



EUROPEAN PAIN FEDERATION

# CORE CURRICULUM FOR THE EUROPEAN DIPLOMA IN PAIN MEDICINE

SEPTEMBER 2023  
Second Edition



## **Dedication**

This curriculum is dedicated to the millions of people throughout Europe who suffer pain, and the scientists and health care professionals who seek the best ways to help them.

## **Endorsements**

This curriculum is endorsed by the following organisations:

- European Society of Anaesthesiology and Intensive Care Medicine (ESAIC)
- European Academy of Neurology (EAN)
- European Psychiatric Association (EPA)
- European Society of Regional Anaesthesia (ESRA)
- World Organisation of National Colleges, Academies and Academic Associations of GPs/Family Physicians, European Branch (WONCA EUROPE)
- European Cancer Organisation (ECO)
- European Region of World Physiotherapy (ER-WCPT)
- European Association of Hospital Pharmacists (EAHP)



## Foreword from the President

Education for all clinicians is one of the key priorities of the European Pain Federation EFIC. With the core curriculum for the European Diploma in Pain Medicine (EDPM), EFIC sets the standard for medical education on pain in Europe. The core curriculum was first launched in 2016, and through my time on the Executive Board and as President, I have seen it flourish under the leadership of EFIC pain medicine educators; Prof Bart Morlion, Dr Andreas Kopf, Prof. Frank Huygen, Dr Daniele Battelli, Dr Liam Conroy and Dr Chris Wells.

The core curriculum has been brought to life via EFIC's EDPM Examination, e-learning materials on the EFIC Academy platform, the biennial Virtual Pain Education Summit and in various live-teaching environments including the EFIC Pain Schools. The curriculum is the reference point for European pain educators, and we have seen a concerted effort to map educational activities to the learning outcomes set out in this document. I would like to thank all the educators within the EFIC community for their dedication to this task.

Along with the direct provision of assessment and teaching by EFIC, a wider goal for the core curriculum is to influence other educators across Europe in the development of their educational programmes, whether in a formal academic setting or informally. Likewise, the recognition of the curriculum and Examination by educational authorities is part of EFIC's strategic objectives which we are striving towards.

As a physiotherapist, I helped establish EFIC's European Diploma in Pain Physiotherapy (EDPP) and championed the development of EFIC's European Diploma in Pain Nursing (EDPN) exam. Interprofessional and multidisciplinary pain practice is central to EFIC's philosophy. Prof. Morlion is the strongest supporter of this ideal and it has been a pleasure to work together to champion the development of pain medicine education within a broader interprofessional framework with physiotherapy, psychology and nursing .

Dr Brona Fullen

President, European Pain Federation EFIC®

September 2023

## Foreword from the Curriculum Chair

The European Pain Federation EFIC first decided to establish a core curriculum for pain medicine in 2015. This pivotal moment led to the establishment of a broad and ambitious educational framework, covering not only medicine but also various other allied professional fields, including physiotherapy, psychology and nursing. The European Diploma in Pain Medicine (EDPM) plays a central role, and pain medicine professionals continue to make up the largest share of professionals working in pain management.

The core curriculum is multidisciplinary, for all clinicians across Europe (and beyond, for those interested). Whilst some European countries have their own pain management qualification, many do not at this time. Even when a qualification is available it is often aimed at one specialty, or even a subsection of that specialty (for example, interventional management). The core curriculum aims to show that the Fellow has a firm grounding in the basic skills and knowledge needed to assess and manage the many patients whose pain requires attention in all types of clinical scenario.

This curriculum is a dynamic instrument and will be reviewed and updated on a regular basis, sensitive to advances in pain medicine and in medical education and also feedback from educators and learners.

Feedback on the 2016 curriculum has been overwhelmingly positive, and it continues to direct learning in existing educational projects and institutions. This review has been undertaken as a substantial amount of time has passed since the initial launch, though much of the content remains relevant. Rather than an overhaul of the previous curriculum, revisions reflect small updates in scientific understanding and clinical management concepts.

Significant developments on the original version include reference to the latest version of the International Classification of Diseases (ICD-11) and chronic primary pain, a new section on digital medicine (now mainstreamed since the COVID-19 pandemic), and updates in response to concerns on non-responsible opioid prescribing and opioid use disorder.

The review of the curriculum has been supported by many colleagues, including examiners for the EDPM Examination, EFIC Academy Board members, EFIC Pain School directors, EFIC Education Committee members and various other experts consulted for their subject-matter expertise. The full list of acknowledgments can be found at the back of this document.

We remain grateful to the Faculty of Pain Medicine of Australia and New Zealand for allowing us to use their curriculum as a basis for ours. This has been modified to suit the diversity in pre- and post-graduate training in pain medicine across Europe and in line with our desire to cover all factors of relevance to all medical disciplines involved in the assessment and treatment of those in pain.

Professor Bart Morlion, Curriculum review chair, European Diploma in Pain Medicine

Past President, European Pain Federation

September 2023

## Table of Contents

Introduction .....	8
Section One: Foundations of Pain Medicine	
1.1 Background .....	12
1.2 Fundamental Concepts .....	12
1.3 Terminology used in Pain Medicine .....	13
1.4 Neurobiology of Pain .....	14
1.5 Research Methodology of Pain .....	15
1.6 Bio-psychosocial Aspects of Pain .....	17
1.7 Assessment of Pain .....	21
1.8 Management of Pain .....	22
Section Two: Pain Medicine Roles in Practice	
2.1 Clinician .....	26
2.2 Professional .....	33
2.3 Scholar .....	35
2.4 Communicator .....	36
2.5 Collaborator .....	38
2.6 Manager (and Leader) .....	39
2.7 Health Advocate .....	40
Section Three: Managing Different Types of Pain	
3.1 Acute Pain .....	44
3.2 Neuropathic and related Pain .....	48
3.3 Cancer-related Pain .....	50
3.4 Musculoskeletal Pain .....	55
3.5 Neck and Back Pain .....	57
3.6 Fibromyalgia Syndrome and Chronic Widespread Pain .....	61
3.7 Headache and Orofacial Pain .....	64
3.8 Visceral Pain .....	68
3.9 Complex Regional Pain Syndromes, Type I and II .....	70
3.10 Pain in Hereditary Connective Tissue Disorders .....	72
Section Four: Special Patient Populations	
4.1 Pain in Older Adults .....	76
4.2 Pain in Infants, Children and Adolescents .....	82
4.3 Pain and Problem Substance Use .....	85
Section Five: Interprofessional Working and Learning	
5.1 Interprofessional Working and Learning .....	88
Acknowledgements .....	89

## Introduction

Chronic, unrelieved pain is a major unsolved healthcare problem worldwide. It is universal, with no age, race, social class, national or geographic boundaries. It has enormous associated costs – financial, as well as being a tremendous burden in terms of reduced quality of life for the patient, their family and wider society. Rough estimates place the cost of chronic pain, as a disease state, in the very substantial category of cardiovascular disease and cancer. The incidence of chronic pain tends to increase with age; with the success of curative and preventative medicine, and the consequent increase in average life spans, the problem of chronic pain is likely to increase for the foreseeable future.

Pain is the most common reason for patients to see their family doctors, and is a frequent reason for them seeing a specialist. Although clear guidelines exist for assessing and managing acute and cancer pain, these are not always applied, leading to unnecessary suffering. Understanding and managing chronic pain is more difficult, and problems arise because of the lack of understanding of the biopsychosocial approach, and also the undertreatment by some, and overtreatment by others, of the patient.

In recent years “Pain Medicine” has emerged as a distinct academic discipline with delineated borders and aims. It focuses on management of complex pain problems, typically using a multidisciplinary approach. Healthcare authorities in several countries in Europe have begun to establish programs for specialist training and certification in the field of Pain Medicine. The time has come to broaden the scope of pain specialization to cover the whole of Europe using uniform, agreed-upon standards of training and certification for pain specialists.

Pan-European standards of training and certification, once in place, will ensure higher professional quality, uniformity and care. Such standards will also promote recognition among specialists and non-specialists alike, of the boundaries at which patients with complex chronic pain ought to be referred to a pain specialist for treatment. Finally, they will create a body of trained professionals qualified to provide guidance and leadership in the areas of therapeutic modalities, resource allocation, research, ethical considerations and public policy concerning chronic pain and its management.

The European Pain Federation EFIC® is a multidisciplinary professional organisation in the field of pain research and medicine, consisting of the 38 Chapters of the International Association for the Study of Pain (IASP®), which are the IASP approved official national Pain Societies in each country. Established in 1993, EFIC®’s constituent Chapters represent Pain Societies from 38 European countries and close to 20,000 physicians, basic researchers, nurses, physiotherapists, psychologists and other healthcare professionals across Europe, who are involved in pain management and pain research. Further information is on our website, <http://www.efic.org> .

We recognize that most clinicians see people with pain, and feel it is important that all have the knowledge to better assess and manage this pain. We also realise the vital importance of the multidisciplinary management of pain; hence, we have developed this curriculum for all physicians who see and treat pain patients.

In providing a pathway towards specialisation in pain medicine, EFIC has created a core curriculum in pain medicine that establishes the knowledge and competences required for basic proficiency in pain management. The next step would be to establish the core areas of practical training via a ‘common training framework’ for the development of pain as a ‘supra-speciality’; accessible to a wide variety of disciplines relevant to pain.



## The scope of pain medicine practice

The speciality of pain medicine is concerned with the study of pain from a biopsychosocial perspective. Clinically this incorporates the evaluation, treatment and rehabilitation of persons with pain. The field spans three major clinical areas:

- Acute pain – post-operative, post-trauma, acute episodes of pain in medical conditions.
- Cancer-related pain – pain due to tumour invasion or compression; pain related to diagnostic or therapeutic procedures; pain due to cancer treatment; pain present after treatment and in survivorship.
- Chronic non-cancer pain – including more than 200 conditions described in the IASP Taxonomy.
- The purpose of the curriculum is to define the required learning, teaching and assessment necessary for the acquisition of a Diploma in Pain Medicine, as the culmination of training programs for physicians across Europe.

The curriculum aims to:

- Articulate the scope of practice required by a specialist pain medicine physician including breadth and depth of knowledge, range of skills and professional behaviours necessary for quality patient care.
- Guide supervisors of training and other Fellows involved in the training programme with respect to suitable learning experiences for trainees.
- Foster trainees' self-directed learning by providing clear requirements.
- Promote regular and productive interaction between trainees and supervisors, through formative workplace-based assessments and feedback.
- Provide consistency of standards and outcomes across different training settings and countries in Europe.
- Enable comparison with international training programmes with respect to standards of experience, education and assessment.
- Outline foundation knowledge and skills required to ensure that trainees are ready to commence the training programme.
- Provide a framework to inform the scope of continuing professional development activities.

### The sections of the curriculum are:

1. Foundations of Pain Medicine
2. Pain Medicine Roles in Practice
3. Managing Different Types of Pain
4. Special Patient Populations
5. Interprofessional Working and learning

The section on **Foundations of Pain Medicine** has been developed to inform applicants and trainees about the knowledge and skills that underpin learning during the training programme. Trainees may have, or may be training toward, a primary Fellowship in anaesthesia, psychiatry, rehabilitation medicine, physician and surgical specialties (e.g. Neurology, Rheumatology, Orthopaedics, Neurosurgery etc.) or general practice. Attainment of learning outcomes within the **Foundations of Pain Medicine** will ensure that trainees are prepared similarly to build on their current specialist medical abilities.

A key principle in designing the curriculum has been an emphasis on trainees' development across all professional roles. Using the CanMEDS framework from the Royal College of Physicians and Surgeons of Canada as a base, the **Pain Medicine Roles in Practice** have been designed to emphasise a biopsychosocial orientation to practice, rather than a narrow biomedical one. The section includes the titles of Clinician, Professional, Scholar, Communicator, Collaborator, Manager (and Leader) and Health Advocate. The clinician role, which articulates the skills and attitudes required of a specialist pain medicine physician when working with patients and the knowledge to perform these skills, is the focus of outcomes within the next section, **Managing Different Types of Pain**.

The section **Managing Different Types of Pain** directs teaching and learning in relation to specific topic areas in pain medicine. The themes in this section were chosen as areas in which the expertise of the specialist pain medicine physician should be paramount. They are not intended to be a comprehensive coverage of the discipline of pain medicine but rather to be integrative. For example, the themes in "Neuropathic and related Pain" pervade all areas of pain medicine practice, while there is much clinical overlap between the "Neck and Back pain", 'Fibromyalgia Syndrome and Chronic Widespread Pain' chapters. It is important that the topics in this section are studied in conjunction with the **Pain Medicine Roles in Practice**.

The section about **Special Patient Populations** addresses the two extreme age groups, older adults versus infants, children and adolescents and the management approaches which are unique to each of these populations. Problem substance use is an emerging field and is also included in this section.

### European Diploma in Pain Medicine

The Education Committee of EFIC® has developed an examination based upon this curriculum. Physician candidates who wish to achieve the qualification of European Diploma in Pain Medicine of the European Pain Federation will be assessed by this examination. Further details on the examination and how to prepare can be found on the EFIC website.

**Section One:-  
Foundations of Pain Medicine**

## 1.1 Background

The topics in the chapter on Foundations of Pain Medicine aim to provide trainees with the knowledge and skills that underpin learning during the training program. It aims to give trainees a roadmap to gain the basic science and research-related knowledge before they move forward in the program. This approach is taken, given the diversity of pre- and postgraduate training in pain medicine across Europe.

1.1.1	<p>Broadly discuss the importance of the CanMEDS roles in relation to the specialist pain medicine physician comprising:-</p> <ul style="list-style-type: none"> <li>• Medical expert/clinician</li> <li>• Professional</li> <li>• Scholar</li> <li>• Communicator</li> <li>• Collaborator</li> <li>• Health advocate</li> <li>• Manager/leader</li> </ul> <p>CanMEDS is a competency framework designed by the Royal College of Physicians and Surgeons of Canada and comprises seven roles, or thematic groups of competencies, integrated by physicians on a daily basis. For more information refer to <a href="http://rcpsc.medical.org">http://rcpsc.medical.org</a></p>
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## 1.2 Fundamental Concepts

1.2.1	<p>Discuss bioethical principles:-</p> <ol style="list-style-type: none"> <li>1. Justice</li> <li>2. Autonomy</li> <li>3. Beneficence</li> <li>4. Non-maleficence</li> <li>5. EQUITY as a bioethical principle</li> </ol>
1.2.2	<p>Critically discuss the International Association for the Study of Pain (IASP)'s definition of pain</p>
1.2.3	<p>Discuss the distinction between nociception and pain</p>
1.2.4	<p>Discuss the differences between acute and chronic pain</p>
1.2.5	<p>Discuss the evolution of different conceptual models in pain medicine, pain prevention models and strategies, including the biopsychosocial model</p>

## 1.3 Terminology used in Pain Medicine

<p>1.3.1</p>	<p>Define common pain terms according to the International Association for the Study of Pain (IASP):-</p> <ul style="list-style-type: none"> <li>• Allodynia</li> <li>• Analgesia</li> <li>• Anesthesia Dolorosa</li> <li>• Causalgia</li> <li>• Dysesthesia</li> <li>• Hyperalgesia</li> <li>• Hyperesthesia</li> <li>• Hyperpathia</li> <li>• Hypoalgesia</li> <li>• Neuralgia</li> <li>• Neuritis</li> <li>• Neuropathic Pain (Central and Peripheral)</li> <li>• Neuropathy</li> <li>• Nociception</li> <li>• Nociceptive Neuron</li> <li>• Nociceptive Pain</li> <li>• Nociceptive Stimulus</li> <li>• Nociceptor</li> <li>• Nociplastic Pain</li> <li>• Noxious Stimulus</li> <li>• Pain Treshold</li> <li>• Pain Tolerance Level</li> <li>• Paresthesia</li> <li>• Sensitization (Central and Peripheral)</li> </ul>
<p>1.3.2</p>	<p>Define IASP terms used for different Pain Treatment modalities:-</p> <ul style="list-style-type: none"> <li>• Unimodal treatment</li> <li>• Multimodal treatment</li> <li>• Multidisciplinary treatment</li> <li>• Interdisciplinary treatment</li> </ul>
<p>1.3.3</p>	<p>Discuss the concepts of placebo and nocebo effect</p> <p>In referring to the placebo response, address also 'regression to the mean'</p> <p>Discuss the relevance of placebo, nocebo and lessebo effects for routine clinical care</p> <p>Discuss the difference between a diagnosis (according to the ICD-11 classification) and a mechanism, and what does it imply</p>

## 1.4 Neurobiology of Pain

1.4.1	<p>Outline the anatomy and physiology of ascending and descending pathways of nociceptive modulation in the central nervous system</p> <p>Refer to the:-</p> <ul style="list-style-type: none"> <li>• The somatosensory system</li> <li>• The autonomic nervous system</li> <li>• Somatic and visceral peripheral nerves</li> <li>• Spinal system</li> <li>• Processing pathways in the brain:-           <ul style="list-style-type: none"> <li>○ Midbrain and brainstem (including descending inhibition and facilitation)</li> <li>○ Thalamus and cortex</li> <li>○ Limbic system</li> </ul> </li> </ul>
1.4.2	Outline the neuroanatomical and neurophysiological bases for the cognitive and affective dimensions of the pain experience
1.4.3	<p>Describe mechanisms of transduction, transmission and modulation in nociceptive pathways</p> <p>Discuss current concepts of referred pain, including its neurophysiological basis</p>
1.4.4	Understand the changes that occur in the brain during chronic pain and their impact on pain, mood and cognition
1.4.5	<p>Outline the concepts of peripheral and central sensitisation of nociception including reference to:-</p> <ul style="list-style-type: none"> <li>• Synaptic plasticity</li> <li>• N-methyl-D-aspartate (NMDA) receptors</li> <li>• Long-term potentiation/depression</li> <li>• Neuroimmune signalling, glial cells and sensitisation</li> <li>• Brain processes involved in sensitisation</li> <li>• Psychosocial factors contributing to central sensitisation</li> </ul>
1.4.6	Outline the mechanisms of acute pain, inflammatory and neuropathic pain
1.4.7	Compare and contrast the anatomical and physiological aspects somatic and visceral pain
1.4.8	Discuss the physiology of and differences between tolerance, dependence and addiction with respect to pharmacological agents

## 1.5 Research Methodology of Pain

1.5.1	<p>Describe the principles of clinical trial design:-</p> <ul style="list-style-type: none"> <li>• Case definitions (inclusion and exclusion criteria)</li> <li>• Use of data from medical history and clinical examination</li> <li>• Use of questionnaires</li> <li>• Use of laboratory tests and imaging</li> <li>• Hypothesis generation</li> </ul>
1.5.2	<p>Address ethical principles guiding research in humans:-</p> <ul style="list-style-type: none"> <li>• Social and clinical value</li> <li>• Scientific validity</li> <li>• Fair subject selection</li> <li>• Favorable risk-benefit ratio</li> <li>• Independent review</li> <li>• Informed consent</li> <li>• Respect for potential and enrolled subjects</li> <li>• Historical review of abuses of medical ethics</li> </ul>
1.5.3	<p>Describe the principles of clinical epidemiology, including:-</p> <ul style="list-style-type: none"> <li>• Terminology and presentation of epidemiological data</li> <li>• Different types of epidemiological study design: descriptive/observational (correlational, case reports/series, cohort, retrospective, cross-sectional survey) and controlled (interventional, prospective, experimental/clinical trials)</li> <li>• Difference between statistical significance and clinical relevance (minimally clinically important difference; substantial benefit and harm)</li> </ul>
1.5.4	<p>Demonstrate understanding of fundamental data analysis concepts by discussing the following:-</p> <ul style="list-style-type: none"> <li>• Different data types (parametric/non-parametric, continuous/interval, ratio, categorical, dichotomous), and their relevance to statistical analysis</li> <li>• Concept of clear and efficient organization of raw or summary data in tables and graphs</li> <li>• Concepts of normal and non-normal data distributions as relevant to statistical testing, and the use of normalizing transformations such as logarithms</li> <li>• Descriptive statistics, including calculation and interpretation of a 95 per cent confidence interval of a mean or a proportion</li> <li>• Concept of probability testing, sample distributions and the importance of appropriate sampling techniques</li> <li>• Concepts of different types of epidemiological study design: descriptive/observational</li> </ul>
1.5.5	<p>Describe basic power, effect size, and significance concepts by addressing the following concepts:-</p> <ul style="list-style-type: none"> <li>• Power and power calculations</li> <li>• Importance of effect size in respect of power calculations and evaluating the necessary levels of evidence</li> <li>• Concepts of significance and power when testing an hypothesis, that is, type one and type two errors and their relationship to sample size</li> <li>• Influence of sample size on derived indices such as a proportion or a mean</li> </ul>

1.5.6	<p>Describe and demonstrate understanding of single and multiple study results:-</p> <ul style="list-style-type: none"> <li>• Concept of minimal clinically important difference</li> <li>• Concept of regression analysis to examine relationship between dependent variable and multiple explanatory variables (including ability to control for confounding variables)</li> <li>• Appropriate use of tests of relationships between continuous data, such as Pearson and Spearman correlation coefficients</li> <li>• Application, limitations and interpretation of tests used to analyse single studies and meta-analyses: specifically t-test and ANOVA (including repeated measures versions), linear regression, chi-squared test, odds ratios, logistic regression, Receiver Operating Characteristic (ROC) methods, effect size and statistical power, survival curves and number-needed-to-treat (NNT) and number-needed-to-harm (NNH)</li> <li>• Appropriate use of methodologies for assessing inter-test session and inter-tester precision of tests, particularly with regard to clinical relevance, such as determination of repeatability and minimal clinical difference (MCD)</li> <li>• Appropriate use of methodologies for determining quantitative agreement between different clinical test methods or instruments, such as Bland-Altman methods and intra-class correlation</li> <li>• Concept of summary statistics in meta-analysis (effect sizes, standardized mean differences and odds ratios)</li> </ul>
1.5.7	<p>Explain the concepts of:-</p> <ul style="list-style-type: none"> <li>• Reliability</li> <li>• Validity</li> <li>• Sensitivity</li> <li>• Specificity</li> <li>• Predictive value</li> </ul>
1.5.8	<p>Explain the concept of design of studies to logically examine specific hypotheses, with special regard to appropriate counterbalancing and controls, tests of placebo and related effects, and randomization methods for minimizing bias</p>
1.5.9	<p>Describe the principles of assessing scientific evidence, including:-</p> <ul style="list-style-type: none"> <li>• Grades of evidence and methodologies and difficulties of combining evidence as in systematic reviews and meta-analyses</li> <li>• Cochrane database of systematic reviews</li> <li>• Influence of bias, chance, multiple comparisons and confounding variables in studies, and methods to reduce them</li> <li>• Publication bias</li> <li>• Principles of assessment of qualitative studies including systematic reviews of same</li> </ul>



## 1.6 Bio-psychosocial Aspects of Pain

1.6.1	<p>With reference to the biopsychosocial model of pain, the specialist pain medicine physician (SPMP) in close collaboration with the general practitioner should:-</p> <ul style="list-style-type: none"> <li>• Critically discuss the concept of assessment and management of patients with pain</li> <li>• Demonstrate understanding of the integrated role of specialist disciplines in the biopsychosocial management of pain including clinical psychology, physiotherapy, occupational therapy, nursing, social work</li> </ul>
<b>Patient Triage</b>	
1.6.2	<p>The SPMP should be able to:-</p> <p>Demonstrate the process of triaging patients with respect to their underlying diagnosis, natural history and prognosis, urgency, complexity and facilities required, and psychosocial risk factors for ongoing chronicity</p>
1.6.3	<p>Critically discuss situations when referral to specialist team members is appropriate. Being able to screen and diagnose and refer for treatment comorbid psychiatric disorders commonly associated with chronic pain such as depression, suicidality and anxiety disorders</p>
1.6.4	<p>Discuss ICD-11 classification in relation to high-impact chronic pain</p> <p>Discuss the application of the World Health Organisation (WHO) International Classification of Functioning, Disability and Health (ICF).</p>
<b>Assessment Principles</b>	
1.6.5	<p>The SPMP should be able to:-</p> <p>Demonstrate understanding that pain in any one patient may attract different concurrent descriptors, and therefore, different inferred mechanisms</p>
1.6.6	<p>Demonstrate ability to infer mechanism(s) of production of pain on the basis of clinical examination, irrespective of pre-existing diagnostic label(s)</p>
1.6.7	<p>Discuss the process of integrating multiple sources of information towards a multi-axial formulation of diagnosis – physical, psychological and psychosocial context</p>
1.6.8	<p>Identify and explore patients' issues, concerns, beliefs, goals and expectations with respect to their pain experience and pain treatment</p>
<b>Patient Assessment</b>	
1.6.9	<p>The SPMP will describe how to carry out a focused biomedical assessment including but not limited to:-</p> <ul style="list-style-type: none"> <li>• Response to current and post treatments</li> <li>• Nutritional status</li> <li>• Sleep function</li> <li>• Sexual function</li> <li>• Pharmacological management</li> <li>• General health indicators</li> <li>• Psychological function (depression, anxiety, fear)</li> </ul>

Physical Assessment	
1.6.10	Demonstrate skills to undertake a physical assessment including levels of activity function and sleep
1.6.11	Identify all Red, Yellow, Blue, Black and Orange flags
1.6.12	Show understanding of the role of physiotherapy and when it is appropriate to refer for further specialist assessment and treatment
Psychological Assessment	
1.6.13	Elicit and interpret a detailed history of the concerns and beliefs of the patient regarding their pain: experience and consequences of the pain
1.6.14	Perform a focused assessment regarding but not limited to: home situation, eating, support, family and roles, employment and occupational factors, financial status, recreational activities, cultural beliefs, mobility
1.6.15	<p>Demonstrate an understanding of the detailed specialist assessment a clinical psychologist will undertake relating to:-</p> <ul style="list-style-type: none"> <li>• History of physical, emotional and sexual abuse history</li> <li>• Family medical and psychological history</li> <li>• Personal psychological history</li> <li>• Past and current lifetime events</li> <li>• Personal psychological history</li> <li>• Family medical and psychological history</li> <li>• Identification of lifetime, current and daily stresses</li> <li>• Current psychological symptoms</li> <li>• Cognitive impairment</li> <li>• Resources: coping strategies, self-efficacy, support/lack of support from family &amp; friends</li> <li>• Beliefs and anxieties about pain and cause of pain</li> <li>• Expected prognosis</li> <li>• Interference with life</li> <li>• Changes to lifestyle and identity</li> </ul>
Psychological Management	
1.6.16	<p>Demonstrate an understanding of the behavioural and psychodynamic therapies available and delivered by clinical psychologists including but not limited to:-</p> <ul style="list-style-type: none"> <li>• Education</li> <li>• Reduction of fear avoidance</li> <li>• Hypnosis</li> <li>• Relaxation/guided imagery</li> <li>• Biofeedback</li> <li>• Balancing/regulating rest and activities</li> <li>• Behavioural analysis</li> <li>• Operant aspects</li> <li>• Solution focused brief therapy</li> <li>• Mindfulness-based cognitive behavioural therapy</li> <li>• Acceptance and commitment therapy</li> <li>• Mindfulness-based stress reduction</li> <li>• "Pain neuroscience" education</li> </ul>

Physical Management	
1.6.17	<p>Demonstrate an understanding of the range of treatment options that a chartered physiotherapist can offer including:-</p> <ul style="list-style-type: none"> <li>• TENS</li> <li>• Paced and graded activity</li> <li>• Physical activity and fitness</li> <li>• Goal setting</li> <li>• Neurodynamics</li> <li>• Manual therapy, and their level of integration (peripheral, spinal, supraspinal)</li> </ul> <p>Demonstrate an understanding of the range of treatment options that occupational therapy can offer:-</p> <ul style="list-style-type: none"> <li>• Energy conservation</li> <li>• Pacing</li> <li>• Relaxation</li> </ul> <p>Demonstrate an understanding of the importance of integrating physiotherapy programme to work and leisure</p>
Social Management	
1.6.18	Demonstrate an understanding of the role of work, occupational factors, career, finances, housing, recreational and leisure activities
Validated Tools for assessing and monitoring Treatment	
1.6.19	Demonstrate critical selection of appropriate physical and psychological assessment and outcome measures across International Classification of Functioning, Disability, and Health (ICF) domains (mood, quality of life, beliefs about pain, pain self-efficacy, physical function, sleep, health literacy)
1.6.20	Demonstrate ability to assess psychosocial factors that elicit and maintain pain disorders with somatic causes [Multiaxial Pain Classification – Psychosocial Dimension (MASK-P)]
1.6.21	<p>Show ability to choose appropriate and validated tools to assess and monitor treatment in specific populations such as:-</p> <ul style="list-style-type: none"> <li>• Older adults</li> <li>• Neonates and Children</li> <li>• Patients from linguistically or culturally diverse backgrounds</li> <li>• Patients who are cognitively impaired</li> <li>• Patients with behavioural issues</li> </ul>
Implementing a biopsychosocial Management Plan	
1.6.22	Discuss the process of explaining the diagnostic formulation and the proposed management plan to the patient, taking into account the patients' health literacy level

1.6.23	<p>Demonstrate the process of negotiating a therapeutic alliance with the patient towards implementation of the management plan. Differentiate those patients who require:-</p> <ul style="list-style-type: none"><li>• Multimodal approach from one practitioner</li><li>• Interprofessional/multidisciplinary approach from a team</li><li>• Referral to other medical specialists and/or allied healthcare professionals</li></ul>
1.6.24	<p>Discuss the process of applying interprofessional/multidisciplinary treatment principles in pain management programs. Demonstrate ability to adapt plans to the specific needs of patient groups, including but not limited to:-</p> <ul style="list-style-type: none"><li>• Pregnant women</li><li>• Older adults (including those with dementia)</li><li>• Patients with mental health disorders</li><li>• Opioid-tolerant</li><li>• Opioid-naïve</li><li>• With active or past substance use disorders</li><li>• Patients with intellectual and/or physical disabilities</li></ul>

## 1.7 Assessment of Pain

1.7.1	<p>Broadly describe how the following factors may influence the patient's experience of illness and pain:-</p> <ul style="list-style-type: none"> <li>• Social</li> <li>• Cultural</li> <li>• Psychological</li> <li>• Physical</li> <li>• Genetic</li> <li>• Age</li> <li>• Gender</li> <li>• Caregivers</li> <li>• Role of health literacy (patient's ability to seek, understand and implement health related information to manage their health)</li> <li>• Religion</li> <li>• Traditional medical practices</li> <li>• Patients' and family wishes, motivations, goals and strengths</li> </ul>
1.7.2	Broadly describe patient's and family's different responses to the experience of pain and illness including affective, cognitive and behavioural responses
1.7.3	Outline the current Diagnostic and Statistical Manual of Mental Disorders (DSM) and International Classification of Diseases (ICD) framework for classification of mental disorders with particular reference to anxiety, substance misuse, different somatic symptom disorders, and depressive disorders
1.7.4	Demonstrate understanding of the concept of coloured flags: red (biomedical), yellow (psychosocial predictors), blue (social and economic factors) and black (occupational)
1.7.5	<p>Perform a basic medical assessment of a patient including:-</p> <ul style="list-style-type: none"> <li>• General history-taking</li> <li>• General physical examination</li> <li>• Quantitative Sensory Testing</li> <li>• Psychological function /Mental state examination</li> </ul>
1.7.6	<p>Interpret the following basic investigations, including but not limited to:-</p> <ul style="list-style-type: none"> <li>• Full blood count</li> <li>• Biochemical screening including liver function tests and myeloma screening</li> <li>• Arterial blood gases</li> <li>• Thyroid function tests</li> <li>• Electrocardiograms</li> <li>• Plain radiographs</li> <li>• MRI and fMRI</li> <li>• CT</li> </ul>
1.7.7	<p>Interpret the following basic screening questionnaires for psychological and somatic symptom burden, including but not limited to</p> <ul style="list-style-type: none"> <li>• Patient Health Questionnaire 4</li> <li>• Patient Health Questionnaire 9</li> <li>• Hospital Anxiety and Depression Scale</li> </ul>
1.7.8	Demonstrate basic problem-oriented synthesis of clinical information

## 1.8 Management of Pain

1.8.1	<p>Generally discuss the following treatment principles that may be used in the management of pain:-</p> <ul style="list-style-type: none"> <li>• Psychological</li> <li>• Physical</li> <li>• Pharmacological</li> <li>• Interventional</li> </ul>
1.8.2	<p>Broadly discuss the principles of pharmacokinetics, pharmacogenetics and pharmacodynamics</p>
1.8.3	<p>Describe and give examples of pharmacogenetic variation in relation to a range of drugs, including but not limited to:-</p> <ul style="list-style-type: none"> <li>• Tramadol</li> <li>• Tricyclic antidepressants</li> <li>• Non-steroidal anti-inflammatory drugs</li> </ul>
1.8.4	<p>Describe the:-</p> <ul style="list-style-type: none"> <li>• Mechanism(s) of action</li> <li>• Potential adverse effects (including toxicity)</li> <li>• Indications, precautions, and contraindications for use</li> <li>• Interactions with other drugs</li> <li>• Site of action</li> </ul> <p>Of the following drugs</p> <ul style="list-style-type: none"> <li>• Paracetamol</li> <li>• Metamizole (dipyrone) – in countries where used</li> <li>• Nefopam – in countries where used</li> <li>• Non-steroidal anti-inflammatory drugs, selective and un-selective</li> <li>• Opioid agonists, partial agonists, agonist-antagonists and antagonists</li> <li>• Methadone</li> <li>• Tramadol and tapentadol</li> <li>• Antidepressants</li> <li>• Anticonvulsants</li> <li>• Benzodiazepines</li> <li>• Local anaesthetics</li> <li>• Corticosteroids</li> <li>• Botulinum toxin</li> <li>• Capsaicin</li> <li>• Alpha 2 adrenoreceptor agonists</li> <li>• Cannabis-based medicines and medical cannabis</li> </ul>

1.8.5	<p>Discuss the principles of analgesic and opioid equivalence, including but not limited to:-</p> <ul style="list-style-type: none"> <li>• Buprenorphine</li> <li>• Codeine, dihydrocodeine</li> <li>• Fentanyl</li> <li>• Hydromorphone</li> <li>• Methadone, Levomethadone</li> <li>• Morphine</li> <li>• Oxycodone</li> <li>• Tapentadol</li> <li>• Tramadol</li> </ul>
1.8.6	<p>Describe pharmacokinetic and pharmacodynamic differences between the different systemic routes of administration of drugs (for example, onset/offset of action, efficacy, adverse effects), including:-</p> <ul style="list-style-type: none"> <li>• Oral</li> <li>• Sublingual</li> <li>• Buccal</li> <li>• Rectal</li> <li>• Transdermal</li> <li>• Topical</li> <li>• Inhaled</li> <li>• Intranasal</li> <li>• Subcutaneous</li> <li>• Intramuscular</li> <li>• Intravenous</li> <li>• Intra-articular</li> <li>• Spinal (epidural and intra-thecal)</li> </ul>

## 1.9 Digital medicine and telehealth

1.9.1	Understand the principles and theoretical foundations of digital medicine, including artificial intelligence, in pain management
1.9.2	Evaluate the benefits, limitations, and ethical considerations of digital technologies in pain medicine
1.9.3	Utilize evidence-based approaches to implementing telemedicine, artificial intelligence, remote consultation, in pain management including patient education and self-management through digital platforms
1.9.4	Identify and select appropriate health apps and digital tools (e.g., wearables) for pain assessment, monitoring, and treatment
1.9.5	Apply data security and privacy principles in the context of digital medicine, including artificial intelligence in pain management
1.9.6	Collaborate effectively with interdisciplinary teams in utilizing digital technologies for comprehensive pain care and integrate electronic health records and digital platforms for comprehensive care; patient-reported outcomes, patient-relevant outcomes, digital biomarkers
1.9.7	Evaluate the impact of digital medicine, including artificial intelligence, on patient outcomes, satisfaction, and quality of life
1.9.8	Stay updated with the latest advancements and trends in digital medicine and their relevance to pain management



**Section Two:-  
Pain Medicine Roles in Practice**

## 2.1 Clinician

As a *clinician*, the specialist pain medicine physician dynamically applies high-level knowledge, skills and professional attitudes in the practice of pain medicine across stable, unpredictable and complex situations. The clinician role describes in particular the skills to be acquired during the course of pain medicine training. It also contains aspects of knowledge that are considered to permeate and transcend all aspects of the discipline.

By the end of training, the Specialist Pain Medicine Physician will be able to:-

Clinical Assessment and Formulation	
2.1.1	Triage referred patients with respect to urgency, complexity, risk factors for ongoing chronicity, facilities required
2.1.2	Elicit and interpret a detailed history of:- <ul style="list-style-type: none"> <li>• The patient's biopsychosocial background</li> <li>• The pain experienced by the patient</li> <li>• The consequences of the experience of pain for the patient, with particular regards to concerns and beliefs about the pain</li> </ul>
2.1.3	Discuss the application of the World Health Organization (WHO) International Classification of Functioning, Disability and Health (ICF) concepts to people experiencing pain:- <ul style="list-style-type: none"> <li>• Functioning and disability               <ul style="list-style-type: none"> <li>○ Body functions and body structures</li> <li>○ Activities and participations</li> </ul> </li> <li>• Contextual factors               <ul style="list-style-type: none"> <li>○ Environmental Factors</li> <li>○ Personal factors</li> </ul> </li> <li>• Select appropriate outcome measures across the ICF domains</li> </ul>
2.1.4	Perform a focused psychological and sociological assessment <i>See Section One: Foundations of Pain Medicine/1.6.14 Bio-psychosocial Aspects of Pain</i>
2.1.5	Perform a focused biomedical assessment, including but not limited to:- <ul style="list-style-type: none"> <li>• Response to treatment(s) to date</li> <li>• Nutritional status</li> <li>• Sleep function</li> <li>• Sexual function</li> <li>• Pharmacological management</li> <li>• General health indicators</li> </ul>

2.1.6	<p>Perform and interpret a pain-orientated physical examination, incorporating:-</p> <ul style="list-style-type: none"> <li>• Documentation of pain qualities and symptoms</li> <li>• Assessment of Musculo-skeletal and articular functions</li> <li>• Assessment of clinical tests and signs for pain-oriented diagnosis formulation</li> <li>• Assessment of nervous system functions           <ul style="list-style-type: none"> <li>○ Pain oriented sensory testing (POST)</li> <li>○ Assessment of motor functions</li> <li>○ Assessment of autonomic functions</li> </ul> </li> <li>• Relevant systems</li> </ul> <p>Knows the role and limitations of use of ultrasounds in bedside patient evaluation and treatment for:-</p> <ul style="list-style-type: none"> <li>• Musculoskeletal pain</li> <li>• Peripheral neuropathies</li> <li>• Other pain conditions</li> <li>• US-guided procedures</li> </ul>
2.1.7	<p>Use appropriate and validated assessment techniques to specific populations such as:-</p> <ul style="list-style-type: none"> <li>• Older patients</li> <li>• Neonates, Infants and Children</li> <li>• Patients from linguistically or culturally diverse backgrounds</li> <li>• Patients who are cognitively impaired</li> <li>• Patients with opioid use disorders</li> </ul>
2.1.8	<p>Recognise that pain in any one patient may attract different concurrent descriptors and therefore different inferred mechanisms</p>
2.1.9	<p>Demonstrate ability to infer mechanism(s) of production of pain on the basis of clinical examination, irrespective of pre-existing diagnostic label(s)</p>
2.1.10	<p>Critically review existing investigations and interpretations, including but not limited to bone scans, computed tomography (CT) scans, magnetic resonance imaging (MRI), positron emission tomography (PET) scans, and electrodiagnostic techniques</p>
2.1.11	<p>Make judicious and resource-sensitive decisions about obtaining further investigative options</p>
2.1.12	<p>Integrate multiple sources of information towards a multi-axial formulation of diagnosis-function-context</p> <p>Identify and explore the patient's issues, concerns, beliefs, goals and expectations with respect to their pain experience and the pain treatment</p>
2.1.13	<p>Evaluate and arrange if necessary whether further specialised assessment and/or management is required in sociological, psychological, cultural, religious or biomedical dimensions</p>
2.1.14	<p>Develop understanding of the person and their family, in relation to their pain-associated limitations, losses and distress, but also strengths, motivators and resilience</p>

Preparing Management Plans	
2.1.15	Synthesize, justify and negotiate with the patient an individualized management plan and options, based on evidence and the context in which the patient's experience of pain occurs
2.1.16	Recognise and respond to the uncertainty inherent in the practice of pain medicine, including but not limited to:- <ul style="list-style-type: none"> <li>• Accommodating unpredictability</li> <li>• Managing risk in complex patient care situations</li> <li>• Varying practice according to contextual and cultural influences</li> </ul>
2.1.17	Adapt plans to the specific needs of the following patient groups experiencing pain:- <ul style="list-style-type: none"> <li>• Pregnant women</li> <li>• Patients with hepatic and/or renal function impairment</li> <li>• Elderly patients (including those with dementia)</li> <li>• Patients with mental health disorders, cognitive or neurodevelopmental impairment</li> <li>• Opioid-tolerant patients</li> <li>• Patients with active or past substance abuse problems</li> <li>• Patients from diverse socio-economic, ethnic and cultural backgrounds</li> <li>• Patients with allergies</li> </ul>
2.1.18	Understand the principles and application of placebo and nocebo theory in patients with pain
2.1.19	Critically discuss evidence-based psychological therapies related to pain medicine, including:- <ul style="list-style-type: none"> <li>• Solution focused brief therapy</li> <li>• Cognitive and behavioural therapies</li> <li>• Mindfulness-based cognitive behaviour therapy; acceptance and commitment therapy; mindfulness-based stress reduction</li> <li>• Systemic (couple and family) therapy</li> <li>• Hypnosis/guided imagery</li> <li>• Biofeedback, relaxation techniques such as progressive muscle relaxation and autogenic training</li> </ul>

2.1.20	<p>Discuss in detail clinical pharmacotherapy, the evidence base for the efficacy and adverse effects in pain medicine, including but not limited to the use of:-</p> <ul style="list-style-type: none"><li>• Paracetamol</li><li>• Non-steroidal anti-inflammatory drugs</li><li>• Opioids, strong and weak</li><li>• Tramadol and tapentadol</li><li>• Cannabinoids</li><li>• Capsaicin</li><li>• NMDA-receptor antagonists</li><li>• Local anaesthetic agents</li><li>• Anticonvulsants</li><li>• Antidepressants</li><li>• Benzodiazepines</li><li>• Neuroleptics</li><li>• Alpha-2 adrenergic agonists</li><li>• Anti-emetics</li><li>• Laxatives</li><li>• Vitamins and electrolytes supplementations</li><li>• Biologic drugs</li></ul>
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2.1.21	<p>With respect to opioids:-</p> <ul style="list-style-type: none"> <li>• Compare and contrast rational of use in acute, chronic non-cancer and cancer-associated pain</li> <li>• Critically discuss the evidence base for their efficacy in non-cancer pain</li> <li>• Critically discuss commonly used dose equivalents for oral, parenteral, transdermal and neuraxial (epidural, intraspinal) routes of opioid administration</li> <li>• Describe the pharmacokinetic and pharmacodynamic differences between immediate-release and slow-release oral opioid formulations</li> <li>• Discuss the rationale for opioid rotation</li> <li>• Describe the use and idiosyncrasies of methadone and buprenorphine</li> <li>• Critically discuss opioid-induced hyperalgesia</li> <li>• Discuss the assessment, prevention and symptomatic relief of adverse effects of opioids with particular reference to:-             <ul style="list-style-type: none"> <li>○ Constipation</li> <li>○ Nausea and vomiting</li> <li>○ Sedation</li> <li>○ Confusion or delirium</li> <li>○ Pruritus</li> </ul> </li> <li>• Discuss the long-term effects of the use of opioids including, but not limited to their immuno-modulatory, endocrine and psycho-cognitive effects</li> <li>• Detail the factors that need to be considered if patients are discharged from hospital with opioids for ongoing management of acute pain including dispensation and disposal of unused drugs</li> <li>• Negotiate a plan for withdrawal from opioids, where appropriate</li> <li>• Know the different metabolic pathways of opioids, including when used in patients with liver or kidney function impairment</li> <li>• Know and know how to discuss with the patient issues related to opioids such as:- length of treatment, dependency, loss of efficacy with time, impact on driving, general function</li> <li>• Know the principles of deprescribing, tapering and stopping opioids</li> </ul>
2.1.22	<p>Critically discuss physical treatment modalities related to pain medicine, including but not limited to:-</p> <ul style="list-style-type: none"> <li>• Principles of physical activity</li> <li>• Principles of pacing and graded activity</li> <li>• Passive and active therapy</li> <li>• Role of physiotherapy</li> <li>• Know how to adapt physical treatments to different pain states</li> <li>• Exercise prescription</li> </ul>

2.1.23	<p>Critically discuss indications, efficacy, complications, management and patient follow-up for procedural treatment modalities related to pain medicine, including but not limited to:-</p> <ul style="list-style-type: none"> <li>• Peripheral injections           <ul style="list-style-type: none"> <li>○ Soft-tissue</li> <li>○ Intra-articular</li> </ul> </li> <li>• Neuraxial injections</li> <li>• Ablative techniques: chemical OR electrical/thermal</li> <li>• Non-invasive neuromodulation           <ul style="list-style-type: none"> <li>○ Transcutaneous- and Percutaneous Electrical Nerve Stimulation (e.g. TENS, PENS, rTMS, tDCS, tACS)</li> </ul> </li> <li>• Electroacupuncture</li> <li>• Intradiscal techniques</li> <li>• Ablative techniques           <ul style="list-style-type: none"> <li>○ Chemical</li> <li>○ Electrical/thermal</li> </ul> </li> <li>• Neuromodulation           <ul style="list-style-type: none"> <li>○ Spinal Cord Stimulation</li> <li>○ Dorsal Root Ganglion (DRG) stimulation</li> <li>○ Intrathecal drug delivery</li> </ul> </li> <li>• Epiduroscopy</li> <li>• Surgical interventions           <ul style="list-style-type: none"> <li>○ MRI-, US-, laser- guided ablations</li> <li>○ Deep brain, motor cortex, transcranial magnetic stimulation</li> <li>○ Stereotactic surgical techniques</li> <li>○ Cordotomy</li> <li>○ Dorsal root entry zone (DREZ)</li> <li>○ Other CNS surgical techniques for pain treatment</li> </ul> </li> </ul>
2.1.24	<p>Critically discuss the use, evidence, efficacy and potential interactions and adverse effects of complementary and alternative medicine (CAM) used in the community for the treatment of pain, including, but not limited to:-</p> <ul style="list-style-type: none"> <li>• Acupuncture</li> <li>• Homeopathy</li> <li>• Herbal, botanical, and dietary supplements,</li> <li>• The conceptual framework of Integrative pain medicine and Salutogenesis</li> </ul>
2.1.25	<p>Describe the application of interprofessional and multidisciplinary treatment principles in pain management programmes</p> <p><i>See Section One: Foundations of Pain Medicine/1.6 Bio-psychosocial Aspects of Pain</i></p>
<b>Implementing Management Plans</b>	
2.1.26	<p>Discuss and agree with the patient and their significant others the diagnostic formulation and the proposed management plan</p>
2.1.27	<p>Build a therapeutic alliance with the patient and their significant others towards implementation of the management plan, using 'plain language', the teachback method to ensure patient's understanding, and establishing common expectations</p>

2.1.28	Discuss the role of shared decision when choosing treatment
2.1.29	Evaluate efficacy of intervention, through reassessment of key indicators (reflecting International Classification of Functioning, Disability and Health)
2.1.30	Discuss the role of adherence
2.1.31	Demonstrate the ability to differentiate between those patients who require:- <ul style="list-style-type: none"> <li>• Multimodal approach from one practitioner</li> <li>• Interprofessional and multidisciplinary approach from a team</li> <li>• Referral to other medical specialists and/or allied healthcare professionals</li> </ul>
2.1.32	Consult and collaborate with colleagues and other healthcare professionals to optimise patient wellbeing and enhance patient outcomes
2.1.33	Demonstrate the skills required to lead a interprofessional/multidisciplinary team (across health and social care) in the implementation of a pain management plan, including communication skills
2.1.34	Incorporate as part of a comprehensive pain management plan, where indicated:- <ul style="list-style-type: none"> <li>• Risk assessment</li> <li>• Identification of vulnerable adults and appropriate safeguarding referral</li> <li>• Consider use of an independent patient advocate</li> <li>• Psychological treatment, physiotherapy and social needs evaluation in an interprofessional and multidisciplinary setting</li> <li>• Rational pharmacotherapy</li> <li>• Appropriate interventional treatment modalities</li> <li>• Patient education</li> <li>• Involvement in supported self-management, in voluntary and community organisations</li> </ul>
2.1.35	Demonstrate ability to rationalize, supervise and individualize complex pharmacotherapy in patients experiencing pain, also in light of their co-morbidities as well as discuss pharmacotherapy with hospital pharmacist
2.1.36	Consider the use of alternative therapies to meet patient needs
2.1.37	Arrange appropriate follow up and proper outcome measurement. Discuss de-prescribing strategies, specifically for opioids, risks and mitigation plans
2.1.38	Discuss the role of PROMs (patient-reported outcome measures) and PREMs (patient-reported experience measures) as measures of the well-being of patients in clinical practice and research



## 2.2 Professional

As a *professional*, the specialist pain medicine physician (SPMP) has a unique role arising out of their advanced knowledge of the sociobiology of pain and its complex effects on people. Such work requires mastery of a complex skill set and the knowledge underpinning this, in addition to the art of medicine. The SPMP is committed to the health and wellbeing of individuals and society through ethical practice, characterised by high personal standards of behaviour, accountability and leadership.

By the end of training the SPMP will be able to:

Ethical Practice	
2.2.1	Exhibit professional behaviours in practice, including honesty, integrity, commitment, compassion, respect, and altruism
2.2.2	Exhibit understanding of principles of confidentiality, including access to, content of, and security of records
2.2.3	Discuss the principle of informed consent without coercion and shared decision making
2.2.4	Explain the concepts of competence, contract and negligence
2.2.5	Demonstrate professional relationships with colleagues and patients and their significant others
2.2.6	Accept the responsibilities involved in continuing care of people with complex conditions
2.2.7	Recognise and respond to ethical issues encountered in practice
2.2.8	Recognise limitations of expertise and seek appropriate guidance
2.2.9	Demonstrate professional integrity, probity and ethical conduct in response to industry marketing strategies
2.2.10	Recognise and manage conflicts of interest
Cultural Awareness and Sensitivity	
2.2.11	Demonstrate an understanding of how personal beliefs, cultural bias and biopsychosocial factors may influence pain diagnosis, management, rehabilitation and interactions with others
2.2.12	Demonstrate respect for differences in cultural and social responses to health and illness in general, and to pain in particular
2.2.13	Incorporate health beliefs of the individual/community into management modalities in a culturally sensitive manner
Legal and regulatory Environment	
2.2.14	Adhere to professional, legal and ethical codes of practice
2.2.15	Fulfill regulatory and legal obligations required of current practice
2.2.16	Respond to requests for medico-legal and coroner's opinion, especially in compensation settings

2.2.17	Demonstrate accountability in considering access, clinical efficacy and quality when making patient-care decisions
2.2.18	Recognise and respond to others' unprofessional behaviour, which may include notification to regulatory authorities
2.2.19	Recognize conflicts of interest in choice of provider
2.2.20	Demonstrate detailed knowledge of regulations with respect to controlled substances in the relevant jurisdiction(s)
2.2.21	Be aware of the restrictions regarding the use of cannabinoids in the relevant jurisdiction(s)
2.2.22	Recognise the features of substance abuse in the patient and in the healthcare professional
<b>Health and sustainable Practice of Specialist Pain Medicine Physicians</b>	
2.2.23	Identify risks to personal physical and mental wellbeing
2.2.24	Adopt strategies to enhance personal and professional awareness and insight, such as developing a mentor relationship
2.2.25	Recognise and respond to other professionals in need

## 2.3 Scholar

As a *scholar*, the specialist pain medicine physician (SPMP) demonstrates active commitment to learning, to the creation, dissemination, application and translation of knowledge relevant to pain medicine, and to the education of their patients, students, colleagues and within the community.

By the end of training, the specialist pain medicine physician (SPMP) will be able to:-

Ongoing personal Learning	
2.3.1	Identify opportunities for further personal development and learning
2.3.2	Participate in relevant professional and educational development in pain medicine and apply insights in practice
Critical Appraisal and clinical Application of medical Information	
2.3.3	Access established and evolving knowledge in the clinical and social sciences relevant to pain medicine
2.3.4	Participate in practice evaluation and quality improvement activities, apply insights from own learning to medical practice
2.3.5	Determine the validity and risk of bias in a wide range of scholarly sources
2.3.6	Critically appraise scientific literature and translate evidence into decision-making about the care of patients with pain using national high-quality guidelines
2.3.7	Describe the principles, application and limitations of evidence-based medicine
2.3.8	Participate in audit of specific areas of practice
Teaching and Learning of others, with Respect to Pain and Pain Medicine	
2.3.9	Identify the learning needs of others and prioritise learning outcomes
2.3.10	Demonstrate effective teaching strategies to facilitate learning
2.3.11	Provide meaningful feedback to others
2.3.12	Provide inter-professional mentorship to colleagues and other health professionals by leading education sessions related to pain medicine
New Knowledge and Practices in Pain Medicine (Contribution to Innovation)	
2.3.13	Describe principles of research ethics as applied to human and animal research in pain medicine
2.3.14	Contribute to clinical trials and/or research projects and to education/teaching activities of students/peers, for example teaching courses, clinical education etc.
2.3.15	If appropriate, stimulate scholarly interdisciplinary collaborative research in the area of pain medicine in an international context

## 2.4 Communicator

As a *communicator*, the specialist pain medicine physician (SPMP) offers the patient a relationship with a professional who has particular interest and expertise in the pain, which is the focus of their concern and suffering. The SPMP is able to listen, interpret and explain the predicament and concerns of the patient in a broad bio-psychosocial framework.

By the end of training, the specialist pain medicine physician (SPMP) will be able to:-

Therapeutic Relationships	
2.4.1	Establish therapeutic relationships with patients, their families and carers, and foster their involvement as partners in their care  Be able to assess a patients level of ,activation' and health literacy and be able to tailor information giving appropriately
2.4.2	Communicate using a person-centered approach that encourages patient trust and autonomy, and is characterised by empathy and respect
2.4.3	Demonstrate effective communication skills, including but not limited to:- <ul style="list-style-type: none"> <li>• Active listening</li> <li>• Encouraging discussion</li> <li>• Reinforcing key messages</li> <li>• Attending to verbal and non-verbal cues</li> <li>• Respecting patient difference and diversity</li> <li>• Adapting communication skills to individual patients</li> <li>• Recognising and addressing miscommunication</li> <li>• Apply the "Teach-back method" to ensure patients understanding of condition and therapeutic instructions</li> <li>• Motivational interviewing</li> </ul>
2.4.4	Acknowledge and validate the patient's experiences of pain
2.4.5	Optimise the physical environment for patient comfort, dignity, privacy, engagement and safety
2.4.6	Recognise and negotiate challenging communication situations, including conflict or culturally related situations
2.4.7	Identify and manage emotionally charged situations
Obtaining relevant Information	
2.4.8	Gather, prioritise and synthesise information about the patient's medical condition, including beliefs, anxieties, expectations and experiences, from a variety of sources
2.4.9	Utilise appropriate personnel and resources to facilitate communication with patients from culturally and linguistically diverse populations
2.4.10	Elicit a patient's understanding of their referral to a pain service and correct misconceptions
Sharing Information with Patients and significant others	

2.4.11	Advise patients about the risks and benefits of treatment options, specifically the limitations of evidence, to help with informed choices
2.4.12	Facilitate discussion with patients and their families to ensure a common understanding of the problems and plans, using appropriate developmental tools for children (e.g. videos, drawings, pictures)
2.4.13	Respect diversity and difference and the impact these have upon decisionmaking
2.4.14	Encourage active involvement in shared decision-making
2.4.15	Provide patients with “plain language” information regarding model of care, discharge and follow up
2.4.16	Explain unanticipated complications to patients, their families and other healthcare providers
2.4.17	Assist patients and others to identify and make use of information and communication technologies to support their care and manage their health
<b>Sharing Information</b>	
2.4.18	Demonstrate effective written and verbal communication skills tailored to audience, purpose, intent, and context
2.4.19	Comprehensively and succinctly document the assessment and agreed management plan for the individual patient with pain
2.4.20	Develop skills for communication in medico-legal settings and with administrative bodies
2.4.21	Develop skills for communication with consumer groups and the broader community

## 2.5 Collaborator

As a *collaborator*, the specialist pain medicine physician (SPMP) effectively works in a healthcare team to achieve optimal patient care.

See Section 5: 'Interprofessional Working and Learning'

## 2.6 Manager (and Leader)

As a *manager*, the specialist pain medicine physician (SPMP) has the ability to make and manage decisions about resource allocation as may apply personally, professionally and at an organizational level, to provide leadership and to contribute to the effectiveness of the healthcare system. The SPMP is able to look outward from the clinic to collaborate with other sectors, design local (not just within the service) systems for optimal delivery of healthcare.

By the end of training, the SPMP will be able to:-

Organisational Work Practice	
2.6.1	Define the characteristics underpinning the provision of quality patient-centred pain management services that are safe, effective, efficient, and timely
2.6.2	Contribute to the processes of quality assurance, quality improvement and accreditation activities within their department/practice
2.6.3	Use and adapt systems to learn from adverse events and critical incidents, and to inform regulatory agencies when needed
2.6.4	Apply legislative/regulatory requirements and service policies, for example, adverse outcomes reporting
Personal Work Practice	
2.6.5	Describe their own scope of practice, responsibilities and line of reporting
2.6.6	Identify the operational structure and their role in the pain management service/practice
2.6.7	Organise, prioritise and delegate tasks in order to achieve balance between professional requirements and personal life
2.6.8	Demonstrate self-reflection to appraise and improve efficiency and effectiveness in the workplace
2.6.9	Use information technology to optimise patient care
Equitable Allocation of finite Health Resources	
2.6.10	Understand the general principles of organisational and healthcare funding
2.6.11	Optimise cost-appropriate care in pain medicine
2.6.12	Demonstrate leadership in the management and allocation of tasks and resources
Participation in Administrative and Leadership	
2.6.13	Develop leadership skills in interdisciplinary and administrative settings
2.6.14	Contribute to clinical governance forums as appropriate
2.6.15	Participate in committees and meetings at various organisational levels, as appropriate
2.6.16	Understand the financial, administrative and human resource requirements in order to manage a pain management unit or private practice

## 2.7 Health Advocate

As a *health advocate*, the specialist pain medicine physician (SPMP) responsibly uses their expertise and influence to advance the health and wellbeing of patients and caregivers, colleagues, communities and populations.

By the end of training, the SPMP will be able to:-

Patient Advocate	
2.7.1	Work with patients experiencing pain to address relevant determinants of health
2.7.2	Identify opportunities for advocacy, promotion of health and improvement in quality of life for patients with pain
2.7.3	Advocate for access to evidence-based treatments for pain
2.7.4	Advocate for access to controlled medicines including opioids for management of pain as a human right
2.7.5	Advocate for patient-centred management options, including in palliative and end-of-life contexts
2.7.6	Identify circumstances where advanced care directives or plans, particularly with respect to management of pain, should be formulated by the patient and their family
2.7.7	Promote strategies regarding the recognition of pain in patients with other conditions and in patients from different cultural backgrounds
2.7.8	Promote patient self-advocacy for access to health-related resources
Community Advocate	
2.7.9	Work with a community or population to identify those determinants of health such as cultural influence on pain belief that might influence the experience of pain
2.7.10	Advocate for, and contribute to, the generation of adequate population-based statistics on pain in the general population
2.7.11	Promote the availability and the appropriate and safe use of therapeutic substances for pain treatment within the population
2.7.12	Understand a public health approach to pain management and palliative care as essential in resource-poor settings
2.7.13	Describe the role of specialist pain medicine physicians in advocating for improved resources locally, nationally and internationally in order to improve access for and management of patients with pain
2.7.14	Promote the position of pain medicine within the spectrum of medical professions
2.7.15	Support establishment of personalized pain medicine
2.7.16	Understand health care systems and determinants of access to pain management



Personal Advocate	
2.7.17	Identify risks to personal, physical and mental wellbeing, help in understanding non familiar situations related to cultural differences
2.7.18	Advocate for the health, wellbeing and safety of colleagues and assist or intervene if required



**Section Three:-  
Managing Different Types of Pain**

### 3.1 Acute Pain

The specialist pain medicine physician (SPMP) will be asked to assist in the management of patients with acute pain. The advice requested will often relate to management of complex patients, such as those who have pre-existing chronic pain or are opioid tolerant, or, have a substance abuse disorder or a significant medical comorbidity. This requires that the SPMP will have a thorough knowledge of medications, techniques and equipment used in acute pain management and an understanding of their efficacy as well as recognition and management of their adverse effects and complications. An important aspect is understanding risk factors and mechanisms involved in transition of acute to chronic pain and possible ways to mitigate this process.

By the end of training, a trainee will be able to:-

Background	
3.1.1	Discuss the role of Acute Pain Services (APS). The SPMP should be able to broadly describe the two main APS models: physician-based and specialist nurse-based, physician supervised
3.1.2	Discuss the role of acute pain management in primary care
3.1.3	Discuss general requirements that enable safe and effective delivery of acute pain management techniques in hospitals including: education of staff and patient monitoring requirements (assess and document pain as the "fifth vital sign"); responses to inadequate or excessive medication; use of "standard orders"; equipment used
3.1.4	Discuss the issues related to the ongoing management of acute pain following discharge from hospital, including patients undergoing ambulatory surgery
3.1.5	Evaluate the role of acute pain management in rehabilitation, including enhanced recovery or "fast-track" surgery
3.1.6	Understand the evidence for acute pain management and promotion of enhanced recovery and rehabilitation in prevention of chronic pain
3.1.7	Discuss the risk factors and mechanisms involved in the transition of acute to chronic pain, and critically evaluate the evidence for measures that may reduce (mitigate) that transition  Discuss the potential role of a 'transitional pain service'
Applied Foundation Knowledge	
3.1.8	Describe the pharmacokinetics and pharmacodynamics of opioids and local anaesthetics administered into the epidural space or cerebrospinal fluid; also perineural and infiltrative techniques (infusions in wounds, joints, peritoneal, subfascial, subacromial etc.)
3.1.9	Describe the physiological consequences of a central neuraxial (epidural or intrathecal) block with local anaesthetics and/or opioids
3.1.10	Describe the adjuvant agents that may be used to enhance the quality or extend the duration of central neuraxial or other regional analgesia blocks, and discuss their mechanisms of action, risks and benefits

3.1.11	Discuss the contribution of maladaptive psychological coping skills, mental disorders, psychological distress, psychiatric illness and socioenvironmental and further culturally related factors to the experience of acute pain (pain ratings, opioid use) and the risks of persistent pain and prolonged opioid use after discharge from hospital
3.1.12	Critically discuss the importance of regular institutional audits to ensure that the goals of effective analgesia and patient satisfaction are being met and also to serve as a benchmarking tool
<b>Clinical Assessment of Acute Pain</b>	
3.1.13	Discuss assessment of acute pain (including acute neuropathic pain) in the adult patient, including the nonverbal patient and those from diverse socioeconomic, ethnic, or other, linguistic- and cultural backgrounds, and the relevance of functional assessment
3.1.14	Discuss assessment of acute pain in the older patient (especially those with dementia) including challenges in communication, relevance of functional assessment and use of other pain evaluation methods that do not rely on verbal ability
3.1.15	Discuss assessment of acute pain in infants, young children and adolescents including the developmental and practical challenges, relevance of functional assessment and use of appropriate and validated paediatric pain scales, including those for children with neurodevelopmental impairment
3.1.16	Recognise causes of delirium in the acute pain setting and the effect this may have on assessment and treatment of the patient with acute pain
<b>Management of Acute pain</b>	
3.1.17	Compare and contrast the evidence for efficacy and adverse effects in the management of acute pain by using analgesics:- <ul style="list-style-type: none"> <li>• Paracetamol, metamizole, nefopam</li> <li>• Non-steroidal anti-inflammatory drugs (COX-1 and COX-2 inhibitors)</li> <li>• Strong and weak opioids</li> </ul>
3.1.18	Critically discuss the evidence-base for the indications, efficacy and adverse effects of:- <ul style="list-style-type: none"> <li>• NMDA-receptor antagonists</li> <li>• Anticonvulsants</li> <li>• Antidepressants</li> <li>• Alpha-2 adrenergic agonists</li> <li>• Inhalational agents</li> <li>• Corticosteroids</li> <li>• Systemic lidocaine</li> </ul>

3.1.19	<p>Assess and manage adverse effects related to pharmacological therapies in acute pain management, including but not limited to:-</p> <ul style="list-style-type: none"> <li>• Opioid induced:-           <ul style="list-style-type: none"> <li>○ Nausea and vomiting</li> <li>○ Respiratory depression</li> <li>○ Excessive sedation</li> <li>○ Pruritus</li> <li>○ Constipation</li> <li>○ Cognitive dysfunction</li> </ul> </li> </ul>
3.1.20	Describe the complications that may be associated with neuraxial analgesia and other regional analgesia (including secondary to needle/catheter insertion and drug administration) and how these may be mitigated and managed
3.1.21	Outline a plan to transition patients from patient-controlled analgesia (PCA), intravenous or regional, to oral administration
3.1.22	Discuss the use of ultrasound imaging in the performance of regional analgesic techniques
3.1.23	<p>For patients receiving:-</p> <ul style="list-style-type: none"> <li>• Intravenous PCA</li> <li>• Epidural analgesia (including epidural PCA)</li> <li>• Sublingual PCA (using sufentanil)</li> <li>• Intrathecal analgesia</li> <li>• Analgesia by major peripheral nerve blocks</li> <li>• Plexus analgesia/Paravertebral block and other interfascial blocks</li> </ul> <p>Outline:-</p> <ol style="list-style-type: none"> <li>1. Risks versus benefits</li> <li>2. Monitoring of efficacy</li> <li>3. Safety considerations</li> </ol>
3.1.24	<p>Discuss issues specific to the management of acute pain in patients with:-</p> <ul style="list-style-type: none"> <li>• Spinal cord injury</li> <li>• Burns</li> <li>• Trauma</li> <li>• Crush injuries and ischaemic limbs with a risk of compartment syndrome</li> <li>• Patients with obstructive sleep apnoea</li> <li>• Patients who are pregnant or breast-feeding</li> <li>• Patients with renal impairment (including those on dialysis)</li> <li>• Patients with chronic pain</li> <li>• Opioid-tolerant patients and patients with past or present substance abuse disorder</li> </ul>
3.1.25	Discuss the management of patients who are taking anticoagulants or anti-platelet agents and who have or are about to receive catheters in situ for neuraxial or major peripheral nerve analgesia
3.1.26	Discuss the potential complications specific to the concurrent use of anticoagulant and antiplatelet agents in patients undergoing central neuraxial and major regional nerve blockade

3.1.27	Discuss the management of patients undergoing repeated painful procedures including use of EMLA, NO <sub>2</sub> or psychological treatment (distraction, hypnosis)
3.1.28	Discuss the management of acute pain by using nonpharmacological methods e.g. hot/cold pack, TENS, low-laser therapy and psychological strategies (e.g. distractions and breathing techniques) and psychological support for patients before and after surgery
3.1.29	Evaluate efficacy of key interventions through assessment of key clinical and patient reported outcomes

## 3.2 Neuropathic and related Pain

The recognition that disease of damage to the somatosensory nervous system itself can be associated with the experience of pain has been a major insight. The recent change in the definition of “neuropathic” pain and its role as a descriptor, has prompted a reappraisal of how to deliver this topic. Technically, “neuropathic pain” is pain of neurological disease or damage.

By the end of training, a trainee will be able to:-

Background	
3.2.1	Critically discuss the main descriptors of pain and other pain-related terms as in the International Association for the Study of Pain (IASP) Taxonomy
3.2.2	Distinguish between use of terms in relation to pain syndromes, such as nociceptive, neuropathic, mixed, hypersensitivity and sensitization
Applied Foundation Knowledge	
3.2.3	Outline the neurobiological (functional and structural) basis of allodynia, hyperalgesia and hyperpathia
3.2.4	Describe possible mechanism(s) leading to the experience of pain in the following examples of damage to the somatosensory nervous system:- <ul style="list-style-type: none"> <li>• Brain injury</li> <li>• Spinal cord injury</li> <li>• Traumatic peripheral nerve injury, including that incurred during surgery</li> <li>• Compression neuropathy</li> <li>• Amputation of a limb</li> </ul> <p><i>See also Section 3.3 Pain related to Cancer</i></p>
Clinical Assessment of Neuropathic and related Pain	
3.2.5	Describe purpose, scoring, interpretation and limitations of common tools to assess presumed neuropathic pain:- <ul style="list-style-type: none"> <li>• Douleur Neuropathique (DN4)</li> <li>• pain DETECT</li> <li>• Leeds Assessment of Neuropathic Symptoms and Signs (LANSS)</li> <li>• Neuropathic Pain Questionnaire (NPQ)</li> <li>• Others</li> </ul>



3.2.6	Describe the different presentations of pain and clinical findings in the following primary neurological diseases:- <ul style="list-style-type: none"> <li>• Stroke</li> <li>• Complex Regional Pain Syndrome type II</li> <li>• Trigeminal neuralgia</li> <li>• Parkinson's disease</li> <li>• Multiple sclerosis</li> <li>• Syringomyelia</li> <li>• Peripheral neuropathies: diabetic, HIV-associated, toxic (alcohol, chemotherapy)</li> <li>• Acute herpes zoster infection and post-herpetic neuralgia</li> <li>• Phantom limb</li> <li>• Guillain-Barré syndrome</li> <li>• Neurofibromatosis</li> <li>• Erythromelalgia</li> </ul>
<b>Management of Neuropathic and related Pain</b>	
3.2.7	Critically discuss the general management of neuropathic pain in a biopsychosocial context
3.2.8	Critically discuss the pharmacological treatment of neuropathic pain
3.2.9	Critically evaluate the evidence for the efficacy and adverse effects for drugs used in the treatment of neuropathic pain:- <ul style="list-style-type: none"> <li>• Antidepressants</li> <li>• Anticonvulsants</li> <li>• Topical lidocaine and capsaicin</li> <li>• Opioids</li> <li>• Others (e.g. NMDA-receptor antagonists, intrathecal drug delivery)</li> </ul>
3.2.10	Critically discuss the clinical decision making in the pharmacological treatment of neuropathic pain:- <ul style="list-style-type: none"> <li>• Associated therapeutic goals (e.g., sleeping disorder, depression)</li> <li>• Comorbidity, adverse effects</li> <li>• A mechanism based versus a disease based approach</li> </ul>
3.2.11	Critically discuss the non-pharmacological approaches in the treatment of neuropathic pain:- <ul style="list-style-type: none"> <li>• Neuromodulation</li> <li>• Physiotherapy (e.g., mirror therapy for phantom limb pain)</li> <li>• General multimodal, interprofessional/ multidisciplinary principles of chronic pain management</li> </ul>

### 3.3 Cancer-related Pain

Thirty per cent of patients with cancer will have pain at diagnosis. Seventy per cent will have moderate to severe pain by the time their disease is advanced. Despite this high prevalence, the outcomes for management of cancer pain are often poor. Management of cancer pain uses management techniques from both acute and chronic pain but also brings in additional challenges due to the presence of a terminal illness. This topic also addresses chronic pain experienced by patients who are cancer survivors.

By the end of training, a trainee will be able to:-

Background	
3.3.1	Identify age and sociocultural influences on the perception and experience of cancer and of cancer-related pain
3.3.2	Compare and contrast the assessment and management of persons with cancer pain and those with chronic non-cancer pain
3.3.3	Recognize the problems faced by cancer survivors who have persistent pain
3.3.4	Discuss the meaning and significance of the World Health Organization (WHO) analgesic guidelines for pain in cancer
3.3.5	Discuss the choice of analgesics in the WHO ladder and critically evaluate the evidence base
3.3.6	Discuss the differences between application routes (oral, transdermal, subcutaneous, intravenous, intrathecal)
3.3.7	Discuss the management of opioid analgesics including the role of opioid rotation in patients with inadequate pain relief or severe side effects
3.3.8	Critically discuss situations in which changing the route of analgesic administration may be required
3.3.9	Discuss the use of opioids in the patients with impaired renal or liver function
3.3.10	Discuss the options for the management of breakthrough cancer pain
3.3.11	Discuss the management of opioid-related adverse events
3.3.12	Be aware of and discuss clinical practice guidelines addressing the management of end-of-life symptoms including but not limited to:- <ul style="list-style-type: none"> <li>• Pain</li> <li>• Nausea/vomiting</li> <li>• Respiratory symptoms</li> <li>• Fatigue</li> <li>• Itch</li> <li>• Emotional distress</li> </ul>
3.3.13	Recognise the essential role of close collaborations between the various teams involved in the care of cancer patients – for example pain specialist, oncologist, surgeon, palliative care, hospital pharmacist, physiotherapist, nurse and family physician

Applied Foundation Knowledge	
3.3.14	<p>Discuss the neurophysiological mechanisms contributing to the experience of pain:-</p> <ul style="list-style-type: none"> <li>• Nociceptive pain related to cancer and cancer treatment</li> <li>• Neuropathic pain related to cancer and cancer treatment</li> <li>• Visceral pain related to cancer and cancer treatment</li> </ul> <p>Address specific mechanisms including pain:-</p> <ul style="list-style-type: none"> <li>• Arising from a solid viscus</li> <li>• Arising from a hollow viscus</li> <li>• Directly related to cancer (tumour invasion, compression, metastases etc.)</li> <li>• Indirectly related to cancer (pressure areas, osteoporosis, acute herpes zoster infection, worsening back pain due to poor mobilisation)</li> <li>• Related to cancer treatments (surgery, radiotherapy, chemotherapy, hormone therapy or immunotherapy)</li> </ul>
3.3.15	Recognise interactions of medications, particularly the anti-cancer drugs, with the cytochrome P450 enzyme system and how this might influence analgesic treatments
3.3.16	<p>Discuss the analgesic benefits of cancer-modifying treatments such as:-</p> <ul style="list-style-type: none"> <li>• Surgery</li> <li>• Chemotherapy</li> <li>• Radiotherapy</li> <li>• Hormone therapy</li> </ul>
Clinical Assessment of Cancer Pain	
3.3.17	<p>Define and distinguish between:-</p> <ul style="list-style-type: none"> <li>• Breakthrough pain and persistent background pain</li> <li>• Incident pain and incompletely relieved background pain</li> </ul>
3.3.18	<p>Apply a mechanism-based approach to identifying the origins and contributing factors to pain in cancer patients:-</p> <ul style="list-style-type: none"> <li>• Bone pain</li> <li>• Soft tissue</li> <li>• Visceral pain</li> </ul>
3.3.19	<p>Discuss assessment and management of cancer pain in special populations such as older adults, children, adults with learning difficulties and those with substance abuse problems.</p> <p><i>See Section Four: Special Patient Populations</i></p>
3.3.20	<p>Discuss the presentation of emergencies in the patient with cancer-related pain, including but not limited to:-</p> <ul style="list-style-type: none"> <li>• Acute spinal cord compression</li> <li>• Life-threatening increased intracranial pressure</li> <li>• Gastrointestinal obstruction and perforation of a viscus             <ul style="list-style-type: none"> <li>○ Bleeding from tumour</li> <li>○ Airway obstruction from tumour or post radiotherapy</li> </ul> </li> <li>• Hypercalcaemia</li> <li>• Long bone fracture</li> </ul>

3.3.21	<p>Discuss the role of cancer therapies in the management of cancer-related pain, including but not limited to:-</p> <ul style="list-style-type: none"> <li>• Radiotherapy</li> <li>• Radiopharmaceuticals</li> <li>• Chemotherapy</li> <li>• Immune therapy</li> <li>• Surgery</li> </ul>
3.3.22	<p>Discuss the management of acute pain in cancer patients, including:-</p> <ul style="list-style-type: none"> <li>• Diagnostic interventions</li> <li>• Therapeutic interventions</li> </ul>
3.3.23	Discuss the management of post-chemotherapy and post-radiotherapy pain
3.3.24	Discuss the management of mucositis
3.3.25	<p>Outline the changes in pain management when a patient is:-</p> <ul style="list-style-type: none"> <li>• No longer able to swallow</li> <li>• Unconscious or delirious</li> <li>• Likely to die within days</li> </ul>
3.3.26	<p>Critically discuss the use of adjuvant analgesics in cancer pain including but not limited to:-</p> <ul style="list-style-type: none"> <li>• Bisphosphonates</li> <li>• Denosumab</li> <li>• Corticosteroids</li> <li>• Ketamine</li> <li>• Antidepressants</li> <li>• Anticonvulsants</li> </ul>

3.3.27	<p>Discuss the role of interventional procedures in the management of cancer pain that is unresponsive to non-invasive treatment, including but not limited to:-</p> <ul style="list-style-type: none"> <li>• Neuraxial and intracerebroventricular administration of medications</li> <li>• Neurolytic blocks, with particular reference to:-             <ul style="list-style-type: none"> <li>o Saddle block</li> <li>o Coeliac plexus block</li> </ul> </li> <li>• Surgical procedures             <ul style="list-style-type: none"> <li>o Cordotomy</li> <li>o Vertebral procedures</li> </ul> </li> </ul>
3.3.28	<p>Discuss the evidence base for other analgesics in the management of pain and other symptoms in patients with terminal disease for example:-</p> <ul style="list-style-type: none"> <li>• Cannabinoids</li> <li>• Ziconotide</li> </ul>
3.3.29	<p>Evaluate efficacy of key interventions through reassessment of key clinical and patient reported outcomes</p>

### Management of Pain associated with Cancer

3.3.30	Discuss the different goals of care for a pre-terminal patient compared with those for a terminally ill patient
3.3.31	Address management of pain and other symptoms at the end of life
3.3.32	Outline the value of palliative care regarding structure and process of care

### 3.4 Musculoskeletal Pain

Musculoskeletal (MSK) pain is one of the most frequent pain conditions and a major clinical problem. It comprises most of the nociceptive pain conditions seen, and also has major social and psychological influences. Peripheral and central sensitization are important mechanisms for MSK pain conditions. Further research into peripheral and central neurobiological mechanisms is required to improve understanding, diagnosis and management. The incidence of MSK is increasing; this is linked to ageing, obesity and sedentary life style.

The sections on 'Neck and Back pain' and 'Fibromyalgia syndrome and widespread pain' address many topics related to MSK pain: they should be considered in conjunction with this section.

By the end of training, a trainee will be able to:-

Background	
3.4.1.	Understand the pathophysiology of joint pain, muscle pain and bone pain
Applied Foundation Knowledge	
3.4.2	Recognise the stages of acute and chronic MSK pain and discuss the development and prevention of chronicity
3.4.3	Recognise causes and treatments of joint pain
3.4.4	Recognise causes and treatment of bone pain
3.4.5	Recognise the role of movement in causation of MSK pain
3.4.6	Recognise the influence of repetitive injuries in MSK pain
3.4.7	Discuss the role of work and its relationship with MSK pain
3.4.8	Discuss sleep disorders and their relationship to MSK pain
3.4.9	Recognise the poor correlation between symptoms and imaging findings
Clinical Assessment of Musculoskeletal Pain	
3.4.10	Outline the importance of assessment of function together with pain
3.4.11	Differentiate inflammatory and mechanical pain
3.4.12	Assess the impact of MSK pain on activities of daily living
Management of Musculoskeletal Pain	
3.4.13	<p>Discuss the evidence base for employing the following strategies to manage MSK:-</p> <ul style="list-style-type: none"> <li>• Self management</li> <li>• Exercise</li> <li>• Education</li> <li>• Rehabilitation</li> <li>• Pharmacology</li> <li>• Regenerative Medicine</li> <li>• Nonpharmacological approaches</li> </ul> <p><i>See also Sections 3.5 Neck and Back Pain and 3.6 Fibromyalgia Syndrome and Chronic Widespread Pain</i></p>

3.4.14	Evaluate efficacy of key interventions, through assessment of key clinical and patient reported outcomes
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### 3.5 Neck and Back Pain

Neck and Back Pain (spinal pain) is a major contributor to lost productivity. Low back pain, which affects 9 % of the world's population, and neck pain, which affects 5 % of the world's population, are major contributors to global non-fatal health burden (years lived with disability). Definitions and approaches to assessment and management of spinal pain vary according to the belief systems of the diverse group of healthcare providers involved. It is essential that specialist pain medicine physicians develop a comprehensive, integrated approach to reduce its impact on the patient and society at large.

By the end of training, a trainee will be able to:-

Background	
3.5.1	Compare and contrast the current International Association for the Study of Pain (IASP) Classification of Spinal Pain with other classification systems
3.5.2	Discuss controversies in diagnostic terminology in spinal pain
3.5.3	Discuss the public health dimensions of the problem of spinal pain, including but not limited to:- <ul style="list-style-type: none"> <li>• Prevalence</li> <li>• Demography</li> <li>• Personal and societal costs including but not limited to:-               <ul style="list-style-type: none"> <li>○ Effects on quality of life</li> <li>○ Ability to work</li> <li>○ Social function</li> <li>○ Disability and sickness benefits</li> <li>○ Lost productivity</li> </ul> </li> </ul>
3.5.4	Recognise major risk factors, including psychosocial, for transition of acute to chronic low back pain
3.5.5	Recognise risk factors for transition of acute to chronic neck pain following "whiplash" injury
3.5.6	Discuss factors predictive of chronicity after acute spinal pain, including but not restricted to the "flag" system
Applied Foundation Knowledge	
3.5.7	Describe the neuroanatomy and function of the spine and identify potential structures that can be associated with pain
3.5.8	Critically appraise the value of epidural injections, zygo-apophyseal joint blocks, medial branch blocks and denervation as part of a long-term plan and as part of the diagnostic process
Clinical Assessment of Neck and Back Pain	
3.5.9	Discuss initial evaluation of spinal pain, including risk assessment and risk stratification tools, e.g. STarT Back

3.5.10	<p>Discuss the rationale and use of questionnaires for assessing dimensions of chronic spinal pain, e.g.:-</p> <ul style="list-style-type: none"> <li>• Oswestry Low Back Pain Disability Questionnaire</li> <li>• Roland Morris Disability Questionnaire</li> <li>• Assessment of mood, anxiety, catastrophising</li> <li>• PainDETECT</li> </ul>
3.5.11	<p>Identify the potential specific causes of acute and chronic spinal pain including but not limited to:-</p> <ul style="list-style-type: none"> <li>• Infection</li> <li>• Trauma</li> <li>• Neoplasia</li> <li>• Metabolic bone disease</li> <li>• Inflammatory disease</li> <li>• Pain hypersensitivity/augmentation</li> <li>• Degeneration and rheumatic disease</li> </ul>
3.5.12	Distinguish between radiculopathic and referred pain, with respect to limb girdle or limb pain associated with spinal pain. Identify neuropathic components of spinal pain
3.5.13	Critically interpret commonly used physical examination tests for upper and lower limbs, for example, Lasegue/straight leg raise test, slump test, etc.
3.5.14	Perform a gait analysis
3.5.15	Recognise the clinical presentation of symptomatic spinal stenosis
3.5.16	Recognize 'red flag' pathologies: e.g. cauda equina syndrome and neoplasm
3.5.17	Distinguish between acute and acute-on-chronic episodes of spinal pain
3.5.18	Reinterpret pre-existing investigations and opinions in the light of clinical findings
3.5.19	Know and discuss when to order investigations including imaging and how to interpret images and reports
<b>Management of Neck and Back Pain</b>	
3.5.20	Critically discuss the evidence base for management of acute low back pain with or without radicular pain
3.5.21	Describe national, European and international guidelines for the management of acute and chronic low back pain
3.5.22	Discuss the importance of self-management and how it may be implemented

3.5.23	<p>Discuss the efficacy of psychological therapies in chronic spinal pain including, but not limited to:-</p> <ul style="list-style-type: none"> <li>• Cognitive</li> <li>• Behavioural</li> <li>• Acceptance commitment</li> <li>• Biofeedback</li> <li>• Mindfulness</li> <li>• Relaxation therapies</li> <li>• Hypnosis</li> <li>• Combined psychological and physical approaches</li> </ul>
3.5.24	<p>Discuss principles of activity prescription in the management of neck and back pain</p>
3.5.25	<p>Generally discuss the evidence for efficacy and adverse effects of treatment approaches in spinal pain, including but not limited to:-</p> <ul style="list-style-type: none"> <li>• Graded exercise exposure</li> <li>• Aerobic exercises</li> <li>• Stretching/strengthening</li> <li>• Biomechanics</li> <li>• Hydrotherapy</li> <li>• Alexander technique</li> <li>• Massage</li> <li>• Acupuncture</li> <li>• Electrical stimulation, Transcutaneous- and Percutaneous Electrical Nerve Stimulation (TENS, PENS)</li> <li>• Laser therapy</li> </ul>
3.5.26	<p>Critically discuss the evidence base for the efficacy of pharmacological treatments for chronic spinal pain including:-</p> <ul style="list-style-type: none"> <li>• Paracetamol</li> <li>• NSAIDS</li> <li>• Weak opioids, including in combination</li> <li>• Strong opioids</li> <li>• Adjunct medications including antidepressants and anticonvulsants</li> <li>• Antibiotics for modic disc changes</li> </ul>

3.5.27	<p>Critically discuss the evidence base for the indications, efficacy and complications of interventions used for chronic spinal pain, with or without radicular pain including:-</p> <ul style="list-style-type: none"> <li>• Injections           <ul style="list-style-type: none"> <li>○ Epidural/caudal steroids</li> <li>○ Medial branch injections</li> <li>○ Prolotherapy</li> <li>○ Trigger point injections</li> <li>○ Botulinum toxin</li> <li>○ Intra-articular steroids (apophyseal and sacro-iliac)</li> </ul> </li> <li>• Radiofrequency and electrothermal treatment (including evaluation)           <ul style="list-style-type: none"> <li>○ Facet joint</li> <li>○ Intervertebral disc</li> <li>○ Sacro-Iliac joint</li> <li>○ Dorsal root ganglion</li> </ul> </li> <li>• Central neuromodulation including spinal cord stimulation</li> <li>• Peripheral nerve stimulation</li> <li>• Intrathecal drug infusion</li> <li>• Epiduroscopy</li> </ul>
3.5.28	<p>Critically discuss the evidence base for the indications, efficacy and limitations of surgical interventions for chronic spinal pain with or without radiculopathy:-</p> <ul style="list-style-type: none"> <li>• Decompression/laminectomy</li> <li>• Discectomy</li> <li>• Disc replacement</li> <li>• Fusion</li> </ul>
3.5.29	<p>Critically discuss the evidence base for the efficacy and complications of complementary and alternative medicine in spinal pain, for example, acupuncture, chiropractic</p>
3.5.30	<p>Evaluate efficacy of key interventions through assessment of key clinical and patient reported outcomes</p>

### 3.6 Fibromyalgia Syndrome and Chronic Widespread Pain

Physicians who see people with pain will be expected to assess and manage patients who have diffuse pain that is not well understood by medical science. Such presentations are marked by incomplete knowledge and/or uncertainty as to causation. However, in this chapter fibromyalgia syndrome (FMS) should be considered as a well defined clinical entity, with national and international recommendations for its management. Pain (CWP) is a symptom described by many patients.

By the end of training, a trainee will be able to:-

Background	
3.6.1	Demonstrate understanding of historical speculations about the nature of pain that is poorly understood, the shortcomings of these speculations and the medical and social outcomes that have arisen as a result of the adoption of these concepts. These include but are not limited to:- <ul style="list-style-type: none"> <li>• Symptoms as psychological by default (DSM-V and ICD-10)</li> <li>• Symptoms as injury (for example, "repetitive strain injury")</li> <li>• Symptoms as disease entity (for example, "fibromyalgia syndrome")</li> <li>• Symptoms according to different age groups, e.g. adolescents, adults and older adults</li> </ul>
3.6.2	Be aware of developments in the field of nociceptive signal processing in the brain and descending control systems
Applied Foundation Knowledge	
3.6.3	Critically discuss the concepts of somatisation and hypervigilance
3.6.4	Discuss the "diagnostic" category of somatic symptom disorder and related disorders (according to DSM-V or ICD-10), including but not limited to:- <ul style="list-style-type: none"> <li>• Somatic symptom disorder</li> <li>• Illness anxiety disorder</li> <li>• Psychological factors affecting other medical conditions</li> <li>• Central sensitization disorders</li> <li>• Small nerve neuropathy</li> <li>• Chronic Pain Disorder with somatic and psychological factors</li> </ul>
3.6.5	Recognise the potential contributions of sources of somatic and visceral nociception to the experience of widespread pain including CNS processing and descending controls
Clinical Assessment of FMS and CWP	
3.6.6	Outline the heterogeneity of clinical presentations of CWP
3.6.7	Critically interpret the clinical finding of "tenderness"
3.6.8	Critically evaluate the constructs of "myofascial pain" and "fibromyalgia syndrome"
3.6.9	Evaluate the role of a mental health care specialist in providing a formulation and assessing risk of suicide

3.6.10	Understand the condition of FMS and its historical and more recent definitions, including the current American College of Rheumatology definition, revised in 2011
3.6.11	Know the incidence, including relative occurrence according to gender, and understand the societal impact
3.6.12	<p>Discuss and critique the criteria for diagnosis including:-</p> <ul style="list-style-type: none"> <li>• Widespread pain</li> <li>• Tender points</li> <li>• Fatigue</li> <li>• Sleep problems</li> <li>• Mood disturbance, including depression and anxiety</li> <li>• Cognitive effects, including loss of concentration, memory</li> <li>• Associated conditions including irritable bowel syndrome (IBS), headache, cystitis, chronic fatigue syndrome (CFS)</li> <li>• Absence of other conditions to explain symptoms</li> </ul>
3.6.13	<p>Discuss the possible aetiologies for FMS and CWP such as:-</p> <ul style="list-style-type: none"> <li>• Chemical changes in the brain</li> <li>• Central sensitisation</li> <li>• Small fibre neuropathy</li> <li>• Altered descending inhibition</li> <li>• Sleep disturbance</li> <li>• Injury (including trauma and litigation)</li> <li>• Infection</li> <li>• Sympathetic</li> <li>• Viral disorder</li> <li>• Growth hormone deficiency</li> <li>• Genetic predisposition (gene abnormalities)</li> <li>• Immune system disorder</li> <li>• Lyme disease</li> <li>• Neuropathic pain</li> <li>• Psychological disturbance</li> <li>• Somatoform disorder</li> <li>• Arteriovenous shunt (Albrecht)</li> <li>• Malingering</li> </ul>
<b>Management of FMS and CWP</b>	
3.6.14	Discuss reasons for the paucity of quality evidence in the management of CWP
3.6.15	Appreciate the need to provide an interprofessional/multidisciplinary approach including explanation, acceptance, graded activity and social adaptations stressing the importance of movement, rehabilitation and self-management. Critically review medications used for FMS (see below)

3.6.16	Discuss treatment of FMS according to National and International Guidelines including the evidence base and the place of:- <ul style="list-style-type: none"><li>• Self-management</li><li>• Graded exercise</li><li>• Medications, including duloxetine, milnacipran, antidepressants, pregabalin, tramadol, simple analgesics only in short term usage<ul style="list-style-type: none"><li>◦ Other than tramadol, opioids should not be used</li></ul></li><li>• Cognitive Behavioural Therapy (CBT) and the use of appropriate alternative techniques to reduce symptoms and encourage increased activity and better function</li></ul>
3.6.17	Educate the patient on the role of the key interventions and evaluate the efficacy of key interventions through assessment of key clinical and patient reported outcomes (PROs)

### 3.7 Headache and Orofacial Pain

Headache and orofacial pain are among the most common pain disorders. Almost half of the adult population have a headache at least once a year. More than 10% of the population have migraine and medication overuse headache may affect up to 5% of some populations. About 10% of the population suffers from chronic orofacial pain. Temporomandibular disorders are the most common causes of orofacial pain and are often associated with other chronic pain conditions. Headache and orofacial pain disorders are associated with the major personal and societal burdens of pain and disability and have a significant psychological impact including depression and anxiety. In spite of their high prevalences, only a minority of people with headache and orofacial pain disorders are appropriately diagnosed, indicating that this is an underestimated and undertreated problem throughout the world. A number of specific headache and orofacial pain disorders may be identified based on careful clinical assessment.

By the end of training, a trainee will be able to:-

Background	
3.7.1	Appraise the International Classification of Headache Disorders and compare to IASP's
3.7.2	Generally discuss accepted definitions of terms associated with headache disorders and orofacial pain conditions
3.7.3	Describe a taxonomy of orofacial pain such as International Classification of Orofacial Pain (ICOP)
Applied Foundation Knowledge	
3.7.4	Describe the anatomy of the cranial and upper cervical nerves and the innervation of the scalp, sinuses and teeth
3.7.5	Describe potential neurobiological mechanisms for:- <ul style="list-style-type: none"> <li>• Primary and secondary headaches</li> <li>• Orofacial pain</li> <li>• Dental pain</li> </ul>
3.7.6	Discuss the pathophysiology of trigeminal neuralgia and trigeminal autonomic cephalalgias (TAC)
3.7.7	Discuss the pathophysiology of:- <ul style="list-style-type: none"> <li>• Migraine</li> <li>• Medication Overuse Headache</li> <li>• Post-dural puncture headache</li> </ul>
Clinical Assessment of Headache and Orofacial Pain	
3.7.8	Perform a cranial nerve examination
3.7.9	Perform an examination of the face including the temporomandibular system and intraoral examination
3.7.10	Perform an examination of the cervical spine
3.7.11	Detail the critical factors for assessing life-threatening headache



3.7.12	<p>Demonstrate awareness of potential causes of headache that may be overlooked on initial assessment including:-</p> <ul style="list-style-type: none"> <li>• Idiopathic intracranial hypertension</li> <li>• Low cerebrospinal fluid (CSF); low pressure headache; intracranial hypotension</li> <li>• Post-craniotomy headache</li> <li>• Space-occupying lesions</li> <li>• Vascular disease, especially temporal arteritis</li> <li>• Cervical artery dysfunction</li> <li>• Pathology in the eyes and ears</li> <li>• Sinus pathology</li> </ul>
<b>Headache</b>	
3.7.13	<p>Distinguish between the clinical features of the following primary chronic daily headache syndromes:-</p> <ul style="list-style-type: none"> <li>• Migraine (with and without aura)</li> <li>• Tension-type headache</li> <li>• Trigeminal autonomic cephalalgias (cluster headache, paroxysmal hemicrania, short-lasting unilateral neuralgiform headache attacks, hemicrania continua)</li> </ul>
3.7.14	<p>Distinguish between the clinical features of the following secondary chronic daily headache syndromes:-</p> <ul style="list-style-type: none"> <li>• Medication-related             <ul style="list-style-type: none"> <li>○ Medication overuse headache</li> <li>○ Medication-induced side effects</li> </ul> </li> <li>• Post-traumatic             <ul style="list-style-type: none"> <li>○ Headache attributable to head injury</li> <li>○ Headache attributable to neck injury or whiplash trauma</li> </ul> </li> <li>• Disorders of intracranial pressure             <ul style="list-style-type: none"> <li>○ Increased intracranial pressure</li> <li>○ Decreased intracranial pressure</li> </ul> </li> <li>• Headache referred from other structures             <ul style="list-style-type: none"> <li>○ Cervicogenic headache</li> </ul> </li> </ul>
<b>Orofacial Pain</b>	
3.7.15	<p>Recognise the clinical features of:-</p> <ul style="list-style-type: none"> <li>• Trigeminal neuralgia and its variants</li> <li>• Secondary trigeminal neuralgia – e.g multiple sclerosis, tumour</li> <li>• Glossopharyngeal neuralgia</li> <li>• Post-herpetic neuralgia</li> <li>• Trigeminal neuropathic pain related to past trauma</li> <li>• Post stroke pain</li> <li>• "Burning mouth" syndrome</li> </ul>
3.7.16	Describe the use of investigations such as MRI for trigeminal neuralgia
3.7.17	Apply a differential diagnosis approach to determining the anatomical origin of persistent idiopathic facial pain

3.7.18	Distinguish pain of odontogenic (especially cracked tooth) and non-odontogenic origin and appreciating the role of the dentist in ruling out odontogenic causes
3.7.19	Describe the spectrum of diagnostic criteria for temporomandibular disorders as defined by the 2014 International Research Diagnostic Criteria for Temporomandibular Disorders consortium and the findings of the large OPPERA study in the USA
3.7.20	Discuss the importance of psychosocial factors as predictors of chronicity in temporomandibular disorders
<b>Management of Headache</b>	
3.7.21	<p>Discuss the evidence base for non-drug interventions in primary and secondary headaches:-</p> <ul style="list-style-type: none"> <li>• Education and information (counseling), including the importance of           <ul style="list-style-type: none"> <li>○ Keeping a pain diary</li> <li>○ Relaxation</li> <li>○ Aerobic exercise</li> <li>○ Sleep hygiene</li> <li>○ Diet</li> </ul> </li> <li>• Cognitive-behavioural therapy</li> <li>• Biofeedback</li> <li>• Physiotherapy</li> <li>• Role of patient support groups</li> </ul>
3.7.22	<p>Discuss the evidence base for pharmacological treatment of acute migraine:-</p> <ul style="list-style-type: none"> <li>• Paracetamol</li> <li>• Non-steroidal anti-inflammatory drugs</li> <li>• Antiemetics</li> <li>• Triptans</li> <li>• Ergotamines</li> <li>• GEPANTS</li> <li>• DITANS</li> <li>• IV lidocaine/ketamine</li> </ul>
3.7.23	<p>Discuss the evidence base for pharmacological prophylaxis of migraine in adults:-</p> <ul style="list-style-type: none"> <li>• Beta-blockers</li> <li>• Calcium channel blockers</li> <li>• Sodium valproate</li> <li>• Tricyclic agents</li> <li>• Topiramate</li> <li>• Other agents including selective serotonin-noradrenalin reuptake inhibitors (SNRIs), gabapentin, pizotifen</li> <li>• GEPANTS</li> <li>• CGRP monoclonal antibodies</li> </ul>
3.7.24	Discuss the evidence base for and the role of botulinum toxin in the prophylaxis management of chronic migraine
3.7.25	Discuss the limited number of invasive treatment options for migraine and cluster headache (e.g. greater occipital nerve (GON)-injection and neuromodulation for cluster headache)

3.7.26	Describe management of cluster headache including, but not limited to : Sumatriptan s.c. / oxygen; verapamil/topiramate/lithium; gon-injection/neurostimulation
3.7.27	Discuss the treatment options available in the management of medication-overuse headache
<b>Management of Orofacial Pain</b>	
3.7.28	<p>Discuss the evidence base, recommendations and side effects for pharmacological treatment of trigeminal neuralgia with:-</p> <ul style="list-style-type: none"> <li>• Carbamazepine</li> <li>• Oxcarbazepine</li> <li>• Lamotrigine</li> <li>• Gabapentin and pregabalin</li> <li>• Clonazepam</li> <li>• Baclofen</li> <li>• Levetiracetam</li> <li>• Angiotensin II receptor antagonists</li> <li>• Others</li> </ul>
3.7.29	<p>Discuss the efficacy and complications of surgical options for trigeminal neuralgia:-</p> <ul style="list-style-type: none"> <li>• Neurovascular decompression</li> <li>• Radiofrequency ablation</li> <li>• Balloon compression</li> <li>• Gamma irradiation</li> <li>• Glycerol rhizotomy</li> <li>• Partial rhizotomy</li> <li>• Stereotactic radiosurgery</li> </ul>
3.7.30	Discuss the evidence base for management of painful trigeminal neuropathy with trigeminal ganglion stimulation
3.7.31	<p>Discuss the evidence base behind these treatments for temporomandibular disorders:-</p> <ul style="list-style-type: none"> <li>• Education and information (counseling)</li> <li>• Cognitive behavioural therapy</li> <li>• Jaw exercises</li> <li>• Occlusal appliances</li> <li>• Physiotherapy (e.g. massage)</li> <li>• Other approaches (e.g. acupuncture)</li> <li>• Temporomandibular joint arthroscopy</li> <li>• Temporomandibular joint surgery</li> </ul>
3.7.32	Appreciate the need to manage temporomandibular disorders early and holistically to prevent chronicity
3.7.33	Discuss the evidence base for management of "burning mouth" syndrome
3.7.34	Discuss the evidence base for management of persistent idiopathic facial pain
3.7.35	Discuss the evidence base for management of facial deafferentation with motor cortex Stimulation
3.7.36	Evaluate efficacy of key interventions through assessment of key clinical and patient reported outcomes

### 3.8 Visceral Pain

Visceral pain can arise from the chest, abdomen or pelvis and is a common symptom in the population. Pain affecting the viscera can be severe. Injury and inflammation can be particularly problematic, as organs become highly sensitive to any kind of stimulation, as in inflammatory bowel disease.

By the end of training, a trainee will be able to:-

Background	
3.8.1	Describe the taxonomy of primary (functional) and secondary (organic) visceral disorders
3.8.2	Discuss the differences between somatic and visceral pain syndromes
3.8.3	Describe the epidemiology of principle visceral pain conditions and their social impact
Applied Foundation Knowledge	
3.8.4	Outline the definition and classification of visceral pain
3.8.5	Demonstrate an understanding of the following with respect to chronic visceral pain:- <ul style="list-style-type: none"> <li>• Neuroanatomy               <ul style="list-style-type: none"> <li>○ Central pathways</li> <li>○ Peripheral pathways</li> <li>○ Innervation of viscera within: thorax, abdomen &amp; pelvis</li> </ul>               With particular reference to:-               <ul style="list-style-type: none"> <li>» Stellate ganglion</li> <li>» Splanchnic nerves</li> <li>» Coeliac ganglion</li> <li>» Hypogastric plexus</li> <li>» Ganglion impar</li> <li>» Pudendal nerve</li> </ul> </li> <li>• Neurophysiology               <ul style="list-style-type: none"> <li>○ Visceral sensitization</li> <li>○ Visceral nociceptors</li> <li>○ Visceral pain &amp; hyperalgesia</li> <li>○ Visceral hypersensitivity</li> <li>○ Neurophysiological basis of referred visceral pain</li> <li>○ The gut-brain-axis</li> </ul> </li> <li>• Biopsychosocial issues of visceral pain</li> </ul>
Clinical Assessment of Visceral Pain	
3.8.6	Outline features for evaluating the clinical history of suspected visceral pain syndromes
3.8.7	Outline features of a psychosocial assessment
3.8.8	Outline features of a physical examination

3.8.9	Distinguish clinically between:- <ul style="list-style-type: none"> <li>• Active visceral nociception</li> <li>• Visceral hyperalgesia</li> <li>• Referred pain with and without hyperalgesia:-             <ul style="list-style-type: none"> <li>o Viscero-somatic</li> <li>o Viscero-visceral (cross-organ sensitization)</li> </ul> </li> </ul>
3.8.10	Interpret laboratory tests and imaging
3.8.11	Identify 'red flag' features that suggest active visceral disease
3.8.12	Demonstrate a mechanistic approach for identifying non-visceral causes of thoracic, abdominal and pelvic pain. This would include myofascial, thoracic and abdominal wall pain, and post-surgical neuropathic pain
<b>Management of Visceral Pain</b>	
3.8.13	Discuss the principles of pharmacotherapy to manage visceral pain
3.8.14	Discuss the evidence base for the indications, effectiveness and adverse effects of the following therapies:- <ul style="list-style-type: none"> <li>• Physiotherapy</li> <li>• Other approaches (e.g. acupuncture)</li> <li>• Non-invasive neuromodulation (e.g. TENS, rTMS, tDCS, tACS)</li> <li>• Invasive therapies             <ul style="list-style-type: none"> <li>» Radiofrequency techniques</li> <li>» Neuromodulation</li> <li>» Intrathecal techniques</li> <li>» Electrical stimulation</li> <li>» Neurolytic techniques</li> </ul> </li> </ul>
3.8.15	Discuss the evidence base for the indications and effectiveness of psychological interventions used for management of chronic visceral pain
3.8.16	Discuss treatment options for the management of:- <ul style="list-style-type: none"> <li>• Functional pain syndromes such as: irritable bowel syndrome, chronic functional abdominal pain, painful bladder syndrome and functional chest pain</li> <li>• Organic visceral pain disorders such as in chronic pancreatitis and inflammatory bowel diseases</li> <li>• Abdominal wall pain</li> <li>• Anorectal pain</li> <li>• Pelvic pain syndromes</li> </ul>
3.8.17	<ul style="list-style-type: none"> <li>• Evaluate efficacy of key interventions through assessment of key clinical and patient reported outcomes</li> </ul>

### 3.9 Complex Regional Pain Syndromes, Type I and II

Complex Regional Pain Syndromes, types I and II, are challenging in terms of understanding the mechanisms of the disease and approaches to management. The specialist pain medicine physician should gain expertise in identifying presenting signs and symptoms, diagnosis and differential diagnosis of these conditions. It is also important to gain knowledge of the pathophysiology, natural history and evidence-based approaches for prevention and treatment.

By the end of training, a trainee will be able to:-

Background	
3.9.1	Discuss the historical progression of terminology used to describe CRPS Syndromes, type I and II, towards the current use of clinical and research New IASP criteria. Address also, sensitivity, specificity and positive predictive value of the current diagnostic criteria
3.9.2	Know that there are differences between adult and paediatric CRPS in terms of presentation, disease course and management and prognosis
Applied Foundation Knowledge	
3.9.3	Discuss proposed pathophysiological mechanisms of CRPS, types I and II.
3.9.4	Critically discuss "sympathetically maintained pain"
3.9.5	Explain the rationale for programs of:- <ul style="list-style-type: none"> <li>• Desensitisation</li> <li>• Graded mobilisation</li> </ul>
Clinical Identification and Assessment of CRPS	
3.9.6	Generate a differential diagnosis of more common conditions for a patient with presumed CRPS and know how to use the New IASP criteria
3.9.7	Perform a functional assessment of the CRPS-affected limb including:- <ul style="list-style-type: none"> <li>• Comparison with the contralateral side</li> <li>• Performance of activities of daily living</li> <li>• Motion analysis, where relevant</li> <li>• Deep somatic structures (bone, joints)</li> <li>• Vasomotor changes, sudomotor changes, trophic changes and sensory changes</li> </ul> <p><i>See also Section 3.5. Neck and Back Pain</i></p>

Management of CRPS	
3.9.8	<p>Outline the role and the elements of the following strategies in achieving improved function and/or recovery in patients with CRPS:-</p> <ul style="list-style-type: none"> <li>• General:-               <ul style="list-style-type: none"> <li>○ Patient information and education</li> </ul> </li> <li>• Psychological (cognitive behavioural therapy), including but not limited to:-               <ul style="list-style-type: none"> <li>○ Coping skills</li> <li>○ Relaxation techniques</li> <li>○ Addressing critical life events and abuse</li> <li>○ Management of anxiety and/or depression</li> </ul> </li> <li>• Physical, including but not limited to:-               <ul style="list-style-type: none"> <li>○ Graded motor imagery</li> <li>○ Mirror visual feedback</li> <li>○ Occupational therapy</li> <li>○ Graded paced exercise and activity</li> <li>○ Desensitization with tactile and thermal stimuli</li> </ul> </li> <li>• Pharmacotherapy depending on the stage of the disease including               <ul style="list-style-type: none"> <li>○ Neuropathic pain medication</li> <li>○ Bisphosphonates</li> <li>○ Steroids</li> </ul> </li> <li>• Invasive treatment options in selected patients               <ul style="list-style-type: none"> <li>○ Neuromodulation</li> <li>○ Neuraxial application of analgesics</li> <li>○ Sympathectomy</li> </ul> </li> <li>• IV infusions</li> </ul>
3.9.9	<p>Evaluate efficacy of key interventions through assessment of key clinical and patient reported outcomes</p>

### 3.10 Pain in Hereditary Connective Tissue Disorders

Pain in hereditary connective tissue disorders (HDCT) is a major contributor to lost productivity. Several pain patterns are recognized in these disorders such as neuropathic pain including entrapment neuropathies, arthralgia, low back and neck pain, luxation or subluxation. Dysautonomia and psychological disturbances are another important clinical issue. HDCT is a non homogenous group of conditions that includes Ehlers Danlos Syndrome (EDS), Joint Hypermobility Syndrome (JHS), Marfan Syndrome, Osteogenesis Imperfecta and other related syndromes. HDCT affects 2 % of the world's population. These conditions are major contributors to global non-fatal health burden (years lived with disability). Definitions and approaches to assessment and management of HDCT vary according to the etiology and clinical presentation. It is essential that the Specialist Pain Medicine Physician develop a comprehensive, integrated approach to this burden on society.

By the end of training, a trainee will be able to:-

Background	
3.10.1	Compare and contrast the current definition of HDCT Rheumatoid Arthritis/Juvenile RA, Bechterew/Ankylosing Spondylitis, Systemic Lupus Erythematosus (SLE), Osteo Arthritis, Fibromyalgia syndrome, 'Growing Pain', Migraine, Multiple Sclerosis, Painful Peripheral /Entrapment Neuropathies, Restless Legs, Low Back Pain
3.10.2	Discuss controversies in diagnostic terminology of HDCT
3.10.3	Discuss the public health dimensions of the problem of pain in HDCT, including but not limited to:- <ul style="list-style-type: none"> <li>• Prevalence</li> <li>• Demography</li> <li>• Personal and community costs</li> </ul>
Applied Foundation Knowledge	
3.10.4	Describe the connective tissue structure and function and identify potential structures that may be associated with pain
Clinical Assessment of Pain in HDCT	
3.10.5	Discuss the rationale and use of psychological and functional questionnaires for assessing these chronic pain conditions
3.10.6	Identify the potential specific causes of acute and chronic pain in HDCT <ul style="list-style-type: none"> <li>• Dislocation/subluxation</li> <li>• Trauma</li> <li>• Skin and tissue fragility</li> </ul>
3.10.7	Distinguish between radiculopathic and referred pain with respect to limb girdle or limb pain associated with spinal pain, or peripheral or central entrapment disorders
3.10.8	Critically interpret commonly used physical examination tests, for example, Beighton score, 2017 criteria for EDS diagnosis and myofascial pain syndrome tests
3.10.9	Perform a gait analysis, bedside neurological examination, orthostatic blood pressure test, joint/muscle examination



3.10.11	Recognise the clinical presentation of symptomatic dysautonomia mast cell activation syndrome
3.10.12	Distinguish between acute and acute-on-chronic episodes of pain
3.10.13	Reinterpret pre-existing investigations and opinions in the light of clinical findings
<b>Management of Pain in HDCT</b>	
3.10.14	Critically discuss the evidence base for management of acute and chronic pain according to the pain etiology
3.10.15	Discuss the efficacy of psychological therapies in chronic musculoskeletal pain, including but not limited to:- <ul style="list-style-type: none"> <li>• Cognitive</li> <li>• Behavioural</li> <li>• Acceptance and commitment</li> </ul>
3.10.16	Discuss principles of activity prescription in the management of pain in HDCT
3.10.17	Generally discuss the evidence-base for efficacy and adverse effects of physiotherapy in chronic HDCT pain, including but not limited to:- <ul style="list-style-type: none"> <li>• Graded exercise exposure</li> <li>• Stabilization/strengthening</li> <li>• Posture training, proprioceptive training</li> <li>• Hydrotherapy</li> <li>• Feldenkrais technique</li> <li>• Manual therapy</li> <li>• Massage</li> <li>• Biofeedback</li> <li>• TENS</li> </ul>
3.10.18	Critically discuss the evidence base for the efficacy of pharmacological treatments for chronic pain and dysautonomia in HDCT
3.10.19	Critically discuss the evidence base for the indications, efficacy and complications of interventions used for chronic HDCT pain, including:- <ul style="list-style-type: none"> <li>• Injections</li> <li>• Epidural/caudal steroids</li> <li>• Medial branch injections</li> <li>• Trigger point injections               <ul style="list-style-type: none"> <li>○ Botulinum toxin</li> <li>○ Intra-articular steroids</li> </ul> </li> </ul>
3.10.20	Broadly appreciate the evidence base for the efficacy and complications of complementary and alternative medicine for management of HDCT pain, for example, acupuncture and chiropractic medicine



**Section Four:-  
Special Patient Populations**

## 4.1 Pain in Older Adults

While previous evidence suggests that chronic pain typically affects those of working age, there is growing evidence to demonstrate that chronic pain continues to increase into the oldest old. Although older people experience a decrease in non-disabling back pain, they experience an increased prevalence of disabling back pain and this can continue to increase into the oldest of the elderly.

The aetiology of back pain in the working population is relatively well known, risk markers are well established, and include, female gender, lower social class, poor psychological well-being and occupational physical and psychosocial factors. The aetiology of back pain may differ in older people, however there are few large-scale prospective studies in this area and so information is sparse.

There are substantial differences in the population, methods and definitions used in published research which make it difficult to compare across studies and determine the prevalence of pain in older people. The reported effect of age on pain prevalence in older people is inconsistent, with some studies reporting an increase in prevalence with age and others reporting a decrease in prevalence with age. This section aims to describe the intricacies around the prevalence and onset of pain in older adults, to allow a fuller understanding of how pain might be better assessed and managed.

Background	
4.1.1	Demonstrate an understanding of the prevalence of pain in later life
4.1.2	Demonstrate an understanding of the onset of pain in older adults
4.1.3	Demonstrate an understanding of the burden pain has both on the individual and to society
4.1.4	Demonstrate an understanding of the key risk factors both associated with, and predictive of, pain in older adults
4.1.5	Discuss the prognosis for pain in older adults

Applied Foundation Knowledge	
4.1.6	<p>Demonstrate an understanding of the anatomical and pathophysiological processes involved in the distribution and perception of pain in the older person, addressing:-</p> <ul style="list-style-type: none"> <li>• Alterations to anatomical structures and physiological processes associated with ageing and how these alterations impact upon the presentation and normal physiological response to pain and its treatment</li> <li>• Changes in pharmacodynamics and pharmacokinetics</li> <li>• Site of pain</li> <li>• Physical comorbidities</li> <li>• Thresholds of pain</li> <li>• Physiological processes in the Central Nervous System related to:-               <ul style="list-style-type: none"> <li>○ Injury</li> <li>○ Ischaemia</li> <li>○ Neurodegenerative disorders:                   <ul style="list-style-type: none"> <li>a. Alzheimer's disease and other dementias</li> <li>b. Parkinson's disease</li> </ul> </li> </ul> </li> <li>• Changes in neurotransmitters</li> <li>• Physiological processes in the Peripheral Nervous System related to:-               <ul style="list-style-type: none"> <li>○ Injury</li> <li>○ Degeneration</li> <li>○ Neurotransmitters</li> </ul> </li> </ul>
4.1.7	<p>Address the multifactorial nature of pain, including:-</p> <ul style="list-style-type: none"> <li>• Emotional and behavioural components</li> <li>• Mood</li> <li>• Sleep</li> <li>• Functional ability</li> <li>• Agitation and anxiety</li> </ul>
4.1.8	<p>Demonstrate knowledge of alterations to physiological and metabolic processes associated with ageing and how these alterations impact upon the metabolic and physical response to the pharmacological management of pain addressing:-</p> <ul style="list-style-type: none"> <li>• General physical ageing</li> <li>• Gastrointestinal</li> <li>• Hepatic: structural and metabolic</li> <li>• Renal system: structural and functional</li> </ul>
4.1.9	<p>Demonstrate an understanding of conceptualisations of attitudes and beliefs and their relationship to behaviour</p>
4.1.10	<p>Demonstrate an understanding of the impact of beliefs held by health professionals, care givers and family</p>
4.1.11	<p>Demonstrate an understanding of the impact the beliefs health professionals, care givers, and family have on the support and interventions offered to older people</p>
4.1.12	<p>Demonstrate an understanding of the impact the beliefs health professionals, care givers, and family have on older people's responses to pain</p>

4.1.13	<p>Show an understanding of the pharmacokinetics, pharmacodynamics, tolerance, and dependence of drugs upon the older person with and without identified comorbidities. Describe:-</p> <ul style="list-style-type: none"> <li>• Pharmacokinetics           <ul style="list-style-type: none"> <li>○ Drug absorption</li> <li>○ Drug distribution</li> <li>○ Renal drug excretion</li> <li>○ Drug metabolism</li> </ul> </li> <li>• Pharmacodynamics           <ul style="list-style-type: none"> <li>○ Receptor properties</li> <li>○ Homeostatic mechanisms</li> </ul> </li> <li>• Tolerance</li> <li>• Dependence</li> </ul>
4.1.14	<p>Describe some of the common conditions/diseases in older people and presenting with specific pain, including:-</p> <ul style="list-style-type: none"> <li>• Bone pain (secondary to metastasis or osteoporotic fractures)</li> <li>• Chronic neuralgic pain (from nerve compression or radiculopathy)</li> <li>• Chronic visceral pain syndrome (like bladder pain and gastrointestinal pain)</li> <li>• Include an understanding of the characteristics of visceral pain (in contrast to somatic pain)</li> </ul>
<b>Clinical Assessment of Pain in Older Adults</b>	
4.1.15	<p>Demonstrate skills for assessing the intensity of pain in the older population regardless of aetiology and communication ability</p>
4.1.16	<p>Discuss key topics required for diagnosis of pain in older adults along with the range of assessment tools available for clinicians to use:-</p> <ul style="list-style-type: none"> <li>• To determine the differences between acute and chronic pain</li> <li>• To identify the assessment tools which can be applied by clinicians to aid diagnosis and quantify symptoms           <ol style="list-style-type: none"> <li>a. Brief Pain Inventory</li> <li>b. Numerical Pain Scales/Verbal Pain Scales</li> <li>c. NRS/VPS</li> <li>d. Geriatric Pain Scales</li> </ol> </li> </ul>
4.1.17	<p>Show ability to identify the impact of pain upon the mood and quality of life of the older person:-</p> <ul style="list-style-type: none"> <li>• Explore tools available to measure anxiety and depression which may be associated with long term pain (Hospital Anxiety and Depression Scale, Beck Depression Scale)</li> <li>• Identify the impact of pain upon quality of life</li> </ul>

4.1.18	<p>Perform a person-centred assessment and establish a management plan:-</p> <ul style="list-style-type: none"> <li>• Prioritise facilitation of physical activity/exercise within issues to be addressed with the person</li> <li>• Assess physical abilities and capacity, preferences for physical activity/exercise, and perceived barriers</li> <li>• Establish goals of physical activity/exercise in collaboration with the person and, if appropriate, their families, which should consider improvement/maintenance of social, physical and psychological function; and managing symptoms</li> <li>• Establish a person-centred physical activity/exercise plan</li> </ul>
4.1.19	<p>Demonstrate ability to:-</p> <ul style="list-style-type: none"> <li>• Identify and manage pain in people living with dementia, use of pain tools and carer involvement</li> <li>• Describe the effects of pain (e.g. on diet, mood and behaviour) on general health of people living with dementia</li> <li>• Outline referral pathways for people living with dementia who experience pain</li> <li>• Support carers and family of people living with dementia who experience pain</li> </ul>
<b>Management of Pain in Older Adults</b>	
4.1.20	<p>Discuss the influence of other prescribed medicines and the potential impact of common comorbidities when considering treatment options for pain</p>
4.1.21	<p>Describe changes in the pharmacodynamics and pharmacokinetics of analgesic drugs that occur with ageing</p> <ul style="list-style-type: none"> <li>• NSAIDs</li> <li>• Opioids</li> <li>• Tricyclic antidepressants</li> <li>• Anticonvulsants</li> </ul>
4.1.22	<p>Explain the consequences and implications of physiological and pharmacological changes on effectiveness, side effects and need for dose adjustment</p>
4.1.23	<p>Monitor effects of pain management approaches to adjust the care plan as needed</p>
4.1.24	<p>Recognise that pharmacological treatments for persistent pain are more effective when combined with non-pharmacological approaches and that use of analgesic medicines should aid functional rehabilitation</p>
4.1.25	<p>Recognise that dependence to and misuse of analgesics may occur in older people and ensure appropriate monitoring</p>

4.1.26	<p>Show ability to facilitate physical activity/exercise within the practitioner's defined scope of practice and expertise:-</p> <ul style="list-style-type: none"> <li>• Demonstrate a commitment to facilitating physical activity/exercise in older people with persistent pain</li> <li>• Apply knowledge of the clinical, biological, psychological and social sciences relevant to the practitioner's discipline, in the context of physical activity/exercise</li> <li>• Recognize the breadth of work, leisure, and other activities of daily living covered by the term 'physical activity'</li> <li>• Perform appropriate clinical assessments and provide clearly understandable recommendations, which may include referral to a health professional from a more appropriate discipline for physical activity/exercise, e.g. a physiotherapist</li> <li>• Recognize and respond to the complexity, uncertainty, and ambiguity inherent in facilitation of physical activity/exercise</li> </ul>
4.1.27	<p>Plan and perform facilitation of physical activity/exercise:-</p> <ul style="list-style-type: none"> <li>• Determine, in collaboration with the patient, options for physical activity/exercise, appropriate to their physical abilities/capacity, including discussion of the possible value of equipment and adaptations to support engagement in activity</li> <li>• Explain the risks and benefits of, and the rationale for, a proposed physical activity/exercise plan</li> <li>• Consider the priority of the type of physical activity/exercise, taking into account the person's functional status and available resources.             <ul style="list-style-type: none"> <li>○ For example, professional-led rehabilitation focusing on strength, flexibility, endurance and balance for people with limited function; supervised activity/exercise for people not yet confident in independent physical activity/exercise; community-based physical activity/exercise for higher functioning people</li> </ul> </li> <li>• Provide clear feedback on the person's performance of physical activity/exercise</li> <li>• Facilitate physical activity/exercise in a skilful and safe manner, adapting to unanticipated findings or changing clinical circumstances</li> </ul>
4.1.28	<p>Establish plans for physical activity/exercise as part of self-management and, when appropriate, provide provision for timely consultation:-</p> <ul style="list-style-type: none"> <li>• Implement a person-centred physical activity/exercise plan that supports self-management, and provides practical advice about future consultation</li> </ul>
4.1.29	<p>Discuss the benefits of minimally invasive interventional strategies in pain management. Addressing the:-</p> <ul style="list-style-type: none"> <li>• Evidence base behind recommending invasive approach in certain conditions</li> <li>• The different available modalities and when to consider each one</li> </ul>



4.1.30	<p>Discuss current evidence around growing interest in the use of psychosocial interventions to help older adults manage pain:-</p> <ul style="list-style-type: none"> <li>• Demonstrate an understanding of the various psychosocial interventions available</li> <li>• Demonstrate an understanding of the evidence on effectiveness of these interventions in older adults</li> <li>• Demonstrate an understanding of why psychosocial interventions would be beneficial for older adults based on the aetiology of pain in this population</li> </ul>
4.1.31	<p>Demonstrate an understanding on the key aspects of Cognitive Behavioural Therapy (CBT) as relevant for pain management in older adults:-</p> <ul style="list-style-type: none"> <li>• Demonstrate a knowledge of CBT and what it is</li> <li>• Demonstrate an understanding of areas where evidence for CBT is strong and pain research can learn from</li> <li>• Demonstrate an understanding of the evidence around CBT and its use for pain management in older adults</li> </ul>
4.1.32	<p>Discuss the considerations which must be made when using complementary therapies with older adults in terms of contraindications, efficacy and side effects:-</p> <ul style="list-style-type: none"> <li>• Consider the use of complementary therapies such as acupuncture, TENS and massage</li> </ul>
<b>Palliative Care, Cancer Care and the End of Life</b>	
4.1.33	Understand the needs of older adults when receiving cancer care or palliative care
4.1.34	Consider the implications of treatment and side effects
4.1.35	Understand the principles of analgesic use, using the three step, WHO, analgesic ladder
4.1.36	Anticipate and prevent the risk of side effects associated with strong opioid drugs
4.1.37	Promote evidence based practice
4.1.38	Provide guidelines for the end of life
<b>Nursing Care</b>	
4.1.39	<p>Ensure the application of good pain management practice regardless of patients' age or cognitive ability:-</p> <ul style="list-style-type: none"> <li>• Conduct relevant and appropriate pain assessment and documentation using well validated pain tools according to level of cognitive ability</li> <li>• Act as a patient advocate throughout the pain management process, ensuring that the patient receives the best possible care and understands the implications of such care</li> <li>• Monitor progress and report any deviations from the pain management process or any untoward side effects</li> <li>• Communicate between the patient, their carer and members of the interprofessional/ multidisciplinary team</li> </ul>

## 4.2 Pain in Infants, Children, Adolescents and Young Adults (AYA)

The section outlines the core knowledge, skills and attitudes for physicians specializing in Pain Medicine who may be involved in managing a child with pain. The premise of this chapter is that not all specialist pain medicine physicians will be directly involved in providing pediatric pain services, however, all need to have an understanding in this area.

Applied Foundation Knowledge	
4.2.1	Demonstrate knowledge of developmental neurobiology of pain, including mechanisms of nociception and hyperalgesia
4.2.2	Show understanding of the long-term neurophysiological consequences of pain in infancy and early childhood
4.2.3	Outline the of principles of age-related changes in body composition, pharmacokinetics and pharmacodynamics affecting pain pharmacotherapy, therapeutics and dosing in infants, children and adolescents
4.2.4	Discuss ethical and legal aspects of prescribing for children including marketing authorisation and off-label prescribing
Clinical Assessment of Pain in Infants, Children and Adolescents	
4.2.5	Discuss developmental, cognitive, contextual, and practical considerations in acute, procedural and chronic pain assessment in infants, children and adolescents
4.2.6	Demonstrate accurate assessment of acute and chronic pain in infants, children and adolescents using validated pain measurement tools and diaries, including the ability to apply to children who are:- <ul style="list-style-type: none"> <li>• Cognitively impaired</li> <li>• From linguistically and culturally diverse backgrounds</li> </ul>
4.2.7	Critically discuss the evidence-base on the relationship of mood disorders and early adverse life events, including prolonged time in the neonatal intensive care unit or child abuse and pain
Management of Pain in Infants, Children and Adolescents	
4.2.8	Critically discuss methods of analgesic delivery appropriate for:- <ul style="list-style-type: none"> <li>• Home</li> <li>• School</li> <li>• Hospital settings</li> </ul>

4.2.9	<p>Discuss the evidence-base for effective pain treatments in children of different ages and in different contexts including, but not limited to:-</p> <ul style="list-style-type: none"> <li>• Procedural pain, including repeated painful procedures</li> <li>• Acute pain</li> <li>• Postoperative pain</li> <li>• Complex pain conditions including, but not limited to functional abdominal pain, headache, Complex Regional Pain Syndrome, chronic widespread pain, neuropathic, visceral and musculoskeletal pain</li> <li>• Cancer pain and palliative care, including mucositis</li> <li>• Role of interventional procedures including regional nerve blocks and surgical procedures</li> </ul>
4.2.10	Discuss safe and effective pharmacological management of acute, procedural and complex pain conditions in children using analgesics and adjuvants
4.2.11	Demonstrate safe and appropriate prescription of analgesia with awareness of toxicity, interactions and side-effects associated with opioids and other pain medication
4.2.12	Demonstrate understanding of the principles of interprofessional/multidisciplinary team management of pain in children and adolescents
4.2.13	Discuss biopsychosocial aspects of pain management in children, family-centered care, including the role of the family (or carer) and society and influence of diverse socio-economic, ethnic and cultural backgrounds
4.2.14	<p>Demonstrate understanding of organisational aspects of children's pain services including:-</p> <ul style="list-style-type: none"> <li>• Acute (postoperative and procedural) pain</li> <li>• Cancer pain and palliative care</li> <li>• Complex pain</li> </ul>
4.2.15	Critically discuss Child Protection and safeguarding risks and procedures
4.2.16	Outline practices for transitioning from pediatric to adult pain clinics
4.2.17	<p>Demonstrate skills for communication with:-</p> <ul style="list-style-type: none"> <li>• Children and families/carers in a setting of cultural diversity</li> <li>• Other healthcare professionals in primary and secondary children's care</li> </ul>
4.2.18	Discuss the role of Returning To School (RTS) and Staying In School (SIS)
4.2.19	Recognize the family as information provider as well as co-therapist. Examples include but not limited to allowing for PCA by proxy in small children or by facilitating breast feeding during immunization
4.2.20	Demonstrate skills for setting adequate and realistic functional goals for management of complex pain conditions
4.2.21	Outline means to identify children at risk and means to implement local safeguarding procedures
4.2.22	Critically discuss appropriate skills mix for interprofessional/multidisciplinary pain management in children of different ages, abilities and social, cultural and educational needs

4.2.23	Demonstrate verbal and written communication skills necessary within the interprofessional/multidisciplinary team
4.2.24	Discuss approaches for integrating the 3 P's – Pharmacology, Physiotherapy and Psychology into an interprofessional /multidisciplinary management plan
4.2.25	Outline physical and psychological strategies to manage pain including, but not limited to:- <ul style="list-style-type: none"> <li>• Hot/cold pack</li> <li>• TENS</li> <li>• Distractions</li> <li>• Breathing techniques</li> </ul>
4.2.26	Distinguish the role of physiotherapy, including pacing, in chronic pain
4.2.27	Critically discuss the role of psychological therapies in procedural and chronic pain, including:- <ul style="list-style-type: none"> <li>• Cognitive behavioural techniques</li> <li>• Distraction, guided imagery</li> <li>• Biofeedback and mindfulness</li> </ul>
4.2.28	Discuss the role of complementary and alternative medicine (CAM)

#### Pain Medicine Roles in Practice

4.2.29	Participate in a local or international pain research and/or pain registry
4.2.30	Participate in teaching relevant pain topics to other health care professionals including general practitioners, students and nurses
4.2.31	Present a pediatric pain topic at academic rounds or a journal club
4.2.32	Attend at least one local or international pediatric pain conference during the fellowship
4.2.33	Participate in Continuing Professional Development (CPD) including patient and colleague feedback
4.2.34	Participate in annual appraisal and revalidation processes

### 4.3 Pain and Problem Substance Use

Pain and substance misuse are often “co-morbid”. The specialist pain medicine physician (SPMP) must not only be aware of the spectrum of substance abuse in the clinical pain community but also be equipped to identify, if possible prevent, and institute management of such problems in patients and in colleagues.

By the end of training, a trainee will be able to:-

Background	
4.3.1	Define the following concepts:- <ul style="list-style-type: none"> <li>• Tolerance</li> <li>• Physical dependence</li> <li>• Psychological dependence</li> <li>• Classification of clinical states following psychoactive substance use</li> <li>• Dual diagnosis (Substance Use Disorder as Co- Morbidity with Physical and Mental Health Problems)</li> </ul>
4.3.2	Critically discuss the differences in understanding and use of the terms above between the disciplines of pain medicine and addiction medicine
4.3.3	Distinguish between inappropriate prescription (inappropriate prescriber behaviour) and unsanctioned use (unsanctioned user behaviour) of drugs
4.3.4	Describe the impact of the following non-prescription substances on health and pain experience:- <ul style="list-style-type: none"> <li>• Caffeine</li> <li>• Illicit Heroin</li> <li>• Nicotine</li> <li>• Alcohol</li> <li>• Cannabis</li> <li>• Methamphetamine and other stimulants</li> </ul>
Applied Foundation Knowledge	
4.3.5	Describe in detail regulations regarding the prescription, restrictions and monitoring of controlled substances in your relevant healthcare system  <i>See also Section 2.2.20 – 2.2.22 Professional</i>
4.3.6	Discuss the current DSM 5 or ICD-11 criteria for diagnosis of mental and behavioural problems due to psychoactive substance use, in particular Opioid Use Disorder; discuss the appropriateness of ICD-11 criteria of substance use disorder and dependence for patients receiving opioid therapy
4.3.7	Discuss in detail the role of sedatives, hypnotics, and anxiolytics in acute pain and chronic non-cancer pain
4.3.8	Describe your understanding of Neonatal Abstinence Syndrome (NAS) – Describe the relationship between NAS and prescribed opioid analgesia

Clinical Presentations and Risk Assessment	
4.3.9	Recognize the different forms of substance abuse that may be co-morbid with the experience of chronic pain across all ages
4.3.10	Compare and contrast intoxication and withdrawal syndromes from:- <ul style="list-style-type: none"> <li>• Opioids</li> <li>• Alcohol</li> <li>• Benzodiazepines</li> <li>• Amphetamines</li> <li>• Cannabis</li> <li>• Other centrally acting substances</li> </ul>
4.3.11	Identify risk factors and protective factors for addictive behavior, acknowledge the individual risk continuum and stratify patients into risk categories when considering opioid prescription for pain
4.3.12	Critically appraise the tools available to assist clinical assessment of suitability for, and monitoring of, prescription of opioids for chronic non-cancer pain
4.3.13	Discuss the uses and limitations of urine drug testing and hair analysis Discuss the ethical aspects of drug testing
Management of Problem Substance Use	
4.3.14	Assess and quantify medication use by persons with chronic pain, including assessing the cumulative effects of multiple substances
4.3.15	Discuss strategies to minimise opioid diversion
4.3.16	Broadly discuss regimens of supervised withdrawal from:- <ul style="list-style-type: none"> <li>• Illicit opioids</li> <li>• Prescribed opioids (including methadone, buprenorphine and others)</li> <li>• Benzodiazepines</li> <li>• Alcohol</li> <li>• Other centrally acting substances</li> </ul>
4.3.17	Demonstrate understanding of controlled opioid substitution treatment programs in your relevant health care system
4.3.18	Demonstrate understanding of the management of patients with problematic substance use in the context of acute and chronic pain, including monitoring, identification of the change cycle in which the patient is, the role of support figures, drug therapy and rehabilitation
4.3.19	Counsel patients, their families and carers, and colleagues regarding the conduct of withdrawal of opioids and benzodiazepines in chronic non-cancer pain and the provision of naloxone
4.3.20	Work ethically with general practitioners, addiction services, families and, where appropriate, employers of patients with co-morbid pain and problematic substance use
4.3.21	Assist in the management of the healthcare professional with problematic substance use, especially benzodiazepines and opioids; including monitoring, drug therapy and rehabilitation

**Section Five:-  
Interprofessional Working and Learning**

## 5.1 Interprofessional Working and Learning

A specialist pain medicine physician (SPMP) should function within an interprofessional and multi-disciplinary pain management team to achieve optimal patient care. The European Pain Federation EFIC have established complimentary educational pathways for various professions, with a focus on interprofessional learning and working. By the end of training, the SPMP will be able to:-

5.5.1	Discuss the importance of interprofessional working in pain management along with potential barriers and facilitators to team-based care
5.5.2	Demonstrate an ability to work respectfully and in partnership with patients, families/ carers, healthcare team members and agencies, to improve patient outcomes
5.5.3	Engage in and create regular opportunities for interprofessional education and supervision understanding the importance and benefits of interprofessional learning
5.5.4	Critically reflect on own contribution to the interprofessional team and continually strive to improve interpersonal and team skills, e. g. communication, negotiation, problem solving, decision-making
5.5.5	Demonstrate understanding of professional perspectives, skills, goals and priorities of all team members
5.5.6	Negotiate overlapping and shared responsibilities with interprofessional colleagues for episodic or ongoing care of patients with pain
5.5.7	Respect professional differences, acknowledge misunderstandings and limitations in oneself and other healthcare professionals that may contribute to interprofessional tension(s)
5.5.8	Reflect, negotiate and work with others to minimise and resolve conflict and maximise patient outcomes
5.5.9	Participate in team discussions and implement strategies to improve team-based care and interprofessional working
5.5.10	Discuss the particular personal and team-related stressors inherent in specialist pain medicine practice, and seek assistance or provide support as necessary
5.5.11	Convey all relevant information when transferring care of a patient to another practitioner



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