CLINICAL PRACTICE SCENARIO:

✓ National Cancer Institute of Mexico
  ○ Pain Clinic Unit, Inpatient Care, Anesthesia and Perioperative Unit

The Pain Clinic at National Cancer Institute has participated not only in postgraduate education, it has also participated and promoted to incorporate Pain Medicine (algology) as part of the official program in Medicine School at the biggest and most important university in Mexico (Universidad Nacional Autónoma de México). We also receive 2 months every year medicine students, and all the year along anesthesia residents and pain medicine fellows form the country and observers from all around America.

FELLOW SELECTION CRITERIA:

✓ The candidate must be a medical doctor, specialized in anesthesiology.

✓ He/she must send a copy of both of his/her graduation diploma.

✓ 2 Letters of recommendation of his/her University.

✓ Curriculum vitae.

✓ Certify he/she is from a Latin-American country (Passport, Birth Certificate)

✓ Personal statement explaining why he/she wants to make this observership program (1 page, one space).

Only applications that are complete will be reviewed. Those that are not, will be discarded automatically. Best candidates will be interviewed.

If accepted, the fellow must submit the following documentation before arriving to Mexico:

- A signed letter, where he/she commit to return to his/her country of origin, once the observership program is finished.
- Vaccination card with Hepatitis and Tetanus application
- Civil liability insurance
- Labor risk insurance
- Health insurance
The trainers team will be composed by the following professionals in pain management and rehabilitation:

Professors
- Ricardo Plancarte Sánchez, MD, PhD, FIPP
- B. Carolina Hernández-Porras, MD, FIPP, CIPS

Faculty
- Ángel Juárez Lemus, MD, ASRA-PMUC
- Rocío Guillén Nuñez, MD
- Verónica Cedillo Compeán, PhD
- Luis Felipe Cuéllar Guzmán, MD
- Marcela Sámano García MD
- Ale González Cáseres, MD

The following attitudes are proposed to be acquired across the fellowship:

- The trainee will acquire knowledge according literature regarding the classification, epidemiology, pathophysiology, and treatment of acute and chronic pain disorders and through practical experience.

- He/she will have the ability to apply this knowledge and skill to a diverse population of patients, specifically in cancer patients and survivors.

- An ethic, responsible, multidisciplinary and interdisciplinary view of medicine and pain medicine.

- Recognize and comprehend indications, techniques and complications in ultrasound, fluoroscopic and CT guided procedures for cancer and non-cancer pain management control.

- Identify his/her abilities and limitations.

All the following clinical practices will be developed:

- Acute/Postoperative pain
- Chronic cancer and noncancer pain
- Physiotherapy

Classes and conferences:

All fellows will have 1 hour of classes daily from Monday to Friday. On Wednesday, they have to assist to the General Session at the Hospital and after that all day.
ACUTE PAIN / REGIONAL ANESTHESIA

Duration: 1 month
Schedule: Monday to Friday 7:00 am – 5:00 pm
Place: The fellow will be at floor, recovery room and in regional anesthesia procedures

The fellow will acquire the following knowledge:

- Combination of different drugs in order to apply a multimodal therapy
- Indications of invasive treatment for cases of postoperative pain
- Uses of patient controlled analgesia (PCA) bombs
- Identify and treat opioids acute side effects
- Ultrasound guidance in peripheral nerve and interfascial blockade, and acute pain service management skills, postoperative pain.

The fellow will acquire the following skills:

- Prescribe drugs for PCA bombs
- Program PCA bombs
- Ultrasound guided blocks

Recommended reviews:

- Preventive analgesia
- Pharmacology of local anesthetics, NMDA receptor antagonist, opioids, steroids, botulinum toxin
- Urogenital pain
- Management of PCA bombs
- Principle basis of analgesia using diagnostic images
- Treatment for pharmacological complications
- Ultrasound guided minimal invasive treatments for acute pain

CHRONIC PAIN

Duration: 8 months
Schedule: Monday to Friday 7:00 am – 5:00 pm
Place: In order to acquire the following knowledge, the fellow will rotate in external rehabilitation consultation, emergency department, interventional pain medicine procedures (CT, fluoroscopy, ultrasound procedures) and hospitalization floor.

The fellow will acquire the following knowledge:

- Knowledge of the differences between malignant neuropathic pain (central and peripheral) and how to treat it.
- Understand the basis of cancer diagnosis, treatment according to surgical and clinical oncologist and radiotherapist view.
• Apply multimodal pain management.
• Understand the importance of the multidisciplinary approach in a biopsychosocial model.
• Comprehend interventional pain management approaches in inpatient and outpatient setting.
• They will present a class per week and participate in Clinical Cases on Wednesday.

The fellow will acquire the following skills:

• Indications of invasive procedures for the management of chronic pain.
• Indicate and evaluate diagnostic images.
• Interventional pain management in inpatient and outpatient setting.
• Integrate the indications and evaluation of diagnostic images to their clinical practice.
• Integrate a multidisciplinary team of patient treatment, respecting the diverse proposals of each professional of the team.

Recommended reviews:

• Chronic articular pain: Arthrosis
• Fibromyalgia
• Neuropathic pain
• Pain in old people
• Deconditioning in chronic pain
• Cancer pain
• Degenerative organic disease
• Approach to the patient with spine lesion
• Regenerative Medicine

Program Non Cancer Pain:

Module 1 PAIN PHYSIOPATHOLOGY
Process of nociception: from the periphery to the SNC
❖ Integration of anatomophysiology of pain ❖ Biochemistry in the transmission of pain ❖ Pathways of pain ❖ Nociceptors ❖ Peripheral sensitization ❖ Inflammatory cascade ❖ Dorsal Root Ganglion: involved in the processing of the pain ❖ Theory of the Gateway ❖ Central mechanism of pain transmission ❖ Central sensitization ❖ Central and segmental modulation ❖ Opioid receptor: biochemical structure and classification ❖ Opioid receptor: desensitization, internalization and tolerance ❖ Sodium channels dependent on voltage and its involvement in the transmission of pain ❖ ASIC receivers, TRPV ❖ Voltage-dependent Calcium Channels ❖ AMPA Receptors - Kainato ❖ Glutamate and metabotropic receptors
Module 2 SCALES OF ASSESSMENT AND PHARMACOLOGICAL PAIN TREATMENT

❖ Adverse reactions associated with opioids ❖ Uncommon side effects associated with opioids ❖ Toxicity of opioids ❖ Treatment of the side effects of opioids ❖ Neurotoxicity associated with opioids ❖ Pharmacokinetics and pharmacodynamics of the following medicines ❖ Tramadol ❖ Codeine ❖ Dextropropoxyphene ❖ Morphine ❖ Oxycodone ❖ Fentanyl ❖ Buprenorphine ❖ Methadone ❖ Hydromorphone ❖ Tapentadol ❖ Non-steroidal anti-inflammatories: action mechanism and adverse events ❖ Selective COX-2 inhibitors ❖ Adjuvants: ❖ Paraminophenols: paracetamol ❖ Local anesthetics: lidocaine, bupivacaine, ropivacaine ❖ Antidepressants: Tricyclics and Inhibitors of the recapture of serotonin ❖ Phenothiazines: Haloperidol, levomepromazine, chlorpromazine ❖ Anticonvulsants Gabapentinoids: gabapentin, pregabalin ❖ Muscle relaxants and botulinum toxin ❖ Cannabinoids ❖ Anxiolytics: Benzodiazepines ❖ Capsaicin ❖ Bisphosphonates ❖ Steroids mechanism action and classification ❖ Contrast media ❖ Pharmacological interactions of drugs more employees in pain therapy

Module 3 OTHER ASPECTS IN THE MANAGEMENT OF PAIN

❖ Acute postoperative pain ❖ Chronic pain and psychiatric disorders ❖ Psychological therapies as adjuvants to the control of pain ❖ Cognitive-behavioral medicine in pain management ❖ Biofeedback and relaxation techniques for control of pain ❖ Placebo and pain ❖ Mindfulness: clinical application in the patient with pain ❖ Misuse of opioids and other substances: Addiction, pseudoaddiction, tolerance ❖ Bioethics in the management of pain ❖ Physical therapy and rehabilitation for pain control. ❖ Evaluation of functionality and dysfunction in the chronic pain ❖ Electrodiagnostic evaluation of acute and chronic pain the painful syndromes ❖ Evoked potentials, reflex H electromyography: indications in Algology ❖ Electrical nerve stimulation ❖ Acupuncture ❖ Development and Organization of a pain clinic ❖ Administration applied to pain medicine ❖ Nursing paper in the area of Algology

Module 4 Selected Topics

❖ Diagnostic pathophysiology, treatment and complications: ❖ Joint pain. Osteoarthritis ❖ Bone pain of non-oncological origin ❖ Osteoporosis ❖ Pain in rheumatological diseases: ❖ Rheumatoid Arthritis ❖ Lupus Systemic Erythematosus ❖ Myofascial pain ❖ Diseases of central origin ❖ Central pain secondary to spinal cord injury
❖ Central cerebral pain: Post EVC, thalamic syndrome
❖ Fibromyalgia
❖ Complex regional pain syndrome type 1 and 2
❖ Phantom pain, ghost sensation and pain in place stump
❖ Orthosis and mirror therapy for pain management
❖ Peripheral neuropathies
❖ Herpes zoster and postherpetic neuropathy
❖ Diabetic polyneuropathy
❖ Other painful polyneuropathies

Module 5 PAINFUL REGIONAL NON ONCOLOGICAL SYNDROMES

Visceral pain
❖ Most common headaches in clinical practice ❖ Classification and treatment of primary headaches and high schools ❖ Cervicogenic headache ❖ Cranial neuralgia ❖ Trigeminal Neuralgia ❖ Glossopharyngeal Neuralgia ❖ Vagal neuralgia ❖ Other neuralgia, painful anesthesia ❖ Facial pain ❖ Intraoral and dental pain ❖ Ocular and periocular pain ❖ Earache, hemicara and aerodigestive tract ❖ Temporomandibular dysfunction ❖ Thoracic pain of cardiac origin ❖ Thoracic pain of non-cardiac origin ❖ Assessment, diagnosis and management ❖ Cervicalgias ❖ Shoulder pain and upper extremity ❖ Abdominal, peritoneal and retroperitoneal pain ❖ Pelvic pain in man ❖ Pelvic pain in women ❖ Associated painful back pain and Acute low back pain ❖ Chronic low back pain ❖ Discogenic pain ❖ Sacroiletitis ❖ Failed back surgery syndrome ❖ Psychological evaluation prior to procedures ❖ Hip pain ❖ Knee pain ❖ Lower pelvic member pain

Module 6 Pain in special population


PHYSIOTHERAPY

Duration: 1 month
Schedule: Monday to Friday 7:00 am – 5:00 pm
Place: In order to acquire the following knowledge, the fellow will rotate in external rehabilitation consultation and hospitalization floor

The fellow will acquire de following knowledge:

- Recognize causes and treatment for muscular and articular pain
- Diagnose MSK pain, myofascial pain syndrome, fibromyalgia, cervical pain, chronic postoperative pain and lymphedema
- Understand and prescribe non-pharmacological treatment for pain

The fellow will acquire the following skills:

- Educate patients and family members in the rehabilitation process of chronic pain
- Make the diagnosis and treatment of the following pathologies: lymphedema, spinal cord injury, fatigue, prolonged rest, associated facial paralysis, sequelae of cerebral infarction (hemiplegia, quadriplegia) frozen shoulder, rotator cuff, amputation, knee and shoulder hip prosthesis, cervical plexopathy and muscular dystrophy

Recommended reviews:

- Chronic and acute unspecific lumbar pain
- Red flags for lumbar pain
- Chronic and acute muscular pain
- Myofascial syndrome
- Articular pain
- Fibromyalgia
- Unspecific cervical pain
- Integral rehabilitation of patients with pain

PAIN IN THE PEDIATRIC PATIENT

Duration: 1 month
Schedule: Monday to Friday 7:00 am – 4:00 pm
Place: In order to acquire the following knowledge, the fellow will rotate in The National Pediatric Institute

The fellow will acquire de following knowledge:

- Recognize causes and treatment of pain in pediatrics
- Evaluate through different scales pain according to age
- Understand and prescribe non-pharmacological treatment for pain in children
• Learn how to treat and the precautions to follow when prescribing a children pain medicine
• Communicate effectively with the parents and/tutors

The fellow will acquire the following skills:

• Educate patients and family members
• Make the diagnosis and treatment of the most common causes of acute and chronic pain in children

Recommended reviews:

• Evaluation of pain
• Pharmacology in children
• Dosing in children

ACCREDITATION

The fellow should attend to all the programmed clinical sessions and practices, in order to receive his Fellowship Accreditation.

Fellows will benefit from 20 days vacation and 3-4 days conference attendance paid by their own.

Take into account this “Accreditation” is not an academic degree and it just certifies that the fellow completed an observership program.