This document summarizes the organization of the fellow’s educational experience during the rotation, taught and supervised by the Department of Neurology in our program.

The Brigham and Women’s Clinical Neurophysiology Fellowship training program has been accredited by the ACGME since July 1, 2000. The program is organized to provide the intellectual environment, formal instruction, peer interaction and broad supervised clinical experience necessary for fellows to master the knowledge, skills and attitudes essential to the practice of clinical neurophysiology and to allow progression into a subspecialty practice, research or teaching career in clinical neurophysiology. Central to these goals is the fellow’s attainment, at the level of a new practitioner, of the six ACGME core competencies in the areas of patient care, medical knowledge, practice-based learning and improvement, interpersonal and communication skills, professionalism, and systems-based practice. The program is designed to foster the development of well-rounded, competent clinical and academic clinical neurophysiologists. We value a strong commitment to the highest standards of patient care. We encourage research and quality improvement projects as well as other scholarly experiences.

Each rotation includes experiences and formal evaluation of outcomes designed to ensure the development of competent graduates in clinical neurophysiology. Fellows in this program participate in a structured core clinical and educational experience, with rotations at the Brigham and Women’s and Children’s Hospitals. The Program is under the direction and supervision of the Training Director, Barbara Dworetzky, M.D.

We provide one year of well-supervised graduate medical education experience with graded and progressive responsibility. Brigham and Women’s Hospital is a ~750 bed general hospital with a general neurology ward service with an average census of 20. There is a Neurology-Neurosurgery ICU (9C and 9D) with 20 beds, all wired for EEG monitoring. The Epilepsy Monitoring Unit has 4 wired beds with built in video camera in the ceiling of the private rooms located on 10 C and 10 D. There is a video-EEG server for portable monitoring, emergency neurology, and consult services; 2 inpatient neurosurgical services; an active Emergency Department with Level 1 Trauma Center; a large EMG laboratory and neuromuscular subspecialty clinic, a world renowned sleep laboratory; and outpatient clinic facilities including
general neurology and epilepsy clinics, a first seizure clinic, and a women’s neurology division with an epilepsy and pregnancy clinic. Brigham and Women’s Hospital and Children’s Hospitals are both accredited by the Joint Commission for Accreditation of Hospitals (JCAHO). The Training Program is approved by the Accreditation Council of Graduate Medical Education’s Residency Review Committee for one year of training. An optional second year serves as a supplement to this ACGME-approved fellowship for candidates interested in advanced training and research in epilepsy and EEG.

**Children's Hospital Boston** One of the largest and best pediatric medical centers in the United States, Children's Hospital offers a complete range of health care services for children from birth through 21 years of age. The Epilepsy/EEG program has a 6 bed epilepsy monitoring unit, with full surgical capabilities under the direction of Dr. Blaise Bourgeois. Children’s Hospital is adjacent to the Brigham and Women’s Hospital, and connected via an indoor corridor. Fellows attend conferences, lectures, and research symposia and have access to clinical material at this large pediatric facility.

**General Goals**

The overall education goals of this training program are to help fellows develop an understanding of the role of clinical neurophysiology in the comprehensive care of patients in inpatient, outpatient, and acute care settings. Fellows are provided with extensive clinical/technical experience in the performance of clinical neurophysiologic examinations, and trained in the clinical evaluation and management of patients with epilepsy, or neuromuscular diseases. Fellows are intended to achieve proficiency in performing and interpreting clinical neurophysiologic tests, and understanding the relevance of tests in the diagnosis and treatment of neurologic disease. They are expected to learn the skill of reporting results to other professionals and to patients in understandable language and with sensitivity for the meaning of these results. The training program provides opportunities to develop knowledge, clinical skills, and professional attitudes that result in the best possible patient care. We expect our fellows to be motivated self-learners who actively participate in their own educational plan under the supervision of our faculty. Fellows will develop growing competence in clinical service, consultation, teaching, and research.

**Criteria for Promotion and Graduation**

Upon completion of this program, the fellow should be well grounded in basic clinical neurophysiology and the interpretation of these clinical tests. In addition, the fellow should be knowledgeable about the variety of clinical applications and the management of patients with epilepsy, sleep disorders, or neuromuscular disease. The fellow should have experience teaching clinical neurophysiology to medical students and neurology residents, and to be teachers for their patients in methods of disease prevention and disease management. They should be familiar with research methodology in the field and be equipped to begin careers of leadership in service, teaching, administration, research, and training, in the broad fields of clinical neurophysiology and epilepsy. Upon completion of the program, fellows are expected to be competent in the core
areas of patient care, medical knowledge, interpersonal and communication skills, practice-based learning and improvement, professionalism, and systems-based practice. The program seeks to be flexible in tailoring the required goals to individual interests, but the core clinical and educational experiences will be similar. Upon completion of this program, the fellow will be qualified for competent independent practice in clinical neurophysiology, and be eligible for examination by the respective specialty and subspecialty boards for certification.

Core Competencies:

1) Patient Care
Clinical neurophysiology fellows are expected to provide patient care that is compassionate, appropriate and effective and that promotes health, prevents illness and addresses the needs of patients. By the completion of the program, fellows must be able to perform a detailed patient history and physical exam, generate an appropriate differential diagnosis, formulate diagnostic and treatment plans that demonstrate sound clinical judgment and problem solving, and to work with the patient, family, and the multidisciplinary team. The fellow should be able to recognize and respond to neurophysiologic and other neurologic emergencies. Selection and use of appropriate neurophysiology tests is critical for the satisfactory completion of this core competency.

2) Medical Knowledge
Fellows are expected to demonstrate knowledge of established and evolving biomedical, clinical and social sciences, as they relate to adult and pediatric patients’ underlying neurological/medical conditions, and demonstrate application of their neurophysiologic knowledge to patient care and the education of others.

3) Practice Based Learning and Improvement
Fellows are expected to be able to use scientific evidence and methods to investigate, evaluate and improve patient care practices. Fellows must regularly use medical libraries (electronic or otherwise) and information technology, participate in weekly journal club by demonstrating appraisal of the scientific literature, and engage in other educational activities that indicate self-motivated learning and use of evidence from scientific studies in individual practice. By midyear, the clinical neurophysiology fellow must identify a quality improvement project based on 10-20 patients seen in the clinic, laboratory, or inpatient neurophysiology service, and present a one-page written report to the program director outlining necessary and feasible steps to promote improved clinical care.

4) Interpersonal and Communication Skills
Fellows are expected to demonstrate interpersonal and communication skills that enable them to establish and maintain professional relationships with patients, families and other members of the health care team. Specifically, they should demonstrate effective verbal, nonverbal and written information exchange in collaboration with parents, families, and colleagues.

5) Professionalism
Fellows are expected to behave professionally at all times and demonstrate behaviors that reflect a commitment to continuous professional development and ethical practice. Fellows should demonstrate an understanding of, and sensitivity to, diversity with a responsible attitude towards their patients, their profession and society. This means that fellows should be punctual, reliable, available, and be able to complete required paperwork and phone contacts in a timely manner. Fellows should maintain the highest standards of ethical practice, putting patient needs above personal needs. Requests for studies will be carefully reviewed and accommodated if at all possible. In addition, fellows must demonstrate responsiveness to feedback and direction, with attention to personal issues and behavior.

6) Systems Based Practice
Fellows are expected to demonstrate both an understanding of the contexts and systems in which health care is provided, and the ability to apply this knowledge to optimize healthcare. Fellows must be aware of hospital and departmental quality assurance standards and of system-based factors that contribute to medical error. They should practice cost effective care and advocate for their patients within the healthcare system.

II. Overall Fellowship Goals and Objectives

1. Interpret electroencephalographic (EEG) and evoked potential (EP) studies and understand their significance as they pertain to patient management.
2. Interpret and understand long-term video-EEG monitoring (LTM) studies.
3. Evaluate and formulate diagnostic and management strategies for patients with suspected seizures or epilepsy. Understand the safety issues on the long term monitoring unit. For pediatric patients, understand the differences in drug selection and dosing for both acute and chronic care of this population.
4. Gain exposure to surgical epilepsy planning leading up to a definitive surgical procedure. Specifically, they must know the indications for invasive monitoring (for adult and pediatric patients), the recommended neuroimaging procedures, and the integration of noninvasive data into decisions regarding placement of subdural and depth electrodes in the treatment of refractory epilepsy. Fellows should be able to interpret invasively obtained EEG data in the context of planning for resective surgery.
5. Gain exposure to polysomnograms (PSG) and multiple sleep latency tests (MSLTs) and understand their role in clinical diagnosis and management.
6. Gain exposure to invasive tests such as intracarotid amytal testing and intraoperative monitoring, including electrocorticography and electrocortical stimulation.
7. Become familiar with the use of electromyography (EMG), nerve conduction studies (NCS), and related testing to understand the use of these techniques in the diagnosis and monitoring of neuromuscular disorders.
8. Become familiar with relevant current literature, investigational protocols and research studies.

III. Rotation Specific Learning Goals and Objectives
1. **ICU Rotation**: Attending reads with fellow by 8:30AM daily.

   a. Patient Care
   
   Goals: develop and carry out consultation plans regarding emergency care for patients on EEG monitoring. Fellows are expected to review EEG data daily, convey the results to the ordering physicians, and generate reports within one day of the test via the ICU database.
   
   Competencies: recognize a clinical emergency with use of EEG monitoring; participate in the treatment decisions in the care of patients on ICU EEG monitoring, synthesize the information from EEG monitoring and clinically relevant other data. Objectives: to be competent at caring for ICU patients with seizures, including status epilepticus.

   b. Medical Knowledge
   
   Goals: understand indications for EEG and EP studies in the ICU, particularly prolonged EEG monitoring. The fellows work with the technologists to review the large amount of digital data, specifically reviewing the markings placed by the technologists. Fellows are also expected to identify the different anticonvulsants used and potential interactions in the emergency armamentarium, the potential dangers involved with these drugs, and their effects on EEG and EP.
   
   Competencies: Advise/teach neurology residents, staff and medical students how to diagnose and treat all types of status epilepticus, utilize spectral analysis software and interpret their results to enhance the clinical care of patients in the Neurology-Neurosurgery ICU.
   
   Objectives: recognize and treat emergency seizures, identify electrocerebral silence, and other situations.

   c. Practice Based Learning and Improvement
   
   Goals: demonstrate knowledge of when ICU monitoring is helpful and appropriate as a tool for patient care.
   
   Competencies: perform and interpret hairline EEGs, diagnose and manage all types of status epilepticus, differentiate other rhythmic patterns from status epilepticus. **Be prepared to know no later than 10AM each day which patients can be taken off ICU monitoring**. This needs to be reported to the chief EEG technologist for best utilization of resources.
   
   Objectives: to become a self motivated life long learner in this area.

   d. Interpersonal and Communication skills
   
   Goals: participate in the daily communication with the primary team regarding the indications for EEG and EP studies in the ICU, particularly prolonged EEG monitoring, help arrange such studies when appropriate, and convey the results in a timely manner.
   
   Competencies: help to increase accessibility of obtaining EEGs and triage multiple requests based on level of urgency.
   
   Objectives: serve as an epilepsy consultant to the primary care team.

   e. Professionalism
   
   Goals: interact effectively and professionally in potentially stressful clinical situations. Fellows also provide epilepsy consults when requested by ICU or


general neurology teams, and staff these with an epilepsy attending within 24hrs of seeing the patient.
Competencies: demonstrate respect, compassion, and integrity in interactions with patients, families, nurses, consulting physicians, technologists.
Objectives: be aware of your influence on the team, and your interactions for purposes of overall patient care.

f. Systems Based Practice
Goals: Triage EEG studies appropriately for the limited resource days.
Competencies: be familiar with available literature on emergency EEG uses and treatments, as well as research outcomes in this area.
Objectives: be aware of national guidelines on the definition and treatment of status epilepticus and whether/how/why our practice differs from these.

1. LTM Rotation (EBB service named for our former chief Edward B. Bromfield):
   Attending rounds with EBB resident and fellow at 9:30AM daily
   a. Patient Care
   Goals: This is an inpatient ward rotation for electively admitted patients with episodes suspected to be seizures. The fellow evaluates all patients as they arrive for video EEG monitoring (scheduled typically for Monday afternoon). The fellow must assess each patient and contact the EBB attending to discuss the first evening plan regarding safety and medications. Orders, including intravenous line, and plan for seizures should be clearly written into the record and communicated by the fellow to the covering resident. The fellow should review studies with the resident before 9AM and orient the technologist to the critical clinical issues for the day for each of the patients on the EBB service. Critical lab work or testing should be discussed by attending rounds. Fellows are responsible for daily notes, rounding with the attending and resident, and communicating plans as the leader of the team. In addition, the fellow reviews the studies later in the day and modifies the clinical plan with the attending if needed depending on the data. The fellow is responsible for generating preliminary reports, contacting the supervising attending after any seizure, and providing clinical information (care plan) into the clinical epilepsy database on every monitored patient before team conference. The plan must be updated with the discharge plan into the database.
   Competencies: direct care for patients on EBB service, review and monitor inpatient EEG recordings each day; supervision and coverage of the junior resident on the team.
   Objectives: begin to lead a subspecialty epilepsy service with patients on continuous video-EEG monitoring.
   b. Medical Knowledge
   Goals: determine potential interactions of polypharmacy/multiple anticonvulsants used in this setting, and how to safely and effectively adjust these medications for each patient.
   Competencies: understand safety issues involving patients monitored with continuous video-EEG, especially with regards to reducing anticonvulsant medications and preventing clustering of seizures and status epilepticus.
Objectives: to become an expert in video EEG monitoring well-versed in polypharmacy, seizure semiology, and surgical evaluation.

c. Practice Based Learning and Improvement
Goals: Participate in the patient simulator program focused on safety in the video EEG monitoring unit; understand how inpatient continuous video EEG monitoring can be a tool for diagnosis, medication adjustments or both, display mastery of what data is needed to determine epilepsy surgical candidacy. The fellow will also be expected to prepare the presentations for case conference with the EBB attending. Each block is 2 weeks and includes presentations of the patients from the prior week. Fellows help to arrange for SPECT scan admissions and will help with SPECT watch as needed.
Competencies: demonstrate knowledge of when an inpatient admission for continuous EEG monitoring is indicated, and when a patient who has had seizures in the hospital is safe to be discharged.
Objectives: be able to evaluate the quality of the process of monitoring, and whether a patient has been adequately assessed.

d. Interpersonal and Communication skills
Goals: The fellow will examine the EBB inpatients every morning, express competence and compassion in each interaction, and learn to explain complicated drug changes with each patient, updating them daily. The fellow also acts as clinical teacher and supervisor to the resident on the EBB/neurophysiology rotation.
Competencies: Interpret the electroclinical data provided by LTM in order to address the specific indications in a given patient and enhance their clinical care.
Objectives: Provide the highest level of care with clear and supportive communication with the patients on a subspecialty epilepsy service.

e. Professionalism
Goals: The fellow will learn to discuss difficult topics with patients and their families regarding risks of further seizures, medication failures, surgical evaluation, and prognosis. When appropriate, a diagnosis of non-epileptic seizures will also be provided to a patient in a compassionate and professional fashion.
Competencies: develop rapport with patients, express an understanding that the process of inpatient monitoring can be stressful and frightening for patients, especially when anticonvulsants are reduced or removed, provide reassurance to patients.
Objectives: The fellow will show the highest level of professionalism with all patients, co-fellows, attendings, nurses, technologists, and support staff.

f. Systems Based Practice
Goals: Recognize guidelines regarding indications for and uses of inpatient monitoring protocols, and whether/how/why our practice differs from these.
Competencies: develop and use protocols for patient monitoring

2. **EEG Rotation:** **EEG attending reads at 9AM daily**
a. Patient Care
Goals: The fellow is responsible for facilitating access to EEGs for ordering physicians, interpreting all inpatient and outpatient routine and portable EEGs, and generating a preliminary report in the database. These will be read and reviewed together with the attending the following day, and the report finalized in BICS.

Objectives: Interpret EEG and EP studies and understand their significance as they pertain to patient management.

b. Medical Knowledge
Goals: Demonstrate an understanding of the electrophysiologic basis of EEG, along with its limitations.

c. Practice Based Learning and Improvement
Competencies: Display knowledge of what constitutes a normal EEG, recognize concerning patterns, and differentiate these from normal variants.

d. Interpersonal and Communication skills
Goals: Any urgent results (usually the portable recordings) on inpatient studies will be conveyed by the fellow to the ordering physician the same day. The fellow will page the ordering physician for any patient not on seizure medication with epileptic discharges seen on EEG, and document this communication in LMR. If ongoing seizures are recorded on EEG in the laboratory, the attending will be paged for consideration of treatment. The patient will be held in the lab until the referring doctor is notified.
Competencies: Interact with referring physicians in a timely manner when necessary, and be able to advise him/her with appropriate medication recommendations.

e. Professionalism
Goals: The fellow will be available and accessible to the technologists if they request that a physician review a study urgently, in addition to helping triage studies when resources are limited.

f. Systems Based Practice
Goals: Understand the indications for routine and emergency EEG. Become familiar with the indications, procedures, and interpretation of invasive studies such as intracarotid amobarbital testing, intraoperative electrocorticography and stimulation, and placement and interpretation of intracranial electrodes.
Competencies: Be aware of national guidelines and/or trends in epilepsy pre-surgical evaluation, and whether/how our practice differs.

4. Sleep Neurophysiology Rotation
b. Medical Knowledge
Goals: All fellows are required to learn how to interpret sleep studies as their minor for the clinical neurophysiology fellowship. This occupies about twenty percent of the fellow’s time in training. Every Tuesday, fellows meet with Dr. Pavlova after reviewing assigned PSGs and multiple sleep latency studies, and receive focused teaching and feedback from her. There are selected reading assignments that correspond to the teaching that is offered during this block as well. Fellows will keep a log of all of the studies they have reviewed and maintain it for their portfolios.
Competencies: PSG interpretation, MSLT interpretation.
Objectives: Be knowledgeable about common sleep disorders including sleep apneas, parasomnias, movement/motor disorders of sleep, and insomnia. Identify criteria for diagnosing narcolepsy, and know potential treatments.
c. Practice Based Learning and Improvement
Goals: Consider the potential impact of sleep disorders on patients’ well-being, especially those with epilepsy. Recognize how anticonvulsants may affect sleep, positively or negatively.
Competencies: Understand ways in which sleep disorders and epilepsy overlap, as well as why/how diagnosing and treating both can enhance clinical care.
f. Systems Based Practice
Goals: Identify indications for the PSG and/or MSLT, what information can be obtained from these studies as well as their limitations.
Competencies: Recognize the growing literature and understanding of how sleep and epilepsy overlap.

5. Pediatric Rotation:
b. Medical Knowledge
Goals: gain exposure to pediatric EEG, EP, sleep studies, and LTM, using both invasive and noninvasive electrodes, as well as these results in planning surgical treatment of children with intractable epilepsy. Fellows will read with several different electroencephalographers at the Children’s Hospital EEG lab during their pediatric rotation, and will obtain a password from the Chief Technologist so that they can directly enter their interpretations into the system and produce a report. Usual staff interpretation sessions occur in the afternoon daily, and reports are put into the system by dictation.
Competencies: Read and interpret EEG/EP/Sleep studies in neonates, children, and adolescents.
Objectives: Become familiar with the etiologies, disease course, comorbidities, and medical and surgical treatments of epilepsy in children, including how these may resemble or differ from epilepsy in adults.

6. Research
b. Medical Knowledge
Goals: Two week elective is scheduled into the second half of the first year for the purposes of focusing on a research project. This is a very short amount of time, so we encourage fellows to start thinking about their project shortly after arrival to the fellowship. A list of mentors is available, though most attendings are willing and interested in being contacted by fellows for this purpose. Fellows should identify a mentor from the Neurology or Neurophysiology faculty and have their project chosen before September. They should meet with their mentor early to discuss and plan their project and inform the program director by September 5.
Competencies: During the elective month, the fellow should plan to collect and analyze relevant data, and meet with the Program Director to keep her apprised of their progress. Fellows are strongly encouraged to present an abstract at the
annual American Epilepsy Society Meeting. Fellows are encouraged to apply for research training grants if they are planning to stay for a second year. Objectives: at a minimum, submission of an abstract to the AES meeting for 2011.

f. Systems Based Practice
   Goals: Gain experience in clinical or basic neurophysiology research.
   Competencies: participate in clinical or basic research in epilepsy or EEG
   Objectives: to submit an abstract (poster or platform), or paper under the mentorship of one of our faculty members.

III. Practical Information

Administrative Faculty:

Barbara Dworetzky, M.D.
Chief, Division of Epilepsy, EEG, Sleep Neurology
Program Director, Clinical Neurophysiology Program (CNP)

General Faculty BWH:

Amato, Anthony
Chief, EMG/Neuromuscular, BWH

Ellen J. Bubrick, MD
Assistant Program Director, EEG/Epilepsy Fellowship; Neurophysiologist, BWH

Steven A. Greenberg, MD
EMG/Neuromuscular, BWH

Shahram Khoshbin, MD
Neurophysiologist, BWH

Autumn Klein, MD, PhD
Director, Women’s Neurology Program, BWH, Neurophysiologist, BWH

Jong Woo Lee, MD, PhD
Director, EEG ICU Monitoring, BWH; Neurophysiologist, BWH

David McCarthy, MD
Neurophysiologist, BWH

Tracey Milligan, MD
Director, Faulkner Epilepsy Program; Neurophysiologist, BWH
Program Director, Partners Neurology Residency
Milena Pavlova, MD
Director, Sleep Lab, BWH/Faulkner; Neurophysiologist, BWH

Page Pennell, MD
Director, Epilepsy Research; Neurophysiologist, BWH

Claus Reinsberger, MD
EEG/Epilepsy, South Shore Hospital; Neurophysiologist, BWH

General Faculty  CH:

Ann Bergin, MD  
Neurophysiologist, CH

Blaise Bourgeois, MD
Chief, Epilepsy and Clinical Neurophysiology, CH

Frank Duffy, MD, PhD
Senior Associate in Neurology, CH

Frances Jensen, MD
Director, Epilepsy Research, CH

Mark Libenson, MD  
Director of EEG Lab, CH

Annapurna Poduri, MD
Assistant in Neurology, CH

Alex Rotenberg, MD
Assistant in Neurology, CH

Masanori Takeoka, MD
Assistant in Neurology, CH

**Weekly Schedule: (see attached schedule)**

Calls:  Beeper Call from home during LTM rotation  
Vacation:  Fellows are entitled to 21 days of vacation during their clinical neurophysiology fellowship.

Important phone numbers:  (617)-

<table>
<thead>
<tr>
<th>Position</th>
<th>Phone Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fellowship Program Director, BWH</td>
<td>732-5946</td>
</tr>
<tr>
<td>Fellowship Assistant Director, BWH</td>
<td>732-6806</td>
</tr>
<tr>
<td>Fellowship Coordinator</td>
<td>525-7110</td>
</tr>
</tbody>
</table>
IV. Settings and Teaching Methods

A. Settings

Clinical experience is divided between the clinical neurophysiology laboratories and outpatient epilepsy clinics. Fellows see a mixture of patients (see below) and are involved in the interpretation of neurophysiologic studies such as EEGs, EPs, and PSGs performed on a wide range of patients drawn from both the inpatient and outpatient settings. The clinical neurophysiology fellows will assist in interpreting these findings for the benefit of clinicians, medical students and neurology residents. Supervision of the clinical neurophysiology fellows comes from the staff physicians on a daily basis (see supervision policy).

Clinic meets on a weekly wherein clinical neurophysiology fellows participate in follow-up care, and perform initial evaluations of new patients. Consultation with a clinical neurophysiology staff physician follows immediately and the patient is seen together with the staff member, after which a diagnostic and management plan is reached. Including the nurses and social workers in your clinical plan is key to getting your patients the proper services and attention they need. Please avail yourself of their excellent services.

B. Teaching Methods

EEG: EEG reading sessions are supervised by the clinical neurophysiology faculty. Fellows are given an opportunity to review records on their own and arrive at a provisional diagnosis and report. Each record is then reviewed by the fellow and clinical neurophysiology faculty together, and a final interpretation is generated and then signed by the staff.

EPs: EPs will be read first by fellows with the generation of a provisional diagnosis and report. Each study will then be reviewed by the faculty and a final interpretation will be generated and signed by the staff.

Sleep studies: Similarly, sleep studies will be interpreted first by the fellow and then reviewed by the clinical neurophysiology faculty with expertise in sleep. Although studies are performed off-site, at either FH or other Sleep Health facility, they are
completely networked and are reviewed in the BWH clinical neurophysiology laboratory. The final interpretation is approved and signed by the staff physician.

Epilepsy Clinic: Fellows will develop facility in presenting data from the history, physical examination and tests, and in formulating an opinion about neurologic localization, etiologic differential diagnosis and management. The fellow’s assessment will be discussed Socratic style, involving students and residents as appropriate. Management plans will be reviewed with the clinical neurophysiology staff.

Simulation Lab: Fellows will develop facility in treating emergency seizures, and to be facile with their role as “first-responders” in the monitoring unit in the case of possible life threatening event from a seizure.

C. Regular Conferences

Core Neurophysiology (CNP) Lecture Series: Regular conferences include the required weekly CNP core didactic lecture series presented by clinical neurophysiology staff (Tuesday morning video conference between BWH Tyler library and MGH Blake 12 library. This includes, but is not limited to, basic principles of neurophysiology (electricity/electronics, filters, properties of electrodes, signal analysis), basic science of neurophysiology (membrane potentials, channels, active and passive currents, neuromuscular transmission, volume conduction principles, field determinations, single fiber potentials, fibrillation and positive sharp wave potentials, excitotoxicity, mechanism of action of antiepileptic drugs, epileptogenesis) and a wide variety of clinical and basic science/research topics.

Children’s Hospital Surgery Conference: All candidates for surgery at Children’s Hospital are discussed in a team neurosurgical conference every Tuesday 8:00-9:00 AM on Fegan 7. This is a required multidisciplinary conference and will add to the surgical experience of the fellows, in particular in pediatrics. Fellows alternate weeks of attendance at this conference.

Neurology Weekly Grand Rounds are announced by email through the Partners’ Neurology Chief Residents. They occur at 9:30-10:30AM Wednesdays (except in summer) in the H.I.M. building second floor Bray room. Neuromuscular and Epilepsy topics occur fairly regularly, and are a required part of the fellowship.

Quality Improvement/ Quality Assurance: On the first Thursday of the month, the staff and fellows meet to review studies from a quality perspective and for any administrative issues. The technologists, fellows, or faculty are encouraged to bring studies or clinical issues to be reviewed together with teaching geared toward improving interpretation and techniques of implementation.

Research seminar: Dr. Pennell leads this meeting from 12-1 PM on the second and fourth Thursdays of the month. This conference is mandatory and will be held the environmental services conference room on the lower pike. This alternating with the Quality Improvement review in the lab. Fellows and staff are asked to send specific aims from grant proposals, or questions from academic papers for review. Heidi Thomas from research administration attends
and provides research training as well. Meetings are in the environmental services conference room on the lower pike.

Research colloquium: Dr. Jensen leads this seminar once (third Thursday) per month at 11:00AM located at Children’s Hospital, first floor Pavilion conference room (adjacent to the blood bank). Breakfast foods are served, and research topics, grant writing, and critical reviews are undertaken.

Journal Club: Every Tuessday at 12:00PM, following the lecture. We will meet in the environmental services conference room. Fellows and attendings are expected to pre-read the circulated article ready to critique. The articles are chosen by staff members or fellows and full participation is requested. Dr. Lee oversees the journal club.

Monthly Basic Neurophysiology review: Dr. Lee and staff will meet with fellows at 12:00PM on Fridays once/month to review selected chapters or readings in basic clinical neurophysiology or neuroscience. Please be prepared by reading in advance.

BWH Multidisciplinary Team Clinical Case Conference: Every Thursday 1:00-2:00 PM, fellows present the monitored patients eligible for surgery, or selected patients for teaching. All patients monitored must be entered into the clinical epilepsy database. The team plan should be relayed back into the database and the plan coordinated with key members of the treating team. Referring doctors should be included in the plan by a person phone call from the EBB attending. Reporting should be succinct and geared toward communicating the necessary next steps to the multidisciplinary team. Fellows should learn to lead the discussion and teach the members of the team regarding clinical aspects of epilepsy with enhancements from literature searches.

Neuropathology Conference: Weekly neuropathology conferences are currently held within the neurology residency program, and occurring Fridays at 7:30 AM. Epilepsy or neuromuscular cases will be posted on the neurowiki site. In addition, there will be alternating monthly neuropathology conferences featuring epilepsy surgery cases, occurring on Fridays at 9:30 AM on Amory 3 with the multihead microscope. These will be announced by the program director. We will review our surgical specimens with Dr. Rebecca Folkerth.

Neuroradiology Conference: Every other month there will be a neuroradiology conference specifically devoted to epilepsy cases. This will be held on L1 in the Abrams conference room and announced by the program director. It will alternate with the neuropath conference.

EEG Atlas and collected cases:. The rotating EBB resident will be responsible to find an interesting EEG case and add a question to our atlas. This will be posted on the resident’s shared site and will be used for teaching. Attendings and fellows teach residents and students using the case method and will review these over the year.

Children’s Neurophysiology/Epilepsy lecture series: Fegan 7 11:30AM-12:30 PM. This is an excellent lecture series on pediatric topics in neurophysiology. Most of the lectures are option, however, selected pediatric topics not in our series will be required and you will be notified. Lunch is also served.
Morbidity and Mortality Conference: Fridays 11:30-1. This conference occurs weekly through the Partners Residency program and is broadcast across the MGH and BWH. Ward and ICU cases are selected by the seniors on service, and feedback/review is provided between attendings, fellows, and residents. Ethical issues are stressed, and occasional conferences are devoted specifically to ethics.

Each week, the neurology chief residents attach the listing of all other conferences available at our facility in an updated link available on the neurology residency website and emailed to all staff, residents and fellows. Invited grand rounds speakers, and neuroscience talks are posted via a link, and the fellows are encouraged to attend these talks as they are included in the breadth and scope of the fellowship. The program director alerts the fellows of additional talks that are offered.

V. Mix of Diseases

Electromyography Laboratory
- Inflammatory myopathies
- Motor neuron disorders/ALS
- Movement disorders/dystonias
- Muscular dystrophies
- Myasthenia gravis/Lambert Eaton syndrome
- Myelopathies
- Myotonic disorders and channelopathies
- Neuropathies: mononeuropathies
- Neuropathies: polyneuropathies
  - Inflammatory
  - Inherited
  - Metabolic
  - Toxic
- Plexopathies
- Radiculopathies
- Spinal stenosis

Electroencephalography Laboratory
- Anti-epileptic Drugs
- Brain stem disorders
- Brain tumors and other mass lesions
- Cerebrovascular Disorders
- Coma/stupor
- Confusion
- Dementia/memory loss
- Developmental delay
- Epilepsies: idiopathic/symptomatic, focal/generalized
- Head trauma
- Encephalitis/Meningitis
- Ketogenic Diet
Multiple sclerosis
Nonepileptic Seizures
Pediatric Epilepsies
Seizures: absence, generalized convulsive, generalized nonconvulsive, partial,
Status Epilepticus
Syncope
Vertigo

Sleep Disorders Laboratory
Cataplexy
Narcolepsy
Obstructive Sleep Apnea
Circadian Disturbances
Insomnia
REM behavior disorder
Periodic Limb Movements of Sleep

VI. Patient Characteristics

With approximately 100,000 outpatient neurology visits and 2000 neurology admissions per year, we have available for training purposes a more than adequate number of patients who exhibit a large variety of clinical problems, providing broad experience in clinical neurophysiology in inpatient, ambulatory and other settings. There are an adequate number of patients of both sexes, and a spectrum of socioeconomic status and age, including pediatric, adolescent and geriatric groups.

VII. Types of Clinical Encounters

These have been described above. In the outpatient setting, fellows evaluate new and returning patients, and then obtain an immediate consultation with the clinical neurophysiology staff, who will also see the patient and formulate a diagnostic and management plan in conjunction with the fellow. In the EMG laboratory, the fellow and clinical neurophysiology staff physician work side-by-side performing and interpreting the studies. In the electroencephalography and sleep labs, records are first read by the fellows and then by the fellow and clinical staff neurophysiologist together.

VIII. Procedures

Clinical Neurophysiology fellows will develop, with appropriate instruction and feedback, experience in the following procedures: EEG interpretation, epilepsy monitoring including scalp-sphenoidal and invasive video-EEG, intraoperative electrocorticography, intraoperative and extra-operative cortical electrical stimulation studies, intracarotid amobarbital testing, placement of sphenoidal electrodes, adjustment of vagal nerve stimulators (VNS), use of MEG and MRI techniques in epilepsy surgery, EPs, and polysomnograms (PSGs).
IX. Reading Lists (Bibliography)

Fellows will be given a list of basic articles collected by the faculty and deemed important for each fellow to read. These will easily be accessible through the Harvard eCommons digital library. They will also be expected to systematically review chapters assigned from a clinical neurophysiology and an epilepsy textbook. Basic neurophysiology will be emphasized.


X. Pathologic Material

A weekly neuropathology conference is held within the Partner’s Neurology residency, Friday’s at 7:30AM. It includes samples of nerve and muscle biopsies. The brain specimens from surgical resections will be reviewed monthly on a multi-headed microscope, Fridays at 9:30 with
Dr. Folkerth. The fellow can review pathological specimens with a neurophysiology staff member and neuropathologist in the neuromuscular disease center or neuropathology department.

XI. Other Educational Resources to be used

Fellows have at their disposal a learning area in the department, which includes several computers and some of the most frequently used, up-to-date textbooks. The Stratus simulation lab located at the Neville House is available to all fellows. The computers allow literature searches. In addition, fellows have access to the Countway library at Harvard Medical School, which includes thousands of journals and other textbooks. In addition, each institution has its own local library as does the department of Neurology. Subscription to the major neurophysiology journals is available. In addition, digital atlas material and a teaching file are available in the EEG laboratory.

XII. Methods of Evaluation of Fellow Performance

There are a great many direct discussions among fellows and clinical neurophysiology staff, and many opportunities for staff to observe fellows interacting directly with patients, including performance of the neurologic exam, discussions with patients at the bedside, in the clinic, and on the phone, and performance and interpretation of clinical neurophysiology procedures. All fellow studies and reports are reviewed by faculty with direct feedback. At quarterly intervals, the New Innovations web based evaluation system is used to collect from staff standard evaluation forms, which the fellows can view anonymously on any computer with internet access. In addition, the program director meets at least twice yearly with each fellow for direct feedback about fellow’s performance and knowledge, and to receive feedback about the program. There is also an anonymous program-specific evaluation form on-line.

XIII. Methods of Evaluation of Program (rotation) Performance

The Brigham and Women’s Clinical Neurophysiology Training Program regards ongoing evaluation of both fellows and faculty performance as a mutual obligation in the training process. In addition, both fellows and faculty must at regular intervals evaluate the Training Program as a whole as to whether it provides the means to meet the overall goals and objectives of fellowship training. Fellows are evaluated in each of their clinical training services midway through the rotation, and at its conclusion. In didactic seminars, fellows are evaluated at the conclusion of each course. In turn, each faculty member and clinical service is evaluated anonymously by each fellow midway through the fellowship, and at the conclusion. All evaluations must be supplemented by direct feedback between fellow and faculty member during the process of working together.

Evaluations of performance in clinical services and didactic seminars are based on meeting two standards: Satisfying the specific goals and objectives of a clinical service or didactic seminar, and satisfying the goals and objectives of six core clinical competencies: patient care, medical knowledge, interpersonal and communication skills, practice-based learning and improvement, professionalism, and systems-based practice. All goals and objectives are
delineated in terms of knowledge, skills and attitudes. The fellow must demonstrate increasing competency in each core area, as it pertains to particular clinical techniques or modalities, and in different settings.

It should be noted that “competency” is a relative term and should be assessed at the developmental level for a particular trainee. For example, one would expect the competency of a fellow at the end of the first year in the management of a case to be different from that of a Board certified Neurologist with Neurophysiology specialty practice 5 years out. As physicians, we must see practice in the context of “life-long learning”, and our evaluations should reflect the standards of competent care for the developmental level of the individual being evaluated. The most commonly used standard of competency in fellowship training is meeting the skill level of a new practitioner.

A. Evaluation of Fellows, Faculty, Services and Training Program:

1. Evaluation of Fellows

Fellow evaluations are accomplished as follows. There is increasing demand in graduate medical education for greater reliability and validity in the evaluation of fellow trainee competence.

   a. Performance in Clinical Services, Treatments and Didactic Seminars

   Evaluations of fellows by faculty are recorded on forms included in the New Innovations program. The rotations in this fellowship have specific goals and objectives, given to the fellows at the beginning of the year. The goals and objectives of the core competencies are contained in this evaluation manual, distributed to all fellows and faculty annually.

   It is a vital role of faculty to give ongoing feedback to fellows about his or her increasing knowledge, skills and attitudes in all areas of training. Open dialogue about a fellow’s professional development is a critical part of this training program. Any concerns about fellow performance should be discussed with the fellow and with the program director.

   There are three grades for assessment in each category of a particular General Competency: Needs Improvement, Competent, or Exceeds Expectations. Competent is defined as meeting the goals and objectives of the seminar or service and able to function appropriately for his or her level of training – and capable now or should be capable at the end of residency to function as a new practitioner. After each competency, there is space for written comments.

   All fellows at some course of their training need improvement. Practice-based learning and improvement is something that all physicians should strive for. Open and honest discussion should take place between the faculty member and fellow should this occur so that the fellow can fully understand his or her weakness and how it can be addressed. If a faculty member feels that a fellow’s need for improvement is so significant that
remediation is indicated – that he or she is not clearly on a positive developmental trajectory,--it is incumbent on that faculty member to specify:

- the exact nature of the weakness
- a plan for remediation by that evaluating faculty member, i.e. goals and methods for assistance
- a time table specified for the specific deficiency to be improved

This plan must be submitted in writing to the training director.
If there is a weakness, it should be identified early enough in a rotation so that the faculty member has ample opportunity to work with the fellow to improve performance.

d. Formal Written Examinations

All clinical neurophysiology fellows are required to take an in-service exam. Since there is no ABPN Clinical Neurophysiology in-service exam, the ACNS in-service is given to our fellows. This is usually offered in February each year. This exam has national norms for program comparison and alerts the program director of areas in need of improvement for the program. Subsections of the in-service exam include evoked potentials, epilepsy, sleep, clinical EEG, instrumentation, and intraoperative monitoring. While this exam is required, it will not impact negatively on the fellow’s overall evaluation. More importantly, this exam is used by the program director as a way of evaluating the teaching program and areas in need of improvement for the program and for individual fellows.

e. 360 Degree Evaluations or Multiple Evaluator evaluations

Each fellow is evaluated with a standardized instrument. This instrument involves competency assessments by a number of individuals including allied health professionals (nurses, social workers, administrative and support staff) and patients. Twice yearly, these instruments are distributed to allied health professionals and provide invaluable information to the program director. This will be included in the overall evaluation of the fellow.

f. Biannual Fellow Review Meetings

The Program Director will collect all faculty evaluations in an ongoing manner and keep a file for each fellow with the other evaluative measures noted above. She will fill out a training summary every six months, based on all the assessments collected at that time. Each fellow will meet formally with the training director at least twice yearly to discuss progress towards the attainment of all the goals and objectives of the Training Program.
During those meetings, the fellow will also discuss his or her evaluations of the individual faculty and of the Training Program, and areas in need of improvement.

**g. Longitudinal File for the Fellows**

The Program Director keeps a longitudinal file that contains all of the fellow’s evaluations, in-service exams, patient care logs, portfolios, 360 degree evaluations, and any other material relevant to the assessment of the fellow, e.g. unsolicited letters of commendation, patient or staff evaluations, presentations given at local and national meetings, publications, and awards, among other documents. This will be part of the fellow’s permanent record that also includes all application and preliminary interview material, records from residency, and any additional documentation about the fellow’s performance past and present. It will also include a checklist of seminars and clinical service rotations that are required as part of the fellowship program, and indicate whether they were successfully completed. The file will document any evidence of unethical behavior, unprofessional behavior, or clinical incompetence. Where there is evidence, it will be comprehensively recorded along with the responses of the fellow. If disciplinary or remedial actions were taken, they will be documented with a clear description of the outcome. The record will include a final letter from the Training Director verifying whether the fellow has successfully completed the program, and has demonstrated sufficient professional ability to practice competently, ethically, and independently, based on the program’s defined core competencies. With successful completion of this document, fellows will receive a certificate of graduation from the ACGME program.

**2. Evaluation of Faculty**

Fellows evaluate faculty and seminars in an ongoing manner. Each clinical faculty member is evaluated midway through the year and at the conclusion of the fellowship. Each seminar and its leader are evaluated at the conclusion of the course. The faculty evaluations are completed anonymously on new innovations, and the Training Director reviews each of them.

Clinical faculty members are graded as Competent, Exceeding Expectations or Needing Improvement. There is room on the evaluation forms for additional comments. It is expected that if a fellow grades a faculty member as needing improvement, the exact nature of a weakness is described in detail. There is also space at the end of each evaluation for a fellow’s self-assessment of progress in the 6 core competencies, with indication how the service, supervision or seminar helped in attaining competency.

It is expected that fellows give faculty members feedback, most often anonymously, in both clinical and didactic areas as to how helpful they are in transmitting knowledge, skills and attitudes relevant to clinical neurophysiology. Fellows give the Training Director a verbal evaluation of each faculty member in the formal biannual individual review meetings with the Training Director.
At the end of each year, the Program Director sends each faculty member an annual review of his or her teaching and supervision, based on the anonymous fellow evaluations and on individual discussions with each fellow, as well as support staff, other faculty members, etc.

3. **Evaluation of Clinical Services**

Fellows provide the Program Director with an anonymous evaluation of clinical services twice yearly. This includes an assessment of the patient population seen in terms of number and variety of cases, the ability of the service to teach the six core competencies, the various rotations, the effectiveness of teaching specific clinical skills, and an assessment of the administration of the service. Each fellow is also asked whether the rotation should be required, whether its length is adequate, and whether the supervision is satisfactory. The fellow is asked to produce a formulation about the rotation including its strengths and weaknesses.

4. **Program Evaluation**

Fellows are required to provide evaluations of the overall Training Program. They fill out a confidential evaluation form biannually within the New Innovations web-based program. The form asks fellows to assess the clinical, didactic and administrative components of the Training Program. It also asks if the educational goals and objectives of the Training Program have been met. The faculty reviews the program and evaluates it on an annual basis after a full discussion at the yearly staff meeting. The faculty evaluates the Program in terms of the resources available to the Program, the contribution of each institution participating in the Program, the financial and administrative support of the Program, the volume and variety of patients available to fellows for educational purposes, the performance of members of the teaching staff, the scheduled conferences, and the quality of supervision of fellows.

Fellows provide feedback to the Training Director and Graduate Medical Education (GME) Committee to help determine what modifications in the teaching program are necessary for improvement in the coming year. The Program Director takes the comments of the fellows very seriously and will modify schedules to meet the learning needs of the fellows.

In accordance with the Common Program and Institutional Requirements of the ACGME, the Training Program has an Internal Review at the mid-point of its ACGME accreditation cycle. This is a formal comprehensive review, conducted by a Review Committee and Chaired by the Partners GME Designated Institutional Officer. The report is sent to the Training Director, and is reviewed by the Training Committee and fellows.

**B. Methods of Evaluation**
Evaluation of clinical competency is an essential function of the teaching faculty. Each faculty member is required to be familiar with the six core competencies, and must strive in all educational efforts to assess how the fellow is progressing in each area. The following are descriptions of the most common methods faculty members may use in the assessment of fellow knowledge, skills and attitudes. Each faculty member must indicate on evaluation forms which methods were used to formulate evaluations. Faculty members are encouraged to increase their repertoire of assessments over time.

1. **Supervisory Reports**

Supervisors may use personal notes about a fellow’s performance. Such notes may be based on personal observation of the fellow with patients, ongoing case discussions, and review of medical records or written patient evaluations. The notes may be put together into a formal report to the Training Director, but, if used, should always be summarized in a fellow evaluation form.

2. **Patient Care Observation**

The Training Program encourages faculty to observe fellows caring for patients. This should be done in all clinical settings. This is easier in certain situations than in others. For example, there are many opportunities for direct observation in inpatient hospital and consultation services. Faculty should observe fellows’ care in both formal interviews, e.g. diagnostic evaluations and family meetings, and also in informal interactions, such as with colleagues and other staff.

In outpatient care, each clinical supervisor is expected to observe at least one full evaluation, or all individual parts of each aspect of the evaluation.

Following an interview or treatment session observed, the supervisor should discuss communication and interviewing techniques, clinical reasoning, case formulation and differential diagnosis, treatment planning, and therapeutic skills used for that particular case.

3. **Record Review**

This method involves a faculty member’s reviewing a fellow’s written medical record of a patient. It is useful for evaluating skill in documenting care, clinical reasoning, data gathering and synthesis, treatment planning, use of ancillary testing, use of hospital and community resources, communication with other professionals, and use of best practice standards in clinical care. This can be done through the inpatient (LTM) or outpatient (clinic) electronic medical record. The program director will also randomly check notes written by fellows.
4. Chart Stimulated Reviews

This method is done by supervision, in clinical examinations or at the close of a rotation. The program director chooses one or more charts of patients the has treated and uses chart documentation to assess patient care issues, including data gathering, clinical reasoning, methods of clinical care, prevention and educational methods, patient outcome, use of resources, and use of systems of care in disposition planning. Formal discussions may also help evaluate the fellows’ knowledge base and method of self-monitoring for practice-based learning and improvement.

5. Case Reports

Fellows will be asked to present case reports in individual supervision, on rounds in hospital-based care, or in clinical conferences. They may be written or oral. The case report is intended to allow a fellow to present a comprehensive history and clinical evaluation of a patient. The evaluation should also include a thorough differential diagnosis, formulation, treatment plan, and prognosis. In some cases, a case report may serve to highlight a particular diagnosis, clinical problem or treatment. In these situations, fellows may supplement the case report with an article or brief literature review. The case report may be useful in assessing data gathering and synthesis, knowledge base, clinical reasoning, methods of clinical care, use of neurophysiologic and other ancillary tests and systems of care, and prevention methods.

6. Written Examinations

The Training Program administers the in-service examination annually to clinical neurophysiology fellows. This exam usually is given the third week in February.

7. Written Reports

Supervisors should routinely review written clinical evaluations prepared by fellows. This is easily done after clinical encounters and before adding the attending’s electronic signature. Some of these should include a review of formal diagnostic evaluations, while others may include a review of emergency assessments or consultation reports. Reports are helpful in evaluating a resident’s data collection, use of medical knowledge, clinical reasoning, communication of findings, understanding of systems, and professionalism. Fellows may be asked to submit additional cases for review.

8. 360 Degree Evaluations

Fellows are evaluated by selected allied health professionals such as nurses or technologists, as well as by patients and families.

9. Patient Logs
Fellows must keep track of all procedures performed (sphenoidal electrode insertion), intracarotid amobarbital tests and surgeries attended, and sleep studies, evoked potentials, pediatric EEGs interpreted. Each fellow’s log is reviewed with the Program Director at his or her semi-annual review. This is to insure an adequate volume and variety of patients on each clinical service. For clinic patients and adult EEGs, the Program Director can review these in the electronic medical record.

10. Portfolios

A portfolio is a collection of products prepared by the fellow to provide evidence of learning and achievement related to a learning plan. The fellow includes self-reports of experiences or other documents that demonstrate such competencies as therapeutic effectiveness, ethical integrity, professionalism, self-directed learning and skill development; lectures given; continuing education experiences; and written documents such as review or research papers or case formulations. Meetings and courses attended must also be included. Patient logs are to be included in portfolio reviews. The fellow can use the Harvard FIRST account CV to facilitate the gathering of this data.

Critical Features of the Portfolio include the following (adapted from the ACGME Outcome Project web-page)

- Together with their teachers/mentors, fellows determine what they need to learn and what products will provide sufficient evidence of learning (Explicit and Accountable)
- Specific portfolio entries or contents are planned, created, reviewed and maintained by fellows; thus each portfolio content is unique to each fellow and requires the fellow to be responsible for learning (Individualized)
- Portfolio entries are based on fellows’ actual experiences. For fellows, these experiences may be captured by monitoring report notes, a learning plan, a journal of challenging encounters, etc. (Real-Life)
- Reflection and self-assessment can occur during at least three phases of portfolio development (Self-Assessment)
  - Process of planning portfolio entries
  - Creation of entries
  - Review of portfolios by oneself and with mentors

Each fellow will review his/her portfolio with the Training Director at the Biannual Review meeting.

Other methods that involve outside evaluations

Professionalism, patient care, interpersonal skills and communication, practice-based learning and improvement, and systems-based care can all be assessed by addition measures such as:
a. Patient satisfaction surveys

These are incorporated in the 360 degree evaluations and are confidential. Additional surveys are occasionally performed by the hospital.

b. Evaluations of unit staff

These may be done in inpatient or outpatient rotations. They should be done confidentially. They are done formally as part of the 360 degree evaluations.

c. Evaluations from professionals in systems of care

These may include medical professionals, allied health professionals, or colleagues. They are done formally as part of the 360 degree evaluations.

d. Evaluations by participants in seminars or larger meetings, where fellows give presentations

This includes solicited feedback from the multidisciplinary team meeting on Thursdays at the Brigham and Women’s Hospital. Fellows run this conference on a weekly basis, and learn to be a team facilitator.

e. Peer review and faculty review of specific projects

These may include academic presentations, participation in research projects, or Training Program enhancements.

For each rotation, fellows evaluate the program and this is reviewed by the program director. The program is also subject to an internal review by the GME committee. Tests of fellow performance on certification exams, sponsored by the American Board of Psychiatry and Neurology with subspecialty training in clinical neurophysiology, will be reviewed. These exams will be strongly encouraged by the program and site directors.

<table>
<thead>
<tr>
<th>Specific Learning Objectives</th>
<th>PC</th>
<th>MK</th>
<th>PBLI</th>
<th>ICS</th>
<th>PRF</th>
<th>SBP</th>
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</thead>
<tbody>
<tr>
<td>Interpret EEG/EP studies and understand their significance as they pertain to patient management</td>
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<tr>
<td>Interpret and understand long term monitoring (LTM) studies</td>
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<tr>
<td>Gain exposure to evoked potentials and polysomnograms and understand their role in clinical diagnosis and management.</td>
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<tr>
<td>Gain exposure to invasive EEG tests such as intracarotid amytal testing, and intraoperative monitoring, including electrocorticography and</td>
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<td>electocortical stimulation</td>
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<tr>
<td>Familiarize fellow with current literature, investigational protocols and research studies</td>
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</table>

PC = Patient Care  
MK = Medical Knowledge  
PBLI = Practice Based Learning and Improvement  
ICS = Interpersonal and Communication Skills  
PRF = Professionalism  
SBP = Systems Based Practice
### Assessment Methods and Instruments to be Used in this Fellowship (check as needed)

<table>
<thead>
<tr>
<th>Core Competency</th>
<th>Required Skill</th>
<th>Observation and Focused Performance Assessment</th>
<th>Record-Based Performance Assessment (chart review)</th>
<th>Attending Global Assessment</th>
<th>360° evaluation</th>
<th>Fellow Portfolio</th>
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<tbody>
<tr>
<td>Patient Care</td>
<td>Caring and respectful behaviors</td>
<td>√</td>
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<td>Interviewing</td>
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<td></td>
<td>Develop &amp; carry out patient management plans</td>
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<td></td>
<td>Counsel, educate patients and families</td>
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<td>Performance of procedures</td>
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<td></td>
<td>a. routine physical exam</td>
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<td>b. medical procedures</td>
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<td>Preventive health services</td>
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<td>Work within a team</td>
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<tr>
<td>Medical Knowledge</td>
<td>Investigatory &amp; analytic thinking</td>
<td>√</td>
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<td>Knowledge &amp; application of basic sciences</td>
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<td></td>
<td>Knowledge &amp; application of basic sciences</td>
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<tr>
<td>Practice Based Learning And Improvement</td>
<td>Analyze own practice for needed improvement</td>
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<td></td>
<td>Use of evidence from scientific studies</td>
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<td>Application of research &amp; statistical methods</td>
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<td>Use of information technology</td>
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<td></td>
<td>Facilitate learning of others</td>
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<tr>
<td>Interpersonal &amp; Communication Skills</td>
<td>Creation of therapeutic relationship with patients</td>
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<td></td>
<td>Listening skills</td>
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<td>√</td>
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<tr>
<td>Professionalism</td>
<td>Respectful, altruistic behavior</td>
<td>√</td>
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<td></td>
<td>Ethically sound practice</td>
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<td></td>
<td>Sensitivity to cultural, age, gender, disability issues</td>
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<td>√</td>
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<tr>
<td>Systems Based Practice</td>
<td>Understand interaction of their practices with the larger system</td>
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<td></td>
<td>Demonstrate knowledge of practice and delivery systems</td>
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<td></td>
<td>Practice cost effective care</td>
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<td>Advocate for patients within the health care system</td>
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## Clinical Neurophysiology Fellowship Schedule (BWH)

<table>
<thead>
<tr>
<th>AM</th>
<th>Monday</th>
<th>Tuesday</th>
<th>Wednesday</th>
<th>Thursday</th>
<th>Friday</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>EEG review TM 9:00-10:00</td>
<td>Pediatric surgical Case conference 8-9</td>
<td>EMG Lectures (opt) 8:30-9:30 Neurology Grand Rounds 9:30-10:30</td>
<td>EEG review DM 8:30-9:00 ICU faculty 9:00-10:00</td>
<td>Neuropath 7:30 Morgue</td>
</tr>
<tr>
<td></td>
<td>Epilepsy Fellow 1 Clinic</td>
<td>EEG review SK 9-10</td>
<td>EEG review PP 10:30-11:30</td>
<td>Epilepsy Fellow 3 Clinic</td>
<td>Epilepsy neuropath (qo monthly) Amory 3 9:30-10:30</td>
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<td>CNP Core Lecture Series 11:00 – 12:00</td>
<td>Monthly QA</td>
<td>Research collaborative monthly (3rd Thursday) 11-12</td>
<td>EEG review BD (9-10) 11:30-12:30</td>
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<td>12:00-12:30 EEG QA faculty/fellows</td>
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<td>Journal Club 12:30-1:00</td>
<td>Morbidity and Mortality/Children’s Lecture Conference</td>
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<td>Sleep neurophysiology interpretation MK</td>
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<td>PM</td>
<td>EEG preparation, LTM admission 1:00-5:00</td>
<td>Sleep neurophysiology interpretation (cont.)</td>
<td>Epilepsy Fellow 2 Clinic</td>
<td>Surgical Epilepsy Fellow Conference 1:00-2:00</td>
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<td>12:00 – 5:00</td>
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Clinical Neurophysiology Schedule (CH)

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<tr>
<td>AM</td>
<td></td>
<td>Pediatric surgical Case conference 8-9</td>
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<td>Monthly Research colloquium 11-12</td>
<td>11:30-12:30 Children’s Lecture Conference</td>
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