation

Each year the residents evaluate each other; and patients, nursing personnel and administrative personnel, evaluate them.

Resident Portfolio

We will help you to develop your portfolio. This contains all of you presentations (case conference, grand rounds, research day presentation, etc.), papers, practice based learning, quality improvement and quality measurement project. Also included are you evaluations, RITE scores, NEX results, letters of recommendation and biannual evaluations.

Biannual Evaluation

In early January and late June of each academic year all residents meet with the program director to review their progress. At that time these items are reviewed:

- Evaluations from each rotation
- Clinical Competency Committee review
- Case presentations
- RITE scores (June of each year)
- NEX performance and mock orals (June of each year)
- 360º evaluations
- Chart review
- Conference attendance
- Medical student evaluations
- Resident portfolio
- Research day presentation
- Career plans

Residency Steering Committee

This committee meets monthly, or more often as necessary to cover the day-to-day management of the residency program. It is composed of: Dr. Pasnoor, program director, Dr. Gronseth, Department Chair, Yunxia Wang, MD, Chief, Hospitalist Division, Dr. Dubinsky, and the chief residents & Tara Logan, residency coordinator.

Criteria for Advancement:

The Clinical Competency Committee and the program director look at all aspects of the resident to determine if they will advance to the next level of training. Overall, we are looking for maturation of the resident, increase in their medical knowledge, increasing responsibility in patient care, and increasing ability to deal with uncertainty.

- RITE percentile rank > 15%tile for year in training
- Cumulative evaluations for the academic year
- Satisfactory performance on all rotations
- Attendance and participation in all conferences and seminars
- Evidence of scholarly activity

If a resident is found to be below their expected level of performance on the criteria above, or in other domains they may be placed on remediation, at the discretion of the program director. Remediation is an intense course of action, usually lasting three to six months, under the direct supervision of a faculty member to bring the resident up to their expected level of performance. Remediation is not reported outside of the residency program and is not mentioned in response to requests to verify training. Usually an objective measure (e.g. presentation or test performance) to conclude the period of remediation.

Probation is used for correction of a serious deficiency in resident performance. Failure to rectify the problem during probation can lead to dismissal from the program or non-reappointment. It will be reported in any request to verify training. It is up to the discretion of the program director whether or not to promote a resident who is on probation.

Please refer to the GME House Staff Manual: sections 5.2 Term, 11 Remediation and Probation, Corrective Actions: Suspension and Termination, and 13 Grievances, for additional information.

USMLE 3 or COMLEX 3

All residents must take USMLE 3 or COMLEX 3 to matriculate into PGY3. They must pass USMLE 3 of COMLEX 3 to matriculate into PGY4.

ABPN Certification

All residents are expected to pass the ABPN certification examination in adult neurology on their first try. The best time to take this examination is just after graduation. The resident must apply in the winter of their senior year. We will complete the Pre-Certification to verify training for the resident with the ABPN. A permanent state license is required by early September of the year that the resident sits for the examination. Otherwise, their examination fee will be forfeit.

Part 8 – Research Initiatives

Resident Research Experience

Each year we present a series of basic lectures on the principles of clinical research. Residents are encouraged to participate in clinical or basic science research with a faculty mentor. Elective blocks may be spent in research. To do so, a resident must make arrangements ahead of time for a faculty mentor, research project, and a research product (e.g. paper, poster, abstract, planned publication).

Resident and Fellow Research Symposium

On the second or third Friday of June all residents (PGY2–4) and fellows participate in Resident Research Day. Everyone presents a 10-12 minute platform with 3-5 minutes available for questions and discussion. PGY2 residents generally present a case report or case series and the more advanced residents present research testing a hypothesis. This can be a large case series, systematic literature review, basic science or clinical research, etc. Residents are encouraged to work with a faculty mentor. Dr. Pasnoor is in charge of Research day and will post deadlines for title, abstract, and slides.

Residents are encouraged to submit their Research Day abstract for the Resident and Post-Doctoral Fellowship Research Day, usually held in early May.

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Part 9 – Policies

Policy on Selection of Residents

Residency candidates are invited to interview with our residency program based on these criteria:

- Performance in medical school, as shown on their official transcript and supporting documents

- 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 or COMLEX 1 and 2 examinations
- A letter of reference from the Chairman of Neurology at their medical school
- Two additional letters of reference, preferably from Neurologists
- Their personal statement

Level of Appointment Guideline

On occasion, a resident may change core programs. Please see section 5.4.1.c. Residents that change Core Programs will start the new program at the core program PGY 1 level or if applicable in an advanced program at the PGY 2 level.

Communication competency requirement

From the GME manual, section 4.1.2

> Applicants are required to demonstrate spoken, auditory, reading, and writing proficiency in the English language.

This is determined during the application review and in the interview process.

International Medical Graduates

International Medical Graduates applying for a Neurology residency at the University of Kansas Medical Center 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,
- Employment Authorization Documentation (EAD) or Green Card, or
- The applicant must have a J1 visa at the time of application. For holders of H1 visas, these must be converted to J1 by the start of training. We do not sponsor H1 visas.

In addition, a foreign graduate's medical school must be included in the list of "approved" medical schools on the KSBHA's website (http://ksbha.org/medicalschoolsapprovedunapproved.html) and the school must not appear on the list of "disapproved" schools

Candidates who are more than five years after graduation or who have failed USMLE of COMLEX multiple times are not considered as candidates for our residency program.

The Neurology Residency Selection Committee, consisting of the chair, residency program director, the associate and assistant directors, faculty members and residents meet jointly to review all candidates and to determine our rank order list. In addition to the criteria above, we consider personal and professional traits, based on interviews with the Program Director, faculty and residents in the Department of Neurology at the University of Kansas Medical Center.

Only materials in the ERAS system are considered when making a decision to invite a candidate to interview

We fully support the ***All In*** policy of the National Residency Match Program (NRMP) and will not make or consider any offers outside of the Match and the post-match SOAP program.

Policy on Resident Supervision

Each resident is assigned a faculty supervisor for each rotation or clinical experience (inpatient or outpatient). The level and method of this supervision is consistent with the ACGME Special Requirements for Neurology.

Explicit and written descriptions of lines of responsibility for the care of patients are provided in the core curriculum descriptions for each required rotation.

Residents and faculty are provided with personal pagers for rapid, reliable systems of communication. This helps to insure appropriate involvement of supervisory physicians in a

manner appropriate for quality patient care and educational programs. Phone and pager numbers of the staff and residents are provided in the appendix via electronic mail and laminated cards distributed at the beginning of each academic year.

Each faculty member with direct supervision of the resident provides a written summary of their assessment of the resident's performance during the period that the resident was under their direct supervision.

The Program Director counsels and provides written evaluations of each resident at least twice during each year of training. The purpose of this counseling is to provide feedback to the resident on clinical performance and suggest ways for the resident to improve his or her knowledge and skills.

The Neurology Residency Committee meets monthly to address the performance and concerns of the educational activities of the residents. When needed, this information is also presented at the monthly Faculty meetings.

The Program Director advances residents to positions of higher responsibility on the basis of evaluation of their readiness for advancement. This advancement is dependent on the resident's performance and maturation throughout their training. The Program Director and Tara Logan, education coordinator maintains individual resident folders with rotation based and semiannual evaluations. These folders also include results of the Neurology Residency In-Training Examination (RITE) and Mock Oral Boards. This file is available for residents to review upon request and most evaluations are available for review through MedHub.

The **Neurology Resident Supervision Matrix** is part of the Goals and Objectives Section of this handbook.

	Level of Supervision and Supervisor*		
Clinical activity	**Direct, Physician present with resident and patient**	**Indirect, direct supervision immediately available**	**Direct supervision available**
PGY1			
KUH			
Rounds	Primary F		
New patient admissions		Primary F Primary R	
Daily work		Primary F Primary R	
Call		Secondary F	Primary F Primary R
KC VAMC			
Rounds	Primary F		
New patient admissions		Primary F	
Daily work		Primary F	
Call			Primary F
PGY 2-4			
KUH			
Wards			
Rounds	Primary F		
New patient admissions		Primary F R	Secondary F
Daily work		Primary R, Secondary F	
Call		Secondary F	Primary F Secondary R
Consults			
Rounds	Primary F		
New consults	Secondary F	Primary F	
Follow-up consults	Secondary F	Primary F	Secondary F
Neuropathology / neuroradiology**	Primary F	Primary F,	
Neuromuscular	Primary F	Primary F, Secondary NM Fellow	
Epilepsy	Primary F	Secondary F	
NICU	Primary F	Secondary F	
Clinic Elective	Secondary F	Primary F	
KC VAMC			
Clinics	Primary F	Primary F	
Consults	Primary F	Primary F	Secondary F
Leavenworth VAMC			
Clinics and consults	Primary F	Primary F	
Children's Mercy Hospital			
Pediatric Neurology			
Clinic	Primary F	Primary F	
Consults	Primary F	Primary F	Secondary F
Call		Primary F	Secondary F

* F = faculty
R = senior resident
Primary supervision
Secondary supervision

** Patient contact rare

Policy on Progressive Responsibility for Patient Management

The resident is given more responsibility for patient management as they progress through their training. As the resident enters PGY3 and PGY4 they are expected to be able to assume responsibility for all care for their patients yet remain under the supervision as detailed above. This progressive responsibility also encompasses awareness of fatigue and fatigue mitigation.

Policy on Resident Work Hours

Residents will receive a weekly email reminder to enter work hours. The Program Coordinator will run the work hour report weekly. Residents who have not entered or have not correctly entered work hours will be contacted. Residents will be given 2 notices of work hour violation before the Program Director is notified. If resident is still in violation of work hour policy after contact from Program Director, an official written letter on behalf of GMEC Work Hours Subcommittee notifying the resident of work hour monitoring will be sent. If resident does not show improvement, they will be placed on formal monitoring.

Policy on Fatigue

Fatigue is insidious. People with impairment due to fatigue have a loss of insight into their level impairment. In numerous studies, including at least one with residents, impairment due to fatigue was directly compared to alcohol-induced impairment. After starting work at 7 am, residents were impaired from a motoric and a cognitive standpoint to an equivalent BAC of 0.08, or legally intoxicated. By daylight the next morning their impairment had improved to the equivalent of a BAC of 0.05, which is still impaired. More importantly **all** the residents underestimated the degree of their impairment.

Therefore, it is imperative that residents learn to recognize impairment and situations that can lead to impairment.

To mitigate fatigue, we have a call room in Cambridge Tower A. Residents have access to this room 24 hours a day. Thus, after call a resident can nap in the call room and then return home. We also have cab vouchers available to transport a **resident home after call and to return them back to work the next morning**. These vouchers are kept in the resident's workroom on the 6th floor. Please notify the Tara Logan, Education Coordinator and Dr. Pasnoor when they are used so we can complete the necessary paperwork and to replace the used voucher.

Vacation Policy

From the ABPN requirements: *Training programs may schedule individual leave or vacation time for residents in accordance with the overall institutional policy. Leave or vacation time may not be utilized to reduce the total amount of required residency training or to make up deficiencies in training*

Residents are allowed three weeks of vacation per year and two weeks of sick time. Refer to GME policy 5.5.10, 5.5.11 and 5.5.12

Vacations are scheduled in advance by the Chief Resident and are distributed throughout the academic year to provide adequate coverage for all services. Residents are considered yearly employees and can't carry over vacation or sick leave from one year to the next.

Vacations are not taken during NICU rotation blocks, nor are they allowed on the Saturday of *Oral Examinations*, Research Day, the first two weeks of July or the last two weeks of June (except for graduating residents). In general residents are not allowed to take more than one week off during any given block-long rotation. The exception is that senior residents may

take vacation during the last two weeks of their final block of training to move their household before starting their next job. Vacation leave is used for interviews.

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Academic Leave

On a case-by-case basis residents are granted up to five days of academic leave each year to present at national meetings. Academic leave is not used for interviews.

FMLA

GME Policy 5.5.12 addresses leave without pay for reasons that meet FMLA. Meet with HR to see if you qualify for FMLA and discuss payments for benefits, if paid time is exhausted. Oftentimes residents use FMLA for Maternity or Paternity leave.

A reading elective is not available to extend time away from training.

Disability

Disability insurance is provided by the University for all residents and was covered at orientation. Short-term disability is available at cost and was covered at orientation. If you are interested in this please consult the GME handbook and Human Resources.

Policy on Evaluation and Promotion of Residents

Each resident is on a year-to-year contract. Failure to adequately advance across all the professional domains, unprofessional behavior, endangerment of patients, combined with failure to take corrective action as mandated by the program director, associate program director, or department chair results in non-renewal of the resident's contract.

Residents must take the USMLE part 3 (or COMLEX part 3) before the end of their PGY2 year. They must pass the examination prior to entering PGY3 (Neurology department requirement) If this is not completed by the planned end of their training, the certificate is withheld until such time that they have passed the examination and their training is considered unfinished. That means that the resident's training can't be verified, and they can't obtain a permanent medical license.

The decision to promote a resident to the next level of training in made by the program director with the advice of the Clinical Competency Committee. Data used to make this decision include monthly evaluations, lecture attendance and participation, resident presentation, 360º evaluations, RITE scores and the report of the Clinical Competency Committee. Whenever possible 120 days' notice will be given to a resident that they will not be promoted to the next level or that their contract will not be renewed.

Residents who are not progressing as expected in their training (e.g. a RITE score $\leq$ 15 %tile for rank) may be placed on academic remediation. Remediation is a period of intense supervision and guidance to improve the resident's knowledge of Neurology. It is not reported to any credentialing agencies, potential or future employers. It does not appear on the end of residency summative evaluation.

Policy on Evaluation of Faculty and of the Residency Program

For each rotation the residents are assigned reviews of the appropriate faculty members for their rotation. Tara Logan, Education Coordinator, arranges this. These are confidential reviews. Among the faculty, only Dr. Pasnoor can view the individual level reviews, and she can't view hers. These are summarized, comments edited as appropriate, and presented to the Chair and division heads each January as a Teaching Report Card for the faculty member's annual evaluation.

Through the Education Committee meetings, yearly program review, and ad lib conversations, the program is reviewed each year and changes implemented.

GME Resident Funds

The Graduate Medical Education Committee (GMEC) in conjunction with the University of Kansas Health System provides funds for resident use. These are:

- $1500/year for books, travel to national or international meetings, (less AAN dues--$165)
- $200 in PGY1 for medical equipment (e.g. ophthalmoscope)
- $1500 during PGY4 for board preparation.
- $1000 stipend for chief resident(s).

Unspent funds do not carry over from one year to the next.

Resident Travel to Scientific Meetings

The Neurology Residency Review Committee (RRC) requires each neurology resident to attend at least one national neurology meeting. From time to time scholarships are available from the AAN or other sources that are condition specific. Generally these scholarships are offered to senior residents. On a case by case basis the department, and an investigator, may reimburse a resident up to $1,500 to attend a national meeting where they are presenting a poster or platform for work that was performed as part of their neurology residency at KU.

Moonlighting Policies

No, you may not moonlight. You are here to become a neurologist. All of your professional time for the four years of training should be directed towards this goal.

Computer Security

In addition to completing the on-line tutorials on computer security, residents may not share their passwords to the computer systems at the University of Kansas Medical Center or affiliated hospitals and clinical sites. They may not sign into these systems with another's password. Doing so may terminate your employment as a resident.

Social Media Policy

Please see:
https://kumcpublicpoliciesandprocedures.policystat.com/policy/4519441/latest/
for the most recent version of the University's social media policy.

Ombudsman

From the GME manual:

7.9 Ombudsman Guidelines for Residents

The Ombudsman is an academic faculty member in good standing without alignment or administrative connection to either program leadership or School of Medicine/GME Leadership. The Ombudsman will serve as a sounding board/resource to residents with questions or concerns about their program, faculty, or school of medicine. Residents may access one of the three Ombudsmen by email aortman@kumc.edu, msmith33@kumc.edu, jfink2@kumc.edu or JHOWARD3@kumc.edu.

Rev 6-24-2018

Bibliography Suggestions for Adult Neurology Residents

Neuromuscular and EMG/NCS from Dr. Dimachkie

Peripheral Neuropathies. Neurologic Clinics. May 2013. Volume 31, Issue 2, p343-632. Edited by Richard J. Barohn, Mazen M. Dimachkie.

Myopathies. Neurologic Clinics. August 2014. Volume 32, Issue 3, p569-858. Edited by Mazen M. Dimachkie, Richard J. Barohn

Motor Neuron Disease. Neurologic Clinics. November 2015. Volume 33, Issue 4, p727-958. Edited by Mazen M. Dimachkie, Richard J. Barohn

Neuromuscular Junction Disorders. Neurologic Clinics. May 2018. Volume 36, Issue 2, p231-394. Edited by Mazen M. Dimachkie, Richard J. Barohn

Neuromuscular Disorders, 2nd Edition by Anthony A. Amato, James A. Russell.

A Video Atlas of Neuromuscular Disorders. Second Edition. By Aziz Shaibani.

Neuromuscular Disease: Case Studies from Queen Square 1st ed. 2017 Edition. by Hadi Manji, Chris Turner, Matthew R. B. Evans

EMG/NCS Rotation:

Electromyography and Neuromuscular Disorders: Clinical-Electrophysiologic Correlations, 3e 3rd Edition, by David C. Preston MD FAAN, Barbara E. Shapiro MD PhD

ANATOMICAL GUIDE FOR THE ELECTROMYOGRAPHER: The Limbs and Trunk by Perotto, Aldo O. August 1, 2011. Charles C Thomas Publisher.

For EEG, from Dr. Ulloa:

Fisch BJ., EEG Primer – Basic Principles of Digital and Analog EEG, 3rd Ed., Elvisier
Aminoff M., Clinical Neurophysiology, 3rd Ed., Churchill Livingstone.
Kandel ER, Schwarz JH, and Jessell TM. Principles of Neural Science, McGraw-Hill Medical.
Young GB, Ropper AH, and Bolton CF. Coma and Impaired Consciousness: A Clinical Perspective, McGraw-Hill Professional.

Available from Dykes Library:

1. The Atlas of Epilepsies by C. P. Panayiotopoulos
2. A Clinical Guide to Epileptic Syndromes and their Treatment by C. P. Panayiotopoulous
3. Practical Approach to Electroencephalography by Mark Libenson

Neurology Department library:

1. Epileptic seizures: Pathophysiology and Clinical Semiology by Hans Luders and Soheyl Noachtar

Online:

https://www.aesnet.org/sites/default/files/file_attach/elec-16-01-01.pdf

https://eegatlas-online.com/index.php/en/

Suggested for those with extra interest in CNP/EEG:

Fisch and Spehlmann's EEG Primer: Basic Principles of Digital and Analog EEG 3rd Edition

Department of Neurology Clinical Faculty

	Clinical Area	Phone	Pager
University of Kansas Medical Center:		**913-588-5000**	**Dial 9 for outside line**
Abraham, Michael	Vascular/Intensive Care	Cell 816-778-9253	917-2661
Aggarwal, Dipika	General and neurophysiology	86963	917-1518
Barohn, Richard	Neuromuscular	86094	917-9542
Baumgardner, Meagan	Dementia	80970	917-0666
Bittel, Brennen	Hospitalist, Private Service	80933	917-3024
Burka, Tekk	General and Neurophysiology	945-8700	917-0379
Burns, Jeffrey	Dementia	80682	917-4476
Dick, Arthur	General neurology	86041	917-1009
Dimachkie, Mazen	Neuromuscular	80649	917-3198
Dubinsky, Richard	Movement Disorders and neurophysiology	86984	917-2860
Farmakidis, Constantine	Neuromuscular	574-0523	917-6231
Ford, Deetra	General	80994	917-0786
Gronseth, Gary	Vascular and Hospital Neurology	816-304-9386	816-304-9386
Gupta, Harsh	General and Movement Disorders	86970	917-6789
Hairston, Vernita	Neurorehabilitation and General	56168	917-0787
Hammond, Nancy	Epilepsy and general	83616	917-3630
Husmann, Kathrin	Vascular neurology	55018	917-7119
Jabari, Duaa	Neuromuscular	86970	917-6226
Jassam, Yasir	Neuro-immunology	86970	917-6224
Jawdat, Omar	Neuromuscular	-	917-3133
Landazuri, Patrick	Epilepsy and general	Indian Creek: 81119 Epilepsy: 88944	917-0785
Lechtenberg, Colleen	Vascular and Hospital Neurology	83210	917-9500
Lynch, Sharon	Multiple Sclerosis	86978	917-5110
Maali, Laith	Vascular	86970	917-6225
Massey, Brenton	Hospitalist, Private Service		917-2469
Nashatizadeh, Muhammad	Hospitalist	86782	917-4708
Pahwa, Raj	Movement Disorders	86782	913-375-2322
Pasnoor, Mamatha	Neuromuscular	80668	917-5154
Pendurthi, Aparna	Vascular	86970	917-6228
Qureshi, Abid	Vascular	86970	917-6230
Rippee, Michael	General, concussion	85240	917-2699
Rosterman, Lee	Vascular and Hospital Neurology	58538	917-5089
Sachen, Fred	General Neurology	Cell: 913-648-0343	-
Sharma, Kartavya	Vascular/Intensive Care	86970	917-5560
Sharma, Vibhash	Movement Disorders	86782	917-9953
Slavin, Sabreena	Vascular	945-7486	917-6229
Southwell, James	General and neurophysiology	87455	917-0788
Statland, Jeffrey	Neuromuscular	59933	917-4046
Stevens, M, Suzanne	Sleep disorders	86212	917-2301
Swerdlow, Russell	Dementia	56632	917-5152
Ulloa, Carol	Epilepsy	89965	917-4707
Uysal, Utku	Epilepsy	80029	917-1741
Varon, Matthew	Neuromuscular		917-4027
Wang, Yunxia	Vascular and Hospital Neurology	80686	917-5085

KC VAMC		**816-861-4700 or 800-525-1483**	
Paging from outside:		-	816-922-3337
Modem Access:		816-922-3399	
Johnson-Hatchett, Kim	General Neurology	816-861-4700	917-2875
Singh, Vikas	General Neurology	816-861-4700	-

Leavenworth VAMC			
Venkatesh, Ram	General neurology & neurophysiology	913-682-2000	-
ER Phone		52900	
Laboratory		52544	
MICU Phone		52885	
Nurse Ph Unit A2		52828	
Radiology		52244	
Res Rm Ph		53429/53421	

Clinic Numbers/Contacts

Clinic	Contact Name	Extension	O2 username
Epilepsy	Michelle Wyser Teresa Hayes	8-4529	Mwyser Thayes3
General Neurology **Resident Clinic:** 8-6472 8-0674	New pts: Erin Bieser F/u pts: Christy Gillaspie Tara Dydell Marissa Mendoza Jazmin Young	5-8392 8-7176 8-8973 8-8218 8-8219	Ebieser Cgillaspie Tdydell Mmendoza4 Jyoung11
Multiple Sclerosis	Marissa Mendoza	8-8218	Mmendoza4
Neuromuscular	Lindsey Leggio	8-0674	Llegio
Movement	Jennine Haynes	8-6472	Jhaynes5
Sleep & Memory	Jenny Matlock	8-0970	Jmatlock
Stroke	Lindsey Leggio	8-0674	Llegio

Important Dates for AY 2020-2021:

Event and date	Action needed
July 1-10, 2020	***No vacations allowed***
July 2-3, 9-10	Clinics blocked for all residents
TBA	Mandatory Resident as teacher training for PGY2 residents
September 7, 2020 Labor Day	Morning report on Tuesday the 8th
September 22 and 23 O2 training for incoming CMH fellows *Tentative based on 2018 training*	*Notify CMH when confirmed*
October 19-23, 2020	Child Neurology Society meeting, in San Diego ***no vacation for KU resident at CMH***
November 26 & 27, 2020 Thanksgiving	Block KUH resident clinics. VA residents have clinic on Friday
December 24-25, 31 & January 1	Block resident clinics
January 18, 2021 MLK Day	Morning report on January 19
RITE February 11 and 12, 2021	Resident Clinics are blocked, no Grand Rounds ***No vacations***
AAN April 17-23, 2021	cancel resident clinics
Live Patient Exams May 1, 2021	***No resident vacations***
Monday May 31, 2020 Memorial Day	Morning report on Tuesday 1st
TBA Ziegler Professorship Lecture	
June 11, 2021 Research Day	Block all clinics until 3 pm for faculty and residents (No Friday clinic for residents)
June 19, 2021 Graduation	
June 17-18 & 24-25, 2021	Block resident clinics
June 14-30 2021	***No vacations*** except for graduating PGY4 residents

Appendices:

Neurology Milestones
Neurology Milestone Matrix
NEX forms
Chart Documentation
Rotation Schedule
Goals & Objectives

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** ☐				

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** ☐				

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** ☐

Neurology Milestone Matrix						
	Milestone					
No.	No.	Core comp	Label	Level	Description	Rotation
1	1	PC	Neurological History	1	Obtains a neurologic history	KU Wards, Clinic, KC VAMC clinic, Leavenworth
2	1	PC	History	2	Obtains a complete and relevant neurologic history	KU Wards, Clinic, KC VAMC clinic, Leavenworth
3	1	PC	History	3	And organized neurologic history	KU Wards, Clinic, KC VAMC clinic, Leavenworth
4	1	PC	History	4	Efficiently obtains a complete, relevant and organized neurologic history	KU Wards, Clinic, KC VAMC clinic, Leavenworth
5	1	PC	History	5	And incorporates subtle verbal and nonverbal cues	KU Wards, Clinic, KC VAMC clinic, Leavenworth
6	2	PC	Neurological Examination	1	Performs complete neurological examination	KU Wards, Clinic, KC VAMC clinic, Leavenworth
7	2	PC	Exam	2	Performs complete neurological exam accurately	KU Wards, Clinic, KC VAMC clinic, Leavenworth
8	2	PC	Exam	3	And incorporating some additional appropriate maneuvers	KU Wards, Clinic, KC VAMC clinic, Leavenworth
9	2	PC	Exam	3	Visualizes papilledema	Consults, NICU
10	2	PC	Exam	3	Accurately performs a neurological on a comatose patient	KU Wards, Consults, NICU

11	2	PC	Exam	4	Efficiently performs a relevant neurological exam accurately incorporating all additional appropriate maneuvers	KU Wards, Clinic, KC VAMC clinic, Leavenworth
12	2	PC	Exam	4	Accurately performs a brain death examination	KU Consults, NICU
13	2	PC	Exam	5	Consistently demonstrates mastery in performing a complete, relevant, and organized neurological exam	Clinic, Ward supervisor
14	3	PC	Management/Treatment	1	Demonstrates basic knowledge of management of patients with neurologic disease	KU Wards, Clinic, KC VAMC clinic, Leavenworth
15	3	PC	M/T	2	Discusses general approach to initial treatment of common neurologic disorder, including risks and benefits of treatment	KU Wards, Clinic, KC VAMC clinic, Leavenworth
16	3	PC	M/T	2	Identifies neurologic emergencies	KU Consults, NICU, Night float
17	3	PC	M/T	3	Individualizes treatment for specific patients	KU Wards, Clinic, KC VAMC clinic, Leavenworth
18	3	PC	M/T	3	Initiates management for neurologic emergencies and triages patient to appropriate level of care	KU Consults, NICU, Night float

19	3	PC	M/T	3	Appropriately requests consultations from non-neurologic care providers for additional evaluation and management	KU Wards, Clinic, KC VAMC clinic, Leavenworth
20	3	PC	M/T	4	Adapts treatment based on patient response	All
21	3	PC	M/T	4	Identifies and manages complications of therapy	KU ward senior, stroke NICU
22	3	PC	M/T	4	Independently directs management of patients with neurologic emergencies	KU Stroke
23	3	PC	M/T	4	Appropriately requests consultations from a neurologic subspecialist for additional evaluation or management	Clinic
24	3	PC	M/T	5	Demonstrates sophisticated knowledge of treatment subtleties and controversies	KU Wards, Clinic, KC VAMC clinic, Leavenworth
25	4	PC	Movement disorders	1	Recognizes when a patient may have a movement disorder	KU Consults, clinic night float
26	4	PC	MD	2	Identifies movement disorder phenomenology and categories (hypokinetic and hyperkinetic)	Longitudinal clinic
27	4	PC	MD	3	Diagnoses and manages common movement disorders	Longitudinal clinic

28	4	PC	MD	3	Identifies movement disorder emergencies	KU Consults, NICU, Night float
29	4	PC	MD	4	Diagnoses uncommon movement disorders	Longitudinal clinic
30	4	PC	MD	4	Appropriately refers a movement disorder patient for a surgical evaluation or other interventional therapies	Longitudinal clinic
31	4	PC	MD	4	Manages movement disorders emergencies	KU Consults, NICU, Night float
32	4	PC	MD	5	Manages uncommon movement disorders	Longitudinal clinic
33	4	PC	MD	5	Engages in scholarly activity in movement disorders (e.g., teaching, research)	
34	5	PC	Neuro-muscular	1	Recognizes when a patient may have a neuromuscular disorder	KU Wards, Clinic, KC VAMC clinic, Leavenworth
35	5	PC	NM	2	Identifies patterns of neuromuscular disease (e.g., anterior horn cell disease, nerve root, plexus, peripheral nerve, neuromuscular junction, muscle)	KU Wards, Clinic, KC VAMC clinic, Leavenworth
36	5	PC	NM	2	Identifies neuromuscular disorder emergencies	KU Consults, NICU, Night float
37	5	PC	NM	2	Orders NCS / EMG testing appropriately	Longitudinal clinic
38	5	PC	NM	3	Diagnoses and manages common neuromuscular disorders	KU Wards, Clinic, KC VAMC clinic, Leavenworth

39	5	PC	NM	3	Manages neuromuscular disorder emergencies	KU Consults, clinic night float
40	5	PC	NM	3	Interprets results of NCS/EMG testing in context of clinical presentation	Longitudinal clinic
41	5	PC	NM	4	Diagnoses uncommon neuromuscular disorders	KU Wards, Clinic, KC VAMC clinic, Leavenworth
42	5	PC	NM	4	Recognizes when tissue biopsy is warranted	
43	5	PC	NM	5	Manages uncommon neuromuscular disorders	
44	5	PC	NM	5	Engages in scholarly activity in neuromuscular disorders (e.g., teaching, research)	
45	6	PC	Cerebrovascular disorders	1	Recognizes when a patient may have a cerebrovascular disorder	KU Stroke, NF
46	6	PC	CVD	2	Describes stroke syndromes and etiologic subtypes	KU Stroke, NF
47	6	PC	CVD	2	Identifies cerebrovascular emergencies	KU Stroke, NF
48	6	PC	CVD	2	Lists indications and contraindications for intravenous thrombolytic therapy	KU Stroke, NF
49	6	PC	CVD	3	Identifies specific mechanism of patient's cerebrovascular disorder	KU Stroke, NF
50	6	PC	CVD	3	Appropriately refers for interventional or surgical evaluation	KU Stroke, NF

51	6	PC	CVD	3	Manages common cerebrovascular disorders including appropriate use of thrombolytic	KU Stroke, NF
52	6	PC	CVD	4	Diagnoses uncommon cerebrovascular disorders	KU Stroke, NF
53	6	PC	CVD	5	Manages uncommon cerebrovascular disorders	KU Stroke, NF
54	6	PC	CVD	5	Engages in scholarly activity in cerebrovascular disorders (e.g., teaching, research)	
55	7	PC	Cognitive disorders	1	Recognizes when a patient may have a cognitive/behavioral disorder	KU Wards, Consults, Clinic, VA Clinic
56	7	PC	Cog	2	Identifies common cognitive/behavioral disorders	KU Wards, Consults, Clinic, VA Clinic
57	7	PC	Cog	3	Diagnoses and manages common cognitive/behavioral disorders, including cognitive effects of traumatic brain injury	KU Wards, Consults, Clinic, VA Clinic
58	7	PC	Cog	3	Manages behavioral complications of cognitive/behavioral disorders	KU Wards, Consults, Clinic, VA Clinic
59	7	PC	Cog	3	Appropriately refers for neuropsychological testing in evaluating patients with cognitive/behavioral disorders	Longitudinal clinic
60	7	PC	Cog	4	Diagnoses and manages uncommon	

					cognitive/behavioral disorders	
61	7	PC	Cog	5	Engages in scholarly activity in cognitive/behavioral disorders (e.g., teaching, research)	Longitudinal clinic
62	7	PC	Cog	5	Demonstrates sophisticated knowledge of advanced diagnostic testing and controversies	
63	8	PC	Demyelinating diseases	1	Recognizes when a patient may have a demyelinating disorder	KU Wards, NF, Clinic, KC VAMC Clinic
64	8	PC	MS	2	Diagnoses and manages common demyelinating disorders	KU Wards, NF, Clinic, KC VAMC Clinic
65	8	PC	MS	3	Recognizes uncommon demyelinating disorders	KU Wards, NF, Clinic, KC VAMC Clinic
66	8	PC	MS	3	Manages acute presentations of demyelinating disorders	KU Wards, NF, Clinic, KC VAMC Clinic
67	8	PC	MS	4	Diagnoses uncommon demyelinating disorders	KU Wards, NF, Clinic, KC VAMC Clinic
68	8	PC	MS	5	Manages uncommon demyelinating disorders	
69	8	PC	MS	5	Engages in scholarly activity in demyelinating disorders (e.g., teaching, research)	
70	9	PC	Epilepsy	1	Recognizes when a patient may have had a seizure	KU Wards, NF, Stroke, Clinic, KC VAMC Clinic

71	9	PC	Epi	2	Identifies epilepsy phenomenology, and classification of seizures and epilepsies	KU Wards, NF, Stroke, Clinic, KC VAMC Clinic
72	9	PC	Epi	2	Diagnoses convulsive status epilepticus	KU Wards, NF, Stroke, Clinic, KC VAMC Clinic
73	9	PC	Epi	3	Diagnoses and manages common seizure disorders and provides antiepileptic drug treatment	KU Wards, NF, Stroke, Clinic, KC VAMC Clinic
74	9	PC	Epi	3	Diagnoses non convulsive status epilepticus	KU Wards, NF, Stroke, Clinic, KC VAMC Clinic
75	9	PC	Epi	3	Manages convulsive and non-convulsive status epilepticus	KU Wards, NF, Stroke, Clinic, KC VAMC Clinic
76	9	PC	Epi	4	Diagnoses uncommon seizure disorders	KU Wards, NF, Stroke, Clinic, KC VAMC Clinic
77	9	PC	Epi	4	Appropriately refers an epilepsy patient for surgical evaluation or other interventional therapies	KU Wards, NF, Stroke, Clinic, KC VAMC Clinic
78	9	PC	Epi	5	Manages uncommon seizure disorders	
79	9	PC	Epi	5	Engages in scholarly activity in epilepsy	
80	10	PC	Headache	1	Recognizes common headache syndromes	KU Wards, Consults, NF, KC VAMC, LVN VAMC
81	10	PC	HA	2	Diagnoses and manages common headache syndromes	KU Wards, Consults, NF, KC VAMC, LVN VAMC
82	10	PC	HA	2	Identifies headache emergencies	KU Wards, Consults, NF, KC VAMC, LVN VAMC

83	10	PC	HA	3	Recognizes uncommon headache syndromes	KU Wards, Consults, NF, KC VAMC, LVN VAMC
84	10	PC	HA	3	Diagnoses and manages headache emergencies	KU Wards, Consults, NF, KC VAMC, LVN VAMC
85	10	PC	HA	4	Diagnoses and manages uncommon headache syndromes	KU Wards, Consults, NF, KC VAMC, LVN VAMC
86	10	PC	HA	5	Engages in scholarly activity in headache syndromes	
87	11	PC	Neurological Manifestations of Systemic Disease	1	Recognizes when a patient's neurologic symptoms may be due to systemic illness	KU Consults, KC VAMC Consults
88	11	PC	SysDis	1	Identifies neurologic emergencies due to systemic disease	KU Consults, KC VAMC Consults
89	11	PC	SysDis	2	Diagnoses and manages common neurologic manifestations of systemic diseases	KU Consults, KC VAMC Consults
90	11	PC	SysDis	2	Diagnoses and manages neurologic emergencies due to systemic disease	KU Consults, KC VAMC Consults
91	11	PC	SysDis	3	Recognizes uncommon neurologic manifestations of systemic disease	KU Consults, KC VAMC Consults
92	11	PC	SysDis	4	Diagnoses and manages uncommon neurologic manifestations of systemic disease	KU Consults, KC VAMC Consults
93	11	PC	SysDis	5	Engages in scholarly activity in	

					neurological manifestations of systemic disease	
94	12	PC	Pediatric Neurology	1	Obtains basic neurologic history of infants and children	CMH
95	12	PC	PedN	2	Lists the elements of a neurological examination of infants and children	CMH
96	12	PC	PedN	2	Recognizes broad patterns of neurologic disease in infants and children	CMH
97	12	PC	PedN	2	Lists normal developmental milestones	CMH
98	12	PC	PedN	3	Obtains a complete and age-appropriate neurologic history of infants and children	CMH
99	12	PC	PedN	3	Performs a complete and age-appropriate neurological examination of infants and children	CMH
100	12	PC	PedN	3	Diagnoses common child neurologic disorders	CMH
101	12	PC	PedN	4	Initiates management of common childhood neurologic disorders	CMH
102	12	PC	PedN	4	Initiates management of common neurologic emergencies in infants and children	CMH
103	12	PC	PedN	5	Diagnoses uncommon childhood neurologic disorders	CMH
104	13	PC	Neuro-oncology	1	Recognizes common clinical presentations of a brain or spine mass	KU Consults, clinic night float,

						Leavenworth and KC VAMC
105	13	PC	ON	2	Identifies neuro-oncological emergencies and initiates management	KU Consults, clinic night float, Leavenworth and KC VAMC
106	13	PC	ON	3	Provides differential diagnosis of brain or spine mass	KU Consults, clinic night float, Leavenworth and KC VAMC
107	13	PC	ON	3	Identifies neurologic complications due to cancer or the treatment of cancer	KU Consults, clinic night float, Leavenworth and KC VAMC
108	13	PC	ON	4	Appropriately refers for advanced testing, including biopsy	KU Consults, clinic night float, Leavenworth and KC VAMC
109	13	PC	ON	4	Manages neurologic complications due to cancer or the treatment of cancer	KU Consults, clinic night float, Leavenworth and KC VAMC
110	13	PC	ON	5	Engages in scholarly activity in neuro-oncology	
111	14	PC	Psychiatry	1	Recognizes when a patient may have a psychiatric disorder	Psych
112	14	PC	Psych	1	Obtains an appropriate psychiatric history	Psych
113	14	PC	Psych	2	Identifies common psychiatric disorders	Psych
114	14	PC	Psych	2	Identifies psychiatric comorbidities in patients with a neurologic disease	Psych
115	14	PC	Psych	3	Recognizes when a patient's neurological	Psych

					symptoms are of psychiatric origin	
116	14	PC	Psych	3	Recognizes when a patient's psychiatric symptoms are of neurologic origin	Psych
117	14	PC	Psych	3	Identifies major side effects of psychiatric medications	Psych
118	14	PC	Psych	4	Diagnoses common psychiatric disorders	Psych
119	14	PC	Psych	4	Initiates management of psychiatric comorbidities in patients with a neurologic disease	KU Wards, NICU Longitudinal clinic
120	14	PC	Psych	5	Engages in scholarly activity in psychiatric disorders	
121	15	PC	Neuroimaging	1	Identifies basic neuroanatomy on brain magnetic resonance (MR) and computerized tomography (CT)	KU Wards
122	15	PC	NI	2	Recognizes emergent imaging findings on brain MR and CT	KU wards, consults, stroke, night float
123	15	PC	NI	2	Identifies basic neuroanatomy on spine MR and CT	KU Wards, longitudinal clinic
124	15	PC	NI	2	Identifies major vascular anatomy on angiography	KU Stroke
125	15	PC	NI	3	Describes abnormalities of the brain and spine on MR and CT	All
126	15	PC	NI	3	Identifies major abnormalities on angiography	KU Stroke, NICU

127	15	PC	NI	4	Interprets MR and CT neuroimaging of brain and spine	All
128	15	PC	NI	5	Identifies subtle abnormalities on angiography	
129	15	PC	NI	5	Interprets carotid and transcranial ultrasound	
130	16	PC	EEG	1	Explains an EEG procedure in nontechnical terms	
131	16			2	Uses appropriate terminology related to EEG (e.g., montage, amplitude, frequency)	
132	16	PC	EEG	3	Describes normal EEG features of wake and sleep states	
133	16			3	Recognizes EEG patterns of status epileptics	
134	16	PC	EEG	3	Recognizes common EEG artifacts	
135	16			4	Interprets common EEG abnormalities and creates a report	
136	16	PC	EEG	4	Recognizes normal EEG variants	
137	16			5	Interprets uncommon EEG abnormalities	
138	16	PC	EEG	5	Describes normal and some abnormal EEG features of wake and sleep states in children	
139	17	PC	NCS	1	Explains an NCS/EMG procedure in nontechnical terms	
140	17	PC	NCS	2	Uses appropriate terminology related to NCS/EMG	

141	17	PC	NCS	3	Describes NCS/EMG data	
142	17	PC	NCS	3	Lists NCS/EMG findings in common disorders	
143	17	PC	NCS	4	Interprets NCS/EMG data in common disorders	
144	17	PC	NCS	4	Describes common pitfalls of NCS/EMG	
145	17	PC	NCS	4	Formulates basic NCS/EMG plan for specific, common clinical presentations	
146	17	PC	NCS	5	Performs, interprets, and creates a report for NCS/EMG	
147	18	PC	LP	1	Lists the indications and contraindications for lumbar puncture	Simulation
148	18	PC	LP	2	Lists the complications of lumbar puncture and their management	Simulation
149	18	PC	LP	3	Performs lumbar puncture under direct supervision	Simulation
150	18	PC	LP	4	Performs lumbar puncture without direct supervision	Simulation
151	18	PC	LP	5	Performs lumbar puncture on patients with challenging anatomy	
152	19	MK	Localization	1	Attempts to localize lesions within the nervous system	All
153	19	MK	Local	1	Describes basic neuroanatomy	All
154	19	MK	Local	2	Localizes lesions to general regions of the nervous system	All
155	19	MK	Local	3	Accurately localizes lesions to specific	All

					regions of the nervous system	
156	19	MK	Local	4	Efficiently and accurately localizes lesions to specific regions of the nervous system	All
157	19	MK	Local	4	Describes advanced neuroanatomy	All
158	19	MK	Local	5	Consistently demonstrates sophisticated and detailed knowledge of neuroanatomy in localizing lesions	All
159	20	MK	Formulation	1	Summarizes history and exam findings	All
160	20	MK	Form	2	Summarizes key elements of history and exam findings	All
161	20	MK	Form	2	Identifies relevant pathophysiologic categories to generate a broad differential diagnosis	All
162	20	MK	Form	3	Synthesizes information to focus and prioritize diagnostic possibilities	All
163	20	MK	Form	3	Correlates the clinical presentation with basic anatomy of the disorder	All
164	20	MK	Form	4	Efficiently synthesizes information to focus and prioritize diagnostic possibilities	All
165	20	MK	Form	4	Accurately correlates the clinical presentation with detailed anatomy of the disorder	All

166	20	MK	Form	4	Continuously reconsiders diagnostic differential in response to changes in clinical circumstances	All
167	20	MK	Form	4	Diagnoses brain death	KU Consults, wards, stroke, NICU
168	20	MK	Form	5	Consistently demonstrates sophisticated and detailed knowledge of pathophysiology in diagnosis	
169	20	MK	Form	5	Effectively educates others about diagnostic reasoning	
170	21	MK	Diagnostic Evaluation	1	Demonstrates general knowledge of diagnostic tests in neurology	All
171	21	MK	Diag Eval	2	Discusses general diagnostic approach appropriate to clinical presentation	All
172	21	MK	Diag Eval	2	Lists risks and benefits of tests to patient	All
173	21	MK	Diag Eval	3	Individualizes diagnostic approach to the specific patient	All
174	21	MK	Diag Eval	3	Accurately interprets results of common diagnostic tests	All
175	21	MK	Diag Eval	4	Explains diagnostic yield and cost-effectiveness of testing	All
176	21	MK	Diag Eval	4	Accurately interprets results of less common diagnostic testing	All

177	21	MK	Diag Eval	4	Recognizes indications and implications of genetic testing	All
178	21	MK	Diag Eval	4	Recognizes indications of advanced imaging and other diagnostic studies	All
179	21	MK	Diag Eval	5	Demonstrates sophisticated knowledge of diagnostic testing and controversies	
180	22	SBP1	Systems thinking, including cost and risk effective practice	1	Describes basic cost and risk implications of care	All
181	22	SBP1	Cost	2	Describes cost and risk benefit ratios in patient care	All
182	22	SBP1	Cost	3	Makes clinical decisions that balance cost and risk benefit ratios	All
183	22	SBP1	Cost	4	Incorporates available quality measures in patient care	All
184	22	SBP1	Cost	5	Engages in scholarly activity regarding cost and risk-effective practice	
185	23	SBP2	Work in inter-professional teams to enhance patient safety	1	Describes team members' roles in maintaining patient safety	All
186	23	SBP2	Teams/Safety	2	Identifies and reports errors and near misses	All
187	23	SBP2	Teams/Safety	3	Describes potential sources of system failure in clinical care	All

					such as minor, major, and sentinel events	
188	23	SBP2	Teams/Safety	4	Participates in a team-based approach to medical error analysis	All
189	23	SBP2	Teams/Safety	5	Engages in scholarly activity regarding error analysis and patient safety	
190	24	PBLI	Self-directed learning	1	Acknowledges gaps in knowledge and expertise	All
191	24	PBLI	Self-learning	2	Incorporates feedback	All
192	24	PBLI	Self-learning	3	Develops an appropriate learning plan based upon clinical experience	All
193	24	PBLI	Self-learning	4	Completes an appropriate learning plan based upon clinical experience	All
194	24	PBLI	Self-learning	5	Engages in scholarly activity regarding practice-based learning and improvement	
195	25	PBLI	Locate, appraise, and assimilate evidence	1	Uses information technology to search and access relevant medical information	All
196	25	PBLI	Evidence	2	Uses scholarly articles and guidelines to answer patient care issues	All
197	25	PBLI	Evidence	3	Critically evaluates scientific literature	All
198	25	PBLI	Evidence	4	Incorporates appropriate evidence-based information into patient care	All

199	25	PBLI	Evidence	4	Understands the limits of evidence-based medicine in patient care	All
200	25	PBLI	Evidence	5	Engages in scholarly activity regarding evidence-based medicine	
201	26	PROF 1	Compassion, integrity, accountability, and respect for self and others	1	Demonstrates compassion, sensitivity, and responsiveness to patients and families	All
202	26	PROF 1	Compassion respect	1	Demonstrates nondiscriminatory behavior in all interactions, including diverse and vulnerable populations	All
203	26	PROF 1	Compassion respect	1	Describes effects of sleep deprivation and substance abuse on performance	All
204	26	PROF 1	Compassion respect	2	Demonstrates appropriate steps to address impairment in self	All
205	26	PROF 1	Compassion respect	2	Consistently demonstrates professional behavior, including dress and timeliness	All
206	26	PROF 1	Compassion respect	3	Demonstrates compassionate practice of medicine, even in context of disagreement with patient beliefs	All
207	26	PROF 1	Compassion respect	3	Incorporates patients' socio-cultural needs and beliefs into patient care	All

208	26	PROF 1	Compassion respect	3	Demonstrates appropriate steps to address impairment in colleagues	All
209	26	PROF 1	Compassion respect	4	Mentors others in the compassionate practice of medicine, even in context of disagreement with patient beliefs	All
210	26	PROF 1	Compassion respect	4	Mentors others in sensitivity and responsiveness to diverse and vulnerable populations	All
211	26	PROF 1	Compassion respect	4	Advocates for quality patient care	All
212	26	PROF 1	Compassion respect	5	Engages in scholarly activity regarding professionalism	
213	27	PROF 2	Ethics over self	1	Describes basic ethical principles	
214	27	Prof	Ethics over self	2	Determines presence of ethical issues in practice	
215	27	Prof	Ethics over self	3	Analyzes and manages ethical issues in straightforward clinical situations	
216	27	Prof	Ethics over self	4	Analyzes and manages ethical issues in complex clinical situations	
217	27	Prof	Ethics over self	5	Demonstrates leadership and mentorship on applying ethical principles	

218	28	IPCS 1	Relationship development, teamwork, and managing conflict	1	Develops a positive relationship with patients in uncomplicated situations	All
219	28	IPCS 1	Rel Dev TW, Conflict	1	Actively participates in team-based care	All
220	28	IPCS 1	Rel Dev TW, Conflict	2	Manages simple patient/family-related conflicts	All
221	28	IPCS 1	Rel Dev TW, Conflict	2	Engages patients in shared decision-making	All
222	28	IPCS 1	Rel Dev TW, Conflict	3	Manages conflict in complex situations	All
223	28	IPCS 1	Rel Dev TW, Conflict	3	Uses easy-to-understand language in all phases of communication	All
224	28	IPCS 1	Rel Dev TW, Conflict	4	Manages conflict across specialties and systems of care	All
225	28	IPCS 1	Rel Dev TW, Conflict	4	Leads team-based patient care activities	All
226	28	IPCS 1	Rel Dev TW, Conflict	5	Engages in scholarly activity regarding teamwork and conflict management	
227	29	IPCS	Information sharing, gathering, and technology	1	Effectively communicates during patient hand-off using a structured communication tool	KU Wards, stroke, consults
228	29	IPCS	Info tech	1	Completes documentation in a timely fashion	KU Wards, stroke, consults
229	29	IPCS	Info tech	1	Accurately documents transition of care	KU Wards, stroke, consults
230	29	IPCS	Info tech	2	Effectively communicates during team meetings, discharge planning,	KU Wards, stroke, consults

					and other transitions of care	
231	29	IPCS	Info tech	2	Educates patients about their disease and management, including risks and benefits of treatment options	All
232	29	IPCS	Info tech	2	Completes all documentation accurately, including use of EHR, to promote patient safety	All
233	29	IPCS	Info tech	3	Effectively communicates the results of a neurologic consultation in a timely manner	KU consults, KC-VAMC consults
234	29	IPCS	Info tech	3	Effectively gathers information from collateral sources when necessary	All
235	29	IPCS	Info tech	3	Demonstrates synthesis, formulation, and thought process in documentation	All
236	29	IPCS	Info tech	4	Effectively leads family meetings	KU wards, stroke, consults NICU
237	29	IPCS	Info tech	4	Effectively and ethically uses all forms of communication	KU wards, stroke, consults NICU
238	29	IPCS	Info tech	4	Mentors colleagues in timely, accurate, and efficient documentation	KU wards, stroke, consults NICU
239	29	IPCS	Info tech	5	Develops patient education materials	
240	29	IPCS	Info tech	5	Engages in scholarly activity regarding	

					interpersonal communication	

Neurology Clinical Evaluation Exercise (NEX v.2)

Resident Name _____ **Evaluator Name** _____ **Date** _____

Case Scenario (please check one) ☐ **Critical Care** ☐ **Ambulatory** (headache, seizures,etc.) **Level of Training PG** ☐

☐ **Child Neurology** for Adult NeurologyResident ☐ **Neuromuscular** ☐ **Neurodegenerative** **Age of Patient** (Pediatric Cases) ☐

OR

☐ **Adult Neurology** for Child Neurology Resident

Unacceptable	Acceptable
1 Very Poor	5 Acceptable
2 Poor	6 Very Good
3 Unsatisfactory	7 Excellent
4 Borderline but Unacceptable	8 Outstanding

Numeric Grade _____

Medical Interviewing Skills (score 1 - 8)

	Performed	
Did the resident introduce himself/herself appropriately to the patient and others accompanying patient?	☐ Yes	☐ No
Did the resident display appropriate listening skills?	☐ Yes	☐ No
Presenting complaint(s)	☐ Yes	☐ No
History of Present Illness	☐ Yes	☐ No
Past History	☐ Yes	☐ No
Social History	☐ Yes	☐ No
Family History	☐ Yes	☐ No
Review of Symptoms	☐ Yes	☐ No
Medications	☐ Yes	☐ No
Allergies	☐ Yes	☐ No

Numeric Grade _____

Evaluation of Neurological Examination Skills (score 1 - 8)

	Performed	
Mental Status	☐ Yes	☐ No
Cranial Nerves	☐ Yes	☐ No
Sensory	☐ Yes	☐ No
Motor Exam	☐ Yes	☐ No
Reflexes	☐ Yes	☐ No
Cerebellar	☐ Yes	☐ No
Station and Gait	☐ Yes	☐ No

Numeric Grade _____

Humanistic Qualities, Professionalism and Counseling Skills (score 1 - 8)

	Performed	
Did the resident demonstrate appropriate humanistic qualities and professionalism?	☐ Yes	☐ No
Did the resident adequately counsel the patient in the nature of their diagnosis and evaluation approach?	☐ Yes	☐ No
Is the patient/family provided an opportunity to ask questions?	☐ Yes	☐ No
Closure with patient/family appropriate?	☐ Yes	☐ No

Overall Evaluation (score 1-8) ☐ **Unacceptable** ☐ **Acceptable**

Presentation/Formulation (score 1-8)

Did they pass at their training level?_____ Did they pass at a graduate level_____

Evaluator's Comments (comments are needed for house staff performance)

Resident Signature _____ Date _____ Faculty Signature _____ Date _____

4 wk blocks:	1: July 1st-July 26th	2: July 27th-August 23rd	3: August 24th- September 20t	4: September 21st-Ocotber 18th	5: October 19th-Nov 15th	6: Nov 16th-Dec 13th	7: Dec 14-Jan 10th	8: Jan 11th-Feb 7th	9: Feb 8th-March 7th	10: March 8th-April 4th	11: April 5th-May2nd	12: May 3rd-May 30th	13: May 31st-June 30th
Clinic/NF	Vishal	Obi	Kyle (V:9/1-9/4)	Daniel	Tyler (V: 10/19-10/23)	Ahmad	Joe W	Deepa (V: 1/25-1/29)	Joe C	Juli	Tyler	Joe C	Maryam
NF/Clinic	Mai	Muhtadi	Daniah	Carley (V: 9/28-10/4)	Gloria	Carley (V: 11/30-12/6)	Maggie (V: 1/4-1-8)	Maryam	Tyler	Gloria	Daniel	Joe W (V: 5/3-5/7)	Maggie
KUWards Senior	Ryan	Vishal	Aisha	Nick	Shweta	Michael	Muhtadi						
KUWards	Daniel	Tyler	Gloria	Joe C (Tuesday clinic)	Ahmad	Maryam	Ahmad	Tyler	Maggie	Carley	Deepa	Danial	Juli
KUWards	Maryam	Maggie	Carley	Maryam	Joe W	Deepa	Juli	Gloria	Deepa	Joe C	Joe W	Maggie	Ahmad
KUStroke	Michael	Kyle	Srijan	Vishal	Muhtadi	Ryan	Obi	Shweta	Mai	Aisha	Srijan	Nick	Kyle
	Carley	Gloria	Daniel	Tyler	Deepa	Joe W	Joe C (Tuesday clinic)	Maggie	Juli	Joe W	Maryam	Ahmad	Daniel
KUEMU	Muhtadi	Maryam	Joe W	Obi			Tyler	Nick	Ahmad (V: 2/15-2/19)		Gloria (4/5-4/9)	Shweta	Joe C.
KUConsults	Aisha	Michael	Ryan	Ryan	Srijan	Aisha	Vishal	Obi	Shweta	Michael	Kyle	Mai	Daniah
KUConsults	Joe W	Carley	Tyler	Deepa	Julie	Joe C (Tuesday clinic)	Carley	Daniel	Maryam	Ahmad	Maggie	Tyler	Gloria
Neuro ICU	Obi	Daniah	Muhtadi	Kyle						Mai			
KCVA	Nick	Ryan (V: 8/17-8/21)	Shweta (V:9/14-9/18)	Michael	Nick	Vishal	Nick (V:12/21-12/25)	Daniah	Aisha	Vishal	Daniah	Srijan (V 5/10-5/15)	Mai
KCVA	Maggie	Joe W	Maggie	Daniah	Maryam	Muhtadi	Deepa	Ahmad	Gloria	Obi	Carley (V: 4/19-4/23)	Deepa	Deepa
KCVA	Ahmad	Daniel	Maryam (8/31-9/4/20)	Joe W (9/21-25)	Daniel	Gloria	Maryam (V: 1/4-1/8)	Carley	Daniel	Tyler (V: 3/29-4/2)	Ahmad	Gloria	Tyler (V: 6/14-6/18)
LV VA	Kyle	Aisha	Ahmad	Maggie (V: 9/21-9/25)	Carley	Mai	Gloria (V: 1/4-1/8)	Muhtadi	Nick	Kyle	Michael (4/5-4/9)	Ryan	Carley
Peds CMH	Shweta	Mai	Mai	Mai (V:9/21-25)	Kyle	Kyle	Kyle	Ryan	Ryan	Ryan	Obi	Obi (V: 5/3-5/7)	Obi
Peds CMH	Srijan				Daniah (V: 10/26-10/30)	Daniah	Daniah				Muhtadi	Muhtadi (V: 5/17-5/21)	Muhtadi
Path/Rad			Nick (V: 9/14-9/18)		Aisha			Vishal	Srijan (V:3/1-/35))	Shweta	Ryan	Michael (V: 5/25-5/31)	
Psychiatry		Nick		Aisha		Srijan		Michael	Vishal		Shweta (4/19-4/23)		
Elective	Gloria	Srijan	Vishal	Ahmad (9/21-10/4)	Joe C (V: 11/2-11/6)	Shweta	Mai (V:12/26-1/1)	Srijan (Away)	Muhtadi (V: 3/1-3/5)	Nick	Mai (4/19-4/23)	Aisha (5/17-5/21)	Michael
Elective	Jake	Jake	Kyle (V:9/1-9/4)	Gloria (V 9/21-9/27)	Obi (V: 10/26-30)	Julie (V: 11/23-11/27)	Shweta (V:12/21-25)	Joe C	Obi (V: 2/22-2/26)	Danial (3/8-3/19)	Nick (4/19-4/23)	Kyle (5/3-5/7)	Nick
Elective	Ashley	Ashley	Jake	Muhtadi (V: 10/5-10/9)	Mai	Daniel (V: 11/16-11/20)	Srijan	Kyle (V 1/25-1/29)	Kyle	Maggie (3/29-4/2)	Aisha	Daniah (V: 5/10-5/14)	Shweta
Elective	Tyler	Shweta	Ashley (8/24-8/28)	Srijan (10/12-10/16)	Michael (V:10/19-10/23)	Maggie	Daniel	Aisha (V:2/1-2/5)	Daniah (2/15-2/19)	Daniah	Vishal	Maryam (V: 5/17-5/22)	Joe W
Elective	Daniah	Ahmad	Michael	Shweta	Ryan	Nick	Michael	Joe W	Carley	Srijan (possible away)	Joe C (4/12-4/16)	Shweta	Vishal
Elective			Obi		Maggie	Obi	Aisha	Mai	Joe W.	Maryam	Juli (4/5-4/9)	Vishal	Aisha
Elective					Vishal	Tyler	Ryan	Julie	Michael	Muhtadi	Joe W	Carley	Ryan (V: last week)
Elective										Deepa (V: 3/15-3/19)		Juli (V: 5/17-5/21)	Srijan
BACKUP													

Goals & Objectives:

EMG Rotation Curriculum

PGY3 or 4

Description of Rotation or Educational Experience

Supervising faculty responsible for reviewing Goals and Objectives: Mazen Dimachkie, MD

Additional faculty: Richard Dubinsky, MD, MPH; Constantine Farmakidis, MD, Omar Jawdat, MD; Duaa Jabari, MD. Mamatha Pasnoor, MBBS, James Southwell, MD; Matthew Varon, MD

This one-block rotation is devoted to the technical components of performing nerve conduction studies and electromyograms (EMGs), and to the clinical evaluation and management of patients with neuromuscular disorders.

Patient Care

Goal

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 are expected to:

Competencies

From the RRC:

- Must have clinical teaching rounds supervised by faculty. These rounds must occur at least five days per week. Residents must present cases and their diagnostic and therapeutic plans;
- The training must include the indications for and limitations of clinical neurodiagnostic tests and their interpretation. Residents must learn to correlate the information derived from these neurodiagnostic studies with the clinical history and examination in formulating a differential diagnosis and management plan;
- Must receive instruction in appropriate and compassionate methods of end-of-life palliative care, including adequate pain relief and psychosocial support and counseling for patients and family members about these issues; and,

Objectives

The PGY3 or PGY4 resident will:

- Develop a differential diagnosis in the inpatient and outpatient setting, based upon the history and clinical examination and to test this differential diagnosis using EMG and NCS.
- Become proficient in the technical skills of nerve conduction studies and electromyography
- Improve their technical skills to the point where they can perform these studies independently and with minimal supervision.
- Become proficient in the evaluation and management of patients with neuromuscular disorders
- Become proficient in end-of-life and palliative care issues for patients with neuromuscular disorders

As measured by GCP, Checklist, Case Stimulated Recall, Focused Observation (Observation of Procedural Skills,

Medical Knowledge

Goal

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 are expected to:

Competencies

- Must regularly attend seminars and conferences in the following disciplines: … neuromuscular disease, EMG case conference, clinical neurophysiology, … pain management, neuro-genetics, and general neurology. Residents must attend the gross and microscopic pathology conferences and Neuromuscular Journal Club.
- Must learn the basic sciences on which clinical neurology is founded, including neuroanatomy, basic neurophysiology, molecular biology, genetics, immunology; and,
- Must receive instruction in the principles of bioethics and in the provision of appropriate and cost-effective evaluation and treatment for patients with neurological disorders

Objectives

The PGY3 and PGY4 resident will:

- Attend subspecialty conferences in Neuromuscular medicine including: Journal Club, Biopsy Conference, and clinical neurophysiology and EMG lectures
- Demonstrate their knowledge and understanding of basic neurophysiology and clinical neurophysiology

As measured by GCP, Focused Observation (Observation of Procedural Skills), RITE, and AANEM self-assessment examination. All residents that rotate on EMG are may sit for the AANEM in-service examination in May of the academic year.

Practice- Based Learning and Improvement

Goal

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 lifelong learning. Residents are expected to develop skills and habits to be able to:

Competencies

- Identify and perform appropriate learning activities
- Incorporate formative evaluation feedback into daily practice

Objectives

The PGY3 and PGY4 resident will:

- Set learning and improvement goals
- Demonstrate their ability to identify areas of needed improvement in their knowledge to develop an independent reading plan
- Incorporate formative evaluation feedback into daily practice
- The PGY4 resident will be able to do this independently

As measured by GCP, CSR, Focused Observation

Systems Based Practice

Goal

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:

Competencies

Not applicable

Professionalism

Goals

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

Competencies

- Compassion, integrity, and respect for others
- Respect for patient privacy and autonomy

Objectives

The PGY3 and PGY4 resident will:

- Demonstrate compassion and respect for others
- Demonstrate respect for patient privacy and autonomy

As measured by GCP, CSR, 360^{o} Evaluation

Interpersonal and Communication Skills

Goal

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

Competencies

- Communicate effectively with patients and families across a broad range of socioeconomic and cultural backgrounds
- Maintain comprehensive, timely, and legible medical records

Objectives

The PGY3 and PGY4 resident will:

- Demonstrate the ability to communicate effectively with patients and their families
- Effectively communicate through written reports of EMG studies and clinic encounters

As measured by GCP, CSR, Focused Observation, 360^{o} Evaluation,

Teaching Methods

What teaching methods are you using on this rotation or educational experience?

- Daily clinics and EMG sessions
- Presentation, review, and discussion of cases with attending faculty
- Interactive discussions

Assessment Method (residents)

How do you measure the resident's performance on this rotation or educational experience?

Patient Care: GCP, Checklist, Focused Observation (Observation of Procedural Skills, Observation of Patient Care Encounter (SEGUE)), Case Logs
Medical Knowledge: GCP, RITE, AANEM self-assessment examination (optional)
Practice-Based Learning: GCP,
Systems Based Practice: GCP,
Professionalism: GCP, 360^{o} Evaluation,
Interpersonal and Communication Skills: GCP, 360^{o} Evaluation,

Assessment Method (Program Evaluation)

How do you evaluate whether this educational experience is effective?

- Block evaluation of the rotation by the resident
- Yearly program evaluation

Twice-yearly evaluation of the resident and solicitation of feedback.

Level of Supervision

How is the resident supervised on this rotation?

- Daily direct supervision by faculty

Educational Resources

List the educational resources

- Educational CD containing a collection of critical references to the understanding of EMG and Neuromuscular Disorders is available on day 1 of the rotation as well as a loaner brief textbook on EMG and NCS. Please contact Dr. Dimachkie to receive those.
- Aids to the Examination of the Peripheral Nervous System, Saunders Limited, 4th edition, 2000.
- Aminoff M., Clinical Neurophysiology, 3rd Ed., Churchill Livingstone.
- Dawson DM, Hallett M, Wilbourn AJ, Campbell WW, Terrono AL, and Trepman E. Entrapment neuropathies, Lippincott Williams & Wilkins.
- Kandel ER, Schwarz JH, and Jessell TM. Principles of Neural Science, McGraw-Hill Medical.
- Kimura, J. Electrodiagnosis in Diseases of Nerve and Muscle, 3rd edition, Oxford University Press, 2001.
- Misulis KE and Head TC. Essentials of Clinical Neurophysiology, 3rd edition, Butterworth-Heinemann, 2002.
- Practice Parameters from the American Academy of Neurology, are available for a large range of conditions, therapies, and assessment tools at **AAN.com**.
- Dumitru and Amato: Electrodiagnostic Medicine, 2nd edition, Hanley & Belfus, 2001.
- Brown and Bolton, Clinical Electromyography, 2nd edition, Butterworth-Heinemann Ltd, 1987.
- Preston and Shapiro Electromyography and Neuromuscular Disorders, 3rd edition, Clinical-Electrophysiologic Correlations (Expert Consult-Online and Print), Amazon, 2013.

Journals:

- Neurology
- Lancet: Neurology
- Annals of Neurology
- Brain
- Stroke
- Journal of Neurology, Neurosurgery and Psychiatry
- Muscle and Nerve

Rev 6/26/2019

Epilepsy Rotation Objectives and Responsibilities

Overall Description:
During this rotation, the resident will be introduced to clinical Epilepsy and basic EEG. To accomplish this, the resident will participate in both clinical and EEG care of patients.

The epilepsy rotation reinforces the ability to **provide a specific diagnosis** by utilizing ordinary neurological skills of obtaining a superior history, localization, adequate use/interpretation of ancillary testing, forming a differential diagnosis, and generating a specific plan of care for each patient.

Educationally, the resident is expected to participate in mandatory epilepsy conferences during the rotation. A curated library of educational and seminal epilepsy publications is made available to all residents with an equal emphasis placed on independent reading and epilepsy attending bedside teaching

Clinically, the neurology resident on the Epilepsy service is responsible for care of **all epilepsy service inpatients** with care divided equitably between the Epilepsy Nurse Practitioner, Epilepsy Fellow, Clinical Neurophysiology Fellow, and ultimately overseen by the Epilepsy attending. Residents are expected to maintain ownership of their patients.

Electrophysiologically, the neurology resident will be a part of the trainee team reading EEGs. Studies read by the neurology resident are immediately reviewed with the Epilepsy or Clinical Neurophysiology Fellow to prepare for presentation to the Epilepsy attending during EEG review.

Objectives:

1. Learn seizure semiology characteristics by history taking and video review with appreciation of specific semiologies that allow generation of a differential diagnosis of specific epilepsy localizations and lateralizations.

2. Improve understanding and clinical implications of epilepsy etiologies and seizure pathophysiology utilizing the primary ancillary testing of EEG and imaging (MRI/PET).

3. Demonstrate competency in the evaluation and management of patients with epilepsy, including all aspects of medical, surgical, mental health, and cognitive needs.

4. Display a thorough understanding of epilepsy mental health and social implications and how a diagnosis of epilepsy can be limiting while maintaining an empathetic approach.

5. Participate in the diagnosis and treatment of non-epileptic events by learning effective diagnosis delivery, coordination of care with mental health professionals, and effective continuity of care with neurology/epilepsy services to prevent patient abandonment.

6. Accurately formulate and implement treatment plans for patients with drug responsive epilepsy, drug resistant epilepsy, and non-epileptic events.

Responsibilities:

Daily Management of Epilepsy Service inpatients:

1. Pre-round around 8:30 - 9:00 AM to assess how your patients have done overnight, new patient concerns, and the number of seizures or non-epileptic events. This data should be obtained primarily by speaking with patients and subsequently confirmed by reviewing nursing and EEG technician notes in the EMR.

2. Attend Epilepsy huddle at 9:20 with the epilepsy nurse practitioner, nursing, and case management team.

3. Participate in EEG review of EMU patients at 10 AM. This can be done in person or via Zoom. For the first week of the rotation, this will entail reviewing studies at EEG review without required pre-reviewing of EEG studies. For the second week, this will be reviewing at least one of your patients with the epilepsy fellow prior to EEG review. For the remainder of the rotation, you are responsible for independent review of your patient's study with verification of your findings with the epilepsy fellow prior to EEG review. You should present at least one of your patient's EEG findings each day after the first week.

4. Participate in daily EMU clinical rounds. You should be prepared to succinctly present your patients (including a specific diagnosis like left temporal lobe epilepsy, generalized epilepsy, undefined epilepsy, non-epileptic events, etc), plan for titrating AEDs (or other seizure provoking measures), propose additional diagnostic work up, and addressing any other medical/psychiatric need. You are expected to have an overall understanding of all patients on the Epilepsy service regardless of whether the patient is one of your primary patients. After the first week, you should begin to take ownership of discussing your patients' care with them in conjunction with the epilepsy attending.

5. Document a daily progress note. **Excessive or inaccurate copy/paste will result in the note being sent back for documentation that delineates the dynamic nature of an EMU admission.**
    a. The provisional epilepsy or non-epileptic diagnosis should be maintained with specific diagnoses being substituted as new data emerges
    b. The titration of AED medications should be clearly documented and often changes on a daily basis. Changes should always be accompanied by dates

c. The plan for emergency AEDs (lorazepam typically) should be clearly documented and can be different from patient to patient
d. The current EEG report should be updated and summarized on a daily basis

6. Intracranial EEG cases have special considerations
    a. Coordination of care with the neurosurgery nurse practitioners is key and a mutual respect is required.
    b. Head wrap integrity, pain control, antibiotic coverage, and NPO status concerns should be communicated and documented clearly to the Neurosurgery teams as those aspects of care remain firmly neurosurgical.
    c. Emergency AED plans vary significantly in this patient population and should be verified with the Epilepsy attending and clearly verbally communicated and documented to the patient's nurse.

7. Accurately convey consult requests to Dr. Sewell for non-epileptic events. The order for this is NEUROREHABILITATION PSYCHOLOGY**. Dr. Sewell should also be contacted directly for a brief presentation.**

8. Remain available in the hospital to nursing staff until at least 5:00 to help manage acute seizures. If a change in management is warranted, you are to contact the epilepsy attending to discuss your acute bedside evaluation, revised clinical assessment, and proposed treatment plan alteration.

9. Sign out to the on-call neurology resident at 4:30 at the earliest with clear communication of each patient's emergency AED plans, any contingency plans for restarting AEDs that were discussed on rounds, and any other specific medical or psychosocial concerns.

Admission Duties

1. Scheduled EMU admissions should be divided equitably between yourself and the epilepsy nurse practitioner. Specific admissions may be assigned by the Epilepsy attending at her/his preference.

2. Surgical epilepsy cases, both intracranial EEG and therapeutic surgeries, are coordinated by the Epilepsy fellow. You may be asked to see patients by that fellow in conjunction with him/her, the Clinical Neurophysiology Fellow, or on your own with an Epilepsy attending. The most important role for these consultations is verification of AED dosing.

3. You should assist the EEG technician in hook up of at least 2 video EEG admissions during the rotation.

4. Obtain a full history and physical of the patient. Specific aspects of epilepsy histories include a thorough seizure semiology from the first moment the seizure is noted until the patient is back at baseline. Specific care should be given to history that can provide

localizing or lateralizing information. Imaging studies should be independently reviewed and documented at such. You should request to review imaging with the epilepsy attending to clarify findings and develop your imaging skills. Previous EEG reports should be clearly documented and used in the formulation of your assessment and plan. **Your assessment should always include a specific epilepsy diagnosis (or non-epileptic events). This diagnosis can always be revised as new data becomes available.**

5. Use the Adult Video EEG order set to accurately place required orders.

6. Accurately place initial AED orders with appropriate coordination with pharmacy for medications that are either non-formulary or require use of the patient's own medication.

Discharge Duties

1. Attend epilepsy huddle on a daily basis and provide ongoing update as to anticipated discharge date and discharge planning.

2. Complete the discharge summary within 48 hours of discharge.

3. Ensure appropriate follow up as directed by the epilepsy attending. This is accomplished typically in one of 3 patterns.
    a. Follow up with the epilepsy attending at a time of their preference
    b. Follow up with Joseph Newman or Mary Ann Kavalir within 2-4 weeks of follow up.
    c. Ensure and document that patient has follow up with their referring physician if the EMU patient is not a KU Epilepsy Center patient.

4. If a diagnosis of non-epileptic events is made, you should coordinate outpatient follow up with Dr. Sewell as per her directions. Outpatient follow up with epilepsy proceeds as normal.

Other Responsibilities and Considerations

1. Attendance at Epilepsy Surgery Conference at 3:30 PM on Tuesdays is mandatory. You should plan to present at least one patient in conjunction with an epilepsy attending during your rotation.

2. Attend monthly Epilepsy Journal Club (3rd Monday of each Month from 12:15 – 12:45 PM) that will be conducted via Zoom

3. Attendance at EEG conference on Fridays at 12:15 – 1PM is mandatory unless it interferes with your resident continuity clinics

4. There is a selection of 52 journal articles provided by the Epilepsy faculty. At least 80% of these articles should be read, with articles read from each subsection.

5. Attendance of the following activities are optional and should be coordinated with the Epilepsy/Clinical Neurophysiology fellows
    a. Wada testing (done on select Thursday mornings)
    b. Extraoperative cortical mapping of intracranial electrodes (varied timing)
    c. Intraoperative electrocorticography for resections or RNS placement (varied timing)

Rev 6-29-20

Epilepsy Elective Objectives and Responsibilities

Overall Description:
During this rotation, the resident will continue to reinforce clinical Epilepsy and EEG skills introduced in the required epilepsy rotation. Residents will be expected to develop fellow level of care during this rotation. To accomplish this, the resident will participate in both clinical and EEG care of patients.

The epilepsy elective continues development of the resident's ability to **provide a specific diagnosis** by utilizing neurological skills of obtaining a superior history, localization, adequate use and interpretation of ancillary testing, forming a differential diagnosis, and generating a specific plan of care for each patient.

Educationally, the resident is expected to participate in mandatory epilepsy conferences during the rotation. A curated library of educational and seminal epilepsy publications is made available to all residents with an equal emphasis placed on independent reading and epilepsy attending bedside teaching. **Residents should work with epilepsy faculty to further read literature appropriate to their patient care and EEG responsibilities.**

Clinically, the neurology resident on the Epilepsy elective is responsible to assist as required in the care of all epilepsy service inpatients with care divided equitably between the Epilepsy Nurse Practitioner, Epilepsy Fellow, Clinical Neurophysiology Fellow, and ultimately overseen by the Epilepsy attending. Residents on epilepsy elective should preferentially be given surgical patients for clinical care when needed. **Residents may choose to rotate through the outpatient clinic which should be communicated to epilepsy faculty prior to the rotation.**

Electrophysiologically, the neurology resident will be a part of the trainee team reading EEGs. Studies read by the neurology resident are immediately reviewed with the Epilepsy or Clinical Neurophysiology Fellow to prepare for presentation to the Epilepsy attending during EEG

review. **A higher degree of sophistication in report interpretation and writing is expected at this level.**

Objectives:

1. Reinforce seizure semiology characteristics by history taking and video review with appreciation of specific semiologies that allow generation of a differential diagnosis of specific epilepsy localizations and lateralizations.

2. Improve understanding and clinical implications of epilepsy etiologies and seizure pathophysiology utilizing the primary ancillary testing of EEG and imaging (MRI/PET).

3. Demonstrate advanced competency in the evaluation and management of patients with epilepsy, including all aspects of medical, surgical, mental health, and cognitive needs.

4. Display a thorough understanding of epilepsy mental health and social implications and how a diagnosis of epilepsy can be limiting while maintaining an empathetic approach.

5. Lead discussions regarding the diagnosis and treatment of non-epileptic events by learning effective diagnosis delivery, coordination of care with mental health professionals, and effective continuity of care with neurology services to prevent patient abandonment.

6. Accurately formulate, implement, and direct treatment plans for patients with drug responsive epilepsy, drug resistant epilepsy, and non-epileptic events.

Responsibilities:

Daily Management of EEG reading:

10. Routine EEGs should be read promptly upon completion. If you are the primary reader for the EEG, you are responsible for generating a provisional EEG report. Your interpretation and report should be reviewed with a fellow prior to routine EEG review in the afternoon.

11. While you will only be responsible for specific routine EEGs on a daily basis, **it is expected to review all routine EEGs to enhance the rotation educational experience**. This will allow you to verify your own interpretations on a more frequent basis and to ask questions to fellows and the epilepsy faculty about specific waveforms of interest. Reviewing additional video EEGs is encouraged as time allows once your specific video EEG is reviewed and reported.

12. All video EEGs should be distributed equitably between the epilepsy elective resident, the fellows, and the resident on epilepsy rotation.

13. Off service video EEGs should be completed first as other services rely on these reports to generate their patient care plans. Provisional reports should be completed by 9:30 AM.

14. EMU video EEGs should be completed after ICU video EEGs. These reports should be complete by 10 AM.

Daily Management of Epilepsy Service inpatients:

1. Pre-round around 8:30 - 9:00 AM to assess how your patients have done overnight, new patient concerns, and the number of seizures or non-epileptic events. This data should be obtained primarily by speaking with patients and subsequently confirmed by reviewing nursing and EEG technician notes in the EMR.

2. If the resident is caring for inpatients, attend Epilepsy huddle at 9:15 with the epilepsy nurse practitioner, nursing, and case management team.

3. Participate in EEG review of EMU patients at 10 AM. This can be done in person or via Zoom. For the first week of the rotation, this will be reviewing at least one of your patients with the epilepsy fellow prior to EEG review. For the remainder of the rotation, you are responsible for independent review of your patient's study with verification of your findings with the epilepsy fellow prior to EEG review. You should present at least one of your patient's EEG findings each day.

4. Participate in daily EMU clinical rounds. If you are directly caring for a patient, you should succinctly present your patients (including a specific diagnosis like left temporal lobe epilepsy, generalized epilepsy, undefined epilepsy, non-epileptic events, etc), plan for titrating AEDs (or other seizure provoking measures), propose additional diagnostic work up, and addressing any other medical/psychiatric need. **You are expected to have an overall understanding of all patients on the Epilepsy service regardless of whether the patient is one of your primary patients.** You are encouraged to lead patient care discussions by discussing your patients' care with them in conjunction with the epilepsy attending.

5. Document a daily progress note. **Excessive or inaccurate copy/paste will result in the note being sent back for documentation that delineates the dynamic nature of an EMU admission.**
    a. The provisional epilepsy or non-epileptic diagnosis should be maintained with specific diagnoses being substituted as new data emerges
    b. The titration of AED medications should be clearly documented and often changes on a daily basis. Changes should always be accompanied by dates
    c. The plan for emergency AEDs (lorazepam typically) should be clearly documented and can be different from patient to patient
    d. The current EEG report should be updated and summarized on a daily basis

6. Intracranial EEG cases have special considerations
    a. Coordination of care with the neurosurgery nurse practitioners is key and a mutual respect is required.
    b. Head wrap integrity, pain control, antibiotic coverage, and NPO status concerns should be communicated and documented clearly to the Neurosurgery teams as those aspects of care remain firmly neurosurgical.
    c. Emergency AED plans vary significantly in this patient population and should be verified with the Epilepsy attending and clearly verbally communicated and documented to the patient's nurse.

7. Accurately convey consult requests to Dr. Sewell for non-epileptic events. The order for this is NEUROREHABILITATION PSYCHOLOGY**. Dr. Sewell should also be contacted directly for a brief presentation.**

8. Remain available in the hospital until at least 5:00 to help manage acute seizures or stat EEGs. If a change in management is warranted, you are to contact the epilepsy attending to discuss your acute bedside evaluation and/or EEG review, revised clinical assessment, and proposed treatment plan alteration.

9. Sign out to the on call neurology resident at 4:30 at the earliest with clear communication of each patient's emergency AED plans, any contingency plans for restarting AEDs that were discussed on rounds, and any other specific medical or psychosocial concerns.

Admission Duties

7. Scheduled EMU admissions should be divided equitably between yourself and the epilepsy inpatient team. Specific admissions may be assigned by the Epilepsy attending at her/his preference.

8. Surgical epilepsy cases, both intracranial EEG and therapeutic surgeries, are coordinated by the Epilepsy fellow. You may be asked to see patients by that fellow in conjunction with him/her, the Clinical Neurophysiology Fellow, or on your own with an Epilepsy attending. The most important role for these consultations is verification of AED dosing.

9. Obtain a full history and physical of the patient. Specific aspects of epilepsy histories include a thorough seizure semiology from the first moment the seizure is noted until the patient is back at baseline. Specific care should be given to history that can provide localizing or lateralizing information. Imaging studies should be independently reviewed and documented at such. You should request to review imaging with the epilepsy attending to clarify findings and develop your imaging skills. Previous EEG reports should be clearly documented and used in the formulation of your assessment and plan. **Your assessment should always include a specific epilepsy diagnosis (or non-epileptic events). This diagnosis can always be revised as new data becomes available.**

10. Use the Adult Video EEG order set to accurately place required orders.

11. Accurately place initial AED orders with appropriate coordination with pharmacy for medications that are either non-formulary or require use of the patient's own medication.

Discharge Duties

5. Attend epilepsy huddle on a daily basis and provide ongoing update as to anticipated discharge date and discharge planning.

6. Complete the discharge summary within 48 hours of discharge.

7. Ensure appropriate follow up as directed by the epilepsy attending. This is accomplished typically in one of 3 patterns.
    a. Follow up with the epilepsy attending at a time of their preference
    b. Follow up with Joseph Newman or Mary Ann Kavalir within 2-4 weeks of follow up.
    c. Ensure and document that patient has follow up with their referring physician if the EMU patient is not a KU Epilepsy Center patient.

8. If a diagnosis of non-epileptic events is made, you should coordinate outpatient follow up with Dr. Sewell as per her directions. Outpatient follow up with epilepsy proceeds as normal.

Other Responsibilities and Considerations

6. Attendance at Epilepsy Surgery Conference at 3:30 PM on Tuesdays is mandatory. You should plan to present at least one patient in conjunction with an epilepsy attending during your rotation.

7. Attend monthly Epilepsy Journal Club (3rd Monday of each Month from 12:15 – 12:45 PM) that will be conducted via Zoom

8. Attendance at EEG conference on Fridays at 12:15 – 1PM is mandatory unless it interferes with your resident continuity clinic

9. Attendance of the following activities are encouraged and should be coordinated with the Epilepsy/Clinical Neurophysiology fellows
    a. Wada testing (done on select Thursday mornings)
    b. Extraoperative cortical mapping of intracranial electrodes (varied timing)
    c. Intraoperative electrocorticography for resections or RNS placement (varied timing)

Surgical Epilepsy Elective Objectives and Responsibilities

Overall Description:
This rotation serves to provide specific Surgical Epilepsy education and experience. To accomplish this, the resident will participate in surgical hypothesis generation, patient care and EEG interpretation during intracranial EEG admissions, and therapeutic surgery planning and patient care.

The surgical epilepsy rotation develops the resident's ability to specifically care for the surgical epilepsy population in both the intracranial EEG and therapeutic surgery stage.

Educationally, the resident is expected to participate in mandatory epilepsy conferences during the rotation. A curated library of educational and seminal epilepsy publications is made available to all residents with an equal emphasis placed on independent reading and epilepsy attending bedside teaching. **Residents should work with epilepsy faculty to further read literature appropriate to their patient care and EEG responsibilities.**

Clinically, the neurology resident on the Epilepsy service is responsible for care of all surgical epilepsy inpatients with care divided equitably between the Epilepsy Fellow, Clinical Neurophysiology Fellow, epilepsy elective resident, and ultimately overseen by the Epilepsy attending. **Residents may choose to participate in specific EMU patients who are admitted for surgical evaluation with the goal of following that patient's care throughout the surgical process (ie. past the conclusion of the surgical epilepsy rotation).**

Electrophysiologically, the neurology resident will be a part of the trainee team reading intracranial EEGs. If the resident has chosen to follow EMU patients in the presurgical process, he/she would be responsible for that study. Studies read by the neurology resident are immediately reviewed with the Epilepsy or Clinical Neurophysiology Fellow to prepare for presentation to the Epilepsy attending during EEG review.

Objectives:

1. Utilize seizure semiology characteristics by history taking and video review to guide intracranial electrode implantation hypotheses and treatment strategies using neuromodulation, ablation, and resection.

2. Demonstrate advanced understanding and clinical implications of epilepsy etiologies and seizure pathophysiology utilizing the primary ancillary testing of EEG and imaging (MRI/PET) and how these testing modalities relate to the surgical epilepsy process.

3. Demonstrate competency in the evaluation and management of surgical epilepsy patients during the acute surgical period, including all aspects of medical, surgical, mental health, and cognitive needs.

4. Accurately formulate and implement diagnostic and treatment plans for patients with drug resistant epilepsy.

Responsibilities:

Daily Management of EEG reading:

15. Intracranial EEG should be reviewed by 10am. Report generation responsibility should be coordinated between you, the fellow, and the epilepsy attending. Time should be scheduled with the attending to review the findings of the intracranial EEG on a daily basis. This time may be variable depending on the attending's various clinical responsibility.

16. Routine EEGs should be read promptly upon completion. If you are the primary reader for the EEG, you are responsible for generating a provisional EEG report. Your interpretation and report should be reviewed with a fellow prior to routine EEG review in the afternoon.

17. While you will only be responsible for specific routine EEGs on a daily basis, **it is expected to review all routine EEGs to enhance the rotation educational experience**. This will allow you to verify your own interpretations on a more frequent basis and to ask questions to fellows and the epilepsy faculty about specific waveforms of interest. Reviewing additional video EEGs is encouraged as time allows once your specific video EEG is reviewed and reported.

Daily Management of Epilepsy Service inpatients:

1. Pre-round around 8:30 - 9:00 AM to assess how your patients have done overnight, new patient concerns, and the number of seizures or non-epileptic events. This data should be obtained primarily by speaking with patients and subsequently confirmed by reviewing nursing and EEG technician notes in the EMR.

2. Attend Epilepsy huddle at 9:15 with the epilepsy nurse practitioner, nursing, and case management team.

3. Participate in EEG review of EMU patients at 10 AM. This can be done in person or via Zoom. For the first week of the rotation, this will entail reviewing studies at EEG review without required pre-reviewing of EEG studies. For the second week, this will be reviewing at least one of your patients with the epilepsy fellow prior to EEG review. For the remainder of the rotation, you are responsible for independent review of your patient's study with verification of your findings with the epilepsy fellow prior to EEG review. You should present at least one of your patient's EEG findings each day after the first week.

4. Participate in daily EMU clinical rounds. You should be prepared to succinctly present your patients (including a specific diagnosis like left temporal lobe epilepsy, generalized epilepsy, undefined epilepsy, non-epileptic events, etc), plan for titrating AEDs (or other seizure provoking measures), propose additional diagnostic work up, and addressing any other medical/psychiatric need. You are expected to have an overall understanding of all patients on the Surgical Epilepsy service regardless of whether the patient is one of your primary patients. After the first week, you should increase ownership of discussing your patients' care with them in conjunction with the epilepsy attending.

5. Document a daily progress note. **Excessive or inaccurate copy/paste will result in the note being sent back for documentation that delineates the dynamic nature of an EMU admission.**
    a. The epilepsy diagnosis should be maintained with specific diagnoses being substituted as new data emerges
    b. The titration of AED medications should be clearly documented and often changes on a daily basis. Changes should always be accompanied by dates
    c. The plan for emergency AEDs (lorazepam typically) should be clearly documented and can be different from patient ot patient
    d. The current EEG report should be updated and summarized on a daily basis

6. Intracranial EEG cases have special considerations
    a. Coordination of care with the neurosurgery nurse practitioners is key and a mutual respect is required.
    b. Head wrap integrity, pain control, antibiotic coverage, and NPO status concerns should be communicated and documented clearly to the Neurosurgery teams as those aspects of care remain firmly neurosurgical.
    c. Emergency AED plans vary significantly in this patient population and should be verified with the Epilepsy attending and clearly verbally communicated and documented to the patient's nurse.

7. Accurately convey consult requests to Dr. Sewell for coping challenges during the surgical epilepsy process. The order for this is NEUROREHABILITATION PSYCHOLOGY**. Dr. Sewell should also be contacted directly for a brief presentation.**

8. Remain available in the hospital to nursing staff until at least 5:00 to help manage acute seizures. If a change in management is warranted, you are to contact the epilepsy attending to discuss your acute bedside evaluation, revised clinical assessment, and proposed treatment plan alteration.

9. Sign out to the on call neurology resident at 4:30 at the earliest with clear communication of each patient's emergency AED plans, any contingency plans for restarting AEDs that were discussed on rounds, and any other specific medical or psychosocial concerns.

Admission Duties

12. Surgical epilepsy cases, both intracranial EEG and therapeutic surgeries, are coordinated by the Epilepsy fellow. You may be asked to see patients by that fellow in conjunction with him/her, the Clinical Neurophysiology Fellow, or on your own with an Epilepsy attending. **The most important role for these consultations is verification of AED dosing.**

13. You should assist the EEG technician in hook up of at least 1 invasive video EEG.

14. Obtain a full history and physical of the patient. Specific aspects of epilepsy histories include a thorough seizure semiology from the first moment the seizure is noted until the patient is back at baseline. Imaging studies should be independently reviewed and documented at such. You should request to review imaging with the epilepsy attending to clarify findings and develop your imaging skills. Previous EEG reports should be clearly documented and used in the formulation of your assessment and plan. **Your assessment should always include an anatomic epilepsy diagnosis This diagnosis can always be revised as new data becomes available.**

15. Accurately place initial AED orders with appropriate coordination with pharmacy for medications that are either non-formulary or require use of the patient's own medication.

Discharge Duties

9. Ensure the discharge AED regimen is accurate with the neurosurgery nurse practitioner.

10. Ensure appropriate follow up as directed by the epilepsy attending. This is accomplished typically in one of 2 patterns.
    a. Follow up with the epilepsy attending at a time of their preference
    b. Follow up with Joseph Newman or Mary Ann Kavalir within 2-4 weeks of follow up.

Other Responsibilities and Considerations

10. Attendance at Epilepsy Surgery Conference at 3:30 PM on Tuesdays is mandatory. You should plan to present at least two patients in conjunction with an epilepsy attending during your rotation.

11. Attend monthly Epilepsy Journal Club (3rd Monday of each Month from 12:15 – 12:45 PM) that will be conducted via Zoom

12. Attendance at EEG conference on Fridays at 12:15 – 1PM is mandatory unless it interferes with your resident continuity clinics

13. Attendance of the following activities are required and should be coordinated with the Epilepsy/Clinical Neurophysiology fellows
    a. Wada testing (done on select Thursday mornings)
    b. Extraoperative cortical mapping of intracranial electrodes (varied timing)
    c. Intraoperative electrocorticography for resections or RNS placement (varied timing)

You may request to scrub into surgical cases with approval of the neurosurgery attendings. This should be coordinated with the supervising epilepsy attend

Epilepsy Milestones

Epilepsy Patient Care

Level 1
- Recognizes when a patient may have had a seizure
- Diagnoses convulsive status epilepticus
- Recognizes when single seizures do and do not require acute treatment

Level 2
- Identifies separate seizure semiologies
- Manages convulsive status epilepticus

Level 3
- Accurately classifies seizures and epilepsies in both classification schemes
- Initiates and manages routine antiepileptic drug treatment
- Appropriately refers epilepsy patients for presurgical evaluation
- Diagnoses non-convulsive status epilepticus

Level 4
- Manages drug resistant epilepsy patients rational AED polytherapy
- Utilizes multimodal diagnostic testing as part of a presurgical evaluation
- Manages non convulsive status epilepticus.

Level 5
- Manages uncommon epilepsies
- Engages in scholarly activity in epilepsy (eg. Teaching, research, etc)

Epilepsy Neuroimaging – Patient Care

Level 1
- Identifies basic neuroanatomy structures on brain magnetic resonance (MR) and computerized tomography (CT)

Level 2

- Recognize emergent causes of acute seizures or status epilepticus on MR or CT

Level 3
- Describe ordinary MR and CT findings suggesting an epilepsy cause
- Understand functional imaging reports and how they relate to epilepsy evaluations

Level 4
- Describe and interpret less ordinary and subtle MR and CT findings suggesting an epilepsy cause
- Interpret functional imaging studies and how they complement an ongoing epilepsy evaluation

Level 5
- Perform scholarly activity related to epilepsy imaging

Electroencephlogram – Patient Care

Level 1
- Explains an EEG procedure in non-technical terms

Level 2
- Uses appropriate terminology related to montage, amplitude, frequency, etc to describe common EEG findings
- Utilizes clinical features to guide EEG testing by urgency and type of EEG
- Writes an EEG report that requires extensive revision by faculty

Level 3
- Describes normal EEG features of wakefulness and sleep
- Recognizes common EEG artifacts
- Recognizes EEG status epilepticus patterns
- Writes an EEG report that requires minimal revision by faculty

Level 4
- Recognizes epileptiform and non-epileptiform EEG abnormalities
- Recognizes normal EEG variants
- Recognizes pediatric specific features of EEG
- Writes an EEG report that does not require revision by faculty

Level 5
- Perform scholarly activity related to EEG

Kansas City VAMC Consults Curriculum
PGY3 and PGY4

Description of Rotation or Educational Experience

Supervising Faculty for Rotation, responsible for review of Goals & Objectives: Vikas Singh, MD

Additional faculty: Kimberly Johnson, MD; Vikas Singh, MD; Muhammad A Aman, MD; Samuel Lehman, MD

One-block rotation providing consultation service, stroke pager activation and Emergency Department (ED) coverage. This is one of the 18 blocks of inpatient and consult training mandated by the Neurology RRC

This block is repeated in PGY3 and PGY4.

Overall Goals:
During the KU Consult rotation, residents are expected to be able to demonstrate and apply an evidence-based medicine approach to consultant based patient care that reflects an integration of basic science and clinical knowledge.

Residents are expected to improve their skills in communication with patients, patients' families, and colleagues. They are expected to improve their skills in team management

Residents will gain an understanding of neurological manifestations of systemic diseases and systemic manifestations of neurological diseases.

Patient Care

Goal

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 are expected to:

Competencies

Evaluate patients admitted to other services with neurological disorders, or neurological manifestations of systemic disorders

Objectives

The PGY3 resident will:

- Quickly assimilate complex medication information to localize the lesion,
- Be able to generate and prioritize a differential diagnosis
- Develop and carry out patient treatment plans
- Become an effective teacher of medical students and rotating residents

The 4 resident will:

- Counsel and educate patients and their families
- Collaborate with other health care professionals (including those from different disciplines) to provide patient-focused care
- Develop and carry out patient treatment plans
- Demonstrate their proficiency in the evaluation and treatment of patients with neurological diseases in the Emergency Department and in the Intensive Care Unit.
- Become an effective teacher of medical students and rotating residents
- Develop competence for the practice of Neurology without direct supervision

as measured by global performance evaluation and chart stimulated recall

Medical Knowledge

Goal

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 are expected to:

Competencies

Become proficient in the evaluation of ED patients and inpatients with neurological symptoms.

Objectives

The PGY3 resident on the neurology consult service will:

- Attend subspecialty conferences
- Be able to understand the neurological manifestation of systemic diseases and the systemic complications of neurological diseases
- Demonstrate level appropriate maturation in their medical knowledge

The PGY4 resident on the neurology consult service will:

- Attend subspecialty conferences
- Be able to understand the neurological manifestation of systemic diseases and the systemic complications of neurological diseases
- Be able to incorporate new medical knowledge into their patient evaluations

as measured by direct observation and chart stimulated recall.

Practice- Based Learning and Improvement

Goal

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 lifelong learning. Residents are expected to develop skills and habits to be able to:

Competencies

- Set learning and improvement goals

- Locate, appraise and assimilate evidence from scientific studies related to their patients' health problems

Objectives

The PGY3 residents will

- Set learning and improvement goals
- Identify and perform appropriate learning activities
- Incorporate formative evaluation feedback into daily practice
- Participate in the education of patients, families, students, residents and other health professionals, as documented by evaluations of a resident's teaching abilities by faculty and/or learners
- Teach other residents, medical students, nurses, and other health care personnel, formally and informally.

The PGY4 residents will

- Locate, appraise and assimilate evidence from scientific studies related to their patients' health problems
- Incorporate formative evaluation feedback into daily practice
- Participate in the education of patients, families, students, residents and other health professionals, as documented by evaluations of a resident's teaching abilities by faculty and/or learners
- Teach other residents, medical students, nurses, and other health care personnel, formally and informally.

as measured by presentation and discussion with the attending faculty on daily basis. And by global clinical performance

Systems Based Practice

Goal

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:

Competencies

- Coordinate patient care within the health care system relevant to their clinical specialty
- Work in inter-professional teams to enhance patient safety and improve patient care quality

Objectives

The PGY3 resident will:

- Incorporate considerations of cost awareness and risk-benefit analysis in patient care

The PGY4 resident will:

- Work in interprofessional teams to enhance patient safety and improve patient care quality

as measured by Chart Stimulated Recall and 360^0 evaluation.

Professionalism

Goal

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

Competencies

- Sensitivity and responsiveness to a diverse patient population, including but not limited to diversity in gender, age, culture, race, religion, disabilities, and sexual orientation

Objectives

The PGY3 will:

Show beginning accountability to patients, society, and the profession

The PGY4 will:

Demonstrate accountability to patients, society, and the profession, at the level of a fully trained neurologist

as measured by global performance evaluation.

Interpersonal and Communication Skills

Goal

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

Competencies

- Communicate effectively with physicians, other health professionals, and health related agencies
- Act in a consultative role to other physicians and health professionals
- Maintain comprehensive, timely, and legible medical records

Objectives

The PGY3 residents will:

- Communicate effectively with patients and families across a broad range of socioeconomic and cultural backgrounds
- Work effectively as a leader of a health care team or other professional group
- Act in a consultative role to other physicians and health professionals
- Maintain comprehensive, timely, and legible medical records

The PGY4 residents will:

- Communicate effectively with physicians, other health professionals, and health related agencies
- Act in a consultative role to other physicians and health professionals
- Maintain comprehensive, timely, and legible medical records

as demonstrated by chart stimulated recall and 360^{o} evaluation.

Teaching Methods

What teaching methods are you using on this rotation or educational experience?

- Daily teaching rounds with attending faculty
- Scheduled lectures
- Reading assignments

Assessment Method (residents)

How do you measure the resident's performance on this rotation or educational experience?

- Checklist: Direct supervision of resident performing history and clinical evaluation (PC, MK, PROF, LCS)
- RITE (MK)
- Checklist: Lumbar puncture proficiency (PC)
- Global Clinical Performance: Discussion of differential diagnosis, use of laboratory, patient management (PC, MK, SBL, PBL, LCS, PROF)
- Chart Stimulated Recall: (PC, MK, SBL, PBL, LCS)
- 360^{o} evaluation (LCS, PROF)
- Chart review (LCS, PROF)

Assessment Method (Program Evaluation)

How do you evaluate whether this educational experience is effective?

- Block evaluation of the rotation by the resident
- Yearly program evaluation

Twice-yearly evaluation of the resident and solicitation of feedback.

Level of Supervision

How is the resident supervised on this rotation?

- Direct supervision by faculty

Educational Resources

List the educational resources

- Plum F and Posner J. The Diagnosis of Stupor and Coma, 3rd edition, Oxford University Press, 1982.
- Practice Parameters from the American Academy of Neurology, are available for a large range of conditions, therapies, and assessment tools at **AAN.com**.
- Ropper AH and Brown RH. Adams and Victor's Principles of Neurology, 8th edition, McGraw-Hill Professional, 2005.
- Samuels MA and Feske SK. Office Practice of Neurology, Churchill Livingstone.

- Samuels MA. Hospitalist Neurology (Blue Books of Practical Neurology, Volume 19), 1st edition, Butterworth-Heinemann, 1999.

KC VAMC Clinic Rotation Curriculum
PGY2

Description of Rotation or Educational Experience

Supervising Faculty for Rotation, responsible for review of Goals & Objectives: Vikas Singh, MD

Additional faculty: Kimberly Johnson, MD; Vikas Singh, MD; Muhammad A Aman, MD; Samuel Lehman, MD

One block rotation participating in the outpatient clinics at the KC VAMC. The resident rotates through both general neurology and sub-specialty clinics.

This rotation is repeated for a total of four blocks during PGY 2. The assignment to subspecialty clinics may be requested by the resident but should be designed to have as broad an experience as possible among the many sub-specialty clinics.

The resident is at the KC VAMC clinics except for their weekly longitudinal clinic at the Landon Center on Aging, Department of Neurology

Patient Care

Goal

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 are expected to:

Competencies

- The resident is to provide thorough, efficient, and compassionate patient care in the outpatient setting.

Objectives

The PGY 2 resident will:

- Provide outpatient care to patients with a wide range of neurological problems
- Become proficient in the evaluation and management in their care of neurology clinic patients
- Obtain an orderly and detailed history from the patient, in conducting a thorough general and neurological examination, and in organizing and recording data.
- Understand the indications for and limitations of clinical neurodiagnostic tests and their interpretation
- Demonstrate the provision of appropriate and cost-effective evaluation and treatment for patients with neurological disorders.

as measured by chart stimulated recall, global clinical performance, case logs, 360^{o} evaluation, and Focused Observation / checklist (NEX exam)

Medical Knowledge

Goal

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 are expected to:

Competencies

- The resident is to understand the basic pathophysiology of diverse neurological disorders and apply this knowledge to their daily management of clinic patients

Objectives

The PGY2 resident will:

- Demonstrate beginning knowledge in the organization of the nervous system and the ability to determine the location of the lesion

as measured by direct observation

Practice- Based Learning and Improvement

Goal

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 lifelong learning. Residents are expected to develop skills and habits to be able to:

Competencies

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

Objectives

The PGY2 resident will

- Demonstrate their ability to direct their learning activities

as measured by: GCP, CSR, RITE

Systems Based Practice

Goal

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:

Competencies

- Work effectively in various health care delivery settings and systems relevant to their clinical specialty
- Coordinate patient care within the health care system relevant to their clinical specialty
- Incorporate considerations of cost awareness and risk-benefit analysis in patient care
- Advocate for quality patient care and optimal patient care systems
- Work in inter-professional teams to enhance patient safety and improve patient care quality

- Participate in identifying systems errors and in implementing potential systems solutions

Objectives

The PGY2 resident will:

- Demonstrate their ability to lead a multi-disciplinary consult team

as measured by GCP and CSR.

Professionalism

Goal

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

Competencies

- Compassion, integrity, and respect for others
- Responsiveness to patient needs that supersedes self-interest

Objectives

The PGY2 resident will

- Compassion and respect towards their patients and be available when needed for clinical duties

as measured by GCP and 360^{o} evaluation

Interpersonal and Communication Skills

Goal

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

Competencies

- Act in a consultative role to other physicians and health professionals
- Maintain comprehensive, timely, and legible medical records

Objectives

The PGY2 resident will

- Demonstrate their ability to effectively communicate with other health care professionals through clinic notes and consultation reports

as measured by GCP and 360^{o} evaluation

Teaching Methods

What teaching methods are you using on this rotation or educational experience?

- Direct supervision by clinic attending
- Presentation, review and discussion of each case with the clinic attending

Assessment Method (residents)

How do you measure the resident's performance on this rotation or educational experience?

- Checklist: Direct supervision of resident performing history and clinical evaluation (PC, MK, PROF, LCS)
- RITE (MK)
- Global Clinical Performance: Discussion of differential diagnosis, use of laboratory, patient management (PC, MK, SBL, PBL, LCS, PROF)
- Chart Stimulated Recall: (PC, MK, SBL, PBL, LCS)
- 360^{o} evaluation (LCS, PROF)
- Chart review (LCS, PROF)

Assessment Method (Program Evaluation)

How do you evaluate whether this educational experience is effective?

- Block evaluation of the rotation by the resident
- Yearly program evaluation

Twice-yearly evaluation of the resident and solicitation of feedback.

Level of Supervision

How is the resident supervised on this rotation?

- Direct supervision by clinic attending faculty

Educational Resources

List the educational resources

- Brazis PW, Masdeu JC, and Biller J. Localization in Clinical Neurology, 5th edition, Lippincott Williams & Wilkins, 2007.
- Bradley WG, Daroff RB, Fenichel GM, and Jankovic J. Neurology in Clinical Practice, 4th edition, Butterworth-Heinemann, 2003.
- Aids to the Examination of the Peripheral Nervous System, Saunders Limited, 4th edition, 2000.
- Cooper JR, Bloom FE, and Roth RH. The Biochemical Basis of Neuropharmacology, 8th edition, Oxford University Press.
- Practice Parameters from the American Academy of Neurology, are available for a large range of conditions, therapies, and assessment tools at **AAN.com**.
- Ropper AH and Brown RH. Adams and Victor's Principles of Neurology, 8th edition, McGraw-Hill Professional, 2005.
- Samuels MA and Feske SK. Office Practice of Neurology, Churchill Livingstone.
- Strunk W, White EB, and Kalman M. The Elements of Style Illustrated, Illustrate edition, The Penguin Press HC, 2000.
- Trusse L. Eats, Shoots & Leaves: The Zero Tolerance Approach to Punctuation, Reprint edition, Gotham, 2006.

Journals:

- Neurology
- Archives of Neurology
- Annals of Neurology
- Brain

- Stroke
- Journal of Neurology, Neurosurgery and Psychiatry

Rev 6/30/14

KU Consults Curriculum
Required Rotation PGY3 and PGY4

Description of Rotation or Educational Experience

Supervising Faculty/Chief of Service: Yunxia Wang, MD

The faculty who is on rotation the first day of each block is responsible for reviewing the Goals and Objectives at the start of each rotation

Additional faculty: Colleen Lechtenberg, MD; Yunxia Wang, MD; Brennen Bittel, MD; Brenton Massey, DO; Muhammad Nashatizadeh, MD; Lee Rosterman, MD; Harsh Gupta, MD; Richard Dubinsky, MD, MPH; Aparna Pendurthi, MD; Constantine Farmakidis, MD; Omar Jawdat, MD; Sharon Lynch, MD; Matthew Varon, MD; Ryan Townley, MD; Tekk Burka, MD, Megan Baumgardner, MD; Amanda Thuringer, MD; Jorge Kawano, MD; Yasir Jassam, MD

One-block rotation providing consultation service, ~~stroke pager activation~~ and Emergency Department (ED) coverage. This is one of the 18 blocks of inpatient and consult training mandated by the Neurology RRC

This block is repeated in PGY2, PGY3 and PGY4.

Overall Goals:
During the KU Consult rotation, residents are expected to be able to demonstrate and apply an evidence-based medicine approach to consultant based patient care that reflects an integration of basic science and clinical knowledge.

Residents are expected to improve their skills in communication with patients, patients' families, and colleagues. They are expected to improve their skills in team management

Residents will gain an understanding of neurological manifestations of systemic diseases and systemic manifestations of neurological diseases.

Progressive Responsibility: In PGY4 the resident is expected to become more involved in the teaching of neurology residents, rotating residents, medical students, and supervision of the KUH ward team.

Patient Care

Goal

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 are expected to:

Competencies

Evaluate patients admitted to other services with neurological disorders, or neurological manifestations of systemic disorders

Objectives

The PGY3 resident will:

- Be able to localize the lesion
- Develop a comprehensive differential diagnosis
- Develop and carry out patient management plans
- Competently perform all essential medical and invasive procedures
- Become an effective teacher of medical students and rotating residents
-

The PGY4 resident will:

- Counsel and education patients and their families
- Collaborate with other health care professionals (including those from different disciplines) to provide patient-focused care
- Develop and carry out patient treatment plans
- Communicate quickly and efficiently with referring health care providers
- Competently perform all essential medical and invasive procedures
- Demonstrate their proficiency in the evaluation and treatment of patients with neurological diseases in the Emergency Department and in the Intensive Care Unit.
- Become an effective teacher of medical students and rotating residents
- Develop competence for the practice of Neurology without direct supervision

As measured by global performance and chart stimulated recall

Medical Knowledge

Goal

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 are expected to:

Competencies

Become proficient in the evaluation of ED patients and inpatients with neurological symptoms.

Objectives

The PGY3 resident on the neurology consult service will:

- Be able to understand the neurological manifestation of systemic diseases and the systemic complications of neurological diseases
- Demonstrate maturation in their knowledge of neurology
- Provide cost effective care and treatment

The PGY4 resident on the neurology consult service will:

- Demonstrate maturation in their knowledge of neurology

- Provide cost effective care and treatment

As measured by direct observation, RITE, and chart stimulated recall.

Practice- Based Learning and Improvement

Goal

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 lifelong learning. Residents are expected to develop skills and habits to be able to:

Competencies

- Set learning and improvement goals
- Locate, appraise and assimilate evidence from scientific studies related to their patients' health problems

Objectives

The PGY3 residents will

- Set learning and improvement goals
- Identify and perform appropriate learning activities
- Incorporate formative feedback into daily practice
- Participate in the education of patients, families, students, and residents and other health care professionals as determined by the faculty and other learners
- Teach other residents, medical students, nurses, and other health care personnel, formally and informally.

The PGY4 residents will

- Locate, appraise and assimilate evidence from scientific studies related to their patients' health problems
- Use information technology to optimize learning
- Participate in the education of patients, families, students, and residents and other health care professionals as determined by the faculty and other learners
- Teach other residents, medical students, nurses, and other health care personnel, formally and informally.

As measured by presentation and discussion with the attending faculty on daily basis. And by global clinical performance

Systems Based Practice

Goal

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:

Competencies

- Coordinate patient care within the health care system relevant to their clinical specialty

- Work in inter-professional teams to enhance patient safety and improve patient care quality

Objectives

The PGY3 resident will:

- Incorporate considerations of cost awareness and risk-benefit analysis in patient care
- Demonstrate comprehensive hand-off of patients to the residents covering on the weekends and holidays

The PGY4 resident will:

- Work in inter-professional teams to enhance patient safety and improve patient care quality
- Demonstrate comprehensive hand-off of patients to the residents covering on the weekends and holidays

As measured by Chart Stimulated Recall and 360^0 evaluation.

Professionalism

Goal

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

Competencies

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

Objectives

The PGY3 residents will:

- Demonstrate sensitivity and responsiveness to the diverse patient population seen on the neurology consultation service

The PGY4 residents will:

- Demonstrate sensitivity and responsiveness to the diverse patient population seen on the neurology consultation service
- Demonstrate accountability to patients, society, and the profession

As measured by global performance evaluation.

Interpersonal and Communication Skills

Goal

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

Competencies

- Communicate effectively with physicians, other health professionals, and health related agencies
- Act in a consultative role to other physicians and health professionals
- Maintain comprehensive, timely, and legible medical records

Objectives

The PGY3 residents will:

- Communicate effectively with patients and families across a broad range of socioeconomic and cultural backgrounds
- Communicate effectively with physicians, other health professionals, and health related agencies
- Work effectively as a **leader** of a health care team or other professional group
- Act in a consultative role to other physicians and health professionals
- Maintain comprehensive, timely, and legible medical records

The PGY4 residents will:

- Act in a consultative role to other physicians and health professionals
- Maintain comprehensive, timely, and legible medical records

As demonstrated by chart stimulated recall and 360^{o} evaluation.

Teaching Methods

What teaching methods are you using on this rotation or educational experience?

Assessment Method (residents)

How do you measure the resident's performance on this rotation or educational experience?

- Checklist: Direct supervision of resident performing history and clinical evaluation (PC, MK, PROF, LCS)
- RITE (MK)
- Checklist: Lumbar puncture proficiency (PC)
- Global Clinical Performance: Discussion of differential diagnosis, use of laboratory, patient management (PC, MK, SBL, PBL, LCS, PROF)
- Chart Stimulated Recall: (PC, MK, SBL, PBL, LCS)
- 360^{o} evaluation (LCS, PROF)
- Chart review (LCS, PROF)

Assessment Method (Program Evaluation)

How do you evaluate whether this educational experience is effective?

- Block evaluation of the rotation by the resident

- Yearly program evaluation

Twice-yearly evaluation of the resident and solicitation of feedback.

Level of Supervision

How is the resident supervised on this rotation?

- Direct supervision by faculty on daily rounds.

Educational Resources

List the educational resources

- Pocket Neurology, Westover
- High-yield neuroanatomy, Gould
- Neuroanatomy through Clinical Cases, Blumenfeld
- Topical Diagnosis in Neurology, Duus
- Lange Clinical Neurology, Aminoff
- Neurologic Differential Diagnosis, Patten
- Localization in Neurology, Brazis
- Decision Making in Neurocritical Care, Frontera
- EMG Easy, Weiss
- Primer of EEG, Rowan
- Aids to the Examination of the Peripheral Nervous System, O'Brian
- Adam and Victors' Principles of Neurology
- Bradley and Daroff Neurology in Clinical Practice
- Practice Parameters of AAN
- AAN Continuum

- Plum F and Posner J. The Diagnosis of Stupor and Coma, 3rd edition, Oxford University Press, 1982.
- Practice Parameters from the American Academy of Neurology, are available for a large range of conditions, therapies, and assessment tools at **AAN.com**.
- Ropper AH and Brown RH. Adams and Victor's Principles of Neurology, 8th edition, McGraw-Hill Professional, 2005.
- Samuels MA and Feske SK. Office Practice of Neurology, Churchill Livingstone.
- Samuels MA. Hospitalist Neurology (Blue Books of Practical Neurology, Volume 19), 1st edition, Butterworth-Heinemann, 1999.

Reviewed 6-26-2019

KU Stroke Service Curriculum

Required Rotation PGY2, 3 and 4

Description of Rotation or Educational Experience

KU Stroke Service
Supervising Faculty/Chief of Service: Yunxia Wang, MD

The faculty who is on rotation the first day of each block is responsible for reviewing the Goals and Objectives at the start of each rotation

Additional faculty: Colleen Lechtenberg, MD; Lee Rosterman, MD; Sabreena Slavin, MD; Aparna Pendurthi, MD; Abid Qureshi, MD; Laith Maali, MD; Yunxia Wang, MD, Jorge Kawano, MD.

One-block long rotation providing medical care to inpatients with cerebrovascular disease on the Neurology service at the University of Kansas Hospital.
This is one of the 18 blocks of inpatient and consult training mandated by the Neurology RRC
This block is repeated during PGY2-4.

Overall Goals:
During the KU Stroke rotation, residents are expected to be able to demonstrate and apply an evidence-based medicine approach to the care of patients with stroke, or suspected stroke, and stroke mimics that reflects an integration of basic science and clinical knowledge.

Residents will have an opportunity to improve and refine localization skills based on specific anatomic lesions and will learn about the different stroke syndromes result from them.

Residents will learn about different mechanisms of ischemic stroke: lacunar, large-vessel, cardioembolic, and cryptogenic. They will gain knowledge on how the diagnostic work up changes for each subtype, and learn the nuances of stroke management.

Residents will run acute stroke activations for emergent evaluation of tPA and/or thrombectomy encountered in the Emergency Department and in the inpatient setting. This includes improving your neurological examination (and NIHSS), rapid interpretation of neuroimaging studies for suspected stroke without the reliance on neuroradiology (as this can cause time delays), and a continued focus on communication skills with patients, family members, and colleagues.

Over the course of neurology residency, the resident will handle increasing responsibility as demonstrated by managing patients with more complex disorders, more thorough and rapid evaluation of patients, discuss with patient/family the

benefits/risk of tPA if required, providing care for a higher number of patients and effectively teaching rotating residents and medical students about neurology.

Patient Care

Goal

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 are expected to:

Competencies

Evaluate and manage patients with neurological disorders and as well as neurological manifestation of systemic diseases

Objectives

The PGY2 resident in neurology will:

- Obtain a full history for all patients new to yourself (including patients passed off by a co-resident)
- Obtain an update for overnight events for patients known to you.
- Perform an efficient and thorough general physical examination
- Be NIHSS certified in the first block of training
- Initiate acute stroke therapy including tPA, acute blood pressure and hemorrhage management, and consultation for neuro-invasive procedures
- Perform an efficient and thorough neurological examination and NIHSS
- Interpret urgent neuroimaging studies, primarily CT, CTA, CTP, MRI, MRA, MRV
- Assess for appropriate acute stroke therapy
- All stroke activations must be staffed immediately with the stroke attending or stroke fellow.
- Explain the need to administer tPA if indicated including the benefits vs risk associated with it.
- Provide ongoing inpatient care for the patient who has survived a stroke
- Triage patients with stroke disorders and stroke mimics
- Know how to stabilize a patient with an ICH or SAH in the ER.
- Know how to manage hemorrhage secondary to tPA acutely
- Know how to manage increased cerebral edema in large hemispheric strokes with midline-shifts
- Understand risk factors for stroke, and goals for secondary prevention.
- Understand and classify strokes based on etiology and formulate a management plan based on that.
- Maintain and apply knowledge of internal medicine to manage common comorbidities

As measured by checklist (direct observation), global clinical performance, and chart stimulated recall.

In addition, the PGY3 and 4 residents in neurology will:

- Lead the stroke team on rounds
- Have a basic understanding of major stroke trials.
- Use evidence-based decision for therapeutics in stroke – ASA, Plavix, DOACs etc.
- Know rare and uncommon causes of stroke.
- Interpret conventional angiograms and venograms.
- Be more comfortable on making decision on administering tPA and the need for mechanical thrombectomy.

As measured by checklist (direct observation), global clinical performance, and chart stimulated recall.

Medical Knowledge

Goal

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 are expected to:

Competencies

- The resident must learn the basic sciences on which clinical neurology is founded and integrate them into their evaluation and treatment of patients. This includes knowledge of neuroanatomy, neuropathology, neurophysiology, neuroimaging, neuropsychology, neural development, neurochemistry, neuropharmacology, molecular biology, genetics, immunology, epidemiology, and statistics.
- Regularly attend seminars and conferences in: stroke and neurocritical care.
- Residents must learn about major developments in both the basic and clinical sciences relating to neurology. Attend periodic seminars, journal clubs, lectures in basic science, didactic courses, and meetings of local and national neurological societies
- Learn and apply the principles of bioethics and in the provision of appropriate and cost-effective evaluation and treatment for patients with neurological disorders

Objectives

The PGY2-4 resident will;

- Improve their fund of knowledge appropriate for the level of training
- Become familiar with basic phenotypic and causative stroke classifications.
- Learn common stroke etiologies and their management (**PGY-2**)
- Know the major stroke syndromes and uncommon stroke etiologies (**PGY 3-4**)
- Read major stroke clinical trials and how to apply them in patient management and care.
- Become familiar with modifiable and non-modifiable risk factors for stroke
- Provide cost effective evaluation and treatment

as measured by checklist (witnessed examination), global clinical performance and Resident In-service Training Examination (RITE).

Practice- Based Learning and Improvement

Goal

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 lifelong learning. Residents are expected to develop skills and habits to be able to:

Competencies

- Set learning and improvement goals
- Participate in the education of patients, families, students, residents and other health professionals, as documented by evaluations of a resident's teaching abilities by faculty and/or learners

Objectives

The PGY2-4 resident will

- Incorporate formative evaluation feedback into their daily practice of neurology
- Participate in the education of patients, families, students, residents and other health professionals
- The more advanced residents will counsel patients and family members on the recovery from stroke and the necessary lifestyle and medication changes to make to reduce the chance of secondary stroke

As measured by checklist (witnessed examination) global clinical performance

Systems Based Practice

Goal

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:

Competencies

- Coordinate patient care within the health care system relevant to their clinical specialty
- Incorporate considerations of cost awareness and risk-benefit analysis in patient care

Objectives

The PGY2-4 resident will;

- Coordinate patient care within the health care system
- Advocate for quality patient care and optimal patient care systems
- Become familiar with Tele-Stroke

As measured by, chart stimulated recall and global clinical performance.

Professionalism

Goal

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

Competencies

- Respect for patient privacy and autonomy
- Sensitivity and responsiveness to a diverse patient population, including but not limited to diversity in gender, age, culture, race, religion, disabilities, and sexual orientation

Objectives

The PGY2-4 resident will demonstrate;

- In the process of providing care to inpatients, resident to demonstrates sensitivity to patient privacy, autonomy and diversity.
- Be responsive to patient primary and autonomy

As measured by checklist (witnessed examination), global clinical performance, and 360^{o} evaluation.

Interpersonal and Communication Skills

Goal

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

Competencies

- Communicate effectively with patients and families across a broad range of socioeconomic and cultural backgrounds
- Maintain comprehensive, timely, and legible medical records

Objectives

The PGY2 resident will:

- The resident communicates effectively with patients and their families.
- Work effectively as a **member** of a health care team
- The resident maintains the medical record in a comprehensive, timely and legible manner

As demonstrated by chart review and global clinical performance.

The PGY3 and 4 resident will:

- The resident communicates effectively with patients and their families.
- Work effectively as a **leader** of a health care team
- The resident maintains the medical record in a comprehensive, timely and legible manner

- Urgently communicate between team members, attending physicians, radiologists, interventional neuro-radiologist, and ICU nurses and attending physicians.

As demonstrated by chart review and global clinical performance.

Teaching Methods

What teaching methods are used on this rotation or educational experience?

- Didactic lectures of specific topics, including the neurological examination, localization and evaluation of neurological disorders
- Articles and a supplementary material by your attending physician.
- Weekly Stroke conference to stimulate discussion about interesting cases.

Assessment Method (residents)

How do you measure the resident's performance on this rotation or educational experience?

- Checklist: Direct supervision of resident performing history and clinical evaluation (PC, MK, PROF, LCS)
- RITE (MK)
- Checklist: Lumbar puncture proficiency (PC)
- Global Clinical Performance: Discussion of differential diagnosis, use of laboratory, patient management (PC, MK, SBL, PBL, LCS, PROF)
- Chart Stimulated Recall: (PC, MK, SBL, PBL)
- 360^{o} evaluation (LCS, PROF)
- Chart review (LCS, PROF)

Assessment Method (Program Evaluation)

How do you evaluate whether this educational experience is effective?

- Block evaluation of the rotation by the resident
- Yearly program evaluation
- Twice-yearly evaluation of the resident and solicitation of feedback.

Level of Supervision

How is the resident supervised on this rotation?

- Daily direct supervision by stroke attending and the stroke fellow
- The resident reviews every admission and consultation with the attending or the stroke fellow in a timely fashion. Attending stroke neurologists are available 24 hours a day, 365 days a year.

Educational Resources

List the educational resources

- Pocket Neurology, Westover

- High-yield neuroanatomy, Gould
- Neuroanatomy through Clinical Cases, Blumenfeld
- Lange Clinical Neurology, Aminoff
- Neurologic Differential Diagnosis, Patten
- Localization in Neurology, Brazis
- Caplan's Stroke: A Clinical Approach
- Diagnostic Cerebral Angiography, Osborn
- Stroke Syndrome, Caplan
- Uncommon Causes of Stroke, Caplan
- Stroke: Pathophysiology, Diagnosis, and Management
- Decision Making in Neurocritical Care, Frontera
- The NeuroICU Book, Lee
- The Diagnosis of Stupor and Coma
- Adam and Victors' Principles of Neurology
- Practice Parameters of AAN
- AAN Continuum

- Aminoff M., Neurology in General Medicine, Churchill Livingstone.
- Flaherty, A. The Massachusetts General Hospital Handbook of Neurology, Lippincott Williams & Wilkins.
- Marshall RS and Mayer SA. On Call Neurology: On Call Series, Saunders.
- Plum F and Posner J. The Diagnosis of Stupor and Coma, 3rd edition, Oxford University Press, 1982.
- Practice Parameters from the American Academy of Neurology, are available for a large range of conditions, therapies, and assessment tools at AAN.com.
- Ropper AH and Brown RH. Adams and Victor's Principles of Neurology, 8th edition, McGraw-Hill Professional, 2005.
- Strunk W, White EB, and Kalman M. The Elements of Style Illustrated, Illustrate edition, The Penguin Press HC, 2000.
- Trusse L. Eats, Shoots & Leaves: The Zero Tolerance Approach to Punctuation, Reprint edition, Gotham, 2006.

Journals:

- Neurology
- Archives of Neurology
- Journal of Neurology, Neurosurgery, and Psychiatry
- Annals of Neurology
- Brain
- Stroke

Rev. 6/30/2015

KU Ward Service Curriculum

Required Rotation PGY2

Description of Rotation or Educational Experience

KU Ward Service
Supervising Faculty/Chief of Service: Yunxia Wang, MD

The faculty who is on rotation the first day of each block is responsible for reviewing the Goals and Objectives at the start of each rotation

Additional faculty: Collen Lechtenberg, MD; Laith Maali, MD, Aparna Pendurthi, MD, Abid Qureshi, MD, Lee Rosterman DO; Sabreena Slavin, MD; Yunxia Wang, MD; Gary Gronseth, MD; Jorge Kawano-Castillo, MD; Dipika Aggarwal, MBBS

One-block long rotation providing medical care to inpatients on the Neurology service at the University of Kansas Hospital. This is one of the 18 blocks of inpatient and consult training mandated by the Neurology RRC. This rotation is repeated during PGY3 and PGY4. The level of responsibility increases each year.

Overall Goals:
During the KU Ward rotation, residents are expected to be able to demonstrate and apply an evidence-based medicine approach to patient care that reflects an integration of basic science and clinical knowledge.

Residents are expected to improve their skills with the neurological examination, localization, and formulation of a comprehensive differential diagnosis.
As a **PGY2**, it is important to improve your communication skills with patients, patients' families and colleagues, and to gain proficiency in lumbar punctures. Over the course of the PGY2 year you will handle increasing responsibility as demonstrated by managing patients with more complex disorders, providing care for a higher number of patients, and effectively teaching rotating residents and medical students about neurology.

As a senior resident, this rotation will allow you to develop your leadership skills, and to further sharpen your critical thinking and decision-making capabilities, as **PGY3** your goal is to learn at a higher level by finding the gaps in your own knowledge and reviewing the literature for topics related to your current patients. As a **PGY4** your aim is to function as a junior attending with minimal supervision, this will further strengthen your decision-making and prepare you for your future medical practice.

Patient Care

Goal
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 are expected to:

Competencies
Evaluate and manage patients with neurological disorders and neurological manifestation of systemic diseases

Objectives
The PGY2 resident in neurology will:

- Obtain a full history for all patients new to yourself (including patients passed off by a co-resident)
- Obtain an update for overnight events for patients known to you.
- Perform an efficient and thorough general physical examination
- Perform an efficient and thorough neurological examination
- Competently perform all essential medical and invasive procedures

The **PGY3** resident will:

- Assist the junior residents to develop a differential diagnosis appropriate for their level
- Assist the junior residents to develop of plan of evaluation and treatment
- Collaborate with other health care professionals (including those from different disciplines) to provide patient-focused care
- Manage medical students by distributing tasks that could assist the junior resident, while at the same time protecting them from "skut" work.
- Become an effective teacher of medical students, rotating and neurology residents.
- Review the literature for current inpatients for effective evidence-based teaching

The **PGY4** resident will (in addition to the skills of a PGY3s):

- Be able to transition into the independent, unsupervised practice of Neurology
- Aim to teach at a level of depth in which even your attending may learn something new
- Manage a private practice, understand coding and billing, manage workload, understand the effects of fatigue and be able to mitigate against fatigue (as measured by GCP, Checklist, Case Stimulated Recall, Focused Observation (Observation of Patient Care Encounter (SEGUE), Case Logs).

As measured by checklist (direct observation), global clinical performance, and chart stimulated recall.

Medical Knowledge

Goal
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 are expected to:

Competencies

The resident must learn the basic sciences on which clinical neurology is founded and integrate them into their evaluation and treatment of patients. This includes knowledge of neuroanatomy, neuropathology, neurophysiology, neuroimaging, neuropsychology, neural development, neurochemistry, neuropharmacology, molecular biology, genetics, immunology, epidemiology, and statistics.

Regularly attend seminars and conferences in: neuropathology (gross, microscopic, and clinical pathological conferences), neuroradiology, neuro-ophthalmology, neuromuscular disease, epilepsy, movement disorders, clinical neurophysiology, behavioral neurology, neuroimmunology, infectious disease, neuro-otology, neuroimaging, neuro-oncology, headache, sleep disorders, pain management, neurogenetics, rehabilitation, the neurology of aging, and general neurology.

Residents must learn about major developments in both the basic and clinical sciences relating to neurology. Attend periodic seminars, journal clubs, lectures in basic science, didactic courses, and meetings of local and national neurological societies;

Learn and apply the principles of bioethics and in the provision of appropriate and cost-effective evaluation and treatment for patients with neurological disorders

Objectives

The PGY2 resident will;

- Improve ability to localize across the nervous system (i.e., learn how a radiculopathy presents differently from a neuropathy or myopathy etc.)
- Generate differential diagnoses based on the localization.
- Learn of the breadth neurologic diseases. Goal is to read one comprehensive book in neurology this year.
- Learn basics of management and therapeutics for neurologic diseases.
- Become familiar with the principles of bioethics

The **PGY3** resident will:

- Learn about uncommon presentations of common diseases, and rare diseases
- Add to the depth of knowledge of common neurologic diseases by reading reviews of topics
- Read a book on advanced localization
- Learn cutting edge management and therapeutics
- Understand the necessity to provide cost effective evaluation and treatment

The **PGY4** resident will:

- Provide cost effective evaluation and treatment within the limits of uncertainty of
- clinical neurology.
- Be current with the literature for the patients you see by preparing overnight and in advance

- Aim to match the level of knowledge of an attending, or that of a subspecialty fellow

as measured by checklist (witnessed examination), global clinical performance and Resident In-service Training Examination (RITE).

Practice- Based Learning and Improvement

Goal

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 lifelong learning. Residents are expected to develop skills and habits to be able to:

Competencies

- Set learning and improvement goals
- Participate in the education of patients, families, students, residents and other health professionals, as documented by evaluations of a resident's teaching abilities by faculty and/or learners
- Identify strengths, deficiencies and limits in one's knowledge and expertise;
- Set learning and improvement goals
- Teach other residents, medical students, nurses, and other healthcare personnel, formally and informally.

Objectives

The PGY2 resident will

- Incorporate formative evaluation feedback into their daily practice of neurology
- Participate in the education of patients, families, students, residents and other health professionals

The **PGY3** resident will:

- Demonstrate the ability to locate, appraise and assimilate evidence from scientific
- studies related to their patients' health problems, at the intermediate to advanced level
- Use information technology to optimize learning

The **PGY4** resident will

- Locate, appraise and assimilate evidence from scientific studies related to them
- patients' health problems
- Teach and provide instructive feedback to other residents, medical students,
- nurses, and other health care personnel, formally and informally.
- Learn from and allow other members of the team to teach.

As measured by checklist (witnessed examination) global clinical performance

Systems Based Practice

Goal

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:

Competencies

- Coordinate patient care within the health care system relevant to their clinical specialty
- Incorporate considerations of cost awareness and risk-benefit analysis in patient care
- Work effectively in various health care delivery settings and systems relevant to their clinical specialty

Objectives

The PGY2 resident will;

- Coordinate patient care within the health care system
- Advocate for quality patient care and optimal patient care systems
- Provide cost effective evaluation and treatment

The **PGY3** resident will:

- Advocate for quality patient care and optimal patient care systems

The **PGY4** resident will:

- Advocate for quality patient care and optimal patient care systems
- Be able to independently lead the Health Care team in the daily huddle

As measured by, chart stimulated recall and global clinical performance.

Professionalism

Goal

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

Competencies

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

Objectives

The PGY2 resident will demonstrate;

- In the process of providing care to inpatients, resident to demonstrates sensitivity to patient privacy, autonomy and diversity.

- Be responsive to patient primary and autonomy

As measured by checklist (witnessed examination), global clinical performance, and 360^{o} evaluation.

The **PGY3** resident will:

- Demonstrate respect for patient privacy and autonomy
- Demonstrate sensitivity and responsiveness to a diverse patient population,
- including but not limited to diversity in gender, age, culture, race, religion, disabilities, and sexual orientation

The **PGY4** resident will:

- Sensitivity and responsiveness to a diverse patient population, including but not
- limited to diversity in gender, age, culture, race, religion, disabilities, and sexual
- orientation .

Interpersonal and Communication Skills

Goal

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

Competencies

- Communicate effectively with patients and families across a broad range of socioeconomic and cultural backgrounds
- Maintain comprehensive, timely, and legible medical records

Objectives

The PGY2 resident will:

- The resident communicates effectively with patients and their families.
- Work effectively as a **member** of a health care team
- The resident maintains the medical record in a comprehensive, timely (please see the section on Learner Expectations) and appropriate manner

The **PGY3** resident will:

- Demonstrate respect for patient privacy and autonomy
- Be able to participate in and at times lead meetings with patients and their family
- members.
- Communicate with consultants and with the patient's other health care providers

The **PGY4** resident will:

- Lead family and team meetings. Break bad news to patient and to their family
- members in a sensitive and caring fashion.

As measured by GCP,CSR ,Focused Observation, 360 Evaluation

As demonstrated by chart review and global clinical performance.

Teaching Methods

What teaching methods are used on this rotation or educational experience?

- Didactic lectures of specific topics, including the neurological examination, localization and evaluation of neurological disorders
- Daily rounds
- Presentation, review, and discussion of cases with attending faculty
- Weekly lectures
- Interactive discussions

Assessment Method (residents)

How do you measure the resident's performance on this rotation or educational experience?

- Checklist: Direct supervision of resident performing history and clinical evaluation (PC, MK, PROF, ICS)
- RITE (MK)
- Checklist and simulation: Lumbar puncture proficiency (PC)
- Global Clinical Performance: Discussion of differential diagnosis, use of laboratory, patient management (PC, MK, SBL, PBL, ICS, PROF)
- Chart Stimulated Recall: (PC, MK, SBL, PBL)
- 360º evaluation (ICS, PROF)
- Chart review (ICS, PROF)

Assessment Method (Program Evaluation)

How do you evaluate whether this educational experience is effective?

- Block evaluation of the rotation by the resident
- Yearly program evaluation
- Twice-yearly evaluation of the resident and solicitation of feedback.

Level of Supervision

How is the resident supervised on this rotation?

- Daily direct supervision by ward attending and other faculty, including the private neurology service faculty 2 pm until 10 pm
- The resident reviews every admission and consultation with the attending in a timely fashion. Attending neurologists are available 24 hours a day, 365~~.25~~ days a year.

Educational Resources

List the educational resources

- Pocket Neurology, Westover
- High-yield neuroanatomy, Gould
- Neuroanatomy through Clinical Cases, Blumenfeld
- Topical Diagnosis in Neurology, Duus
- Lange Clinical Neurology, Aminoff

- Neurologic Differential Diagnosis, Patten
- Localization in Neurology, Brazis
- Decision Making in Neurocritical Care, Frontera
- EMG Easy, Weiss
- Primer of EEG, Rowan
- Aids to the Examination of the Peripheral Nervous System, O'Brian
- Adam and Victors' Principles of Neurology
- Bradley and Daroff Neurology in Clinical Practice
- Practice Parameters of AAN
- Continuum

- Aminoff M., Neurology in General Medicine, Churchill Livingstone.
- Flaherty, A. The Massachusetts General Hospital Handbook of Neurology, Lippincott Williams & Wilkins.
- Marshall RS and Mayer SA. On Call Neurology: On Call Series, Saunders.
- Plum F and Posner J. The Diagnosis of Stupor and Coma, 3rd edition, Oxford University Press, 1982.
- Practice Parameters from the American Academy of Neurology, are available for a large range of conditions, therapies, and assessment tools at AAN.com.
- Ropper AH and Brown RH. Adams and Victor's Principles of Neurology, 8¬th edition, McGraw-Hill Professional, 2005.
- Strunk W, White EB, and Kalman M. The Elements of Style Illustrated, Illustrate edition, The Penguin Press HC, 2000.
- Trusse L. Eats, Shoots & Leaves: The Zero Tolerance Approach to Punctuation, Reprint edition, Gotham, 2006.
- Aids to the Examination of the Peripheral Nervous System, Saunders Limited, 4th edition, 2000.

Journals:

- Neurology
- Archives of Neurology
- Journal of Neurology, Neurosurgery, and Psychiatry
- Annals of Neurology
- Brain
- Stroke

Rev. 6-28-19

Longitudinal Clinic Curriculum

One half day clinic weekly in PGY2, 3 and 4

Description of Rotation or Educational Experience

Supervising faculty responsible for reviewing Goals and Objectives: Fred Sachen, MD; Richard Dubinsky, MD, MPH.

Clinic Supervising faculty:
Gary Gronseth, MD; Richard Barohn, MD, Jeffrey Burns, MD, Arthur Dick, MD, Mazen Dimachkie, MD, Richard Dubinsky, MD, MPH, Sharon Lynch, MD, Rajesh Pahwa, MD, Mamatha Pasnoor, MD, Russell Swerdlow, MD; Muhammad Nashatizadeh, MD; Patrick Landazuri, MD; Yasir Jassam, MD; Duaa Jabari, MD; Michael Rippee, MD; Constantine Farmakidis, MD; Carol Ulloa, MD; Laith Maali, MD; Omar Jawdat, MD; Utku Uysal, MD; Sabreena Slavin, MD; Brenton Massey, DO;

The resident's longitudinal clinic is held one half day each week throughout their training. As they progress through the program they follow larger numbers of patients and the number of patients in each clinic increases. Clinics are held on the mornings and afternoons on Thursday and Fridays. Residents from all levels are in each clinic allowing the more senior residents to teach the junior residents.

Patient Care

Goal

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 are expected to:

Competencies

From the RRC program requirements:

- Residents must also have outpatient experience which must include a resident longitudinal/continuity clinic with attendance by each resident one half day weekly throughout the program. The continuity clinic may be counted toward the required six blocks of outpatient experience, assuming that one half day clinic assignment per week for three years is equal to 3.6 months. All clinics may be credited toward the six-block (month) outpatient requirement. Residents may be excused from this clinic when a rotation site is more than one hour's travel time from the clinic site;
- Must have instruction and practical experience in obtaining an orderly and detailed history from the patient, in conducting a thorough general and neurological examination, and in organizing and recording data. The training must include the indications for and limitations of clinical neurodiagnostic tests and their interpretation. Residents must learn to correlate the information derived from these neurodiagnostic studies with the clinical history and examination in formulating a differential diagnosis and management plan;

- Must receive instruction in appropriate and compassionate methods of end-of-life palliative care, including adequate pain relief and psychosocial support and counseling for patients and family members about these issues; and,
- Must receive instruction on recognition and management of physical, sexual, and emotional abuse.
- Must have opportunities for increasing responsibility and professional maturation. Early clinical assignments must be based on direct patient responsibility for a limited number of patients. Subsequent assignments must place residents in a position of taking increased responsibility for patients.
- Must have management responsibility for patients with neurological disorders.

Objectives

The PGY2 resident will:

- Demonstrate the ability to perform an efficient and thorough general physical examination
- Demonstrate the ability to perform an efficient and thorough neurological examination
- Demonstrate the ability to localize the lesion

The PGY3 resident will:

- Demonstrate the ability to develop a differential diagnosis
- Demonstrate the ability to develop a plan of evaluation and treatment
- Demonstrate the ability to counsel and educate their patients and families

The PGY4 resident will:

- Demonstrate the ability to collaborate with other health care professionals (including those from different disciplines) to provide patient-focused care
- Demonstrate the ability to develop and carry out patient management plans

As measured by Global Clinical Performance and Focused Observation (SEGUE)

Medical Knowledge

Goal

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 are expected to:

Competencies

From the RRC:

- Residents must receive instruction in the principles of bioethics and in the provision of appropriate and cost-effective evaluation and treatment for patients with neurological disorders

Objectives

The PGY2 resident will:

- Start their learning of neurology throughout the training program

- Begin to understand the reasons to practice cost effective evaluation and treatment of their patients

The PGY2–4 resident will:

- Increase their medical knowledge of neurology throughout the training program
- Practice cost effective evaluation and treatment of their patients

The PGY2–4 resident will:

- Increase their knowledge of the neurological manifestations of systemic diseases, throughout the training program
- Master the ability to practice cost effective evaluation and treatment of their patients

As measured by their improving yearly sores on the RITE and Case Stimulated Recall.

Practice- Based Learning and Improvement

Goal

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:

Competencies

- Locate, appraise and assimilate evidence from scientific studies related to their patients' health problems
- Use information technology to optimize learning

Objectives

The PGY2 resident will:

- Set learning and improvement goals
- Systematically analyze practice, using quality improvement methods, and implement changes with the goal of practice improvement

The PGY3 resident will:

- Systematically analyze practice, using quality improvement methods, and implement changes with the goal of practice improvement
- Use information technology to optimize learning
- Participate in the education of patients, families, students, residents and other health professionals, as documented by evaluations of a resident's teaching abilities by faculty and/or learners

The PGY4 resident will:

- Systematically analyze practice, using quality improvement methods, and implement changes with the goal of practice improvement

- Locate, appraise and assimilate evidence from scientific studies related to their patients' health problems
- Participate in the education of patients, families, students, residents and other health professionals, as documented by evaluations of a resident's teaching abilities by faculty and/or learners

As measured by GCP, CSR.

Systems Based Practice

Goal

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:

Competencies

- Coordinate patient care within the health care system relevant to their clinical specialty
- Incorporate considerations of cost awareness and risk-benefit analysis in patient care
- Advocate for quality patient care and optimal patient care systems

Objectives

The PGY2 resident will:

- Work effectively in various health care delivery settings and systems relevant to their clinical specialty

The PGY3 resident will:

- Coordinate patient care within the health care system relevant to their clinical specialty

The PGY4 resident will:

- Advocate for quality patient care and optimal patient care systems

As measured by GCP, CSR, Focused Observation

Professionalism

Goal

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

Competencies

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

Objectives

The PGY2resident will

- Sensitivity and responsiveness to a diverse patient population, including but not limited to diversity in gender, age, culture, race, religion, disabilities, and sexual orientation

The PGY3 resident will

- Demonstrate respect for patient privacy and autonomy

The PGY4 resident will

- Demonstrate compassion, integrity, and respect for others
- Demonstrate accountability to patients, society, and the profession

As measured by GCP, CSR, Focused Observation, 360^{o} Evaluation

Interpersonal and Communication Skills

Goal

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

Competencies

- Communicate effectively with physicians, other health professionals, and health related agencies
- Maintain comprehensive, timely, and legible medical records

Objectives

The PGY2 resident will:

- Maintain complete and legible medical records

The PGY3 resident will:

- Communicate effectively with patients and families across a broad range of socioeconomic and cultural backgrounds
- Communicate in a timely and efficient manner with other health care professionals
- Maintain complete and legible medical records, with concise descriptions of the history, clinical examination, differential diagnosis and plan of evaluation and treatment

The PGY4 resident will:

- Act in a consultative role to other physicians and health professionals
- Maintain timely complete and legible medical records, in particular, letters to referring physicians clearly detailing the results of the consult in a clear concise matter that is not condescending or obscure.

As measured by GCP, CSR, Focused Observation, 360^{o} Evaluation,

-

Teaching Methods

What teaching methods are you using on this rotation or educational experience?

- Presentation, review, and discussion of cases with attending faculty

Assessment Method (residents)

How do you measure the resident's performance on this rotation or educational experience?

Patient Care: GCP, CSR, Focused Observation (Observation of Patient Care Encounter (SEGUE)), Case Logs
Medical Knowledge: GCP, RITE,
Practice-Based Learning: GCP, CSR, Focused Observation
Systems Based Practice: GCP, CSR, Focused Observation
Professionalism: GCP, CSR, Focused Observation, 360º Evaluation,
Interpersonal and Communication Skills: GCP, CSR, Focused Observation, 360º Evaluation,

Assessment Method (Program Evaluation)

How do you evaluate whether this educational experience is effective?

- Block evaluation of the rotation by the resident
- Yearly program evaluation

Twice-yearly evaluation of the resident and solicitation of feedback.

Level of Supervision

How is the resident supervised on this rotation?

- Daily direct supervision by clinic attending and other faculty

Educational Resources

List the educational resources

- Brazis PW, Masdeu JC, and Biller J. Localization in Clinical Neurology, 5th edition, Lippincott Williams & Wilkins, 2007.
- Bradley WG, Daroff RB, Fenichel GM, and Jankovic J. Neurology in Clinical Practice, 4th edition, Butterworth-Heinemann, 2003.
- Aids to the Examination of the Peripheral Nervous System, Saunders Limited, 4th edition, 2000.
- Practice Parameters from the American Academy of Neurology, are available for a large range of conditions, therapies, and assessment tools at **AAN.com**.
- Ropper AH and Brown RH. Adams and Victor's Principles of Neurology, 8th edition, McGraw-Hill Professional, 2005.
- Samuels MA and Feske SK. Office Practice of Neurology, Churchill Livingstone.
- Strunk W, White EB, and Kalman M. The Elements of Style Illustrated, Illustrate edition, The Penguin Press HC, 2000.
- Trusse L. Eats, Shoots & Leaves: The Zero Tolerance Approach to Punctuation, Reprint edition, Gotham, 2006.

Journals:

- Neurology
- Archives of Neurology
- Annals of Neurology
- Brain
- Stroke
- Journal of Neurology, Neurosurgery and Psychiatry

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Neuromuscular Medicine Curriculum

Elective Rotation PGY3 or 4

Description of Rotation or Educational Experience

This one-block rotation is devoted to the evaluation and management of patients with neuromuscular diseases with limited exposure to the technical components of performing nerve conduction studies and electromyograms.

Primary Faculty: Mazen Dimachkie, MD

Additional Faculty: Mamatha Pasnoor, MBBS; Constantine Farmakidis, MD; Omar Jawdat, MD; Jeff Statland, MD, Duaa Jabari, MD.

This rotation takes place in PGY3 or PGY4.

Patient Care

Goal

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 are expected to:

Competencies

From the RRC:

- Must have clinical teaching rounds supervised by faculty. These rounds must occur at least five days per week. Residents must present cases and their diagnostic and therapeutic plans;
- The training must include the indications for and limitations of clinical neurodiagnostic tests and their interpretation. Residents must learn to correlate the information derived from these neurodiagnostic studies with the clinical history and examination in formulating a differential diagnosis and management plan;
- Must receive instruction in appropriate and compassionate methods of end-of-life palliative care, including adequate pain relief and psychosocial support and counseling for patients and family members about these issues; and,

Objectives

The PGY3 or PGY4 resident will:

- Become proficient in the evaluation and management of patients with neuromuscular diseases
- Become proficient in the use of clinical laboratory tests, including genetic studies in the evaluation of patients with neuromuscular diseases.
- Become familiar with the utility of nerve conduction studies and electromyography
- Develop a plan of evaluation and treatment

As measured by GCP, Checklist, Case Stimulated Recall, Focused Observation (Observation of Procedural Skills), Case Logs, NEX exam

Medical Knowledge

Goal

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 are expected to:

Competencies

- Must regularly attend seminars and conferences in the following disciplines: … neuromuscular disease, EMG case conference, clinical neurophysiology, … pain management, neurogenetics, and general neurology. Residents must attend the gross and microscopic pathology conferences and Neuromuscular Journal Club.
- Must learn the basic sciences on which clinical neurology is founded, including neuroanatomy, basic neurophysiology, molecular biology, genetics, immunology; and,
- Must receive instruction in the principles of bioethics and in the provision of appropriate and cost-effective evaluation and treatment for patients with neurological disorders

Objectives

The PGY3 or PGY4 resident will:

- Demonstrate their knowledge and understanding of basic science aspects of neuromuscular diseases
- Demonstrate cost effective evaluation and treatment

As measured by GCP, Focused Observation (Observation of Procedural Skills), RITE, and AANEM self-assessment examination.

Practice- Based Learning and Improvement

Goal

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 lifelong learning. Residents are expected to develop skills and habits to be able to:

Competencies

- Identify and perform appropriate learning activities
- Incorporate formative evaluation feedback into daily practice

Objectives

The PGY3 or PGY4 resident will:

- Demonstrate their ability to set learning and improvement goals
- Use information technology to optimize learning

As measured by GCP, CSR, Focused Observation

Systems Based Practice

Goal

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:

Competencies

- Understand the functioning of a multi-specialty clinic

Objectives

The PGY3 or PGY4 resident will

- Function as part of a multi-disciplinary clinic in the treatment of people with neuromuscular diseases, including PT, OT, Speech Tx, seating, and respiratory therapy

As measured by direct observation of the attending physicians

Professionalism

Goals

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

Competencies

- Compassion, integrity, and respect for others
- Respect for patient privacy and autonomy

Objectives

The PGY3 or PGY4 resident will:

- Demonstrate compassion and respect for others
- Demonstrate respect for patient privacy and autonomy

As measured by GCP, CSR, 360^{o} Evaluation

Interpersonal and Communication Skills

Goal

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

Competencies

- Communicate effectively with patients and families across a broad range of socioeconomic and cultural backgrounds
- Maintain comprehensive, timely, and legible medical records

Objectives

The PGY3 or PGY4 resident will:

- Demonstrate the ability to communicate effectively with patients and their families

- Effectively communicate with physicians and other health care providers, through written reports of EMG studies and clinic encounters

As measured by GCP, CSR, Focused Observation, 360^{o} Evaluation,

Teaching Methods

What teaching methods are you using on this rotation or educational experience?

- Daily clinics and EMG sessions
- Presentation, review, and discussion of cases with attending faculty
- Interactive discussions

Assessment Method (residents)

How do you measure the resident's performance on this rotation or educational experience?

Patient Care: GCP, Checklist, Focused Observation (Observation of Procedural Skills, NEX), Case Logs

Medical Knowledge: GCP, RITE, AANEM Neuromuscular self-assessment examination (optional)

Practice-Based Learning: GCP,

Systems Based Practice: GCP,

Professionalism: GCP, 360^{o} Evaluation,

Interpersonal and Communication Skills: GCP, 360^{o} Evaluation,

Assessment Method (Program Evaluation)

How do you evaluate whether this educational experience is effective?

- Block evaluation of the rotation by the resident
- Yearly program evaluation

Twice-yearly evaluation of the resident and solicitation of feedback.

Level of Supervision

How is the resident supervised on this rotation?

- Daily direct supervision by faculty

Educational Resources

List the educational resources

- Educational CD containing a collection of critical references to the understanding of EMG and Neuromuscular Disorders is available on day 1 of the rotation as well as a loaner brief textbook on EMG and NCS. Please contact Dr. Dimachkie to receive those.
- Aids to the Examination of the Peripheral Nervous System, Saunders Limited, 4th edition, 2000.
- Aminoff M., Clinical Neurophysiology, 3rd Ed., Churchill Livingstone.

- Dawson DM, Hallett M, Wilbourn AJ, Campbell WW, Terrono AL, and Trepman E. Entrapment neuropathies, Lippincott Williams & Wilkins.
- Kandel ER, Schwarz JH, and Jessell TM. Principles of Neural Science, McGraw-Hill Medical.
- Peripheral Neuropathies. Neurologic Clinics. May 2013. Volume 31, Issue 2, p343-632. Edited by Richard J. Barohn, Mazen M. Dimachkie.
- Myopathies. Neurologic Clinics. August 2014. Volume 32, Issue 3, p569-858. Edited by Mazen M. Dimachkie, Richard J. Barohn
- Motor Neuron Disease. Neurologic Clinics. November 2015. Volume 33, Issue 4, p727-958. Edited by Mazen M. Dimachkie, Richard J. Barohn
- Neuromuscular Junction Disorders. Neurologic Clinics. May 2018. Volume 36, Issue 2, p231-394. Edited by Mazen M. Dimachkie, Richard J. Barohn
- Neuromuscular Disorders, 2nd Edition by Anthony A. Amato, James A. Russell.
- A Video Atlas of Neuromuscular Disorders. Second Edition. By Aziz Shaibani.
- Neuromuscular Disease: Case Studies from Queen Square 1st ed. 2017 Edition. by Hadi Manji, Chris Turner, Matthew R. B. Evans

Journals:

- Neurology (including AAN systematic reviews and practice parameters)
- Lancet: Neurology
- Annals of Neurology
- Brain
- Journal of Neurology, Neurosurgery and Psychiatry
- Muscle and Nerve

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KU Night Float / Clinic Curriculum

Required Rotation PGY2-4

Description of Rotation or Educational Experience

KU Ward Service

Supervising Faculty for Rotation, responsible for review of Goals & Objectives: Mamatha Pasnoor, MD; Yunxia Wang, MD

Additional faculty: Brennen Bittel, MD; Tekk Burka, MD; Constantine Farmakidis, MD; Megan Baumgardner, DO; Yasir Jassam, MD; Sharon Lynch, MD; Duaa Jabari, MD; Brenton Massey, DO; Muhammad Nashatizadeh, MD; Vibhash Sharma, MD; Omar Jawdat, MD; Jeff Statland, MD; Mamatha Pasnoor, MD; Sharon Lynch, MD; Deetra Ford, MD; Harsh Gupta, MD; Jeff Burns, MD; Russell Swerdlow, MD; Mazen Dimachkie, MD; Matthew Varon, MD; Tekk Burka, MD; Yasir Jassam, MD; Amanda Thuringer, MD; Ryan Townley, MD

One-block long rotation at the University of Kansas Hospital, split as two weeks of night float and two weeks of assigned outpatient clinics. Night float occurs every night, from 7 pm to 7 am Monday through Sunday (at 7 am). The clinics are assigned for PGY2 residents by Dr. Dubinsky. through Tara Logan and the PGY3 and 4 residents may select subspecialty clinics appropriate to their interests with approval of Dr. Pasnoor. A change-over day is provided when necessary.

This is one of the 18 blocks of inpatient and consult training mandated by the Neurology RRC

This rotation occurs twice in PGY2 and is repeated during PGY2-4.

Overall Goals:

During the KU Night Float and Clinic rotation, residents are expected to be able to demonstrate and apply an evidence-based medicine approach to patient care that reflects an integration of basic science and clinical knowledge. This rotation gives the resident opportunity to rely on their medical knowledge, examination skills, critical thinking and the formulation of management plan for various neurological disorders over many nights, and at the same time, providing continuity of care and enhancing the resident's ability to observe the natural progression of neurological disorders.

Residents are also expected to improve their skills with the neurological examination, performance of lumbar punctures, communication skills with patients, patients' families, and colleagues.

Residents will gain an understanding of neurological diseases and the management of common neurological disorders encountered in the inpatient setting.

Over the course of their training the neurology resident will handle increasing responsibility as demonstrated by managing patients with more complex disorders, providing care for a higher number of patients and effectively teaching rotating residents and medical students about neurology.

Patient Care

Goal

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 [Neurology Program Requirements: IV.A.5.a).(1)]. Residents are expected to:

Competencies

Evaluate and manage patients with neurological disorders and neurological manifestation of systemic diseases

Objectives

The PGY2-4 resident in neurology will:

- Obtain a through and yet efficient history.
- Perform an efficient and thorough general physical examination
- Perform an efficient and thorough neurological examination
- Competently perform all essential medical and invasive procedures
- Formulate a management plan before contacting the on-call staff

As measured by patient presentations, faculty monitored hand-off, checklist (direct observation), global clinical performance, and chart stimulated recall.

Medical Knowledge

Goal

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 (NPR IV.A.5.b).

Competencies

The resident must demonstrate understanding about major developments in the clinical sciences relating to neurology; must demonstrate understanding of the basic sciences through application of this knowledge in the care of their patients and by passing clinical skills examinations; must demonstrate knowledge of: Bioethics; cost-effective care; palliative care, including adequate pain relief as well as psychosocial support and counseling for patients and families; and, the principles of psychopathology, psychiatric diagnosis, and therapy and the indications for and complications of drugs used in psychiatry [NPR IV.A.5.b).(1-3)].

Objectives

The PGY2-4 resident will;

- Improve their fund of knowledge appropriate for the PGY2-4 level
- Become familiar with acute neurological diseases presentations and the ability to efficiently recognize them
- Become familiar with the principles of bioethics
- Provide cost effective evaluation and treatment

as measured by patient presentations, clinical documentation review, checklist (witnessed examination), global clinical performance and Resident In-service Training Examination (RITE).

Practice- Based Learning and Improvement

Goal

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 lifelong learning. Residents are expected to develop skills and habits to be able to [NPR IV.A.5.c)]:

Competencies

- Set learning and improvement goals
- Participate in the education of patients, families, students, residents and other health professionals, as documented by evaluations of a resident's teaching abilities by faculty and/or learners
- Set a goal to improve self-confidence level in managing various neurological disorders.

Objectives

The PGY2-4 resident will

- Incorporate formative evaluation feedback into their daily practice of neurology
- Participate in the education of patients, families, students, residents and other health professionals

As measured by checklist (witnessed examination) global clinical performance

Systems Based Practice

Goal

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. (IV.A.5.f)) Residents are expected to:

Competencies

- Coordinate patient care within the health care system relevant to their clinical specialty (IV.A.5.f).(2))
- incorporate considerations of cost awareness and risk-benefit analysis in patient and/or population-based care as appropriate; (IV.A.5.f).(3))

Objectives

The PGY2-4 resident will;

- Coordinate patient care within the health care system
- Advocate for quality patient care and optimal patient care systems

As measured by, chart stimulated recall and global clinical performance.

Professionalism

Goal

Residents must demonstrate a commitment to carrying out professional responsibilities and an adherence to ethical principles. (IV.A.5.e)) Residents are expected to demonstrate:

Competencies

- Respect for patient privacy and autonomy (IV.A.5.e).(3))
- Sensitivity and responsiveness to a diverse patient population, including but not limited to diversity in gender, age, culture, race, religion, disabilities, and sexual orientation (IV.A.5.e).(5))

Objectives

The PGY2-4 resident will demonstrate;

- In the process of providing care to inpatients, resident to demonstrates sensitivity to patient privacy, autonomy and diversity.
- Be responsive to patient primary and autonomy

As measured by checklist (witnessed examination), global clinical performance, and 360^{o} evaluation.

Interpersonal and Communication Skills

Goal

Residents must demonstrate interpersonal and communication skills that result in the effective exchange of information and collaboration with patients, their families, and health professionals. (IV.A.5.d)) Residents are expected to:

Competencies

- Communicate effectively with patients and families across a broad range of socioeconomic and cultural backgrounds (IV.A.5.d).(1))
- Maintain comprehensive, timely, and legible medical records (IV.A.5.d).(5))

Objectives

The PGY2-4 resident will:

- Discuss with the on-call staff all the inpatient consults or any inpatient critical issues in an efficient and timely manner.
- The resident communicates effectively with patients and their families.
- Work effectively as a **member** of a health care team
- The resident maintains the medical record in a comprehensive, timely and legible manner

As demonstrated by chart review and global clinical performance.

Teaching Methods

What teaching methods are used on this rotation or educational experience?

- Focused discussions with the attending physicians
- Didactic lectures of specific topics, including the neurological examination, localization and evaluation of neurological disorders

Assessment Method (residents)

How do you measure the resident's performance on this rotation or educational experience?

- Checklist: Direct supervision of resident performing history and clinical evaluation (PC, MK, PROF)
- RITE (MK)
- Checklist, simulation: Lumbar puncture proficiency (PC)
- Global Clinical Performance: Discussion of differential diagnosis, use of laboratory, patient management (PC, MK, SBL, PBL, ICS, PROF)
- Chart Stimulated Recall: (PC, MK, SBL, PBL)
- 360^{o} evaluation (ICS, PROF)
- Chart review (OCS, PROF)

Assessment Method (Program Evaluation)

How do you evaluate whether this educational experience is effective?

- Block evaluation of the rotation by the resident
- Yearly program evaluation
- Twice-yearly evaluation of the resident and solicitation of feedback.

Level of Supervision

How is the resident supervised on this rotation?

- Direct supervision by the private service neurologist on call until 10 pm.
- Indirect supervision provided by attending physicians at night through telephone contact
- The resident reviews every admission and consultation with the attending in a timely fashion. Attending neurologists are available 24 hours a day, 365.25 days a year.

Educational Resources

List the educational resources

- Westover, B., Pocket Neurology, Second Edition, LWW, 2016.
- Gould, D., High-Yield Neuroanatomy, Fifth Edition, LWW, 2015.
- Blumenfeld, H., Neuroanatomy through Clinical Cases, 2ND Edition, Sinauer Associates-Oxford University Press, 2010.
- Bahr, M., Frotscher, M., Duus' Topical Diagnosis in Neurology: Anatomy-Physiology-Signs-Symptoms, 5th Edition, TPS, 2012.
- Simon, R., Greenberg, D., Aminoff, M., Lange Clinical Neurology, 10th Edition, McGraw-Hill Education, 2017.

- Patten, J., Neurologic Differential Diagnosis, 2nd Edition, Springer, 1998.
- Brazis, P., Masdeau, J., Biller, J., Localization in Neurology, Seventh Edition, LWW, 2016.
- Aminoff M., Neurology in General Medicine, Fifth Edition, Academic Press, 2014
- Flaherty, A. The Massachusetts General Hospital Handbook of Neurology, Second Edition, LWW, 2007.
- Plum F and Posner J. The Diagnosis of Stupor and Coma, 4th Edition, Oxford University Press, 2007.
- Practice Parameters from the American Academy of Neurology, are available for a large range of conditions, therapies, and assessment tools at AAN.com.
- Ropper AH., Samuels, M., Klein, J., Adams and Victor's Principles of Neurology, 10th Edition, McGraw-Hill Education, 2014.
- O'Brien, M., Aids to the Examination of the Peripheral Nervous System, 5th Edition, Saunders Limited, 2010.

Journals:

- Neurology
- Lancet: Neurology
- Journal of Neurology, Neurosurgery, and Psychiatry
- Annals of Neurology
- Brain
- Stroke

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NICU Curriculum

Description of Rotation or Educational Experience

The resident works in the Neurological Intensive Care unit providing critical care for neurology and neurosurgery patients.

Supervising Faculty: Katherine Husmann, MD,
Neurology faculty: Michael Abraham MD; Sanjeev Keshary MD

This one-block rotation occurs in both PGY3 and 4.

Patient Care

Goal

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 are expected to:

Competencies

From the RRC:

- Must have clinical teaching rounds supervised by faculty. These rounds must occur at least five days per week. Residents must present cases and their diagnostic and therapeutic plans;
- Must participate in the evaluation of and decision making for patients with disorders of the nervous system requiring surgical management. The existence of a neurosurgical service with close interaction with the neurology service is essential;
- Must participate in the management of patients with acute neurological disorders in an intensive care unit and an emergency department;
- Must have experience in neuroimaging that ensures a familiarity with and knowledge of all relevant diagnostic and interventional studies necessary to correlate findings with other clinical information for the care of patients. At a minimum this must include magnetic resonance imaging, computerized tomography and neurosonology;
- Must receive instruction in appropriate and compassionate methods of end-of-life palliative care, including adequate pain relief and psychosocial support and counseling for patients and family members about these issues; and,
- Must have opportunities for increasing responsibility and professional maturation. Early clinical assignments must be based on direct patient responsibility for a limited number of patients. Subsequent assignments must place residents in a position of taking increased responsibility for patients. Night call is essential in accomplishing these goals. Adequate faculty supervision is essential throughout the program.
- Must have management responsibility for patients with neurological disorders.

Objectives

The PGY3 and 4 resident will:

- Demonstrate the ability to provide care for patients with neurological and neurosurgical disorders in the setting of the Intensive Care Unit
- Provide end-of-life care for patients, and the families, in the Neuro ICU
- Demonstrate proficiency in therapeutic procedures as measured by GCP, Checklist, Case Stimulated Recall, Focused Observation (Observation of Procedural Skills, Observation of Patient Care Encounter (SEGUE)), Case Logs.
- Obtain and document an efficient and focused neurologic history on an acutely ill patient (includes: direct patient discussion, family discussion, witness description and/or chart review).
- Develop and recommend initial treatment plans for acutely ill neurologic patients.
- Recognize and initiate management of elevated intracranial pressure.
- Accurately perform and interpret a neurologic examination in a comatose patient.
- Develop communication skills in delivering updates/bad news to patient families.

Medical Knowledge

Goal

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 are expected to:

Competencies

- Must regularly attend seminars and conferences in the following disciplines: neuropathology, neuroradiology, neuro-ophthalmology, neuromuscular disease, cerebrovascular disease, epilepsy, movement disorders, critical care, clinical neurophysiology, behavioral neurology, neuroimmunology, infectious disease, neuro-otology, neuroimaging, neuro-oncology, sleep disorders, pain management, neurogenetics, rehabilitation, child neurology, the neurology of aging, and general neurology. There must be gross and microscopic pathology conferences and clinical pathological conferences. Residents must have increasing responsibility for the planning and supervision of the conferences. Residents must learn about major developments in both the basic and clinical sciences relating to neurology. Residents must attend periodic seminars, journal clubs, lectures in basic science, didactic courses, and meetings of local and national neurological societies;
- Must learn the basic sciences on which clinical neurology is founded, including neuroanatomy, neuropathology, neurophysiology, neuroimaging, neuropsychology, neural development, neurochemistry, neuropharmacology, molecular biology, genetics, immunology, epidemiology, and statistics. The didactic curriculum developed to satisfy

this requirement must cover basic science and must be organized and complete; and,
- Must receive instruction in the principles of bioethics and in the provision of appropriate and cost-effective evaluation and treatment for patients with neurological disorders
- Must learn basics of critical care including assessment of volume status, invasive hemodynamic and neurological monitoring, including intracranial pressure monitoring and use of Transcranial Doppler ultrasound, and management of patients on mechanical ventilation.
- Must participate in critical care procedures including arterial catheter, central venous access catheter placements, and airway management.

Objectives
The PGY3 and PGY4 resident will:
- Understand the basic science components of NICU care including, but not limited to, neuropathology, neuroradiology, neuro-ophthalmology, neuromuscular disease, cerebrovascular disease, epilepsy, movement disorders, critical care, clinical neurophysiology, behavioral neurology, neuroimmunology, infectious disease, neuroimaging, and general neurology as measured by GCP, Focused Observation, RITE, Weekly Quizzes

Practice- Based Learning and Improvement

Goal
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 lifelong learning. Residents are expected to develop skills and habits to be able to:

Competencies
- Identify strengths, deficiencies and limits in one's knowledge and expertise
- Set learning and improvement goals
- Identify and perform appropriate learning activities

Objectives
The PGY3 and PGY 4 resident will:
- *Develop an independent plan of learning activities appropriate to Intensive Care medicine as measured by GCP, CSR, Focused Observation*

Systems Based Practice

Goal
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:

Competencies

- Coordinate patient care within the health care system relevant to their clinical specialty
- Incorporate considerations of cost awareness and risk-benefit analysis in patient care

Objectives

The PGY3 and PGY4 resident will:

- *Demonstrate the ability to function within the ICU system as part of the larger context of hospital based neurology as measured by GCP, CSR, Focused Observation*

Professionalism

Goals

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

Competencies

- Responsiveness to patient needs that supersedes self-interest
- Accountability to patients, society, and the profession

Objectives

The PGY3 and PGY4 resident will:

- *Demonstrate the ability to be responsive to the needs of their patients and their families as measured by GCP, CSR, Focused Observation, 360^{o} Evaluation*

Interpersonal and Communication Skills

Goal

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

Competencies

- Communicate effectively with patients and families across a broad range of socioeconomic and cultural backgrounds
- Communicate effectively with physicians, other health professionals, and health related agencies
- Maintain comprehensive, timely, and legible medical records

Objectives

The PGY3 and 4 resident will:

- *Demonstrate the ability to communicate effectively within the healthcare team and with health care professionals on other services as measured by GCP, CSR, Focused Observation, 360^{o} Evaluation*

Teaching Methods

What teaching methods are you using on this rotation or educational experience?

- *Daily rounds*
- *Presentation, review, and discussion of cases with attending faculty*
- *Weekly lectures*
- *Interactive discussions*

Assessment Method (residents)

How do you measure the resident's performance on this rotation or educational experience?

- Patient Care: GCP, Checklist, Case Stimulated Recall, Focused Observation (Observation of Procedural Skills, Observation of Patient Care Encounter (SEGUE)), Case Logs
- Medical Knowledge: GCP, Focused Observation, RITE, Weekly Quizzes,
- Practice-Based Learning: GCP, CSR, Focused Observation
- Systems Based Practice: GCP, CSR, Focused Observation
- Professionalism: GCP, CSR, Focused Observation, 360º Evaluation,
- Interpersonal and Communication Skills: GCP, CSR, Focused Observation, 360º Evaluation,

Assessment Method (Program Evaluation)

How do you evaluate whether this educational experience is effective?

- Block evaluation of the rotation by the resident
- Yearly program evaluation
- Twice-yearly evaluation of the resident and solicitation of feedback

Level of Supervision

How is the resident supervised on this rotation?

- *Daily direct supervision by ward attending and other faculty*
- *Direct supervision by attending and other faculty*
- *Direct supervision by clinic attending*

Educational Resources

List the educational resources

- *Benarroch EE. Medical Neurosciences: An Approach to Anatomy, Pathology, and Physiology by Systems and Levels, Subsequent edition, Lippincott Williams & Wilkins, 1999.*
- *Cooper JR, Bloom FE, and Roth RH. The Biochemical Basis of Neuropharmacology, 8th edition, Oxford University Press, 2002.*
- *Haines DE, Mihailoff G, Fundamental Neuroscience for Basic and Clinical Applications, 5th Edition, Elsevier, 2017.*
- *Miller DH and Raps EC. Critical Care Neurology, Butterworth-Heinemann.*
- *Samuels MA. Hospitalist Neurology (Blue Books of Practical Neurology, Volume 19), 1st edition, Butterworth-Heinemann, 1999.*
- *Weiner WJ and Shulman LM. Emergent and Urgent Neurology, Subsequent Edition, Lippincott Williams & Wilkins, 1998.*

- *Wijdicks, EFM. Neurologic Catastrophes in the Emergency Department, Butterworth-Heinemann, 1999.*
- *Wijdicks EFM. The Clinical Practice of Critical Care Neurology, 2nd Edition, Oxford University Press, 2003.*
- *Young GB, Ropper AH, and Bolton CF. Coma and Impaired Consciousness: A Clinical Perspective, McGraw-Hill Professional, 1997.*
- *Web-based educational tool: www.myneuroicu.com (articles, and presentations pertaining to neuro-ICU rotation)*
- *Wijdicks, EFM, Rabinstein A., Hocker, S. Neurocritical Care (What Do I Do Now). 2nd edition, Oxford University Press, 2016.*
- *Marino's The ICU Book. LWW Fourth, North American Edition, 2013.*
- *Wijdicks, EFM, The Practice of Emergency and Critical Care Neurology, 2nd Edition, Oxford University Press, 2016.*
- *Lee, K. The NeuroICU Book, 2nd edition, McGraw-Hill Education. 2017.*

Journals:

- *Neurology*
- *Lancet: Neurology*
- *Annals of Neurology*
- *Brain*
- *Stroke*
- *Journal of Neurology, Neurosurgery and Psychiatry*

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Pediatric Neurology Curriculum
Required PGY3 or 4 Rotation

Description of Rotation or Educational Experience

Supervising faculty responsible for reviewing Goals and Objectives: Jean-Baptiste Le Pichon, MD, Ph.D.

Additional faculty: Ahmed Abdelmoity,MD; Tyler Allison, MD; Jennifer Bickel,MD; Keith Coffman, MD (associate program director), Ara Hall, MD; Gina Jones, MD; Husam Kayyali,MD; Kailash T. Pawar, MD; Steven Shapiro,MD, MSHA; Lalit Bansal, MD; Jennifer Dilts, DO; Anna Esparham, MD; Keely Fitzgerald, MD; Rose Gelineau-Morel, MD; Marcie Goeden, MD; Meagan Hainlen, MD; Mohammed Ilyas, MD; Roha Khalid, MD; Lines Vargas Collado, MD.

Three-block rotation in pediatric neurology at Children's Mercy Hospital. This occurs during PGY3 or 4

Patient Care

Goal

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 are expected to:

Competencies

From the RRC:

- Will have a combination of patient care, teaching, and research in their training program. Patient care responsibilities must ensure a balance between patient care and education that achieves for the trainee an optimal educational experience consistent with the best medical care. Patient care responsibilities must include inpatient, outpatient, and consultation experiences;
- Must have experience with neurological disorders in children under the supervision of a child neurologist with ABPN certification or suitable equivalent qualifications. This must consist of a minimum of three blocks FTE in clinical child neurology with management responsibility;
- Must have clinical teaching rounds supervised by faculty. These rounds must occur at least five days per week. Residents must present cases and their diagnostic and therapeutic plans;
- Must have instruction and practical experience in obtaining an orderly and detailed history from the patient, in conducting a thorough general and neurological examination, and in organizing and recording data. The training must include the indications for and limitations of clinical neurodiagnostic tests and their interpretation. Residents must learn to correlate the information derived from these neurodiagnostic studies with the clinical history and examination in formulating a differential diagnosis and management plan;

- Must participate in the evaluation of and decision making for patients with disorders of the nervous system requiring surgical management. The existence of a neurosurgical service with close interaction with the neurology service is essential;
- Must participate in the management of patients with acute neurological disorders in an intensive care unit and an emergency department;
- Must have experience in neuroimaging that ensures a familiarity with and knowledge of all relevant diagnostic and interventional studies necessary to correlate findings with other clinical information for the care of patients. At a minimum this must include magnetic resonance imaging, computerized tomography and neurosonology;
- Must receive instruction in appropriate and compassionate methods of end-of-life palliative care, including adequate pain relief and psychosocial support and counseling for patients and family members about these issues; and,
- Must receive instruction on recognition and management of physical, sexual, and emotional abuse.
- Must have opportunities for increasing responsibility and professional maturation. Early clinical assignments must be based on direct patient responsibility for a limited number of patients. Subsequent assignments must place residents in a position of taking increased responsibility for patients. Night call is essential in accomplishing these goals. Adequate faculty supervision is essential throughout the program. Neurological training must include assignment on a consultation service to the medical, surgical, obstetric and gynecologic, pediatric, rehabilitation medicine, and psychiatry services.
- Must have management responsibility for patients with neurological disorders. Neurology residents must be involved in the management of patients with neurological disorders who require emergency and intensive care

From Children's Mercy Hospital:

- *Residents must be able to provide patient care that is both appropriate and compassionate and that is effective for the promotion of health and the treatment of health problems and disease. Residents must:*
  - *Use all sources to gather essential and accurate information about their patients, including medical interviews, medical examinations, and medical records*
  - *Make informed recommendations to patients and their families regarding treatment plans and recommended diagnostic and therapeutic interventions that are based upon patient preference, scientific evidence, and clinical judgment*
  - *Develop and carry out patient management plans, counsel and educate patients and their families, and collaborate with other health care professionals (including those from different disciplines) to provide family-centered care*
  - *Competently perform all essential medical and invasive procedures*

Objectives

The PGY4 resident will:

- *Demonstrate the ability to perform an efficient and thorough evaluation of the pediatric neurology patient including interviewing the patient and their family*
- *Demonstrate the ability to develop a differential diagnosis for the pediatric neurology patient*
- *Demonstrate the ability to develop a plan for evaluation and treatment of the pediatric patient*
- *Demonstrate the ability to counsel and educate patients and their families*

As measured by GCP, Checklist, Case Stimulated Recall, Focused Observation (Observation of Procedural Skills, Observation of Patient Care Encounter (SEGUE)), Case Logs.

Medical Knowledge

Goal

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 are expected to:

Competencies

- Must regularly attend seminars and conferences in the following disciplines: neuropathology, neuroradiology, neuro-ophthalmology, neuromuscular disease, 167cerebrovascular disease, epilepsy, movement disorders, critical care, clinical neurophysiology, behavioral neurology, neuroimmunology, infectious disease, neuro-otology, neuroimaging, neuro-oncology, sleep disorders, pain management, neurogenetics, rehabilitation, child neurology, the neurology of aging, and general neurology. There must be gross and microscopic pathology conferences and clinical pathological conferences. Residents must have increasing responsibility for the planning and supervision of the conferences. Residents must learn about major developments in both the basic and clinical sciences relating to neurology. Residents must attend periodic seminars, journal clubs, lectures in basic science, didactic courses, and meetings of local and national neurological societies;
- Must learn the basic sciences on which clinical neurology is founded, including neuroanatomy, neuropathology, neurophysiology, neuroimaging, neuropsychology, neural development, neurochemistry, neuropharmacology, molecular biology, genetics, immunology, epidemiology, and statistics. The didactic curriculum developed to satisfy this requirement must cover basic science and must be organized and complete; and,
- Must receive instruction in the principles of bioethics and in the provision of appropriate and cost-effective evaluation and treatment for patients with neurological disorders

From Children's Mercy Hospital:

- *Residents must be able to demonstrate knowledge about current and established clinical, biomedical, epidemiological, and social-behavioral sciences and will apply this knowledge to patient care. Residents must:*

- *Learn the clinical aspects of pediatric neurological disorders and the basis for working up these conditions*
- *Utilize readings to learn the causes of neurological conditions and apply this knowledge in a clinical setting*
- *Learn the appropriate use of diagnostic procedures used to detect common and uncommon neurological disorders in children*

Objectives

The PGY4 resident will:

- *Attend all subspecialty conferences*
- *Learn the clinical aspects of pediatric neurology disorders and apply these to in the clinical setting.*

As measured by GCP, Focused Observation, RITE,

Practice- Based Learning and Improvement

Goal

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 lifelong learning. Residents are expected to develop skills and habits to be able to:

Competencies

- *Identify strengths, deficiencies and limits in one's knowledge and expertise;*
- *Identify and perform appropriate learning activities*

From Children's Mercy Hospital:

- *Residents must be able to use information technology, scientific methods, and scientific evidence to evaluate, investigate, and improve patient care. Residents must:*
- *Identify areas for self-improvement and facilitate learning among students and other health care professionals*
- *Implement strategies to enhance patient care*
- *Analyze practice experience and perform practice-based improvement activities using a systematic methodology*
- *Find an evaluate evidence from scientific studies related to patient health problems and incorporate findings into patient care*
- *Obtain and utilize information about their population of patients as well as the larger population from which their patients are drawn*

Objectives

The PGY4 resident will:

- *Demonstrate their ability to identify strengths, deficiencies and limits in one's knowledge and expertise;*
- *Demonstrate the ability to find an evaluate evidence from scientific studies related to patient health problems and incorporate findings into patient care*

- *Identify and perform appropriate learning activities*

As measured by GCP, CSR, RITE

Systems Based Practice

Goal

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:

Competencies

- *Work effectively in various health care delivery settings and systems relevant to their clinical specialty*
- *Incorporate considerations of cost awareness and risk-benefit analysis in patient care*

From Children's Mercy Hospital:

- *Residents must be able to demonstrate interpersonal and communication skills resulting in effective communication with patients, families, and other medical professionals. Residents must:*
- *Create and sustain a therapeutic and ethically sound relationship with patients*
- *Use listening, nonverbal, explanatory, questioning and writing skills to effectively provide information to and elicit information from patients, families, and other medical professionals*
- *Work effectively with health care teams and other colleagues as a member or as a leader*

Objectives

The PGY4 resident will:

- *Demonstrate their ability to work effectively in various health care delivery settings and systems relevant to their clinical specialty as applied to a pediatric neurology clinic and on the pediatric neurology consult service*
- *Demonstrate the ability to incorporate considerations of cost awareness and risk-benefit analysis in patient care*
- *Demonstrate the ability to create and sustain a therapeutic and ethically sound relationship with patients*
- *Demonstrate the ability to use listening, nonverbal, explanatory, questioning and writing skills to effectively provide information to and elicit information from patients, families, and other medical professionals*
- *Demonstrate the ability to work effectively with health care teams and other colleagues as a member or as a leader*

As measured by GCP, CSR, Focused Observation

Professionalism

Goals

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

Competencies

- Responsiveness to patient needs that supersedes self-interest
- Sensitivity and responsiveness to a diverse patient population, including but not limited to diversity in gender, age, culture, race, religion, disabilities, and sexual orientation

Objectives

The PGY4 resident will:

- *Demonstrate their ability to show compassion, integrity, and respect for others*
- *Demonstrate respect for patient privacy and autonomy*
- *Demonstrate sensitivity and responsiveness to a diverse patient population, including but not limited to diversity in gender, age, culture, race, religion, disabilities, and sexual orientation*

From Children's Mercy Hospital:

- *Residents have an obligation to professionalism and sensitivity and must adhere to ethical principles within a diverse patient population. Residents must:*
- *Demonstrate accountability, respect, integrity, and empathy toward patients and their families and to society*
- *Demonstrate openness and sensitivity to the culture, age, gender, disabilities, socioeconomic status, beliefs and behaviors of patients, patients' families, and professional colleagues*
- *Adhere to ethical principles concerning the withholding of clinical care, confidentiality of patient information, informed consent, and business practices*

As measured by GCP, CSR, Focused Observation, 360^{o} Evaluation

Interpersonal and Communication Skills

Goal

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

Competencies

- Communicate effectively with physicians, other health professionals, and health related agencies
- Maintain comprehensive, timely, and legible medical records

From Children's Mercy Hospital:

- *Residents have an obligation to professionalism and sensitivity and must adhere to ethical principles within a diverse patient population. Residents must:*
- *Demonstrate accountability, respect, integrity, and empathy toward patients and their families and to society*
- *Demonstrate openness and sensitivity to the culture, age, gender, disabilities, socioeconomic status, beliefs and behaviors of patients, patients' families, and professional colleagues*
- *Adhere to ethical principles concerning the withholding of clinical care, confidentiality of patient information, informed consent, and business practices*

Objectives

The PGY4 resident will:

- *Demonstrate their ability communicate effectively with patients and families across a broad range of socioeconomic and cultural backgrounds*
- *Work effectively as a member of a health care team or other professional group*
- *Maintain comprehensive, timely, and legible medical records*

As measured by GCP, CSR, Focused Observation, 360^{o} Evaluation,

Teaching Methods

What teaching methods are you using on this rotation or educational experience?

- *Daily rounds*
- *Presentation, review, and discussion of cases with attending faculty*
- *Weekly lectures*
- *Interactive discussions*

Assessment Method (residents)

How do you measure the resident's performance on this rotation or educational experience?

Patient Care: GCP, Checklist, Case Stimulated Recall, Focused Observation (Observation of Procedural Skills, Observation of Patient Care Encounter (SEGUE)), Case Logs
Medical Knowledge: GCP, Focused Observation, RITE, Weekly Quizzes,
Practice-Based Learning: GCP, CSR, Focused Observation
Systems Based Practice: GCP, CSR, Focused Observation
Professionalism: GCP, CSR, Focused Observation, 360^{o} Evaluation,
Interpersonal and Communication Skills: GCP, CSR, Focused Observation, 360^{o} Evaluation,

Assessment Method (Program Evaluation)

How do you evaluate whether this educational experience is effective?

- Block evaluation of the rotation by the resident
- Yearly program evaluation

Twice-yearly evaluation of the resident and solicitation of feedback.

Level of Supervision

How is the resident supervised on this rotation?

- *Daily direct supervision by ward attending and other faculty*
- *Direct supervision by attending and other faculty*
- *Direct supervision by clinic attending*

Educational Resources

List the educational resources

- *Bradley WG, Daroff RB, Fenichel GM, and Jankovic J. Neurology in Clinical Practice, 5th edition, Butterworth-Heinemann, 2008.*
- *Practice Parameters from the American Academy of Neurology, are available for a large range of conditions, therapies, and assessment tools at **AAN.com**.*
- *Ropper AH and Brown RH. Adams and Victor's Principles of Neurology, 8th edition, McGraw-Hill Professional, 2005.*

Journals:

- *Neurology*
- *Archives of Neurology*
- *Annals of Neurology*
- *Brain*
- *Stroke*
- *Journal of Neurology, Neurosurgery and Psychiatry*

Rev. 9-24-2015

Psychiatry Curriculum

Required Rotation PGY4

Description of Rotation or Educational Experience

Supervising faculty responsible for review of goals and objectives: Angela K. Mayorga, M.D; Lisa Shenkam, MD (Associate Program Director)

This one-block rotation on the Psychiatry Consult service is in PGY4

Patient Care

Goal

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 are expected to:

Competencies

From the RRC:

- Must participate in the management of patients with psychiatric disorders. The program must include at least one-block full-time equivalent experience in clinical psychiatry, including cognition and behavior. The experience should take place under the supervision of a psychiatrist certified by the American Board of Psychiatry and Neurology, or who possesses qualifications acceptable to the Review Committee. They must learn about the psychological aspects of the patient-physician relationship and the importance of personal, social, and cultural factors in disease processes and their clinical expression. Residents must learn the principles of psychopathology, psychiatric diagnosis, and therapy and the indications for and complications of drugs used in psychiatry;
- Must received instruction on recognition and management of physical, sexual, and emotional abuse.

Objectives

The PGY4 resident will:

- *Demonstrate their understanding of common psychiatric problems in both inpatients and in the clinicCollaborate with other health care professionals (including those from different disciplines) to provide patient-focused care*
- *Develop and carry out patient management plans*

As measured by GCP, Focused Observation (Observation of Patient Care Encounter (SEGUE)), Case Logs.

Medical Knowledge

Goal

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 are expected to:

Competencies

- Must receive instruction in the principles of bioethics and in the provision of appropriate and cost-effective evaluation and treatment for patients with neurological disorders

Objectives

The PGY4 resident will:

- *Demonstrate their fund of knowledge in the basic science and clinical manifestations of psychiatric problems*

As measured by GCP, RITE

Practice- Based Learning and Improvement

Goal

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:

Competencies

- Identify and perform appropriate learning activities

Objectives

The PGY4 resident will:

- *Demonstrate their ability to identify learning activities in psychiatry*

As measured by GCP, Focused Observation

Systems Based Practice

Goal

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:

Competencies

The PGY4 resident is expected to:

- Work effectively in various health care delivery settings and systems relevant to their clinical specialty;

Objective:

The PGY4 resident will:

- *Demonstrate the ability to work within the Psychiatric health care delivery system,*

as determined by direct observation by the faculty of the Department of Psychiatry

Professionalism

Goals

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

Competencies

- Compassion, integrity, and respect for others
- Sensitivity and responsiveness to a diverse patient population, including but not limited to diversity in gender, age, culture, race, religion, disabilities, and sexual orientation

Objectives

The PGY4 resident will:

Work effectively in various health care delivery settings and systems relevant to their clinical specialty as measured by GCP, 360^{o} Evaluation

Interpersonal and Communication Skills

Goal

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

Competencies

- Communicate effectively with patients and families across a broad range of socioeconomic and cultural backgrounds
- Communicate effectively with physicians, other health professionals, and health related agencies

Objectives

The PGY4 resident will:

- *Demonstrate the compassion, integrity, and respect for others*

As measured by GCP

Teaching Methods

What teaching methods are you using on this rotation or educational experience?

- *Daily rounds*
- *Presentation, review, and discussion of cases with attending faculty*

Assessment Method (residents)

How do you measure the resident's performance on this rotation or educational experience?

Patient Care: GCP, Focused Observation (Observation of Patient Care Encounter (SEGUE)),

Medical Knowledge: GCP, RITE,

Practice-Based Learning: GCP

Systems Based Practice: GCP

Professionalism: GCP,
Interpersonal and Communication Skills: GCP, Focused Observation

Assessment Method (Program Evaluation)

How do you evaluate whether this educational experience is effective?

- Block evaluation of the rotation by the resident
- Yearly program evaluation

Twice-yearly evaluation of the resident and solicitation of feedback.

Level of Supervision

How is the resident supervised on this rotation?

- *Daily direct supervision by ward attending and other faculty*
- *Direct supervision by attending and other faculty*
- *Direct supervision by clinic attending*

Educational Resources

List the educational resources

- *Bradley WG, Daroff RB, Fenichel GM, and Jankovic J. Neurology in Clinical Practice, 4th edition, Butterworth-Heinemann, 2003.*
- *Aminoff M., Neurology in General Medicine, Churchill Livingstone.*
- *Cooper JR, Bloom FE, and Roth RH. The Biochemical Basis of Neuropharmacology, 8th edition, Oxford University Press.*
- *Devinsky O. Behavioral Neurology: 100 Maxims (100 Maxims in Neurology Series), Mosby-Year Book.*
- *Mesulam M-M. Principles of Behavioral and Cognitive Neurology, Oxford University Press, USA.*

Journals:

- *Neurology*
- *Archives of Neurology*
- *Annals of Neurology*
- *Brain*
- *Stroke*
- *Journal of Neurology, Neurosurgery and Psychiatry*

Research Elective

Description of Rotation or Educational Experience

This is an elective that must be arranged in advance. To take this elective, the resident must arrange to work with a faculty mentor, to have a well-defined project and a demonstrable product (i.e. completed paper) by the end of the block.

This block can be taken in PGY3 or PGY4

Patient Care

NA

Medical Knowledge

Goal

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 are expected to:

Competencies

- Must regularly attend seminars and conferences in the following disciplines: neuropathology, neuroradiology, neuro-ophthalmology, neuromuscular disease, cerebrovascular disease, epilepsy, movement disorders, critical care, clinical neurophysiology, behavioral neurology, neuroimmunology, infectious disease, neuro-otology, neuroimaging, neuro-oncology, sleep disorders, pain management, neurogenetics, rehabilitation, child neurology, the neurology of aging, and general neurology. There must be gross and microscopic pathology conferences and clinical pathological conferences. Residents must have increasing responsibility for the planning and supervision of the conferences. Residents must learn about major developments in both the basic and clinical sciences relating to neurology. Residents must attend periodic seminars, journal clubs, lectures in basic science, didactic courses, and meetings of local and national neurological societies;
- Must learn the basic sciences on which clinical neurology is founded, including neuroanatomy, neuropathology, neurophysiology, neuroimaging, neuropsychology, neural development, neurochemistry, neuropharmacology, molecular biology, genetics, immunology, epidemiology, and statistics. The didactic curriculum developed to satisfy this requirement must cover basic science and must be organized and complete; and,
- Must receive instruction in the principles of bioethics and in the provision of appropriate and cost-effective evaluation and treatment for patients with neurological disorders

Objectives

- This is to be developed in collaboration between the resident, mentor and the program director

as measured by review of the completed research product

Practice- Based Learning and Improvement

NA

Systems Based Practice

NA

Professionalism

Goals

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

Competencies

- Accountability to patients, society, and the profession

Objectives

This is developed between the resident, mentor and program director prior to the beginning of the rotation

Interpersonal and Communication Skills

NA

Teaching Methods

- Determined in conjunction between the resident, mentor and program director

Assessment Method (residents)

Review of the completed project

Assessment Method (Program Evaluation)

How do you evaluate whether this educational experience is effective?

- Block evaluation of the rotation by the resident
- Yearly program evaluation

Twice-yearly evaluation of the resident and solicitation of feedback.

Level of Supervision

How is the resident supervised on this rotation?

- Daily direct supervision by ward attending and other faculty
- Direct supervision by attending and other faculty
- Direct supervision by clinic attending

Educational Resources

- Developed by the resident and the mentor

Elements and Style of Notes, Consults, Discharge Summaries and Correspondence

General Concepts:

- All medical records must be cosigned by the attending physician who has the ultimate responsibility for patient care (regardless the attending physician evaluated the patient at bedside or not).
- Patients seen on call, and not dismissed from the ED, while discussed with the night attending are assigned to the daytime ward/consult/stroke attending for signature (and billing)
- Document the physician that you discussed the case with, *by name*, by service (e.g. vascular neurology) is not acceptable.
- If you examined the patient with the physician, state I examined the patient with Dr. X.
- Quick update notes do not take the place of a daily progress note. They are an addendum to a full note.
- Impression and plan are separate paragraphs.
- No cutting and pasting notes, either yours or someone else's. The conclusion when you copy one of your prior notes is that you did not examine the patient at all, because there is no evidence that you did. Copying someone else's note is plagiarism. **Repeated plagiarism is grounds for disciplinary action or dismissal from the program.**
- All parts of your note should be original for that day, updated with the pertinent positives and negatives, documenting the examination at that encounter, and the impression and plan at that encounter

Elements and Style of a good History and Physical

The purposes of an admission History and Physical note are:

- To document why the patient is being admitted and what problems are to be addressed
- To communicate with other health care provides, both now and in the future
- To document the clinical history and findings at a set point in time
- To convey your clinical reasoning through the assessment and plan

Before graduation a competent resident should be able to document an admission History and Physical in 10 minutes.

History of present illness:

What has led to this admission? This must include the complaint, the time course, diagnostic work up and therapeutic trials

Medical and Surgical History:

Document other illnesses and interventions

Social History:

Document social aspects of the patient that are important to this problem or their overall health.

Family History:

Important to establish presence of familial disorders (e.g. cerebrovascular/cardiac risk factors, migraine, hypercoagulable conditions, degenerative, genetic neurological disorders

Medications:

Self-evident

Review of Systems:

Both neurological and general

Examination:

General: self-evident

Neurological:

Mental status: Orientation, ability to comprehend and to express themselves, if appropriate clinic cognitive test results (SLUMS, MOCA, set generation, similarities, apraxia testing); and if not normal, and the level of consciousness.

Cranial Nerve Examination

Document all 12. Yes, it is important to test smell, the function of CN I. While ophthalmoscopes are available in the clinics, resident should have their own.

Motor

Document: bulk, tone (resistance to passive movement), strength using Medical Research Council of Great Britain (MRC) scale. May also include tests of minimal distal weakness such as a pronator drift of Alter's sign.

Sensory

Document peripheral modalities: light touch, pinprick, pressure, temperature, 128 Hz tuning fork vibration, and proprioception; and when appropriate central sensation: graphesthesia, stereognosis, finger identification. Documentation must include any abnormalities between sides, proximal vs. distal and the presence of a sensory level.

The Romberg test is a test of posterior column proprioception function, by looking for a difference between eyes open and eyes close conditions.

Coordination

Document postural stability while seated, rapid alternating tasks, stance, gait; and when appropriate finger-to-finger nose, heel-to-shin, standing on tip toes or standing on heels, praxis testing, tandem gait, reverse tandem gait, standing on one leg, and reverse tandem gait on heels.

Reflexes:

Muscle stretch reflexes from both sides are documented, including the presence or absence of pathological and primitive reflexes (if appropriate). Please remember that historically normal reflexes were documented as ++, not 2^{+} (or 2-).

Abnormal movements:

Describe the abnormal movements, if necessary, by body region, include the results of distraction.

Assessment:

What is going on, what might be going on

Plan:

What is going to happen, why, and that you discussed this with the patient, and when appropriate their family members, and with the attending physician. Include proposed tests and treatments.

Hospital Progress Notes:

Are in a SOAP note format

Subjective: of what are the patients complaints are on the day of assessment, and anything of note that has happened since the last note

Objective: Physical exam on the that date (not a copied note from the ICU that still says pt on the floor is intubated, see section above on plagiarism)

Assessment: Impression of what the patient's current problems are and what is the trend

Plan: Plan for the day and potentially the rest of the hospital stay. Document how test results have changed the plan (or not changed the plan) To benefit the resident's thought processes, this will need to be in a problem based or system based format so as to not overlook anything.

Elements and Style of a good daily Progress Note

The purpose of the daily progress note is:

- To document what has happened,
- How the patient is doing,
- What your clinical thinking is and
- What is going to happen next.

Interval History: what has happened since the last note. It is not sufficient to say, "No acute events overnight." This can include patient/care team concerns, therapies/testing they have completed since the time of their last evaluation, tolerance of medication changes, etc.

Additional medical, family, social history or review of systems: self-evident.

Examination: This can be either brief, documenting any changes, or extensive. ***Do not copy and paste from prior days***.

Pertinent study results: laboratory, imaging, consult recommendations

Pending results: self-evident

Assessment: What you think is going on

Plan: what you are going to do.

Elements and Style of a Good Discharge Summary

The purposes of a Discharge Summary are:

- Document for other health care professionals why the patient was admitted and what happened.
- Provide for continuity of care

A discharge summary should be brief, but inclusive. With the electronic health record, it is easy look up the results of laboratory, imaging, and clinical test results for any given day.

Suggested outline:

History of Present Illness: Why they were admitted, including the chief complaint, time course of the illness prior to the hospitalization and pertinent findings on admission clinical examination and initial studies. Include relevant admission medications (e.g. phenytoin dose and route if they were admitted for phenytoin toxicity or break through seizures).

Hospital course: In general terms, not day-by-day unless this is important for the future care of the patient.

Pertinent labs and completed investigation: These are the results of key imaging studies, lipid studies, HgBA1c, CSF etc. For stroke patients, discharge NIHSS and mRS are required.

Discharge diagnoses: Primary diagnosis first. This should outline the thought process for establishing the diagnosis

Discharge medications: self-evident

Discharge disposition: where are they going, what follow-up has been arranged or is needed

Follow-up appointment: who they are to see, where (LCOA, Indian Creek, etc) and when.

Pending studies and results: While this is self-evident, you must clearly document these elements:

- Pending laboratory or imaging studies, pending therapies, transfer of care to the responsible health care provider, and acknowledgement that the communication has occurred.
- If warfarin is started, outline and arrange as to who will follow the INR
- Immunotherapies: what follow laboratories are needed, additional treatment, and who has accepted responsibility to follow them
- Further testing: e.g. repeat LP, repeat imaging

Be certain that the patient's primary care physician, appropriate specialists and any physicians that will be assuming care of the patient are sent copies of the discharge summary.

Elements and Style of a Good Clinic Note

The purposes of a clinic note are:

- To communicate with other health care provides, both now and in the future
- To document the clinical history and findings at a set point in time
- To convey your clinical reasoning through the assessment and plan

Before graduation a competent resident should be able to document a return clinic visit in five to seven minutes; and a new patient clinic visit in 10-15 minutes.

History of present illness:

What has led up to this visit for a new patient, what has happened since the last visit for a return encounter. For a new patient this must include the complaint, the time course, diagnostic work up and therapeutic trials

Medical and Surgical History:

Document other illnesses and interventions

Social History:

Document social aspects of the patient that are important to this problem or their overall health.

Family History:

Surgical History:

Medications:

Self-evident

Review of Systems:

Both neurological and general

Examination:

General: self-evident

Neurological:

Mental status: Orientation, ability to comprehend and to express themselves, if appropriate clinic cognitive test results (SLUMS, MOCA, set generation, similarities, apraxia testing); and if not normal, and the level of consciousness.

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Sensory

Document peripheral modalities: light touch, pinprick, pressure, temperature, 128 Hz tuning fork vibration, and proprioception; and when appropriate central sensation: graphesthesia, stereognosis, finger identification. Documentation must include any abnormalities between sides, proximal vs. distal and the presence of a sensory level.

The Romberg test is a test of posterior column proprioception function, by looking for a difference between eyes open and eyes close conditions.

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Abnormal movements:

Describe the abnormal movements, if necessary, by body region, include the results of distraction.

Assessment:

What is going on, what might be going on

Assessment:

What is going on, what might be going on

Plan:

What is going to happen, why, and that you discussed this with the patient, and when appropriate their family members. Include tests, treatments, next clinic visit or how you are going to be in touch with them.

Elements and Style of good correspondence

The purpose of medical correspondence to inform other health care practitioners of the results of your clinical encounter with the patient. This is mainly a matter of style. Some choose to send a copy of their complete clinical encounter note. Others prefer an extremely brief summary of just a few sentences. And lastly, some prefer to combine a brief letter with an attached copy of the clinical encounter note.

Billing and Clinical Documentation

You document what is needed for the purposes of the encounter and for patient care. Billing follows clinical care. Clinical care does not follow what you need to document for a higher level of service.

GMEC Resident Supervision Template

A. Supervision of Residents

- Each patient must have an identifiable, appropriately credentialed and privileged attending physician (or licensed independent practitioner as specified by each Review Committee) who is responsible and accountable for that patient's care.
- This information must be available to residents, faculty members, other members of the health care team, and patients.
    - Inpatient: Patient information sheet included in the admission packet and listed on the "white board" in each patient room
    - Outpatient: Provided during introduction verbally by residents and/or faculty
- Residents and faculty members must inform patients of their respective roles in each patient's care when providing direct patient care.
- The program must demonstrate that the appropriate level of supervision is in place for all residents who care for patients.

B. Methods of Supervision.

- Supervision may be exercised through a variety of methods.
- 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, fellow or senior resident physician, and either on site or by means of telephonic and/or electronic modalities. Some activities require the physical presence of the supervising faculty member. In some circumstances, supervision may include post-hoc review of resident delivered care with feedback.
- The program must demonstrate that the appropriate level of supervision is in place for all residents and it is based on each resident's level of training and ability, as well as patient complexity and acuity.
- Supervision may be exercised through a variety of methods, as appropriate to the situation.
- The Review Committee may specify which activities require different levels of supervision.

C. Levels of Supervision Defined

To promote oversight of resident supervision while providing for graded authority and responsibility, the program must use the following classification of supervision:

Direct Supervision*:*

- The supervising physician is physically present with the resident and patient.

Indirect Supervision A (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.***

Indirect Supervision B (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 as supervisory role in patient care delegated to each resident must be assigned by the program director and faculty members.

Per Program Specific RRC Requirements	**RRC APPROVED LICENSED INDEPENDENT PRACTITIONER SUPERVISOR and this information must be available to the residents, faculty members, other members of the health care team and patients.** (PR VI.A.2.a (1)
	Each patient will have an identifiable and appropriately-credentialed and privileged attending physician (or licensed independent practitioner as specified by the applicable Review Committee) who is responsible and accountable for the patient's care. The physicians round daily with residents for inpatient consults, and are always present in clinic to provide direct supervision. Physicians are available day & night or both direct (coming into the hospital) and indirect (per phone) supervision.
	Physicians are available via pager system, mobile phones.
	VI.A.2.a). (1).(b.)**Inform each patient of their respective roles in patient care, when providing direct patient care.**
	The resident introduces the care team to the patient, identifying everyone's role.
	PGY – 1 residents must be supervised either directly or indirectly with direct supervision immediately available. Conditions and the achieved competencies under which a PGY -1 resident progresses to be supervised indirectly with direct supervision available: (PR VI.A.2.e.(1).(a)
	For PGY-1 supervision, please see Internal Medicine Resident and House staff Manual
	VI.A.2.e).(1).(c) The sponsoring institution and participating sites must ensure that second- or third-year neurology residents or other appropriate

supervisory physicians (e.g., subspecialty residents or attendings) with documented experience appropriate to the acuity, complexity, and severity of patient illness be available at all times on-site to supervise first-year residents on inpatient rotations. (Detail)

VI.A.2.e).(1).(b) The sponsoring institution and participating sites must provide the resources to ensure that residents from other specialties do not supervise neurology residents on any neurology inpatient rotation.

The privilege of progressive authority and responsibility, conditional independence, and a supervisory role in patient care delegated to each resident must be assigned by the Program Director and faculty members. (PR VI.A,2,d, (1,2,3)

II.A.4.q).(2) providing residents with direct experience in progressive responsibility for patient management. (Core)

Progressive responsibility for patient care and for procedures is documented through Med Hub using entrustable professional activities (EPAs) and is available for review by nursing and supervisory personal within the KUH.

RARE CIRCUMSTANCES WHEN RESIDENTS may elect to stay or return to the clinical site :(PR VI.F)

There are no additional Neurology RRC instructions on this topic

DEFINED MAXIMUM NUMBER OF CONSECUTIVE WEEKS OF NIGHT FLOAT AND MAXIMUM NUMBER OF BLOCKS PER YEAR OF IN-HOUSE NIGHT FLOAT (PR VI.F. 6.)

VI.F.6. In-House Night Float
Night float must occur within the context of the 80-hour and one-day-off-in-seven requirements. (CPR, core)
VI.F.6.a) Residents should not have more than two consecutive weeks of night float or half of a block (maximum 16 days). (Neurology RRC, Detail)

Program-specific guidelines for circumstances and events in which residents must communicate with appropriate supervising faculty (PR VI.A.2.e)

Inpatient:

1. Admission to Hospital
2. Admission to Emergency Department
3. Consultation within the hospital
4. Transfer of patient to a higher level of care
5. Rapid response call
6. Transfer of patient to a lower level of care
7. Clinical deterioration, especially if unexpected
8. End-of-life decisions
9. Change in code status
10. Red Events
11. Change in plan of care, unplanned emergent surgery or planned procedure that does not occur
12. Procedural complication
13. Unexpected patient death

Outpatient:

1. All patient encounters are supervised both indirectly (indirect A) and directly by the attending physician in clinic.

(There are no program specific circumstances)

PGY 1	
LEVEL of SUPERVISION	**ACTIVITIES /PROCEDURES (as defined by RRC & Program)**
DIRECT	Please see the Internal Medicine House staff and Resident Handbook
INDIRECT A (with direct supervision immediately available)	
INDIRECT B (with direct supervision available-as determined by program specific RRC guidelines PR VI.D.5.a).(1))	

All OTHER RESIDENTS	
LEVEL of SUPERVISION	**ACTIVITIES /PROCEDURES (as defined by RRC & Program)**
DIRECT	All neurological procedures (e.g. LP, EMG, NCS), stroke activation consults and all NICU procedures until the resident is deemed competent to provide these without direct supervision.
INDIRECT A (with direct supervision immediately available)	Above procedures once the resident is determined to be competent to perform without direct supervision. Initial patient encounters in the clinic
INDIRECT B (with direct supervision available-as determined by program specific RRC guidelines PR VI.D.5.a).(1))	Above procedures once the resident is determined to be competent to perform without direct supervision available or immediately available. Initial patient encounters within the hospital systems.
OVERSIGHT (with direct supervision available)	All patient encounters with the hospital once the resident has been determined to be capable to perform these patient encounters without direct or indirect supervision.