

Colour Coding

Global	GREEN
Regional	BLUE
National	ORANGE
Local (State)	PINK

view article etc) as first author should be submitted to an indexed journal for publication before the candidate appears for the final PDAF exit examination.

13) Pain and Palliative Medicine Curriculum:

The training program can be updated and modulated as and when required.

Part I

Basic Sciences

- 1) **Applied Anatomy:** Basic and correlative neurovascular anatomy related to pain physiology and pain procedures, embryological development of brain, spinal cord, skull and spinal structures, neck anatomy and pain pathways.
- 2) **Applied Physiology:** Basic and correlative pain physiology
- 3) **Applied Pharmacology:** Basic and correlative pharmacology of drugs used for pain management and their clinical applications.
- 4) **Applied Bacteriology:** Basic bacteriology and antibiotics usage in pain procedures.
- 5) **Applied equipments:** Concepts of fluoroscope, radiofrequency machine, ultrasound machine, ozone generator, percutaneous endoscopic discectomy instruments, spinal needles, radiofrequency needles.

Part II

Clinical Sciences

- 1) History and clinical examination methods for pain patients.
- 2) Clinical management of various chronic pain disorders.
- 3) Acute postoperative pain management of patients
- 4) Cancer pain management
- 5) Palliative and end of life care
- 6) Ethics in pain and palliative care
- 7) Management of common emergencies

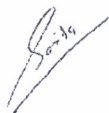
Part III

Recent advancements in pain medicine which includes:

1. Functional pain physiology
2. Spinal cord stimulation
3. Percutaneous endoscopic decompression
4. Intrathecal pumps
5. Percutaneous analgesics patches
6. Neonatal and Pediatric pain management.
7. Regenerative medicine
8. Stem cell therapy for pain control

CLINICAL SKILLS TO BE ACQUIRED BY THE CANDIDATES:

- History and clinical examination of pain patients
- Pre procedure evaluation of pain patients
- Perioperative management of pain procedures



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Advanced Pain management procedures like vertebroplasty, kyphoplasty, neuromodulation, intrathecal pump implantation and percutaneous endoscopic decompression.

- Proficiency in pain procedures
- Proficiency in acute pain management of post operative patients
- Multimodal analgesic regimes
- Palliative care:
 - WHO analgesic ladder for cancer pain
 - Intensive care of sick pain patients
 - Peri-procedure fluid and electrolyte management
 - Proficiency in sympathetic blocks
 - End of life care
 - Breaking of bad news to patients and care givers
 - Collaboration with community members for palliative care
 - Infection control in palliative patients
 - Management of complications in terminal cancer patients
- Advanced Cardiac Life Support
- Pain Medicine-Point of Care ultrasound

14) Final Exit Examination: The exit examination will be conducted as per DM norms of the institute; there be three papers focusing on Basic sciences, Clinical Sciences and Recent Advances.

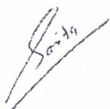
Eligibility: As per Institute's norms the duration of the course is 2 years including the exit exams.

Program outcome

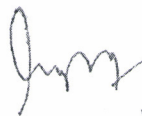
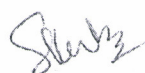
Pain is a significant public health problem and there is now a major shift in the understanding of pain from being just 'a sensory experience' to being a complex phenomenon. There is thus a lot to teach and learn to enhance effective pain control globally. Pain is the most common reason for patients to seek medical advice globally. Approximately 30% of the world's population suffers from pain; in India 19.3% adult population suffers from chronic pain. The World Health Organization estimates that 80% patients with severe pain never receive any adequate treatment. Like any long-term health problem, uncontrolled pain often leads to complications beyond physical symptoms, such as new or worsened depression, anxiety, and difficulty in sleeping.

The above figures emphasize the need of physicians specialized in pain and palliative medicine to take care of patients suffering from chronic and cancer pain across the world. The widespread prevalence of pain demonstrates the need for medical educators to recognize it as a common and often severe condition. Yet there are strong indications that pain receives insufficient attention in virtually all phases of medical education including graduation and post-graduation courses. Improving care for people with acute, chronic and cancer pain requires broad improvements in education, especially about the multiple causes and effects of pain, the range of treatments available to help people obtain relief, and the need to consider chronic pain as a biopsychosocial disorder.

The course aims to impart through, exhaustive and comprehensive training to the health care professionals, enabling them to –



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Function as a specialized faculty in the field of pain and palliative medicine by improving their knowledge and beliefs related to pain and palliative medicine.

2. Function as educators for pain specialists, nurses, and patients in the field of pain and palliative medicine.
3. Help and carry out conduct of applied research in pain and palliative medicine.

A post graduate student pursuing PDAF (Pain and Palliative Medicine) course will acquire adequate knowledge related to

- Basic Sciences as related to Pain Medicine. This will include basic and correlative neurovascular anatomy related to pain physiology and pain procedures, embryological development of brain, spinal cord, skull and spinal structures, neck anatomy and pain pathways.
- Clinical aspect of Pain Medicine: This will incorporate History and clinical examination methods for pain patients along with clinical management of various chronic pain disorders.

SUBJECT SPECIFIC LEARNING OBJECTIVES

During the Pain PDAF program, a student will acquire:

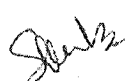
- A. Clinical, diagnostic, analytical, self-directed motivational learning with procedural and therapeutic skills required in care of patients with various pain disorders, especially headache, craniofacial pain, neck and shoulder pain, back and spine related pain, chest and abdominal pain, neuropathic pain, postoperative pain, cancer related pain, which are prevalent in the region, state and country.
- B. Have comprehensive knowledge and skills in the areas of basic, clinical and translational Pain medicine to understand the disease physical and psychological burden, epidemiology, patho-physiology and key determinants of pain in the region, state and country.
- C. Develop mentorship, leadership and networking skills to help teach, train and impart clinical and research skills to future pain physicians in the state and country.
- D. Acquire skills to establish an effective communication network with the patients, patients' relatives, health administration, policy makers, common public, community leaders, peers of medical fraternity and academicians in the field of Pain and palliative medicine along with allied fields.
- E. Demonstrate a detailed and comprehensive understanding about the epidemiology, patho-physiology, cellular and molecular pathology, diagnostic, management and preventive aspects of various types of pain disorders in children and adults.
- F. Along with the clinical pain management, should have skills in formulating research questions, planning, initiating and conducting translational, clinical and epidemiologic research that prioritizes thrust areas of Pain and palliative medicine at institutional, state, national and international levels.
- G. Should network to set up collaborative workforces at various levels to enhance the research milieu of the country with special focus on easing access to therapy, lowering the cost of treatment modalities, novel indigenous modes of treatment and prevention aspects of different types of pain disorders.
- H. Demonstrate compassion for patients and their families and have a ethical and holistic approach to them to help deliver evidence-based, respectful ethical care to the patients.

The student is expected to gain knowledge in the following FOUR key areas:

- A. Theoretical Knowledge:



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- The student will acquire knowledge in all aspects pertaining to the practice of Pain and palliative medicine with focus on the with various pain disorders, especially headache, craniofacial pain, neck and shoulder pain, back and spine related pain, chest and abdominal pain, neuropathic pain, postoperative pain, cancer related pain in the region, state and country. This shall involve teaching and training to enable the Pain PDAF student to provide specialist care to the citizens of the country. In addition to clinical training, research skills shall also be prioritized so that the Pain PDAF trainee gets the skills to set up collaborative networking at institutional, state, national and global levels to add to the research milieu of the country.
- The trainee shall acquire up-to-date knowledge, skills and attitudes in Pain and Palliative Medicine to understand the disease burden, epidemiology, patho-physiology and key determinants of chronic pain conditions in the region, state and country.
- Shall be able to make patient-centric decisions based on the latest scientific advances in Pain and Palliative Medicine after rationally examining available data and apply these ethically in a cost-effective manner tailored to the needs of the patients of the region, state and country.
- Shall be well versed not only with diagnostic and therapeutic modalities related to pharmacological and non-pharmacological management, interventions, cutting edge research and their application to diverse aspects of Pain and Palliative Medicine but shall also be trained in disease patterns, distributions, epidemiological burden and preventive aspects of Pain and Palliative Medicine.

B. Teaching skill


- The student will be able to teach diverse aspects of Pain and Palliative Medicine to other resident doctors, junior colleagues, nursing and para-medical staff to enhance the skills of the work force at local level.
- Shall develop mentorship and leadership qualities to help teach, train and impart clinical and research skills to future Pain and Palliative specialist in the state and country.

C. Research methodology

- Shall have the skills to recognize knowledge gaps and unmet areas of need relevant to pain disorders of the local community.
- To seek solutions to such areas of unmet clinical need, should be conversant with principles of research as applied to contemporary pain disorder spectrum prevailing in the local community, state or country.
- Shall be trained to formulate, write and conduct research proposal using appropriate methodologies related to Pain and Palliative medicine in accordance with ethical guidelines
- Shall have the skills to promote inter-institutional research and help train and guide those who wish to undertake pursue research

D. Group approach

- During the academic training, student will be part of multi-disciplinary meetings with specialists in Neurology, Neurosurgery, Orthopadics, Urology, Plastic surgery, Gastrosurgery, Endosurgery, Hematology and allied clinical disciplines.



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- This will help them to understand the concept of holistic pain management that seeks a multi-disciplinary approach in patient care. Inputs and insights gained during such interactions shall help in knowledge and skill building and is likely to improve patient outcomes of the region, state and country.

Board of Examiners

External examiners will be Pain and Palliative Care Physicians from all over India with a minimum of 10 years of teaching experience and active and direct involvement in the specialty of Pain and Palliative Medicine.

Internal examiners: One amongst Core Faculty members of the Pain and Palliative Medicine.

Theory Papers

There will be three theory papers with the following titles as per Institute's norms:

- Basic Sciences as related to Pain and Palliative Medicine
- Clinical Sciences as related to Pain and Palliative Medicine
- Recent advances in Pain and Palliative Medicine

Clinical practical and viva voce

One long and two short cases will be given to candidates and the discussion there on would last for 30-40 min per case. The candidates will also be given radiological images (CT, MRI, X ray etc), investigations (NCV, electrophysiological monitoring etc) reports to interpret. Various equipment used in operation rooms, drugs and neurolytic agents. will be exhibited for discussion. A grand viva will also be held.

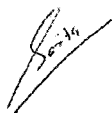
SUBJECT SPECIFIC COMPETENCIES

Cognitive Domain: The student should acquire knowledge in the following areas by the end of the training programme.

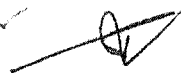
1. Relevance of topic and relevant literature review
2. Prepared and up to date with the topic
3. Clarity, content and presentation style
4. Engaging audience and answering questions
5. Effectiveness and feedback evaluation
6. Understanding of evidence based medicine
7. Understanding of types of research – Qualitative/Quantitative
8. Study design and statistical application
8. Good clinical practice in research
9. Critical appraisal of scientific literature and scientific medical writing


Affective domain

1. Work in a multidisciplinary/interdisciplinary team as a team member
2. Recognize contributions of other team members and involve them in care provision and co-ordination of care
3. Empower patients and their families facing life limiting/terminal illness



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Needs: Local : Pink, National : Orange, Regional: light blue, International : green

- Recognize stress and burn and institutes mitigation measures and recognizes need for self-care
5. Supervision, monitoring and leadership skills.

Psychomotor domain

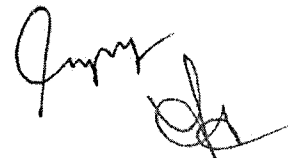
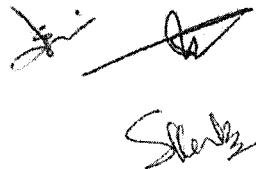
1. Comprehensive assessment and management of pain and physical symptoms.
2. Comprehensive assessment and management of psychological, spiritual, and social issues.
3. Communication skills in patients with advanced life limiting illness setting
4. Disease management options available to patients with advanced life limiting illness in oncology and non-oncology
5. Identification of supportive care needs and understand
6. Manage concurrent illness, co morbid conditions and complications
7. Provide comprehensive end of life care management.
8. Expert Clinical Decision making skills with full understanding of the sociocultural context of patients and families, their value system and beliefs
9. Ethics based decision making and good clinical practice
10. Provide specialist palliative care across all age groups and clinical setting.

15) Detailed Syllabus

1. Multidimensional Nature of Pain
 1. Definition of pain
 1. Biological significance of pain (survival value)
 2. Relationship between acute and chronic pain
 3. Distinction between nociceptive, nociplastic, and neuropathic pain
 4. Pain as a public health problem
 5. Epidemiology: Societal consequences
 2. Ethical issues
 1. The right to receive treatment for pain
 2. Pain disability and litigation
 3. Pain in children
 4. Pain and opiate dependence
 5. Pain research in humans and animals
 3. Basic sciences
 1. Neuroanatomy and Neurophysiology of Pain
 1. Peripheral receptors, afferent fibers, transduction and transformation, peripheral sensitization
 2. Spinal terminations and spinal processing of nociceptive information, spinal reflexes, ascending tracts, transmitters (peptides and amino acids)
 3. Brainstem mechanisms of pain (autonomic reflexes, ascending reticular activating system)
 4. Thalamic nuclei, nociceptive cortical network, cortical reorganization
 5. Descending control of nociceptive information and pain modulation
 6. Central sensitization
 7. Genetics in relation to pain mechanisms
 2. Pharmacology of Pain
 1. Basic pharmacology of local anesthetics
 2. Basic pharmacology of nonsteroidal anti-inflammatory agents



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3. Basic pharmacology of opioids
4. Basic pharmacology of medicines licensed for neuropathic pain
5. Basic pharmacology of other relevant analgesic medicines
3. Psychology of Pain
 1. Affective, cognitive, behavioral, and developmental aspects
 2. Pain attribution, self-esteem, self-efficacy, and perceived self-control
 3. Interpersonal issues, sick role, illness behavior (normal and abnormal), the role of the family
 4. The influence of political, governmental, and social welfare programs
 5. Cultural differences in pain meanings and treatment approaches
 6. Illness behaviors associated with pain (denial and amplification)
 7. Pain as a coded message of psychosocial distress
2. Pain Assessment and Measurement
 1. The validity, reliability, sensitivity, specificity, and clinical utility of methods for:
 1. The measurement of pain, disability, associated distress, and suffering
 2. Quantitative sensory testing in relation to specific mechanisms
 3. Assessment of pain relief and functional improvement (sleep, work, self-care, etc.)
3. Management of Pain
 1. General principles
 1. The measurement, quantification, and recording of pain
 2. The multimodal approach (multidisciplinary pain clinics)
 3. The clinician-patient relationship
 2. Clinical pharmacology
 1. Nonsteroidal anti-inflammatory agents and antipyretics
 2. Systemic and spinal opioids, endorphins
 3. Local anesthetics
 4. Medicines indicated for neuropathic pain
 5. Other medicines active against neuropathic pain (e.g., anticonvulsants, antidepressants)
 3. Psychotherapeutic and behavioral approaches
 1. Individual, family, and group psychotherapy
 2. Cognitive-behavioral therapy
 3. Relaxation techniques (biofeedback, etc.)
 4. Hypnotherapy, operant approach, stress management
 4. Physical therapy
 1. Exercise and other active treatments
 2. Manual therapy and other physical medicine treatments
 5. Neuromodulation techniques
 1. Transcutaneous nerve stimulation
 2. Brain and spinal cord stimulation
 3. Acupuncture
 4. Pulsed radiofrequency
 6. Nerve blocks (image guided)
 1. Local anesthetics
 2. Neurolytic solutions

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3. Ablative Radiofrequency
7. Interventional pain management of chronic pain:
 1. Minimally Invasive intervention Procedures for Treatment of Chronic Pain
 2. Physical Medicine and Rehabilitation Approaches to Pain Management
 3. Psychologic Interventions for Chronic Pain
 4. Interlaminar and Transforaminal Epidural Steroid Injections
 5. Selective Nerve Root Blocks
 6. Antitumor Necrosis Factor- α Drugs and Disease-Modifying Antirheumatic Drugs for Low Back Pain
 7. Pulsed Radiofrequency, Cooled Radiofrequency, and Cryoneurolysis
 8. Discography
 9. Vertebroplasty and Kyphoplasty
 10. Neurolytic Sympathetic Blocks
 11. Central and Peripheral Neurolysis
 12. Spinal Cord Stimulation
 13. Percutaneous endoscopic decompression
 14. Peripheral Nerve Stimulation
 15. Dorsal Root Ganglion Stimulation
 16. Implanted Drug Delivery Systems for Control of Chronic Pain
 17. Fluoroscopy and Radiation Safety
 18. Efficacy of Interventional Procedures for Neuropathic Pain
 19. Ultrasound-Guided Procedures for Pain Management: Spine Injections and Relevant Peripheral Nerve Blocks
 20. Deep Muscle Injections: Piriformis, Scalene Muscle, Iliopsoas Injections
 21. Ultrasound-Guided Musculoskeletal Injections—Shoulder, Hip, and Knee
 22. Head and Neck Blocks
 23. Truncal Blocks : Paravertebral, Intercostal, Pectoral Nerve, Suprascapular, Ilioinguinal, Iliohypogastric Nerve, and Transversus Abdominis Plane Blocks
 24. Fluoroscopy and Ultrasound-Guided Sympathetic Blocks : Stellate Ganglion, Lumbar Sympathetic Blocks, and Visceral Sympathetic Blocks
 25. Interventional Pain Procedures in Patients on Anticoagulants
 26. Interventional Pain Procedures and the Risk of Infection
 27. Nerve decompression
 28. Neurosurgical techniques
 29. Orthopedic techniques
4. Clinical Conditions
 1. Etiology, diagnosis, multidisciplinary management, economic impact, medico-legal, and compensation issues within:
 1. Emergency-service pain
 2. Postoperative pain
 3. Chronic primary pain syndromes

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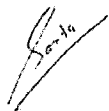
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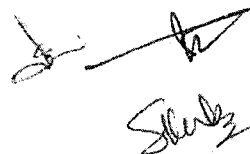
4. Chronic pain related to cancer or its treatment
5. Chronic postsurgical or posttraumatic pain
6. Neuropathic pain
7. Headache and facial pain syndromes
8. Musculoskeletal pain
9. Visceral pain
10. Cervicogenic Headache
11. Overview of Low Back Pain Disorders
12. Myofascial Pain Syndrome
13. Fibromyalgia and Centralized Pain States
14. Complex Regional Pain Syndrome
15. Herpes Zoster and Postherpetic Neuralgia
16. Postamputation Pain
17. Central Pain States
18. Chronic Pelvic Pain
19. Painful Peripheral Neuropathies
20. Entrapment Neuropathies
2. Specific pain issues related to:
 1. Children and infants (signs of pain, evaluation and management, physiology, acute and chronic pain)
 2. Elderly
 3. Developmentally challenged
 4. Pregnancy, childbirth, and breastfeeding
 5. The opioid tolerant patient
 6. Substance use disorders

Cognitive Domain

- **Define: "palliative care";** Demonstrate an understanding of "Palliative care" and "terminal illness"
- Demonstrate an understanding of the terms "palliative care" and "terminal illness" Describe the evolving nature of palliative care over the course of an illness, including integration with active treatment, and the significance of transition points.
- Demonstrate an understanding of palliative care as a generic skill and duty of all healthcare professionals; and the need for appropriate inter professional communication.
- Demonstrate appropriate communication skills, breaking news and breaking bad news, an awareness of the range of palliative care services available
- Demonstrate an awareness of the range of palliative care services available; Hospital based services and Hospices.
- Discuss the history, progress and place of Palliative Medicine.
- Discuss the advantages, disadvantages and relevance of different models of palliative care in the Indian Context
- Hospital based services and Hospices.
- Home visit programmes and community participation
- Describe the importance of Teamwork and networking in Palliative Care Describe the importance of Networking in Palliative Care
- Explain the concept of palliative care to a lay audience



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- Describe the mechanism of causation of pain to a patient or relative
- Explain the importance of "by the clock" drug therapy to a patient or relative
- Counsel a patient or family who are confused about definitive treatment and palliative care
- Counsel a patient who is reluctant to accept ART

Basic sciences

- Describe the anatomical, physiologic and biochemical basis of pain including pain pathways, receptors, neurotransmitters and central sensitization.
- Identify different types of classification of pain including: nociceptive/neuropathic, somatic/visceral etc
- Anatomic and physiologic pathways and neurotransmitters involved in emesis. Understand the patho-physiologic basis of symptoms like constipation, malignant bowel obstruction, spinal cord compression, raised intracranial tension etc
- Discuss the pharmacology, pharmacokinetics, pharmaco-economics and drug interactions relevant to Palliative Care
- Able to perform opioid conversion

Non communicable diseases

- Understand the pathological process and principles of management of Non- communicable diseases, including
- Cancer, including principles, practices and problems associated with
- Radiotherapy, Chemotherapy, Surgery, Hormone treatment
- Chemotherapy
- Surgery
- Hormone treatment
- End-stage heart, lung, liver, renal and metabolic diseases including diabetes and other non-communicable diseases.
- End-stage lung disease
- End-stage liver disease
- End-stage renal disease
- End-stage metabolic diseases including diabetes Other non-communicable diseases.

Communicable diseases

- Understand the pathological process and principles of management of Communicable diseases
- HIV-AIDS, including principles and problems associated with anti- retroviral therapy (ART)
- Other communicable diseases

Access to essential medicines including opioids.

- Understand the relevance of affordability of treatment measures, particularly in the context of the developing world.
- Describe the barriers to access to controlled medications particularly those that relate to the Narcotic Drugs and Psychotropic Substances (NDPS) act
- Describe the principle of balance.
- Describe the measures that can be taken to ensure uninterrupted access to controlled medications.

Pain

- At the end of the course, the student should be able to:

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- Assess pain systematically (Nature, Site, Severity, Radiation, Palliating and provoking factors, temporal factors and meaning of the pain for the patient) Identify common pain syndromes
- Describe the WHO analgesic ladder and identify its key components.
- Discuss the relative benefits/ indications/ contra-indications of different analgesics
- Discuss the role of adjuvant analgesics.
- Identify physical, psychological, social and spiritual factors influencing pain
- Understand the relevance of non-drug measures in pain management.
- Enumerate steps towards management of refractory pain.

Gastrointestinal symptoms

- Evaluate and manage common GI symptoms including nausea, vomiting, constipation, anorexia, bowel obstruction, hiccups, diarrhea, ascites, dysphagia and jaundice.
- Appropriate use of nasogastric tube
- Give nutritional advice on end-of-life situation
- Understand the problems of force-feeding
- Understand the role of role of surgical procedures, GI interventions e.g stenting.
- Understand stoma management in ostomies.
- Evaluate and manage common GI symptoms including nausea, vomiting, constipation, anorexia, bowel obstruction, hiccups, diarrhea, ascites, dysphagia and jaundice.
- Appropriate use of nasogastric tube
- Give nutritional advice on end-of-life situation
- Understand the problems of force-feeding
- Understand the role of role of surgical procedures, GI interventions e.g stenting. Understand stoma management in ostomies

Cardiorespiratory symptoms

- Enumerate the common causes of breathlessness, cough, haemoptysis and orthopnoea.
- Assess and manage.
 - pleural and pericardial effusions
 - superior venacaval obstruction
- Understand appropriate vs inappropriate use of oxygen and invasive ventilation.
- Use of opioids in dyspnoea
- Understand and manage terminal respiratory.
- Understand breathing techniques as a therapeutic tool.
- Understand the relevance of pleurodesis.
- Understand Prevention and management of pulmonary embolism.

Genitourinary symptoms

- Manage vaginal discharge and bleeding per vaginum.
- Diagnose rectovaginal, rectovesical and vesicovaginal fistulae, and understand indications for surgery
- Diagnose and manage bladder spasms
- Manage urgency and dysuria/anuria
- Understand the advantages and disadvantages of various methods of management of urinary retention and incontinence including

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- Identify and manage issues related to sexuality

Neurological symptoms

- Early diagnosis of spinal cord compression and appropriate action
- Manage: raised intracranial pressure, seizures, delirium
 - raised intracranial pressure,
 - seizures
 - delirium

Psychiatric manifestation

- Diagnose and manage the following conditions within the domain of Palliative Medicine depression, anxiety, panic, confusional states, insomnia, hallucinations

Oedema

- Describe the causes, prevention and management of different types of oedema including lymphoedema
- Diagnose and manage lymphoedema
- Diagnose and manage deep vein thrombosis,
- Diagnose and manage acute inflammatory episodes and lymphorrhoea
- Use of compression garments

Other symptoms

- Diagnose and plan management of Pathologic fractures, Itching, Pressure sores, Fungating wounds, Malodour, Candidiasis, Sore mouth, Anaemia and Fatigue

Metabolic disorders

- Assess and manage hypercalcemia, hyponatremia SIADH, hypokalemia, hypoglycemia, dehydration

Care of the elderly

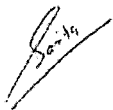
- Understand, assess and manage
 - Medical conditions specific to the elderly
 - Psychological problems common in the elderly
 - Social issues that are relevant to the palliative care of the elderly
 - Principles and practice of palliative care in the elderly
 - Integration of palliative care into geriatric medicine

Paediatric Palliative Care

- Understand, assess and manage
 - Reactions of children to health issues specific to various age groups including relevance of parental separation
 - Medical conditions requiring palliative care in childhood
 - Procedure related pain in children
 - Pain and other symptoms in children
 - Psycho-socio-spiritual issues in children
 - Family support and bereavement support

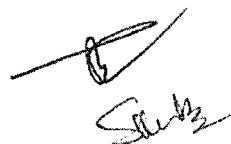
Emergencies and Death

- Assess and manage emergencies including Bleeding
- Spinal cord compression
- Intestinal obstruction
- Breathlessness and Others



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- Prognosticate death
- Demonstrate awareness of a care pathway
- Assess and manage end of life situations including
 - Terminal delirium
 - Secretions and "rattles"
 - Conflicts in family regarding end-of-life decisions
 - Unrelieved symptoms
- Evaluate and reduce medications as appropriate and prepare the family for likely outcomes.
- Prepare the family for the changes that are likely to happen
- Understand the indications, role and modalities of Palliative Sedation Therapy

Psychosocial responses to illness

- Social and Family Relationships
- Psychological Responses of Patients and Carers to Life-Threatening Illness and Loss .
- Interface with Psychology and Psychiatry
- Management of Violent/Suicidal Individuals
- Grief and Bereavement,
- Patient and Family Finance

Communication skills

- The Patient as the Central Focus of Care
- Relationships with Patients and Communication within a Consultation
- Communication with Patients and Carers
- Breaking Bad News

Research and Education

- Identify important peer-reviewed journals on palliative care
- Know how to access literature
- Gather knowledge related to basic and clinical trial methodology
- Understand and able to conduct-different phases of clinical trials, e.g. Phase I, II, III, IV and their implications in Palliative Medicine
- Identify the levels of evidence among published research
- Demonstrate the ability to analyse the quality and implications of medical literature and apply new knowledge in the delivery of health care
- Know important recent advances in the field
- Demonstrate understanding of different teaching methods and structure, including lecturing, problem based learning, role play, bedside teaching
- Demonstrate understanding of teaching contexts (eg. Size of group, professional or otherwise, undergraduate or postgraduate,
- Demonstrate understanding of selection, preparation and presentation of teaching materials
- Demonstrate understanding of how to make a lecture interactive
- Demonstrate understanding of the role of supervision, mentoring, learning contracts, critical appraisal and feedback, experiential learning.
- Plan learning aims, objectives, methods and outcomes.
- Demonstrate understanding of the concept of continuing professional development.
- Demonstrate understanding of framing suitable specific learning objectives.

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- Conducting clinical sessions for undergraduate medical students, nurses and paramedical workers
- Prioritize core competencies in curriculum planning
- Demonstrate an interest and ability to identify future areas of inquiry in medical research
- Utilize knowledge of population based and evidence based medicine in making patient management decisions.
- Have familiarity with basic research methodology, epidemiology, basic information technology skill
- Plan the protocol of a research project, execute it and prepare final report.
- Understand the ethical principles guiding medical research
- Demonstrate knowledge of study design and relevance of sample size

Medical Statistics

- Demonstrate knowledge of:
- Basic concepts of medical statistics
- Mean, median, mode, standard deviation, analysis of variance and correlations Student's T test
- Chi square test
- Fisher's exact test
- Non-parametric tests of significance
- Multivariate analysis
- Survival analysis-log rank test
- Relative risk calculation
- Demonstrate familiarity with commonly used statistical software

Computer application

- Demonstrate familiarity with use of Microsoft word
- Microsoft PowerPoint
- Microsoft Excel
- Internet searching scientific databases (PubMed, Medline, Cochrane reviews)

Affective Domain

Communication skills

- Understand the basic principles of communication including the purpose, active listening and what not to do.
- Describe the steps in effective communication
- Understand possible reactions of patients and families to bad news and respond appropriately
- Understand reasons for collusion within the family and deal with it sensitively

Team work

- Understand the importance of teamwork in this setting and have an appreciation of the skills and contributions of different members of the team
- Identify the role and responsibilities of doctors and other members in multi-professional teams.
- Understand the skills and contributions of other members of the multi-professional team.
- Understand the inevitability of conflict within a team, and strategies to manage this. Understand Skill mix of a team, particularly in relation to the appointment of new members.
- Know the basics of chairing of team meetings.

Leadership skills

- Demonstrate understanding of: Management of change

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- Writing a job description and person specification
- Short-listing and interviewing skills
- Writing a reference
- Induction and training
- Mentoring skills
- Assessment of trainees/junior colleagues
- Motivating and leading a team
- Management styles
- Goal setting
- Short and long term strategic planning
- Negotiating, directing and delegating
- Principles of advocacy with Government and media
- Principles of involving the community in care clinical practice.

Panel of experts for External Examiners:

	Name	Email	Contact
1.	Prof. A. K. Saxena Professor Dept. Of Anaesthesiology UCMS, Flat No.5 Parivar Apartment IP Extension Delhi 110092	profashoksaxena2@gmail.com	9810431367
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8.	Dr Anurag Agarwal Professor	dranurag11@gmail.com	73889 70385

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16	Dr PritiSanghavi, Professor and Head, Department of Palliative Medicine, Dy Director, Gujrat Cancer & Research Institute Ahmedabad	drpritisanghavi@gmail.com	9825420656

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