Curricular area: Neurology
Rotation: Neurology rotation, neurology elective
Responsible faculty: Luis Alexander Frias, MD

Reviewed and revised by Dr. Amer Malas, Program Director, on 12/1/2013
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Goals:
Residents will develop and refine the necessary knowledge base, medical interviewing skills, and clinical acumen to recognize and manage patients with neurological illness consistent with the skills and knowledge of a board certified general internist. Residents will learn to assess inpatients and patients presenting to the emergency center or ambulatory care setting with chronic or acute neurologic conditions. Residents will learn to co-manage patients with neurologic conditions with neurologists and other specialists. Residents will learn the recognition and initial management of neurologic emergencies, and the management of patients with internal medicine conditions and neurologic comorbidities.

Setting: On the neurology rotation, residents work with the neurology attending to evaluate and follow patients on various inpatient services, critical care units and the emergency center at Doctors Hospital at Renaissance (DHR). Residents also gain exposure to neurologic disease in medical inpatients, patients presenting to the Emergency Center, and patients followed in the medicine continuity clinics who may have neurologic comorbidities.

Key to Competencies: PC = Patient care MK = Medical Knowledge I/C = Interpersonal/communication skills PR = Professionalism PBL = Practice based learning SBP = System based practice

Teaching activities:
On the neurology rotation, combined teaching/patient care rounds are conducted by the attending physician daily. Topics relevant to neurology are also covered in the housestaff conference series, morning report, morbidity and mortality conferences. Attending neurologists on the medicine inpatient wards, outpatient clinics and the emergency centers provide direct case-based supervision and instruction to residents evaluating patients with neurologic disease.

Level of supervision:
On the neurology service, all new consults are discussed with an attending physician. Attending rounds are conducted daily to discuss active consults and review case findings. The attending physician provides face-to-face feedback to the resident physician at the end of the rotation, and as needed during the course of the rotation. The resident physician is expected to ask for specific feedback at the midpoint of the rotation.
Patient characteristics:
Patients cared for at DHR outpatient clinics are a diverse group which includes men and women, age 16 and over with acute and chronic diseases commonly encountered in internal medicine practice. Many patients are indigent and may be Spanish speaking or come from other linguistic or ethnic backgrounds.

Reading lists/resources:
Residents are expected to read about their patients’ conditions in textbooks and other resources. Residents have access to online textbooks, UpToDate and other resources from all hospital and clinic sites.

Sample schedule (neurology rotation):

8 am – 9 am Attend Morning Report
11:30 am – 12:30 pm Attend Core Conference

Prerounding and Rounding times vary by attending.

Please contact the attending prior to the start of the rotation to confirm specifics of the month’s schedule.
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| Residents will learn to evaluate patients presenting with neurologic complaints by history and physical examination. Residents will be able to convey these findings to consultants, attendings and other members of the team. | **PGY-1:**  
- Obtain history as relevant to neurologic complaints. Identify key elements as they relate to neurologic disease.  
- Recognize physical exam findings in common neurologic conditions.  
- Utilize appropriate resources to obtain historical information important to the diagnosis and management of patients with neurologic disease, including accessing medical records, data from other health care facilities, physicians and family members as appropriate.  
- Demonstrate the ability to convey key information to other residents, attendings, consultants and other members of the health care team in a logical, coherent manner. | PC, MK, I/C, | Teaching rounds, Resident lecture series, Intern learning group Direct instruction and demonstration by attendings | Global eval MiniCEX |
| **PGY-2** |  
- Recognize important elements of CC, HPI and other aspects of history, as they related to patients neurologic complaint.  
- Increase skills in the neurologic exam to include recognition of less common conditions, use of appropriate maneuvers, and more advanced interpretation of findings.  
- Be able to synthesize key elements of the history and physical in a logical, coherent manner leading to the development of an appropriate differential diagnosis.  
- Show the ability to demonstrate key findings to learners. | | | |
| **PGY-3** |  
- Master the elements of history-taking and physical examination of the neurologic system at the level expected of a board-certified general internal medicine specialist  
- Demonstrate the ability to guide learners to acquire these skills | | | |
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| Residents will acquire the medical knowledge relevant to the diagnosis and management of common neurologic diseases. Residents will demonstrate the medical knowledge and skills required to triage patients with urgent or intensive care needs. | PGY-1:  
- Residents will understand basic neuroanatomy and be able to use this knowledge to recognize common neurologic disorders.  
- Residents will have the knowledge to be able to recognize and initiate appropriate management of patients with neurologic conditions requiring urgent intervention. | PC MK, PBL | Teaching rounds, Resident lecture series, Intern learning group | Global eval Inservice scores miniCEX |
| PGY-2:  
- Through specific experiences on the neurology consult service, the resident will master the knowledge base required for evaluation of patients with neurologic complaints presenting to the Emergency Center or occurring on inpatient services.  
- Residents will acquire the knowledge to assist in the co-management of patients with neurologic conditions admitted to non-medicine services  
- Resident will have the medical knowledge to recognize common neurologic conditions presenting in ambulatory patients and understand how to manage these conditions. | | | |
| PGY-3:  
- Master the knowledge base required to evaluate and manage patients presenting with neurologic disease, at the level of a board-certified general internist. (see Neurology appendix A for list of neurologic conditions commonly seen by general internists) | | | |

Residents will learn the indications for diagnostic tests relevant to the evaluation of patients with neurologic diseases. Residents will be able to interpret results and apply to patient care.

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<td>PGY-1:</td>
<td>Know indications for and interpretation of diagnostic tests commonly used to evaluate patients with neurologic disease. Be able to use the results of diagnostic tests to clarify the differential diagnosis and initiate appropriate management.</td>
<td>PC, MK, PBL,</td>
<td>Teaching rounds, Resident lecture series, Intern learning group</td>
<td>Global eval Inservice examination</td>
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<td>PGY-2:</td>
<td>Demonstrate increased understanding of diagnostic tests, including more specialized and less commonly performed tests, and how to apply the results to the care of patients with neurologic disease.</td>
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<td>PGY-3:</td>
<td>Demonstrate mastery of diagnostic testing in the assessment of patients with neurologic disease, at the level of a board certified general internist. Be able to explain the purpose and meaning of diagnostic tests to other members of the health care team.</td>
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See Neurology appendix B for common diagnostic tests used in the evaluation of patients with neurologic disease.
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| Residents will learn to communicate and collaborate with neurology consultants, physicians from other specialties and other members of the health care team, providing optimal patient care in a cooperative team effort. | PGY-1:  
- Understand the role of the neurology consultant in the evaluation and management of internal medicine patients with neurologic disease  
- Demonstrate effective communication with consulting services for the benefit of the patient, including effective use of the written medical record/consult note.  
- Be able to explain to patients the role of consultants and other services in their health care plan  
- Be able to communicate effectively with patients and families, provide clear and accurate information about their disease. | PC I/C SBP | Teaching rounds, Resident lecture series, Intern learning group | Global eval |
| PGY-2:  
- Demonstrate effective communication with other members of the neurology consult and inpatient teams, including the attending physician | | | |
| PGY-3:  
- Master all aspects of communication skills and interpersonal relationships to evaluate and manage patients with neurologic disease, including communication with patients and families, neurologists and other consultants, and other members of the health care team.  
- Master the communication and interpersonal skills required to provide collaborative care to patients with neurologic comorbidities requiring consultation with a neurologist or other specialists. | | | |
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| Residents will demonstrate skills in practice-based learning required to evaluate and manage patients with neurologic disease. | **PGY-1:**  
  - Resident will demonstrate evidence of study to improve knowledge of neurologic disease commonly encountered by general internists.  
  - Demonstrate the ability to access appropriate resources, including practice guidelines, online textbooks, and other medical literature to increase understanding of neurologic disease.  
  - Seek feedback from attendings and other members of the health care team to improve performance.  
  - Show evidence of reflection and the ability to learn from errors.  
  **PGY-2:**  
  - Increase ability to generate questions based upon clinical encounters and to use the medical literature to answer these questions.  
  **PGY-3:**  
  - Demonstrate increasing competence in the use and interpretation of the medical literature.  
  - Demonstrate an understanding of how to analyze medical errors and poor outcomes and use this experience to improve performance.  
| PBL, SBP              | Journal club                                   | Ambulatory journal club                                                                 |            |                                     |              |
| Residents will demonstrate skills in systems-based practice required to care for patients with neurologic disease. | **PGY-1:**  
  - Learn the role of ancillary services such as dietary, physical and respiratory therapy, and other available services. Learn to use these services effectively to enhance patient care.  
  - Learn the role of consultants and demonstrate the ability to use consultants appropriately to enhance patient care.  
  - Maintain appropriate professional relationships with nurses, pharmacists, clerks, and all other members of the health care team.  
  **PGY-2:**  
  - Upper level residents should be able to teach students and junior residents when to involve ancillary services and consultants in the care of the patients, and the appropriate role for these services.  
  **PGY-3:**  
  - Master aspects of systems-based practice needed to ensure optimal patient care and utilization of available resources.  
  - Demonstrate patient advocacy within the system of care.  
  - Teach students and junior level residents how to use the system to optimize patient care.  
| SBP PC                | Attending rounds  
  M and M conferences  
  Housestaff conferences | Global eval                      |            |                                     |              |