

AMERICAN ACADEMY OF NEUROLOGY PAIN MEDICINE FELLOWSHIP CORE CURRICULUM

I. INTRODUCTION

Pain is one of the most common symptoms that cause persons to seek medical care. As an expert clinician in the diagnosis and treatment of conditions affecting the nervous system, the neurologist is frequently asked to diagnose and treat patients with chronic pain conditions. Unfortunately and ironically, 70% of United States trained neurologists in general clinical practice report they were not adequately trained to diagnose and 80% to treat pain conditions [Galer BS et al, 1999]. In addition, 89% felt neurology residents should obtain more training in pain management. Therefore, clinical practice reality demands that neurologists have better training in pain management at all levels of neurology training and to have available Pain Medicine Fellowships for further subspecialty training. Furthermore, currently most “Pain Medicine” specialists world-wide are anesthesiologists, who lack proper training in the assessment of the nervous system and are most proficient in anesthetic approaches to pain management, such as nerve block. Thus, a medical need exists for Pain Medicine fellowship-trained neurologists who will be able to utilize their diagnostic skills and pharmacotherapeutic management in the treatment of pain disorders.

II GOALS and OBJECTIVES

The nature of chronic pain is multifaceted, with the evaluation and treatment of patients often requiring an interdisciplinary approach. The intent of the educational program therefore must be to train neurologists in Pain Medicine utilizing a biopsychosocial model. Training must take place in a multidisciplinary pain center, at which biomedical (including neurological), psychosocial, rehabilitative, and anesthesiological assessment and therapies are performed regularly and taught by these specialists. Direct mentoring must come from a variety of Pain Medicine specialists from various disciplines, including neurologists, anesthesiologists, psychologists, and physical therapists. The goals of a Pain Medicine Fellowship are:

- to become competent in the assessment of the biological, psychological, and social facets which contribute to the presentation of the pain patient
- to develop an understanding of the pathophysiology and psychosocial factors affecting pain disorders
- to become competent in the development of a treatment plan specific to each pain patient, utilizing an interdisciplinary therapeutic regimen when appropriate
- to be able to orchestrate the various components of the treatment plan and work closely with all of the health care providers involved in a pain patient’s care
-

III CONTENT OF SUBJECTS TO BE TAUGHT

1. Neurobiology of Pain
 - Peripheral neuroanatomy and physiological mechanisms
 - Central neuroanatomy and physiological mechanisms
 - Neuroanatomy and physiological pain modulation
 - Neuroplasticity and chronic pain
 2. Pharmacology of Pain Transmission and Modulation
 3. Measurement of Pain in Humans and in Animal Models of Pain
 4. Psychosocial Aspects of Pain
 - Individual differences
 - Affective, cognitive, and behavioral processes and responses to pain
 - Emotional and psychiatric disorders associated with pain
 - Interaction of pain expression with psychological factors
 - The effect of sociocultural factors
 5. Pain Evaluation and Diagnosis
 - Medical and pain-related history
 - Pain and symptoms assessment
 - Assessment of psychological factors
 - Assessment of sociocultural factors
 - Detailed medication and other therapeutics history
 - Physical examination, including pain, neurological and myofascial physical exam, and interpretation of the findings in conjunction with the medical history relevant to the pain complaint
 - Knowledge regarding appropriate laboratory, electrophysiological, and radiographic testing to be requested and their indications
 - Knowledge about the limitations of laboratory, electrophysiological, and radiographic testing
 - Skills to synthesize medical history, physical findings, and supporting tests to diagnose the underlying biomedical and psychosocial factors underlying the patient's pain complaint
 - Knowledge and familiarity with psychological disorders commonly associated with pain conditions
 6. Treatment and Treatment Planning
 - Match the pain diagnosis and mechanisms to the therapy
 - Establish realistic treatment goals and time-line
 - Emphasize the importance of interdisciplinary pain management
 - Know indications for referral and treatment with other pain specialists (anesthesiology, rehabilitation, psychology/psychiatry, physical/occupational therapy)
 - Development and utilization of an integrated interdisciplinary therapeutic approach for chronic pain patients when appropriate
-
1. Skills in Interpreting Clinical Trials of Pain Treatments
 - Understanding of general principles of therapeutic studies
 2. Drug Treatments

- Be familiar with the randomized, controlled clinical trials’ data and anecdotal evidence in support of each of the following drug classes – opioids, tricyclic antidepressant, anticonvulsants, systemic local anesthetics, topical drugs, and other adjuvant analgesics
- Be familiar with the indications of each drug class
- Know how to titrate each drug to affect
- Know how to perform sequential drug trials
 - Opioids: specific drugs; understand the differences between “addiction,” “tolerance,” and “physical dependence”
 - Antidepressants: tricyclic, SSRI, others
 - Anticonvulsants: phenytoin, carbamazepine, gabapentin, valproic acid, lamotrigine, oxcarbazepine, zonisamide, topiramate
 - Systemic local anesthetics: lidocaine, mexiletine
 - Topical drugs: lidocaine, capsaicin, EMLA

Others: clonidine, tramadol, tizanidine, NSAIDs (including Cox 2), Botulinum toxin

3. Physical Medicine and Rehabilitation

- Be familiar with indications for passive modalities, including
 - Heat/cold
 - TENS
 - Myofascial release
 - Be familiar with indications for active modalities, including
 - Quota-based exercise program
 - Aerobic conditioning
- Be familiar with the use of adaptive equipment where appropriate

4. Intravenous Infusions

- Know the indications and possible outcomes for the following nerve blocks:
 - Lidocaine infusion
 - Phentolamine infusion
 - Opioid infusion

5. Nerve Blocks

- Know the indications and possible outcomes for the following nerve blocks:
 - Somatic nerve blocks
 - Sympathetic ganglion blockade (stellate ganglion, lumbar sympathetic)
 - Intravenous regional sympathetic blockade (Bier block)
 - Axial nerve blocks and infusions
 - Epidural
 - Intrathecal
 - Neurolytic blocks

1. Intrathecal, Neuroaugmentative, and Surgical Therapies

- Know indications for surgical treatment of
 - Low back pain
 - Neck pain
 - Trigeminal neuralgia

- Complex regional pain syndrome
 - Know indications for the following therapies
 - Spinal cord stimulation
 - Intrathecal opioids
 - Intrathecal opioids with local anesthetics
 - Intrathecal clonidine
 - Intrathecal baclofen
2. Psychiatric/ Psychological Assessment and Treatment
- Be able to diagnose
 - Depression
 - Anxiety disorder
 - Post-traumatic stress disorder
 - Evaluate the patient's coping strategies
 - Understand the theoretical rationale, assessment procedures, indications and efficacy of:
 - Cognitive-behavioral techniques
 - Relaxation strategies
 - Operant therapy
 - hypnosis
 - Biofeedback
 - Group therapy
3. Be able to provide care for patients utilizing a multidisciplinary pain management model
4. Be able to diagnose, provide therapies for, and understand the following major categories of chronic pain disorders:
- Nociceptive pain
 - Neuropathic pain
 - Cancer pain
 - Visceral pain
 - Myofascial pain
 - Fibromyalgia

III. PREREQUISITES FOR THE TRAINEE

In order to apply and be accepted to a Pain Medicine Fellowship, applicants must have successfully completed an approved neurology residency program.

IV PERSONNEL NEEDED FOR TRAINING

- Fellowship trained Pain Medicine Neurologist (or has at least 5 years of Pain Medicine clinical experience)
- Pain Clinical Psychologist
- Physical and/or Occupational Pain Therapist
- Pain Fellowship trained Pain Medicine Anesthesiologist

VI QUALIFICATIONS OF THE TRAINERS

- Fellowship trained Pain Medicine Neurologist (or has at least 5 years of Pain Medicine clinical experience)
- Postgraduate trained Pain Clinical Psychologist (or has at least 5 years of Pain Medicine clinical experience)
- Pain Fellowship trained Pain Medicine Anesthesiologist(or has at least 5 years of Pain Medicine clinical experience)

VII FACILITIES NEEDED FOR THE TRAINING

- Space and support staff dedicated for pain clinic evaluation and therapy
- Interdisciplinary pain clinic evaluating and treating patients with chronic pain due to neuropathic pain disorders, myofascial pain syndromes, headache and any other face and head pain, cancer pain, chest, abdominal, pelvic, neck and low back pain, and fibromyalgia
- The clinic must hold weekly team meetings where complex patients are discussed with members of the entire multidisciplinary team

VIII METHODS OF TRAINING

- Patient-based teaching, with trainee evaluating patients with all attending physicians
- Trainee has cohort of own patients with a 'continuity of care' clinic
- Didactic lectures weekly
- Journal club at least monthly
- Trainee required to take primary responsibility for an academic project, which may include a clinical research study, such as a clinical trial, survey, or retrospective chart review, or review article; the quality should be such that the written material would satisfy criteria for a publication
- Attend at least one national (APS, AAPM) or international (IASP) pain conference

IX TIMETABLE FOR TRAINING

Training should take place for at least 12 continuous months.

X METHODS OF EVALUATION OF THE TRAINEE

Trainees will be supervised by an attending neurologist who will provide both formal and informal feedback to trainees on expectations and performance.

XI METHODS OF EVALUATION OF THE TRAINING PROCESS

Fellowship directors will be responsible for assuring training programs comply with training guidelines and the core curriculum. Fellowship trainees will provide feedback upon completion of the program.

XII MECHANISMS FOR FEEDBACK

Fellows will be asked to give informal feedback to Program Directors on an ongoing basis. Formal feedback will occur every 6 months when a written review form should be completed by all trainees.

XIII METHODS OF CONSTANTLY UPGRADING KNOWLEDGE

Fellows should become active members of the American Pain Society, the International Association for the Study of Pain, and/or the American Academy of Pain Medicine, reading pain journals and regularly attending conferences of these societies.

XVI LIST OF REFERENCES/RESOURCES

- The International Association for the Study of pain (IASP) Core Curriculum for Professional Education in Pain, Second Edition, Editor: Howard L. Fields, M.D., Ph.D., IASP Press, 1995.
- Bonica's Management of Pain. Third Edition, Editor: John D. Loeser, MD, Williams & Wilkens, in press (1999).
- Backonja, M. Neuropathic Pain Syndromes: Neurologic Clinics. WB Saunders. November 1998.
- Dworkin R, Galer BS, Perkin F. Neuropathic Pain: Mechanism and Treatment. Clin J Pain, May 2000 (Supplement).