

Overview:

The MDC component of the residency program takes place over 13 blocks or approximately 52 weeks over two years at Jim Pattison Outpatient Care & Surgical Centre Pain clinic (JPOCSC) located in Surrey and GF Strong (GFS) Rehabilitation centre located in Vancouver. Core rotations of cancer pain, musculoskeletal, neurology, psychiatry, addiction medicine, sleep medicine, and pediatric pain will be scheduled in between blocks of the MDC rotation.

During the Acute Pain block rotation, the St. Paul's Hospital (SPH) interventional pain services program is integrated into this rotation.

Year 1 will consist of:

- 4 blocks of outpatient multidisciplinary chronic pain services at the Jim Pattison Outpatient Care & Surgical Centre Pain clinic (JPOCSC) located in Surrey where outpatient assessment and pain procedures will be highlighted.
- 3 blocks will take place with the GF Strong (GFS) Rehabilitation centre located in Vancouver where they will work with the inpatient multi-disciplinary team services with an emphasis subacute pain management in patients after stroke, surgery, trauma and illness requiring rehabilitation and transition to the community care.

Year 2 will consist of:

- 1 block done longitudinally across the elective rotations at a dedicated weekly resident clinic at either JPOCSC and GFS to enhance competencies in longitudinal pain care.
- 5 blocks where the resident finishes year 2 with their final MDC blocks at JPOCSC, GFS or SPH.

Further rotations involving electives in community based outpatient multi-disciplinary pain programs may include experiences at OrionHealth pain program, Okanagan Interventional Pain Clinic (OIPC), CHANGEpain Clinic (CPC), and Nelson BC with GP Dr. Joel Kailia at the RISE BC Wellness Centre.

Interventional Pain Procedure experience can be gained through various centres across BC: JPOCSC, SPH, CPC, OIPC, Nanaimo Regional General Hospital pain clinic (NRGH) and GP pain Clinics.

Resources:

JPOSCS

The resident will start their MDC rotations at this outpatient multi-disciplinary centre for an average of the first 4 blocks in year 1. The interdisciplinary team consists of pain physicians (anesthesiology, spine surgery, rehabilitation), occupational therapist (OT), physiotherapist (PT), pharmacy, social work, nurses, and nurse practitioner.

The resident will be scheduled in a variety of consult days focused and procedure room days consisting of ultrasound guided and fluoroscopy guided procedures from 8am to 5pm. Most patients will be 18 years or older. By year 2, a longitudinal clinic will be organized where the pain resident will be reviewing their own patients with graded supervision.

The resident will participate in the multidisciplinary clinical case rounds that occur at least once per month.

GFS (GF Strong Rehabilitation Center):

1. The pain resident will spend up to 4 week blocks on each of the GFS key inpatient units: neuromuscular

syndromes (NMS), spinal cord injury (SCI), and acute brain injury (ABI). They will become familiar with the subacute needs, disabilities management and functional recovery of patients in each setting.

2. The pain resident will also be doing consults at Vancouver General Hospital (VGH) with the staff on the unit they are scheduled in as these patients will be managed in the respective rehabilitation unit at GF Strong. The consults will teach the resident how to screen for acute pain, learn to perform excellent neurologic and musculoskeletal assessment and also how to perform functional assessment. The residents will follow-up with the consultations done at VGH to learn the longitudinal care aspects during the subacute period after acute pain and also the management required to transition patients to the community. The resident will be expected to work in an multidisciplinary/interdisciplinary setting and to learn how to optimize working relationships in this setting so as to enhance patient care. The resident will also learn how to fill out disability forms and look at strategies for return to work and patient advocacy.
3. During the individual rotation on NMS, SCI, and ABI units, the respective staff physician will provide once weekly organized teaching on a subject of interest for the respective unit. For example neuropathic pain management in patients with multiple sclerosis.
4. The resident will attend the interdisciplinary spasticity clinic, brain injury (concussion clinic, acquired brain injury clinic) and neuromuscular outpatient clinics once per week on Wednesday morning as well as Friday morning 8:00am to 12:00pm.
5. There will also be opportunity to work with the addictions physician at GF Strong center for monitoring of methadone prescriptions for neuropathic pain and for pain management. The resident will also be given opportunity to attend the complex brain injury psychiatry clinic.
6. The longitudinal clinic will take place every Friday afternoon from 1:00 to 5:00 pm during the MDC core rotation. The resident will be provided with at least 4 patients to follow from each program as an outpatient.

Educational Objectives

The MDC core rotation will provide the following experiences:

1. To learn to assess adult inpatients with complex pain and to co-ordinate pain treatments with medical care.
The trainee will be rotated through the inpatient consultation service at GFS rehabilitation. The resident will assess all new ward consultation requests from Vancouver General Hospital and review with supervising clinician as required.
Minimum Inpatient Pain Consultations per block of MDC rotation = 10
2. To learn to assess various presentations of adults with complex pain in the outpatient settings of the Pain clinics located at JPOCSC and GFS. Where scheduled, the resident will attend complex case interdisciplinary rounds and neuromodulation interventions.
Minimum Outpatient Pain Consultations per block of MDC rotation = 30
3. To become exposed to some of the technical skills regarding interventional pain procedures. Residents are expected to have knowledge of these interventions (anatomy, indications, contraindications, and complications), but are not expected to become competent with the technical skills for these interventions. Competency with the technical skills could be acquired with further elective time during the residency program and would also be dependent on baseline familiarity with some of the associated technical skills.
During the core MDC rotation, residents will be assigned days in the procedure room at JPOCSC. Spinal cord stimulation (SCS) therapy and intrathecal pump experience will be gained during the Acute pain service rotation and the Cancer pain rotation as both take place at SPH. Further SCS experience could also be gained at NRGH and further intrathecal pump experience can be at GFS. Pain management procedures for cancer pain management is mostly available during the core cancer rotation that partly takes place at SPH or during pain intervention electives.

Upon completion of the UBC MDC rotation, the pain resident will fulfill the following goals under CANMEDS roles:

Medical Expert Role:

Competencies: the pain physician must acquire the knowledge, skills, and attitudes necessary to assess and provide a management plan for patients with chronic non-malignant pain. The core skill of the Pain Medicine physician is to synthesize available information in a manner, which places the patients' predicament in a bio-psycho-social framework, and to then advise as to the best method of pain management for that individual. This also implies the awareness of and ability to effectively utilize a broad range of therapies aimed at modifying the physical and psychological impacts of acute/chronic pain.

1. Outline the anatomy and neurophysiology of nociception
2. Explain the pathophysiology of acute pain including mechanisms, modulation and associated physiologic consequences
3. Explain the pathophysiology of chronic pain including origins, mechanisms, modulation and associated physiologic consequences
4. Define the disorder of chronic pain and utilize the International Association for the Study of Pain (IASP) Classification of Chronic Pain
5. Be able to perform a comprehensive assessment of the patient with chronic pain (including history, physical examination, relevant investigations, functional and psychosocial impacts), and to be able to describe a comprehensive management plan (including pharmacologic, non-pharmacologic approaches, appropriate collaboration with members of the multidisciplinary team such as physiotherapy, psychology, psychiatry, sleep medicine, etc., and interventional techniques).
6. Perform a directed musculoskeletal and/or neurological physical examination in order to differentiate painful processes arising from bones, joints, soft tissues, peripheral or central nervous system, or other tissues.
7. Be able to identify whether the pain complaint arises from an inflammatory or degenerative musculoskeletal condition and generate a differential diagnosis for the pain complaint using anatomical knowledge and, if applicable, evidence-based examination techniques
8. Select medically appropriate investigative methods in a resource-effective and ethical manner
9. Demonstrate effective clinical problem solving and judgment to address patient problems, including evidence-based examination techniques, interpreting available data and integrating information to generate differential diagnoses.
10. Describe the indications for diagnostic imaging (plain films, CT, bone scan, MRI, Ultrasound, PET); identify expected imaging abnormalities for common pain diagnoses; explain the relationship between imaging findings and pain
11. Demonstrate knowledge of diagnosis and management of common spine pathologies causing pain, including mechanical back pain, intervertebral disc herniation with radiculopathy, spinal stenosis and whiplash-associated disorders. List "red flag" conditions such as tumor, fracture, myelopathy, and infection
12. Formulate an appropriate treatment plan for managing musculoskeletal pain
13. Outline injection formulations and techniques that may be used to treat painful soft tissue and joint disorders
14. Describe the epidemiology, pathophysiology, natural history, diagnosis, treatments and prognosis of common conditions causing neuropathic pain
15. Describe the features of neuropathic pain including peripheral and central sensitization; list common symptoms and signs of each and explain their role in the persistence of pain
16. Demonstrate knowledge of diagnosis, appropriate investigations and management of common painful peripheral nervous system disorders including compression and entrapment syndromes, ischemic nerve injuries, infectious lesions including herpes zoster and post-herpetic neuralgia, and painful diabetic neuropathy
17. Demonstrate knowledge of diagnosis, appropriate investigations and management of common painful central nervous system disorders including post-stroke pain, and multiple sclerosis.
18. Describe the indications and limitations of imaging, nerve conduction studies, electromyography and quantitative sensory testing in the diagnosis of neuropathic pain
19. List clinical tests used to diagnose neuropathic pain including positive signs (mechanical and thermal allodynia and hyperalgesia, temporal and spatial summation), negative signs (sensory loss, weakness and

muscle atrophy) and associated signs such as referred sensation, swelling, alterations in sweating, changes in colour and temperature, and trophic changes. List common validated tools that have been developed to assess neuropathic pain; identify their purpose, scoring, interpretation and limitations

20. Formulate a step-wise approach to pharmacotherapeutics and pain interventions for a patient with neuropathic pain, applying published consensus guidelines, and taking into consideration the patient's individual requirements.
21. The Pain Medicine specialist will demonstrate proficiency in the following areas of medicine, relevant to the practice of Pain Medicine: psychiatry, psychology, addiction medicine, sleep medicine.
22. Describe and use at least one validated outcome measure available to assess each of pain, mood, function, sleep, quality of life and health care utilization; explain their administration, scoring, interpretation, limitations, and clinical utility.
23. List important psychological mechanisms involved in pain and suffering.
24. Identify characteristics of patients who would most benefit from a formal psychological assessment.
25. For the following psychiatric disorders, list diagnostic criteria, provide examples of appropriate screening questionnaires, outline the fundamentals of treatment strategies (and contraindications for other treatments), and state the indications for psychiatric or psychological referral:
 26. Major depressive disorder
 27. Bipolar mood disorders
 28. Post-Traumatic Stress Disorder, Panic Disorder
 29. Substance use Disorders
 30. Attention Deficit Disorder
 31. Somatoform Disorder
 32. Personality Disorders
 33. Social Anxiety Disorder, Generalized Anxiety Disorder
29. Describe how sleep disorders may be relevant to pain
30. Explain the interaction between pain, sleep, medications, non-prescribed substances, anxiety and mood disorders
31. Identify characteristics of those patients who would most benefit from a referral to a Sleep Clinic
32. List common assessment procedures used in the diagnosis of sleep disorders
33. Outline non-pharmacologic and pharmacologic treatment options for the common sleep problems that occur in association with chronic pain disorders.
34. Describe the concepts of impairment, disability and handicap and how these apply to individuals with pain, and define the medico-legal concepts of disability.
35. Describe the principles, indications and limitations of physical treatments (exercise based treatment, passive physical therapies such as ultrasound, transcutaneous electrical stimulation (TENS), manual therapies, manipulation and massage) in the management of musculoskeletal pain
36. Describe the principles, indications and limitations of occupational therapy management (pacing, ergonomics and work/daily activity modification) in the management of musculoskeletal pain
37. Cite current evidence for the potential role of complementary and alternative medicine, commonly used in managing musculoskeletal pain.
38. Identify functional domains as outcome measures for pain. Summarize the principles of functional restoration in individuals with pain.
39. Accurately elicit and synthesize relevant information and perspectives of patients and families, colleagues, and other professionals. Gather information about a patient's beliefs, concerns, expectations and the impact of pain on their life. Identify and explore problems to be addressed from a patient encounter effectively, including the patient's context, responses, concerns, and preferences
40. Respect diversity and difference, including but not limited to the impact of gender, religion and cultural beliefs on decision-making
41. Encourage discussion, questions, and interaction in the encounter
42. Engage patients, families, and relevant health professionals in shared decision- making to develop an individualized plan of care.
43. Perform a consultation, including the presentation of well-documented assessments and recommendations in written and/or verbal form in response to a request from another health care professional
44. Describe current concepts of the placebo response and their implications for assessment and therapy

45. Cite known genetic influences on pain and pharmacotherapy for pain; describe the role of genetic techniques in investigating pain physiology
46. Be able to demonstrate pharmacologic knowledge (pharmacodynamics including mechanism of action, pharmacokinetics including dosing and effect of organ insufficiency such as renal or liver, drug interactions, and complications) of agents used in the management of chronic pain, including local anesthetics, opioids, various co-analgesic medications (NSAID's, NMDA antagonists, serotonin/norepinephrine reuptake inhibitors, calcium channel blockers, sodium channel blockers, anticonvulsants, cannabinoids, corticosteroids, and neurolytic agents.
47. Be able to utilize the Universal Precautions risk stratification and in accordance with National Opioid Use Guideline Group (NOUGG) guidelines, develop and implement an appropriate management and follow up plan for a patient who requires opioids.
48. Describe appropriate documentation and strategies to deal with behaviors possibly associated with opioid misuse, abuse, diversion or addiction
49. Ensure appropriate informed consent is obtained for off label therapies
50. To be competent in the use of lidocaine infusions, including knowledge of indications, contraindications, and complications.
51. Be able to describe the indications (including limitations), contraindications, anatomy, technique, and complications of the interventional techniques used in management of chronic pain:
 - 51.1. sympathetic blocks, spinal nerve root blocks, blocks for facet joint pain, cryoablation, epidural steroid injection and other musculoskeletal injections, peripheral nerve and plexus blocks, intrathecal infusion pumps, spinal cord stimulation.
 - 51.2. Identify procedures that require the use of appropriate image guidance including ultrasound, fluoroscopy, CT-guidance and endoscopic guidance and plan referrals accordingly
 - 51.3. Document and disseminate information related to procedures performed, including obtaining informed consent, and their outcomes
 - 51.4. Ensure adequate follow-up is arranged for procedures
 - 51.5. Be able to demonstrate radiation safety in the use of fluoroscopy ("C-Arm"). Also to take the online radiation safety course: "Fluoroscopy: Practical Radiation Protection." On-line registration is at: <https://ccrs.vch/ca>
52. Devise, as resources allow, an appropriate integrative, interdisciplinary management plan utilizing all appropriate interventions (preventative, psychological, non-pharmacologic, pharmacologic, interventional) based on the individuals' specific pain, co-morbidities, goals and other relevant factors to provide maximal functional restoration.

Communicator Role

Competencies: The pain physician is expected to be able to inform patients (and their families) with pain about their diagnosis and their management plan. They are expected to be able to establish positive therapeutic relationships with patients and their families that are characterized by understanding, trust, respect, honesty and empathy. Communication with patients is expected to be appropriate to the patients' individual preferences and limitations including common emerging parameters of cultural differences. Communication with other members of the healthcare team is fundamental to effective interdisciplinary team management.

1. Be able to write effective chart notes for patients with chronic pain, and write or dictate complete yet succinct consultations for patients with chronic pain.
2. Be able to verbally present medical information succinctly and accurately to attending staff
3. Be able to communicate effectively with other members of the health care team.
4. To be aware of the advantages, disadvantages, limitations of written communication, verbal (both telephone and in person) communication, and non-verbal communication when communicating with patients, family members, or other members of the health care team. To be able to address challenging communication

issues effectively, such as obtaining informed consent, delivering bad news, and addressing anger, confusion and misunderstandings.

Collaborator Role

Competencies: The pain resident shall demonstrate an effective practice of Pain Medicine in the context of a multi-disciplinary pain clinic setting:

1. Be able to function effectively in the health care team, including an understanding of the roles of the various members (other physicians such as family physician, neurologist, neurosurgeon, physiatrist, orthopedic surgeon, rheumatologist, palliative care physician, psychiatrist, addiction medicine physician; other members of the team such as nurse, clinical nurse specialist, psychologist, anesthesiology assistant, radiology technician, physiotherapist, pharmacist, clerical/secretarial staff), and how to prevent or to resolve conflict should they arise
2. Demonstrate effective, appropriate, and timely consultation of another health professional as needed for optimal patient care and specifically in situations where:
 - a. An emergency referral to another specialist is required.
 - b. Consultation with another medical specialist would be beneficial (including for diagnostic or treatment- related interventional procedures)
 - c. Consultation with an allied health practitioner (i.e. Occupational or Physical Therapist) would be beneficial Adapt the referral request to individual situations and consider, where possible, telephone or video consultation
3. Arrange appropriate follow-up care services for a patient and their family after consultation with others with the most responsible physician to facilitate longitudinal coordinated care
4. Offer patients the services of patient support groups when indicated

Manager Role

Competencies: The pain resident must be cognizant of the financial impact, both positive and negative, of acute and chronic pain management strategies. He/she must also possess an awareness of the logistical constraints of delivery of health care and be able to propose useful and creative solutions.

1. Outline the structure of the pain service, and how it fits in the administrative structure of the care setting
2. Discuss the advantages and disadvantages of alternative models
3. explain the costs incurred by pain management strategies
4. discuss the potential savings in health care expenditure offered by acute pain management, with a realistic description of the nature and quality of the arguments.

Health Advocate Role

Competencies: The pain resident must understand the potential benefits of the individual and to society of organized pain management services and be able to provide realistic and scientifically supportable argument in favor of such services. He/she must also be aware of the deficiencies in the system which impede the ideal delivery of these services, and able to contribute to the attempt to eliminate these deficiencies.

1. Describe the components of a safe, effective and efficient chronic non- cancer pain service; describe its impact on health resource utilization
2. Be able to advocate for patients with chronic pain to assess appropriate treatment and in the prevention or treatment of complications
3. Be able to advocate *for individual patients* with chronic pain with special needs for further investigation or assessment/ management by other consultants or members of the health care team
4. Be able to understand the limitations and barriers in the health care system facing the *population of patients* with chronic pain, and to verbalize current proposals in how to address these limitations and barriers.

5. Participate in systemic quality process evaluation and improvement, including patient safety initiatives, organization of delivery of new therapies/ services/programs and evaluation of these new therapies

Scholar Role

Competencies: The pain resident must be able to assess the ongoing developments in the literature regarding pain management and be able to appropriately incorporate them into practice. he/she must also be able to utilize a variety of sources in order to answer questions as they arise. She/he must show an appreciation of the conduct of pain research.

1. Throughout the rotation, the resident should be demonstrating acquisition of medical knowledge as it relates to pain by reading, including the literature provided at the beginning of the rotation
2. The pain resident will be expected to participate in monthly multidisciplinary rounds either in person or by videoconference.
3. The pain resident will reflect on learning issues for all 7 CanMEDS roles from their SPH MDC rotation, with regular entries into the resident Portfolio Project to be reviewed in a face-to-face meeting with a faculty member during the MDC rotation at SPH.
4. To be able to conduct a scholarly project, including quality assurance audits or research.
5. The resident will be expected to participate in journal clubs, to critically appraise the literature, and to be able integrate new learning into practice
6. The pain resident will be effective teacher of chronic pain topics to residents from other programs (anesthesiology, psychiatry, internal medicine, neurology, physiatry, etc) and medical students. The pain resident will be expected to reflect on a teaching encounter in their Portfolio, to be reviewed with faculty at SPH.
7. The pain resident will be able to provide effective feedback to more junior trainees regarding clinical performance (part of clinical teaching)

Professional Role

Competencies: The pain resident must exemplify the professional behaviour and attitudes inherent in the practice of medicine.

1. Throughout the rotation the resident shall demonstrate professional behaviour in all interactions with patients, their family members, and other members of the health care team. This includes the establishment of an effective therapeutic relationship with patients
2. Throughout the rotation, the resident will attend all scheduled educational activities
3. Be able to obtain informed consent for patients with chronic pain undergoing interventional procedures
4. Throughout the rotation, the resident shall round on inpatients, and see outpatients after any interventional procedure. This includes regular on-call duties for any in-patients, and selected outpatients (e.g. Neuromodulation and intrathecal pump outpatients).
5. Throughout the rotation, the resident shall understand his/her own limitations and seek assistance appropriately
6. Throughout the rotation, the resident shall be receptive to constructive feedback
7. By the end of the rotation, be able to demonstrate medical expertise in situations other than patient care, such as providing expert legal testimony or advising hospital/regional health authority administration and governments, as needed
8. Throughout the rotation, the resident shall adapt appropriate professional, legal and ethical codes of practice
9. Throughout the rotation, the resident shall fulfill the regulatory and legal obligations required of current practice
10. Throughout the rotation, the resident shall respond to others' unprofessional behaviors in practice