



**PRAVARA INSTITUTE OF MEDICAL SCIENCES
(DEEMED TO BE UNIVERSITY)**

**Loni, Tal. Rahata, Dist. Ahmednagar 413736
NAAC Re-accredited with 'A' Grade**

SYLLABUS

**Post Doctoral Fellowship in Pain Management
(Dept. of Anaesthesia)
(Dr. Balasaheb Vikhe Patil Rural Medical College)
(Academic Council Meeting Dated 28th October 2021)**

Title: Post Doctoral Fellowship in Pain Management

Proposal

Proposal to start **one year fellowship** in pain management for post M.D. DNB Anaesthesia, DA with one year experience of anaesthesia work, candidates from RMC, PIMS (DU) Loni as well as from outside college candidates.

Introduction

Pain management is an emerging branch in the field of Anaesthesia. Pain management clinics specialize in helping patients achieve the best quality of life possible. As the trend in pain management has been moving towards a multi-disciplinary approach, setting up a good pain management clinic means assembling the right skills and knowledge with respect to anatomy, physiology, pharmacology, radiology, aiding instruments like USG, C-ARM and Computed tomography.

In the course of postgraduate (M.D. DNB) training in anaesthesia there is rotation for pain management but the exposure to wide variety of cases in all age group may not be adequate enough to have confidence to provide pain management independently. This lacunae can be filled by the one year fellowship in pain management. Different institutes are having such fellowship programmes.

In our Institute we have a successfully running Pain management clinic OPD since 2019.

Dr. Amol Bhalerao is working at this clinic as a pain management physician having experience of 5 years in interventional pain management. Anesthesiologists from our institute are exposed to patients for providing analgesia & contribute for the success of this clinic. We have well developed & well equipped Post operative recovery rooms for taking good post operative care of patients which is also very important factor in contributing towards the success of the clinic.

In general we are providing pain free life for 30-40 patients in OPD and around 10-15 interventions are being done per month. Outside OT we have to deal with acute traumatic pain and post operative analgesia in wards and ICU for the patients who undergo orthopedic or major general surgeries.

Considering the patient load for pain management, this fellowship can be welcomed under our esteemed institute PIMS Loni.

Program Highlights :

1. Module Based learning.
2. Full-time residential program including hands-on experience with qualified dedicated faculty for acute and chronic pain services.
3. Best & Latest equipment (Ultrasound, C-ARM guided Fluoroscopy, computed tomography guided etc) available for teaching & training.
4. Experience and Training in managing an Acute Pain Service.
5. Compulsory training, participation, and completion of one research paper as original research.
6. Regular didactic lectures.
7. Possibility of linkage with Senior Residency in Anaesthesiology.

From the year 2019, PG seats in anaesthesia have increased to 11 students per year. These PG students are more likely to seek such fellowship from their parent institutes as they will be learning pain management in more familiar atmospheres. This permits students to pursue fellowship alongside 1 year senior residency. Fellowship programme will also initiate newer development in the techniques & use of newer drug agents in the field of pain management. With this additional qualification, our students can also position themselves in large set up at metro cities & big cities to project our institute's name to higher level.

Curriculum/ Course syllabus :

A. Gain proficiency in managing Chronic Pain

- The fellow will be exposed to the pharmacologic, interventional, as well as the conservative treatments of the non-cancer pain conditions like discogenic low back pain, sciatica, headache, pelvic pain, neuropathic pain (postherpetic neuralgia, CRPS, trigeminal neuralgia etc) and also cancer pain.
- The fellow will have clinical experience with patients with chronic benign pain syndromes during their outpatient clinic experiences and will document a minimum of 200 different patients over a 12 months period.
- He/she will also learn to interpret and become familiar with basic neuro-imaging, identify significant findings, including MR and CT of the spine and brain and/or MRI studies drawn from the examples within the following areas: brain, cervical, thoracic, and lumbar spine when assessing patients with chronic pain.

- Gain proficiency in interventional Fluoroscopy / Ultrasound Assisted Blocks/ interventional Procedures: The fellow will be exposed to interventional procedures such as discography, intradiscal techniques, radiofrequency ablation and long term management. Each fellow will document the involvement of a minimum of 50 patients who undergo interventional procedures.

B. Gain exposure to the Multidisciplinary treatments of pain.

- The fellow will rotate through the Hospice and palliative care service for management of cancer pain and palliative medicine experience. In addition, other specialists (physical therapists, neurosurgeons, neuroradiologists, etc.) may also be invited to give lectures to the fellows.

Gain exposure to teaching, administrative aspects associated with practices of Pain Medicine, Research and Projects:

- The fellow will present formal lectures to the residents rotating through the service.
- Depending on his/her expertise and enthusiasm, the fellow will have the opportunity to present cases and lectures to the department.
- Each fellow must present one Morbidity/Mortality Case discussion to the section of pain medicine during the academic year. A post-lecture self-evaluation would also be completed by each fellow.
- All fellows will gain exposure on the administrative aspects of pain management which include setting up a pain practice, conducting public awareness campaigns, etc.
- The fellows will be involved with problem-solving aspects and process improvement of the Pain Medicine practice and would also pursue, develop, plan and execute a project that will improve patient safety and promote “best practice” principles. A timeline for this project will be presented by the project guide. The project must be fully completed prior to completion of the fellowship. Failure to complete this project may result in probation or suspension.

C. Gain exposure to the Principles of Physician and Patient Safety:

- All fellows will participate in formal and informal lectures regarding radiation safety, addiction and or dependence issues in pain practice, etc.

D. Optional exposure to Psychiatry, Occupational Therapy & Physical Therapy

- Fellows will spend clinical time with other specialists like psychiatrists, occupational therapists or physiotherapists during their course.

Required Teaching List:

A schedule of lectures for the fellows and residents shall be made every month and distributed to the fellows. The schedule will be given to the fellow at the end of the previous month, All topics to be covered in the curriculum would be covered. The topics that can be covered throughout the year include, but should not be limited to, the following topics of pain assessment and treatment:

1. Prevalence, the magnitude of Problem of chronic non-cancer and cancer pain
2. Brief History of Pain Management
3. Anatomy and Physiology
 - a. Peripheral Mechanism.
 - b. Central Mechanism.
 - c. Pain Modulation.
4. Pharmacology of pain transmission and modulation
 - a. Peripheral Mechanism.
 - b. Synaptic transmission in dorsal horn.
 - c. Central sensitization.
 - d. Neurotransmitters in pain modulation.
5. Psychosocial aspect of pain
 - a. Definition and measurement of pain
 - b. Individual differences
 - c. Behavioural processes
 - d. Emotional problem and psychiatric disorders associated with pain
6. General principles of pain evaluation
 - a. Diagnosis
 - b. Clinical History & Patient Examination
 - c. Investigation: Interpretation in reference to various Pain Syndromes:
 - i. PCR (Tuberculosis)/ Anti- ccp / HLA B-27/ Common blood investigations
 - ii. Radiological: X-Ray, MRI,CT, CT Angio, Bone Scan, BMD/DEXA
 - iii. Neurological : NCV/ H-Reflex
7. Drug treatment
 - a. Analgesics,* NSAID,* Antidepressant, anticonvulsant and miscellaneous agents :Narcotics Morphine, Oxycodone, Hydromorphone, buprenorphine, Methadone, Tramadol, Fentanyl.
 - b. Adjuvants: TCA, SSRI , Dothiapine, Milnacipram, Duloxetine, Gabapentin, Pregabalin.
 - c. Bisphosphonates, Calcitonin, Parath. Hormone.
 - d. Neurotropic / Vitamin: Methocobalamine, Vit E, Vit D, Folic Acid.
 - e. Muscle relaxants: Baclofen.

- f. Miscellaneous: L-Carnitine, Botulinum Toxin, Hylaluronate.
 - g. Anti-rheumatoid(DMRD): Leflunamide, Methotrexate, Biologicals, Steroids.
 - h. Neurolytic Drugs: Alcohol, Phenol, Chloro-cresol, Hypertonic Saline, anhydrous Glycerol, Ozone , Radio-Frequency(Auto/Pulse) , Cryo-Lesion.
 - i. Anti-Tubercular Drugs.
 - j. Local Anaesthetics.
8. Aetiopathogenesis, Clinical history, Examination, Diagnosis , D/D, Management , complications and Follow Up of following Pain Syndromes: (10 hours)
- a. Headache/ Migraine/ Trigeminal Neuralgia/ OroFacial Pain.
 - b. Discogenic Pain / IDD(Intradiscal Disc Disruption).
 - c. Lumbar Canal Stenosis(LCS).
 - d. Facet Joint Arthropathy, Kochs Spine, Discitis (tubercular/ Pyogenic).
 - e. Osteoarthritis, Osteoporosis ,Ankylosing Spondylitis, Rheumatoid Arthritis.
 - f. Sacroilitis, Coccydynia.
 - g. Urogenital Pain Syndromes / Pelvic Pain.
 - h. Low backache due to disc prolapse.
 - i. Neuropathic Pain including syndromes like post herpetic neuralgia.
 - j. Complex Regional Pain Syndromes(CRPS).
 - k. Vascular & Sympathetic Mediated Pain.
 - l. Pain during pregnancy.
 - m. Management of Cancer Pain: Magnitude of problem, Etiopathogenesis, Clinical presentation, Diagnosis and Management of Cancer Pain.
- 1. Medication: NSAID, Narcotics(Morphine, Codeine, Tramadol, Oxycodone, Hydromorphone, Methadone, Fentanyl(Patch/Nebulised).
 - 2. Adjuvants.
 - 3. WHO Analgesic Ladder / WHO Cancer Pain relief Programme.
 - 4. Neuroablative Procedures
 - 5. Vertebroplasty
 - 6. Percutaneous Chordotomy
 - 7. Intrathecal/ Epidural Infusion Device
9. Non-surgical neuro augmentative techniques (2 hours)
- a. Nerve blocks
 - b. Surgical approaches
10. Stimulation techniques (3 hours)
- a. Spinal Cord Stimulation.
 - b. DRG Stimulation.
 - c. Peripheral Nerve Stimulation.

11. Physical medicine and rehabilitation (3 hours)

- a. TENS.
- b. Acupuncture.
- c. Vibration / USG.
- d. Physiotherapy

12. Psychiatric and Psychological treatments (2 hours)

- a. Cognitive Behavioural Therapy
- b. Psychotherapy, Counselling
- c. Hypnotherapy, Yoga

13. Multidisciplinary management

14. Interventional pain management

- a. Radiofrequency (RF) / Drug induced Nerve Ablation technique.
- b. Gasserian Ganglion RF Lesion / steroid injection / neurolysis.
- e. Stellate Ganglion RF lesion.
- f. Celiac Plexus Block (Trans Discal/ Trans Aortic).
- g. Splanchnic Nerve RF lesion.
- h. Supra scapular RF lesion.
- m. Medial branch RF lesion.
- n. Sacroiliac Inj., Ganglion impar RF lesion.
- o. Superior Hypo gastric Plexus Block(Trans Discal).
- p. Ganglion Impar RF.
- q. Intraarticular Inj.
- r. Platelet Rich Plasma(PRP) Therapy.

15. Post-operative pain - PCA/PCEA (1 hour).

16. Acute Pain Service (2 hours).

17. Pain in children (1 hour).

18. Obstetric analgesia (1 hour).

19. Stem Cell Therapy/ Genetic Basis of Pain (1 hour).

20. Ethical aspect of pain management (1 hour).

21. Euthanasia (1 hour).

22. Research (Pain management) (5 hours).

23. Palliative Care: Cancer/ AIDS/ Motor Neurone Disease: (6 hours)

- a. Cancer Pain: Prevalence, magnitude of problem , current status , WHO cancer Pain Relief Programme Definition , essentials of Palliative Care.
- b. Physical aspect.
- c. Disease process.

- d. Symptom control: Pain, Anxiety, depression, anorexia, asthenia, Lymphoedema, ascites.
- e. Pharmacological management of cancer pain.
- f. Management of terminally ill patients- last 24 hours.
- g. Family and social background.
- h. Communication skills, bereavement.
- i. Religious and cultural aspects.
- j. Ethical aspect.
- k. Team work.
- l. Organizational aspect: Home, Hospice and Hospital based Palliative care.
- m. Research in Palliative care.
- n. Hospice, End of Life Care.

24. Rheumatology (2 hours).

25. Functional assessment and disability adjustment (1hour).

Course Structure

The total Duration of the course will be 12 months (one year)

During fellowship candidates will learn about

Importance of pre anaesthesia check up for planning of pain relief procedures.

Regional

c) Epidural anaesthesia – learn the technique of establishing epidural anaesthesia with specific no. Tuohy's needle & catheter, use of drugs with proper doses & adjuvant, Learning the advantages of techniques

d) Nerve blocks

Learning techniques of different blocks, under PNS & USG and C-ARM fluoroscopy guidance, knowing the doses of local anesthetic drugs being used, limitations of techniques. Need for supplementation of sedation for the successful utilization of nerve block.

There will be formal teaching, lecture, seminars, case presentations with respect to pain management cases in general surgery, Orthopedics, Neurosurgery.

Candidates will be given hands procedures for fluoroscopic guided blocks, USG guided nerve blocks, cancer pain management, and will also gain experience in conservative management of various pains.

Candidates are expected to participate in one state/national/international conference & present paper, poster. Candidates are expected to publish one paper during the year. Candidate should maintain log book for the entire course.

At the end of year there will be written exam consisting of two papers of 100 marks each & practical & viva examination of 100 marks.

Text books on pain management for reference:

1. Comprehensive treatment of Chronic pain by Medical, interventional and integrative measures : The American Academy of Pain Medicine : Timothy R Deer
2. Atlas of Interventional Pain management : 8th edition : Steven D. Waldman
3. Atlas of Image guided Interventions in Regional and Pain Medicine : 2nd edition : James p. Rathmell
4. Practical management of pain : 5th edition
5. Wall and Melzack's Textbook of pain : 6th edition
6. Atlas of Pain Management injection Techniques : Waldman
7. Principles and practices of Pain Medicine : 3rd Edition : Zahid H. Bajwa
8. Treatment of Chronic Pain by Interventional Approaches : The American Academy of Pain Medicine : Timothy R Deer
9. Bonica's Management of Pain : 5th Edition
10. The Massachusetts General Hospital Handbook of Pain Management
11. Comprehensive Atlas of Ultrasound-Guided Pain Management Injection Techniques : 2nd Edition :Steven D. Waldman
12. Ultrasound for Interventional Pain Management : An Illustrated Procedural Guide

After successful completion of the course the candidate will be awarded a certificate of completion & a certificate in Institution's annual convocation Programme.

Admission Criteria

- M.D., DNB in Anaesthesia, DA with one year experience of anaesthesia work from any recognized university in India or abroad.
- Overseas candidates will have to obtain MCI registration before joining.
- PIMS may conduct entrance examination if there more than 20 application otherwise candidates will be selected by interview.

Other Issue

- One lakh per year course fees may be charged from candidates
- Post M.D. / D.N.B. candidates DA with one year experience of anaesthesia work can be promoted to join fellowship programme during SR ship & pay for the course charges to university.
- Such candidates will get the payments of SR ship as per the rule of PIMS.
- Candidates will do emergency duties as per the departmental schedule.

SOP/ Regulations for the fellowship Programme in "Pain Management"

1) Title of Programme, Programme objective, Year & date of Implementation

Title - Post Doctoral Fellowship in "Pain Management"

Objective -

- a) To train the postgraduate students in management of Pain.
- b) To upgrade the Department of Anaesthesia by developing fellowship programmes.
- c) To highlight the prestige of PIMS through different fellowships.

- d) To initiate research work in pain management.
- e) To avail the facility of such fellowship in rural area & giving the rural patient services as good as metro cities.
- f) To develop high standards in pain Management this will in turn attract postgraduate students from all over India & contribute towards the progress of PIMS.

Year & Date of Implementation – January and June of every year, can be finalized after discussion.

2) Eligibility of the programme

- M.D., DNB in anaesthesia, DA with one year experience of anaesthesia work from any recognized university in India
- Postgraduate qualification in anaesthesia from any recognized universities from abroad, provided that the candidate clears MCI examination & obtains MCI or state recognition.
- If there are less than 10 applications candidates may be selected on the basis of interview only. If there are more than 10 applications a CET may be conducted. CET will include MCQS & justification essay.

3) Duration -

- One calendar year with two semesters
- 900 TL
- 40 Credits (20 Credits each semester)

Candidates will be expected to publish one research paper & attend one state/national / international conference & present paper or poster.

4) Curriculum Delivery /Transaction

- Candidates will be posted with different surgical faculties' e.g. General surgery, Neurology. Orthopaedics surgery. Candidate will learn giving anaesthesia & related problems under the faculties posted in these theaters. Candidates will rotate in these theaters.
- Over the year, candidates will have seminar, Case presentation, Journal club, and lecture in the afternoon session twice a week. Detailed programme can be prepared for the year.

6) Programme outcome

After completing the fellowship programme the candidates will be confident in providing conservative management for various pains, USG guided regional blocks and C-ARM guided fluoroscopic blocks and intra articular steroid injection.

Candidate will also be able to manage the post operative and acute trauma induced pain management .

7) Examination & Evaluation Methods

Two examination will be conducted at the end of each semester.

First Examination at the end of first semester includes

- a) Anatomy of human body.
- b) Physiology of pain
- c) Pharmacology
- d) Preoperative checkup & preparation of patient before procedure.
- e) Premedication

Final Examination at the end of second semester will include

- a) Type of procedures
- b) Nerve Blocks
- c) Specific problems related to different procedures.
- d) Recent advance in pain management

Examination -

Each Examination will consist of two theory paper or 100 mark each.

Passing marks will be 50%

Papers will be evaluated by senior professor in anaesthesia

For practical -Oral -anatomy, physiology, pharmacology, procedures of pain management.

Table viva for Drugs, Xray, USG, anatomical markings of nerves.

Marks 100

Passing 50%

Theory papers two - marks 100 Duration 3 Hrs.-

Portion

Anatomy and Physiology of Human body.

Assessment and monitoring of patients.

Pre-medications

Regional anaesthesia - Spinal, Caudal, epidural

Nerve blocks with PNS, USG and C-ARM guidance.

Special disease conditions.

Pain management in acute and chronic pain.

Labor analgesia.

Pediatric analgesia.

Complications and their management.

Radiation Hazards.

Practical- 100 marks-passing 50%

Consist of -Case presentation -1 major & 1 Minor

Table viva

Paper will be evaluated by Senior Professor

8) Certification authority & design of certificate

- Certification authority will be Vice-chancellor, PIMS
- Certificate design will be according to PIMS design.

9) Place & venue of the academic work at the Programme - PIMS, RMC, Loni

10) Department offering the programme-Department of Anesthesia

11) Intake per batch- maximum intake of **four students** per year.

12) Academic Calendar – Admissions in the month of January and July if seats are vacant every year. And Examinations will be conducted at the end of 12 months of fellowship programme.

13) Time Table- to be submitted later

14) Maintenance of attendance-Via Biometric Attendance

15) Arrangement & conduction of programme-

- Class room session – In Seminar hall of Dept. of Anaesthesia.
- Practical session- In all operation theaters and Pain Clinic OPD.

16) Liaison- HOD Anaesthesia or Senior Professor

17) Evaluation- HOD & Senior Professor

18) Documentation-HOD & Senior professor

19) Appointment of Director/Coordinator. Resource Person, Teacher Assistance -Dean, RMC

20) Approximate Expenditure involved to run one batch per programme.

Administrative expenditure at 20,000 is expected for paper work, processing of applications, Advertisement and conducting interviews.

More expenditure may be incurred to procure external examiners for practical examination

21) Fees proposed to be charged per course-1 lakh/person/ yr.

22) Financial and administrative expectation from PIMS (Du)/PMT to run the programmes :

PIMS-DU/PMT will be expected to provide accommodation to the participants in postgraduate Hostel, Provide mess facilities & Library facility with books & journals on pain management and dedicated USG machine with high resolution for giving nerve block.

23) Infrastructure requirements-Classroom, Operation Theater, dedicated pain clinic with good number of patient influx.

24) Yearly A-A-A0 Audile of the programme & financial audit process & format-according to the PIMS norms.

25) Annual meta-evaluation and up gradation of the content & delivery of the programme.- according to PIMS norms

26) Central documents – According to PIMS Norms

27) Grievance redressal and appeals mechanism- According to PIMS Norms

28) Any other aspect of the programme not covered above :

- Provision of leave
- The candidates will be working at SR level and thus will receive salary for the same post from the institute.

29) Saving clause in case of difficulty – powers of the authorities of the university. According to PIMS norms

The facility of the fellowship provision can be highlighted on PIMS website with special mention regarding the variety of procedures performed & number of cases performed per year. This will definitely attract candidates for this fellowship.

30) Evaluation:-

Term end examination will be arranged and conducted by Dept. of Anaesthesia, Dr. Balasaheb Vikhe Patil Rural Medical College and declare the result.

Examination Scheme

Paper – I : Post Doctoral Fellowship in Pain Management – I

Paper – II : Recent advances in Post Doctoral Fellowship in Pain Management

Theory Examination:- (2 Paper of 100 marks each)

2 LAQ x 20 Marks = 40 Marks

6 SAQ x 10 Marks = 60 Marks

Practical Examination:-

One Long Case / Long experiments = 50 Marks

Three Short Cases (3 x 30) = 90 Marks

Viva Voce / Oral / OSPE / Spottes = 60 Marks

Minimum Passing:-

i) Minimum 50% in Theory papers (Each paper minimum is 40%)

ii) Minimum 50% in Practical / Clinical & Viva Voce

iii) Overall 50% Theory & Practical/Clinical

Award of class:-

50% to 59.5% = IInd class

60 to 74.5% = Ist Class

Above 75% = Ist Class with Distinction

Attempts:-

- A student shall clear the Examination only within three attempts or within 4 years of admission.
- Result / Issue of Mark Sheet – Head of Institute & HOD will jointly issue the Mark Sheet.

Certification:-

- A) Title – Post Doctoral Fellowship in Pain Management.
- B) A fellowship is awarded upon successful completion of the prescribed study program, which will state that i) Candidate has completed the prescribed course of Post-Doctoral Fellowship in Pain Management. ii) Candidate has completed prescribed clinical experience. iii) Candidate has passed the prescribed examination.
- C) Certificate will be issued with the signatures of concern Dean, Dr. Balasaheb Vikhe Patil Rural Medical College & Vice-Chancellor, Pravara Institute of Medical Sciences (Deemed to be University).
- D) Certificates to be prepared by concern College.

Mandatory Fulfillment:-

- 1) To participate in UG teaching / PG teaching.
- 2) Presentation of 6 assignments.
- 3) One Research Methodology Workshop.
- 4) Participation / Presentation with minimum One Research article in Seminars/Conferences/workshop etc.
- 5) One Research Paper in Indian / Scopas / UGC Care list journal.

