NATIONAL POSTGRADUATE MEDICAL COLLEGE OF NIGERIA

PAIN MEDICINE CURRICULUM

FACULTY OF ANAESTHESIA

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FACULTY OF ANAESTHESIA
NATIONAL POSTGRADUATE MEDICAL COLLEGE OF NIGERIA
CURRICULUM FOR PAIN MEDICINE
(FELLOWSHIP AND DOCTOR OF MEDICINE PROGRAMMES)

i) MD Programme: Doctor of Medicine, Pain Medicine (MD, Pain Medicine)

ii) Fellowship Programme. Fellowship of the Medical College in Anaesthesia (Pain Medicine).

A. INTRODUCTION

The course shall be designed to train Pre-Part 2 candidates of the National Postgraduate Medical College of Nigeria in Anaesthesia or Post Fellowship candidates in Anaesthesia or related specialties of the National Postgraduate Medical College of Nigeria, West African College of Surgeons, West African College of Physicians, who desire to specialize and function as Pain specialists. The training program shall enable the trainees to function as Consultants with specialization in Pain Medicine.

B. PROGRAMME PHILOSOPHY

As with all health professions, the objective of the curriculum is to instill the knowledge and skills necessary to advance the science and management of Pain.

Principles of the course:

i. All health-care professionals have an obligation to be empathic and to assess and work with patients and families to manage pain.
ii. Interprofessional learning opportunities provide students with an understanding and appreciation of the expertise of professions other than their own.
iii. Comprehensive pain assessment and management is multidimensional (i.e., sensory, emotional, cognitive, developmental, behavioral, spiritual, cultural) and requires health professional collaboration.
iv. Effective pain management outcomes occur when health-care professionals work together with patients, families, communities, and health-care providers (e.g., regulatory, insurance).
v. Interprofessional pain education is most successful when it reflects real-world practices and is integrated early in the educational experience.
vi. The focus of interprofessional education is patient-centred in the context of team learning.

C. AIM AND OBJECTIVES

The objective of this curriculum is to instill the knowledge and skills necessary to advance the science and management of pain as part of an interprofessional team. The desired outcomes of education emphasize critical competencies that support the humanistic aspects of health care and the learner's capacity to successfully carry out tasks in the real world. The fundamental concepts and complexity of Pain include how pain

is observed and assessed, collaborative approaches to treatment options, and application of pain competencies across the life span in the context of various settings, populations, and care-team models.

Upon completion of this Pain curriculum, the candidate will be able to:

i. Discuss the multidimensional nature of pain and its components, implications for patient-families, and relationship to clinical interventions.
ii. Discuss clinical assessment and measurement approaches and misbeliefs common to health- care professionals.
iii. Describe multi-professional and interprofessional strategies for the planning, intervention, and monitoring of pain-management outcomes.
iv. Develop and discuss as part of an interprofessional student group the rationale for patient-centered pain assessment and management plans based on authentic patient cases (actual or scenarios).
v. Discuss inadequately managed pain assessment and management from an ethical, safety, social, and political perspective.

D. ENTRY REQUIREMENTS

Fellowship Programme: Candidates must have passed the Part 1 Fellowship examination in Anaesthesia, of the National Postgraduate Medical College of Nigeria. In addition, candidate must register for subspecialty programme in Pain Medicine within six months of passing the Part 1 examination. Candidate must also submit proposal for dissertation in the subspecialty.

MD Programme: Candidates with the Part 1 Fellowship of the Faculty of Anaesthesia, NPMCN who have registered for the MD programme in Pain Medicine.

E. DURATION OF PROGRAMME

Fellowship Programme: Duration of the programme is a minimum of 36 months of which the last 18 months must be in the specialty of Pain Medicine.

MD Programme: Six (6) semesters or six (6) months before the Part 2 Final Fellowship examination.

The candidate is advised to do 3 months rotation in a fully accredited institution within the country or in a recognized institution outside the country

F. THE FIRST STAGE OF SENIOR RESIDENCY TRAINING

The duration of this stage is eighteen (18) months.

i. GENERAL EDUCATIONAL OBJECTIVES

This period must be spent in acquiring further knowledge in the subspecialties of Anaesthesia. During this phase of training, residents are expected to perform at a higher proficiency level than they did during their junior residency, to assume a greater degree of responsibility for decision making in patient care as well as cover a much wider scope of anaesthetic practice and procedures, e.g. neonatology. More opportunities are provided at this stage to enable each senior resident participate in teaching junior colleagues, nurses and medical students. He is also introduced to principles of health resource management in addition to problem solving skills as applied to research and anaesthetic practice.

ii. FORMAT OF TRAINING

a) Cardiothoracic anaesthesia 2 months
b) Intensive Care Medicine 2 months
c) Neuroanaesthesia 2 months
d) Obstetric anaesthesia and analgesia 2 months
e) Paediatric (including neonatal) anaesthesia 2 months
f) Pain Medicine 2 months
g) Regional anaesthesia 2 months
h) Anaesthesia for other surgical specialties-
(General Surgery, Urology, Orthopaedics & Trauma
Maxillo-facial, Plastic & Reconstructive,
Ophthalmic, Otorhinolaryngology, Gynaecology) 4 months

iii. COGNITIVE SKILLS

Throughout the period of the Residency Programme, the Head of Department has the responsibility to expose the residents to a systematic schedule of didactic teaching covering the core knowledge pertinent to the practice of anaesthesia, so as to give them confidence and enable them to demonstrate good judgement in dealing with real problems.

This should be presented in form of seminars, tutorials and structured lectures, use of audio-visual aids, clinical case conferences, mortality and morbidity conferences, Information technology course, management course, teaching sessions, theatres and intensive care experience, journal reviews as well as research seminars. The Senior Resident must be updated from time to time on current opinions/research/practice of the specialty The planned schedule should identify the scope of knowledge to be covered in cycles of 36 months and thereby provide opportunities for residents to cover the same ground at least twice; one as a junior resident and one as a senior resident.

iv. PSYCHOMOTOR SKILLS

Each training institution should design its programme in such a way that the resident's acquisition of requisite anaesthetic skills spans over the 5-year (Junior and Senior Programmes) period. The mastery of specific psychomotor skills of increasing degree of complexity, such as stated below should be emphasized.

(a) The handling and care of anaesthetic machines and auxiliary equipment, storage of gases, safety devices.
(b) The organization, disinfection and sterilization of auxiliary anaesthetic equipment appropriate for a particular technique of anaesthesia.
(c) The preparation and setting up of monitoring devices during anaesthesia and intensive care.
(d) The preparation and positioning of patients for regional techniques and particular operations.
(e) Participation in the prevention of explosion and fire in the operating room.

v. RESEARCH SKILLS

The head of department in the training institution should encourage residents to cultivate the habit of systematic clinical problem solving, featuring observation, interpretation, deductive reasoning, and decision-making followed by further observation. These are basic requirements for competence in research, either in the context of clinical problems or basic research projects. Periodic departmental research seminars are recommended as the forum in which young researchers present their project for discussion, and receive the criticism and guidance of their teachers and peers.

vi. COMMUNICATION SKILLS

It is important that Consultant Anaesthetists should be effective communicators not only in the ordinary run of clinical practice dealing with anxious patients, medical records documentation, or case presentation; but also, in the context of scientific conference presentation, scientific journal publication, and indeed examination writing. Therefore training institutions must provide opportunities for the acquisition and testing of various levels of communication skills.

Computers have become important tools in all spheres of anaesthetic practice such as drug prescription, equipment for diagnosis and treatment, anaesthetic machine and others. Record keeping and auditing are also computer based. The knowledge of computer in anaesthesia is relevant in communication skill and should be stressed at this level. This should include literature search, use of internet, the use of statistical software, simulation and Microsoft Power Point for presentations.

vii. CONTACT HOURS AND CREDIT UNITS FOR THE FIRST STAGE OF SENIOR RESIDENCY TRAINING– 18 MONTHS

In addition to the curriculum outline for the Junior Residency training programme, the Senior Residency Curriculum is advanced with further knowledge of the subspecialties in Anaesthesia, Pain Medicine and Intensive Care.

Specialties	**Months**	**Contact academic (hours)**	**Theatre/ Clinical contact (hours)**	**Credit units**
ANE 931. Cardiothoracic anaesthesia	2	30	180	6
ANE 932. Neurosurgical anaesthesia	2	30	180	6
ANE 933. Paediatric including neonatal anaesthesia	2	30	180	6
ANE 934. Obstetric Anaesthesia & Analgesia	2	30	180	6
ANE 935. Anaesthesia for other surgical specialties- General Surgery, Urology, Orthopaedics & Trauma, Emergency, Maxillofacial, Plastic & Reconstructive Surgery, Ophthalmology and Otorhinolaryngology and Gynaecology	4	30	180	6
ANE 936. Intensive Care Medicine	2	30	180	6
ANE 938 Pain Medicine.	2	30	180	6
ANE 939 Regional Anaesthesia	2	30	180	6
Total	**18**			**4**

viii (a). SKILLS TO BE ACQUIRED IN FIRST STAGE (18 MONTHS) SENIOR RESIDENCY TRAINING

	SKILLS	NUMBER REQUIRED TO BE PERFORMED
1	Intubation- routine	150
2	Intubation- nasal	13
3	Intubation- awake	5
4	Intubation- fibreoptic	5
5	Use of supraglottic airway devices	30
6	Difficult airway management	10
7	Double lumen tube insertion	7
8	Cricothyroidotomy	3
9	Percutaneous tracheostomy	3
10	Mini tracheostomy	3
11	Central venous cannulation	10
12	Intra-arterial cannulation	10
13	Intra-osseus cannulation	5
14	Peripheral venous cut-down	3
15	Subarachnoid block	50
16	Epidural block- lumbar	30
17	Epidural block- thoracic	1
18	Combined spinal-epidural block	20
19	Caudal block	25
20	Nerve blocks- brachial plexus, sciatic etc	10
21	Intravenous regional anaesthesia	10
22	Hypotensive anaesthesia	5
23	Total intravenous anaesthesia	5
24	One lung ventilation	7
25	Awkward positioning	25
26	CVP monitoring	5
27	Invasive blood pressure monitoring	5
28	Cardiac echocardiography	Observed/participated

29	Focused assessment for sonography (FAST)	Observed/participated

viii (b). OTHER RELEVANT SKILLS TO BE ACQUIRED IN THE FIRST STAGE (18 MONTHS) SENIOR RESIDENCY TRAINING

	SKILLS	**NUMBER REQUIRED TO BE PERFORMED**
1	Chest tube insertion	1
2	Ultrasound-guided vascular access	2
3	Ultrasound-guided nerve blocks	2
4	Critical care- initiation and weaning off ventilator	20
5	Critical care- arterial blood gas analysis	20
6	Critical care- sedation	12
7	Critical care- use of inotropes, vasopressors, syringe drivers and volumetric pumps	12
8	Critical care- cardiac output studies	Observed/participated
9	Critical care- cardioversion/pacing	2
10	Patient stabilization and transfer	8
11	Advanced Trauma Life Support Course	Attend 1
12	Cardiopulmonary resuscitation Course- adult/paediatric	Attend 1
13	Neonatal resuscitation	13
14	Chronic pain management	5
15	Epidural analgesia	3

Note:

1) The candidate must be able to manage complex surgical cases as itemized in each module

2) Each Candidate is expected to do a minimum of 30 hours of theatre/ clinical sessions per week throughout the 18 months of the first stage of Senior Residency period, taking into cognizance the period of annual leave.

3) A Senior resident is expected to attend at least two (2) local or international conferences and the certificate of attendance should be submitted with the examination application form

4) A senior resident must attain a minimum of 75% attendance at academic sessions. This must be duly signed up by the supervising consultant.

6) The candidate must provide a certificate of Training from a recognized CPR training programme within the 18 months of the first stage of the Senior Residency Training.

G. THE SECOND STAGE OF SENIOR RESIDENCY TRAINING (M.D. AND SUBSPECIALTY)

The duration of this second stage is eighteen (18) months.

H. DOMAIN OF THE PROGRAMME

The Pain Medicine Programme will be domiciled in institutions that are fully accredited by the National Postgraduate Medical College of Nigeria upon recommendation by the Faculty of Anaesthesia.

I. OVERVIEW OF TRAINING PROGRAMME INCLUDING EXTERNAL ROTATIONS

INTERNAL ROTATIONS

Pain Clinic

Trainees are involved on a fulltime basis in workups, procedures or urgent medical/psychosocial situations that may present at the Pain Clinic.

Inpatient Rotation

The primary goal for the trainee on the Inpatient rotation is to learn to assess and manage acute and chronic pain problems in the hospitalized patient. This includes, but is not limited to, the following specific learning objectives:

- Perform an appropriate assessment of hospitalized patients with acute pain including peri-operative and cancer pain.
- Perform an appropriate assessment of hospitalized patients with chronic pain including cancer pain.
- Accurately integrate history, physical examination, and diagnostic testing data to generate a working diagnosis and additional diagnostic evaluation as indicated.

- Develop an appropriate management plan for hospitalized patients with acute and chronic pain utilizing a range of therapeutic options including medical, interventional, and psychosocial.
- Apply didactic information from lecture, grand rounds, journal club, independent study, and other sources to the care of individual patients.
- Provide continuity of care by monitoring patients throughout the hospitalization and appropriately adjusting the pain management plan for changing patient needs.
- Effectively communicate and coordinate the pain treatment plan with the patient's primary service.
- Develop interpersonal skills needed to manage and treat complex pain problems throughout the course of the patient's illness.

Duration: **Four months are allocated for this rotation.**

Skills and Competences: Under faculty supervision, to establish adequate experience to fulfill these objectives, the Trainee must document involvement with a minimum of 15 new chronic pain patients and a minimum of 50 new acute pain patients on the inpatient service.

The trainee will be responsible for triage duties for consult requests for pain management. For routine postoperative consults he will assess the patient and perform the initial history and physical examination. For other (non-postoperative) consults, he will be responsible for the patient's care on a daily basis, beginning with the history and physical examination on the first day. The trainee will also be required to "round" on their patients on a daily basis and formulate a thoughtful care plan. After discussion with the Consultant, the Trainee will be responsible for the implementation of the plan.

Duration of Internal rotation: Four months

Outpatient Rotation

The primary goal of this rotation is to learn to assess and manage acute and chronic pain problems in the outpatient setting. This includes, but is not limited to, the following specific learning objectives:

i. Perform an appropriate assessment of outpatients with chronic pain including cancer pain.
ii. Perform an appropriate assessment of new and acute pain in patients with existing chronic pain.
iii. Accurately integrate history, physical examination, and diagnostic testing data to generate a working diagnosis and additional diagnostic evaluation as indicated.
iv. Develop an appropriate management plan for outpatients with acute and chronic pain utilizing a range of therapeutic options including medical, interventional, and psychosocial.
v. Understand the clinical approach to the treatments that comprise multidisciplinary cancer pain care and strategies to integrate pain management into the treatment model.
vi. Apply didactic information from lecture, grand rounds, journal club, independent study, and other sources to the care of individual patients.
vii. Improve patient presentation skills for both comprehensive consultation visits and problem-focused visits.
viii. Develop and/or improve administrative and record-keeping skills including progress note and procedure dictations, medical record documentation, practice management, and proper prescribing guidelines.
ix. Establish good decision-making skills in treating pain problems including chronic pain management, telephone management, and triage.
x. Effectively communicate and coordinate with referring physicians and other caregivers.

xi. Perform psychiatric evaluation of patients with special attention to psychiatric and pain co-occurring conditions including substance-related, mood, anxiety, somatoform, factitious, personality disorders, and environmental stressor.
xii. Understand the principles and techniques of psychosocial therapies, be able to explain these therapies to a patient, and make appropriate referrals for psychiatric services.
xiii. Develop interpersonal skills needed to evaluate and treat complex pain problems throughout the course of the patient's illness.
xiv. Function effectively as part of a multidisciplinary team in the management of chronic pain patients.

Skills and Competences: Under Consultant supervision, to establish adequate experience to fulfill these objectives, the fellow must document primary responsibility for a minimum of 50 different outpatients followed over at least 2 months each and a longitudinal involvement with a minimum of 20 cancer pain patients. Fellows must also document a complete mental status examination in a minimum of 15 patients, and with a faculty observer in 5 patients.

During this posting, the Trainee will be responsible for daily activities in the clinic. He will assess patients, perform a complete history and physical examination, and present the patient to the lead physician. The presentation should also include a carefully formulated plan of treatment. Fellows will develop the skills above during the time spent on this rotation. After the patient is seen by the staff physician and is discharged from the clinic, the Trainee will be responsible for dictating the record of the patient's visit.

Interventional Procedures

The primary goal of this educational activity is to prepare Trainees to perform interventional procedures for pain management. This includes, but is not limited to, the following specific learning objectives:

i. Understand the selection criteria for a broad range of interventions used in pain management.
ii. Understand the risks and potential advantages of interventional procedures used in pain management.
iii. Perform an appropriate patient assessment and accurately identify appropriate interventional procedures in specific patients in the inpatient and outpatient setting.
iv. Provide appropriate explanations to patients and obtain proper informed consent for procedures including radiologic imaging.
v. Demonstrate adequate technical knowledge and skill for common pain procedures including equipment and set-up for procedures.
vi. Formulate and dictate accurate and appropriately detailed H&P and procedure or operative notes.
vii. Demonstrate understanding of appropriate post-procedure follow-up care for pain procedures.

Skills and Competences: In addition to Trainer assessment, to establish adequate experience to fulfill these objectives, the fellow must document involvement with a minimum of 25 patients who undergo interventional procedures.

Additional Internal Rotations

To assure that Trainees are familiar with elements of all four disciplines of pain medicine they will participate in clinical experiences in the disciplines beyond their own specialty training. Pain management faculty with expertise in Neurology and Psychiatry will work directly with the Trainee to provide this clinical experience.
Separate internal clinical rotations in Anesthesiology and Physical Medicine and Rehabilitation are provided for fellows who need these specific clinical experiences. All fellows complete an additional internal rotation on the Supportive Care and Palliative Medicine service. Each of these internal rotations is 2 weeks in length. If fellows have not met set rotation objectives at the end of the rotation, the rotation will be extended until the clinical and learning objectives are met.

1. Anaesthesiology (Compulsory for Non-Anaesthesia Fellows) 2 weeks

After completing the rotation with the Anesthesiology Service, the fellow will **demonstrate competency** in each of the following as documented with appropriate faculty:

- Obtaining intravenous access in a minimum of 15 patients;
- Basic airway management, including a minimum of mask ventilation in 15 patients and endotracheal intubation in 15 patients;
- Provider course in basic life support and advanced cardiac life support
- Management of sedation, including direct administration of sedation to a minimum of 15 patients;
- Administration of neuraxial analgesia, including placement of a minimum of 15 thoracic or lumbar epidural injections using an interlaminar technique.

2. Neurology 2 weeks

After completing clinical experiences with pain management faculty with expertise in neurology, fellows shall:

- Be able to elicit a directed neurological history.
- Perform a detailed neurological examination to include at least mental status, cranial nerves, motor, sensory, reflex, cerebellar ,and gait examinations in 15 patients.
- Become familiar with basic neuroimaging and be able to identify significant finding.
- Understand the indicators for and interpretation of electro-diagnostic studies.

Trainers shall verify this experience in a minimum of 5 observed patient examinations. Additionally, they will verify that fellows can identify significant findings, at least MR and CT of the spine and brain, on a minimum of 15 CT and/or MRI studies drawn from examples within brain, cervical, thoracic, and lumbar spine.

3. Physical Medicine and Rehabilitation 2 weeks

After completing the rotation with the Physical Medicine and Rehabilitation Department, the Trainee will be able to:

- Perform a comprehensive musculoskeletal and appropriate neuromuscular history and examination with emphasis on structure and function as it applies to diagnosing acute and chronic pain problems including assessment of static and dynamic flexibility, strength, coordination and agility for peripheral joint, spinal, and soft tissue pain conditions.

- Demonstrate understanding of rehabilitation programs for treatment of various acute and chronic pain problems.
- Understand the natural history of various musculoskeletal pain disorders.
- Appropriately integrate therapeutic modalities and surgical interventions into the treatment algorithm.
- Understand the indicators and interpretation of electro-diagnostic studies related to pain disorders.

In addition to general faculty assessment, to establish adequate experience to fulfill these objectives, the fellow must document hands-on experience in the musculoskeletal and neuromuscular assessment of 15 patients, and demonstrate proficiency in the clinical evaluation and rehabilitation plan development of a minimum of 5 patients.

4. Psychiatry 2 weeks

After completing clinical experiences with pain management faculty with expertise in psychiatry, fellows shall be able to:

- Carry out a complete psychiatric history with special attention to psychiatric and pain comorbidities.
- Assess patients for potential psychiatric and pain co-morbidities including substance-related, mood, anxiety, somatoform, factitious, and personality disorders.
- Recognize the impact of pain medications on mental status and be able to assess, evaluate, and treat a patient for mental status changes.
- Understand the principles and techniques of the psychosocial therapies, with special attention to supportive and cognitive behavioral therapies.
- Understand the indications for and appropriately refer patients with psychiatric symptoms.

In addition to general faculty assessment, to establish adequate experience to fulfill these objectives, the Trainee must conduct a complete mental status examination on a minimum of 15 patients, and must demonstrate this ability in five patients to a faculty observer.

5. Palliative Care. 2 weeks (wards, palliative facility where available, and patient's home)

After completing the inpatient rotation with the Supportive Care and Palliative Care service, the fellow will be able to:

- Understand the clinical approach to the multi-dimensional treatments comprising palliative care.
- Understand strategies to integrate pain management into this multi-dimensional treatment model.

In addition to general faculty assessment, to establish adequate experience to fulfill these objectives, the fellow must document longitudinal involvement with a minimum of 10 patients who require palliative care.

External Rotations: 2 months

External Rotations are designed to provide intensive training in diagnostic and therapeutic treatment related to the management of acute and chronic nonmalignant pain syndromes. Specifically, these include rotations in the private practice setting and in predominantly nonmalignant pain clinics. In the Private Practice Rotation, fellows will be responsible for learning to efficiently perform interventional procedures and to

learn about the private practice office-based setting. Fellows are exposed to patients that receive treatments based largely on interventional pain management.

Fellows will learn: • to follow appropriate care and treatment guidelines

- to reassess individuals that do not respond to the most common pain therapies
- to provide a time-governed (e.g., short or long-term) treatment of pain

J. LIST OF COURSES AND DETAILED COURSE DESCRIPTION

List of Courses

COURSE CODE	COURSE TITLE	DURATION (weeks)	LECTURES (hours)	PRACTICALS (hours)	CREDIT UNITS
ANE 948.1	Introduction to pain	4	45	-	3
ANE 948.2	Applied anatomy and physiology in pain medicine	4	30	180	6
ANE 948.3	Pathology in pain medicine	4	30	180	6
ANE 948.4	Ethics of pain medicine	4	45	-	3
ANE 948.5	Assessment and measurement of pain	8	30	180	6
ANE 948.6	Management of pain	16	30	180	6
ANE 948.7	Clinical conditions and applications	18	30	180	6
ANE 948.8	Taxonomy of pain systems	4	30	180	6
PMC 995	Advanced Research Methodology	1	30	-	2
PMC 996	Health Resource Management	1	30	-	2
ANE 999	Dissertation/Thesis	8	90	270	12
#PMC 998	MD seminars	2	30	-	2
	TOTAL	**72 (#74)**			**58 (#60)**

#For MD candidates

In addition to the listed courses above, candidates who are registered in the MD Programme will take the College Medical Education Course and Faculty Specialty-Based Courses as stipulated in each Specialty-MD curriculum.

ANE 948.1: Introduction to pain: **3 Units**

Epidemiology; Pain as a public health problem with social, ethical, legal, and economic consequences*;* Epidemiology with overview of statistics related to acute, recurrent, and/or persistent (chronic) and cancer pain for people across the lifespan*;* Barriers to effective pain assessment and management: individual, family, health professional, society, culture, political institution*;* Development of pain theories*;* Historical development of pain theories and basis for current understanding of pain*;* Definition of pain and pain terms*;* Classification systems of pain*;* Differences between nociception, pain, suffering, and harm*;* Pain and behaviours.

ANE 948.2: Applied anatomy and physiology in pain medicine. **6 Units**

Pain mechanisms; Anatomy and physiology to include neural mechanisms (e.g., peripheral pain mechanisms, dorsal horn processing, ascending and descending modulation, and central mechanisms); Multiple dimensions of pain to include physiological, sensory, affective, cognitive, behavioral, social/cultural/spiritual/political.

ANE 948.3: Pathology in pain medicine **6 Units**

Pathological consequences of unrelieved pain and implications of being a multidimensional experience (e.g., biological, psychological, social, spiritual) Factors influencing neurophysiology (e.g., genetics, age, sex, ethnicity).

ANE 948.4: Ethics of pain medicine **3 Units**

Ethical standards of care (e.g., provision of measures to minimize pain and suffering) for health- care professionals; Ethical standards and guidelines related to the appropriate use of analgesics (e.g., inadequate analgesic prescribing; over-medication; confusion regarding physical dependence, tolerance, and addiction; substance use screening, use of placebos);Inadequate pain management for specific groups, including infants, children, elders, those with communication difficulties and/or learning disabilities; Legal issues related to disability, compensation; Political and societal issues related to access to pain management and beliefs about marginalized populations; Experimental pain issues related to appropriate and meaningful measures and methods.

ANE 948.5: Assessment and measurement of pain. **6 Units**

How is pain recognized?**;** Inter-professional and multi-professional collaboration Assessment of patient priorities as a team where possible (inter-professional) and/or communication of planning between individual health-care professionals (multi-professional) to ensure: Comprehensive assessment, especially when pain problems are complex (e.g., pain sensory characteristics, treatment history, impact of pain on functional status, perception of self/relationships, and past pain experiences)**,** Clear documentation of pain assessment and measurement data, Ongoing communication to ensure comprehensive and consistent approaches**,** Ongoing evaluation of efficacy and effectiveness of management plan**,** Modifying or changing plans to other similar (e.g., different analgesic) and/or different strategy (e.g., physical) if patients' report significant adverse effects and/or an ineffective response; Consideration of appropriate assessment and measurement approaches for people with special

needs (e.g., infants, children, older adults, developmentally challenged, cognitively impaired, addiction history),Development of inter-professional consultant networks (informal/formal) when needed for adequate assessment with complex patients, Expectations of pain management and current understanding of the condition, Tools (unidimensional and multidimensional); Functional measures (e.g., pain-related disability, specific activities, health status); Measures of psychological status (e.g., depression, anxiety, beliefs);Measures for special populations (e.g., nonverbal, infants, cognitively impaired); Measures of global and health-related quality of life; Screening measures for substance use disorder risk (e.g., alcohol, opioids, cocaine, sedatives, benzodiazepines).

ANE 948.6: Management of pain. **6 Units**

How is pain relieved, reduced, or prevented? **;**Goals of pain management**;** Prevention and/or reduction of pain intensity**;** Enhancement of physical functioning**;** Improvement of psychological functioning**;** Promotion of return to work/school and/or role within the family/society**;** Improvement of health-related quality of life**;** Pain management planning decisions; Treatment considerations; Patient issues; Cultural/societal limitations; Caregiver issues; Health professional issues; Political issues; Health professional issues; Understanding of pain (e.g., false beliefs); Fears and anxieties (e.g., drug addiction, adverse effects);Understanding of current evidence supporting management strategies; Understanding of patient goals/needs versus adherence expectations; Pain management as a human right; Access to pain clinics, treatment centers; Access to pain-relieving medications; Access to non-pharmacological and/or interventional treatment; Access to prevention (e.g., herpes zoster vaccine);Access to related mental health treatment centers; Substance use disorder/misuse issues; Understanding aberrant drug-related behavior and substance dependency (use disorder/misuse); Careful assessment and screening for risk of harm; Assessment of benefits of prescribed analgesics, recognizing potential adverse effects (e.g., unwanted physical, psychological, and social effects); Consider and use non-pharmacological/interventional strategies in combination where appropriate; Pharmacological methods; Clarify tolerance, physical dependence, and psychological dependence; Use combinations of analgesics and adjuvants where appropriate; Over-the-counter medications (e.g., acetaminophen/paracetamol); Nonsteroidal anti-inflammatory drugs (NSAIDS); Opioids; Antidepressants; Anticonvulsants; Local anesthetics; Topical agents; Knowledge of legislative requirements and current guidelines regarding controlled drugs; Non-pharmacological and interventional methods; Physical strategies to support home and occupational function and activity ; Psychological and behavioral strategies ; Interventional methods where appropriate; Neuromodulation (e.g., transcutaneous electrical nerve stimulation [TENS], acupuncture, brain and spinal cord stimulation);Neuro-ablative strategies (e.g., neurolytic nerve blocks, neurosurgical techniques); Procedural/Interventional (e.g., injections); Surgery; Palliative radiotherapy (e.g., cancer pain); Complementary alternative medicine (CAM);Information and communication technologies (e.g., virtual reality, computer-assisted interventions, smartphones, innovative technology [e.g., activity trackers, apps, text messaging]);Evaluation of outcomes

ANE 948.7: Clinical conditions and applications: **6 Units**

How does context influence pain management?

This domain focuses on the role of the clinician in applying the knowledge, assessment, and management planning in Domains 1-3 in the context of a variety of patient populations, settings, and care teams. The choice of clinical condition and detail will depend on the learner and specific patient populations to be studied. All patient cases for inter-professional work will not be relevant to every group and context. Also, combinations

of pain issues can be used to increase case complexity and learner involvement (e.g., cancer pain focus with a pregnant woman, management of a diabetic man with neuropathy and a substance use disorder, or an adolescent with juvenile arthritis).
Pain in Special Populations; Pain in infants, children, and adolescents; Pain in older adults; Pain in individuals with limited ability to communicate; Pain in pregnancy, labor, breast feeding; Pain with psychiatric disorders; Pain in individuals with substance use disorder; Pain related to violence (e.g., war, torture, urban violence); Pain with HIV/AIDS; Pain in rare diseases;
Acute Time-Limited Pain; Surgery; Trauma; Infection; Inflammation; Burn
Cancer Pain; Primary pain; Local invasion; Metastatic spread; Treatment-related; End-of-life
Visceral Pain: Referred patterns; Cardiac and non-cardiac chest pain; Abdominal, peritoneal, retroperitoneal pain; Pelvic pain (male and female); Sickle cell crisis
Headache and Facial Pain; Headache; Orofacial pain; Trigeminal neuralgia
Neuropathic Pain: Primary Lesion Central; Multiple sclerosis; Post-stroke; Spinal cord injury/myelopathies; Traumatic brain injury; Syringomyelia
Primary Lesion Peripheral; Degenerative disc disease with radiculopathy in neck and low back; Peripheral neuropathies (diabetes, cancer, alcohol, HIV);Post herpetic neuralgia; Acute disc herniation with radiculopathy; Complex Regional Pain Syndrome II (CRPS II) (causalgia);Phantom limb
Mixed or unclear origin: Complex Regional Pain Syndrome I (CRPS I) (reflex sympathetic dystrophy); irritable bowel syndrome; Fibromyalgia; Other
Musculoskeletal; Rheumatoid arthritis, osteoarthritis; Neck pain, whiplash, and referred pain; Low back pain and referred pain; Injuries from athletics, dance, and similar; Myofascial pain syndrome

ANE 948.8: Taxonomy of pain systems. **6 Units**

Distinction between acute, recurrent, incident, and or persistent (i.e., long-term, chronic) pain (may have a combination of more than one type); Distinction between nociceptive (somatic, visceral), nociplastic, and non-nociceptive (neuropathic) pain (may have nociceptive, nociplastic, and neuropathic pain); Distinction between commonly used pain terms in clinical practice (e.g., allodynia, analgesia, dysesthesia, hyperalgesia, paresthesia, pain threshold, pain tolerance); Involvement of biological, psychological, social, cultural, and spiritual factors influencing the perception of pain; Pain in Special Populations; Pain in infants, children, and adolescents; Pain in older adults; Pain in individuals with limited ability to communicate; Pain in pregnancy, labor, breast feeding; Pain with psychiatric disorders; Pain in individuals with substance use disorder; Pain related to violence (e.g., war, torture, urban violence);Pain with HIV/AIDS; Pain in rare diseases; Acute Time-Limited Pain-Surgery, Trauma, Infection, Inflammation, Burn, Cancer Pain, Primary pain, Local invasion, Metastatic spread, Treatment-related, End-of-life, Visceral Pain, Referred patterns, Cardiac and non-cardiac chest pain, Abdominal, peritoneal, retroperitoneal pain, Pelvic pain (male and female),Sickle cell crisis, Headache and Facial Pain, Neuropathic Pain, Primary Lesion Central, Primary Lesion Peripheral, Mixed or unclear origin, Complex Regional Pain Syndrome I (CRPS I) (reflex sympathetic dystrophy), Irritable Bowel Syndrome, Fibromyalgia, Other- Musculoskeletal, Low back pain and referred pain, Injuries from athletics, dance, and similar, Myofascial pain syndrome

PMC 995. Advanced Research Methodology (College Course) 2 units

The main objective of this course is to facilitate acquisition of sound knowledge and necessary skills for research in Pain. Definition, Spectrum and Types of Health Research Design. Defining Research problems, Setting Objectives, Statistics and Research Methods. Writing Research Proposals (Planning, Protocol Development and Report Writing) Good Clinical Practices and Clinical Trials. Role of Computer in Medical Research (EPI Info and SPSS). Literature review, Use of Physical and Virtual Library, Use of Internet, Search Engines, Systematic Reviews and Meta-analysis. Ethical considerations in medical research. Clinical Governance. Writing –Up, presentation and defense of Theses. Evidence Based Health Care. Statistical Methods (Summary, Inferences and Interpretation). Principles of Writing Articles for Publications. Research integrity and Plagiarism. Budget and Sources of Funding for Research.

PMC 996. Health Resource Management (College Course) 2 Units

The objective is to facilitate acquisition of knowledge and necessary skills required for management of health resources in Health institutions and for programme implementation. Principles and application of Management. Strategic Management. Health Care Planning. Health Policy formulation and evaluation. Health Resources mobilization and allocation. Human Resources Management. Organization. Monitoring and Evaluation of Health Services. Performance Management. Sustainable Development. Problem Solving and Decision-Making skills. Emotional Intelligence. Leadership. Management of Change. Risk Management. Financial Management, Material Resources Management. Quality assurance in health and equity in health. Managing the Health Team-Leadership and Team building. Health Care Financing. Financial Resources Management and Cost-Recovery Systems. Health Economics- the Economic appraisal of Health Programme. Public Private Partnership (PPP). Health Services Management Information Systems. Essentials of Budgeting and Accounting. Social Marketing of Health Programmes. Ethical and Legal Considerations in Medical practice.

30 h (T)

ANE 999. Dissertation/Thesis 12 Units

An approved Dissertation based on original work of candidate on an appropriate topic in Pain Medicine which will be supervised and will be presented for assessment at the end of the programme.

K. Log Books: Candidates should keep a log book of Procedures undertaken during their training which will show the skills that they have acquired**. (LOG BOOK IS ATTACHED)**

L. SKILLS AND COMPETENCIES. As stated above

L. NON-TECHNICAL SKILLS

The trainee should also be able to:

1. Order and prioritize appropriate investigations
2. Understand the principles of informed consent
3. Demonstrate the principles of crisis management, conflict resolution, negotiation and debriefing
4. Understand nonverbal communication with the patient with Pain

M. ASSESSMENT

a) Formative assessment

- Knowledge and skills
- Non-Technical Skills -Cognitive, Social and personal (Effective communication, Team working, Leadership, Decision making, Situation awareness and stress management

b) Summative Assessment

Standard setting with the **Modified Angoff method** will be used for assessment of the candidates.

i) MD Programme: Candidates will defend the MD thesis in Pain Medicine during the MD defense examination.

To proceed to the Fellowship, candidates will take the following during the Part 2 Fellowship examinations (Theory Paper-MCQ/SBA, OSCE and Structured Oral examination)

- Theory Paper: 2 hours. MCQ (SBA). 100. Pain Medicine- Applied Basic Sciences (25), Acute pain (10), Chronic Pain (10), Pain Assessment (5), Ethics of Pain Medicine (5) Taxonomy of Pain Systems (5), Pain Management in Children (5), Clinical Conditions and Applications (35)
- **OBJECTIVE STRUCTURED CLINICAL EXAMINATION (OSCE):** SIX STATIONS: Duration of 1 hour comprising: (a) HISTORY TAKING/COMMUNICATION- 10 marks. (b) PHYSICAL EXAMINATION- 15 marks. (c) SKILLS-. 20 marks. (d) SKILLS. - 20 marks (e) INVESTIGATIONS (XRAYS, CT, HAEMATOLOGY, ECHO. ECG, ABG. CLINICAL CHEMISTRY)- 15 marks. (f) PATIENT MANAGEMENT- 20 marks
- Structured Oral examination. General (50%) and subspecialty (50%)

ii) Fellowship Programme: Part 2 Fellowship Examination

The Part 2 Fellowship examination consists of the following: Theory Paper-MCQ/SBA, OSCE and Structured Oral examination

- Theory Paper: 2 hours. MCQ (SBA). 100. Pain Medicine- Applied Basic Sciences (25), Acute pain (10), Chronic Pain (10), Pain Assessment (5), Ethics of Pain Medicine (5) Taxonomy of Pain Systems (5), Pain Management in Children (5), Clinical Conditions and Applications (35)
- **OBJECTIVE STRUCTURED CLINICAL EXAMINATION (OSCE):** SIX STATIONS: Duration of 1 hour comprising: (a) HISTORY TAKING/COMMUNICATION- 10 marks. (b) PHYSICAL EXAMINATION- 15 marks. (c) SKILLS-. 20 marks. (d) SKILLS. - 20 marks (e) INVESTIGATIONS (XRAYS, CT, HAEMATOLOGY, ECHO. ECG, ABG. CLINICAL CHEMISTRY)- 15 marks. (f) PATIENT MANAGEMENT- 20 marks (TOTAL 100 marks)
- Structured Oral examination. General (50%) and subspecialty (50%). Duration is 1 hour
- Dissertation presentation and defense in Pain Medicine.

GRADING OF MARKS

GRADE	PERCENTAGE %
A (excellent)	≥ 70%
B (very good)	60-69%.
C (good)	55-59%
D (pass)	50-54%
E (borderline)	45-49%
F (fail)	< 45%

N. CONDITION FOR A PASS

i. For a candidate to be awarded a pass, he/she must pass all sections of the examination

ii. Any candidate who fails any section(s) of the examination will be required to repeat the failed section(s) at the next available examination.

O. ACCREDITATION REQUIREMENTS FOR THE SUBSPECIALTY TRAINING

i) General Requirements for Residency Training: The anaesthesia training programme is aimed at producing specialists in anaesthesia of a high degree of competence, comparable in the extent and depth of the training of anaesthesia Fellows in other parts of the world. The anaesthesia specialist should have a firm grasp of the scientific basis of anaesthesia, be skilled in the performance of anaesthetic duties and be conversant with research methodology and the interpretation of research data. The provision of facilities for this level of training must be based on the objectives of the training and should cover the main areas of modern anaesthetic practice.

The institution must have accreditation for general fellowship training in addition to accreditation for training in anaesthesia.

Number of Trainers, related surgical specialties, minimum case load and variety cases, and, training facilities specific for Pain Medicine

(a) Clinical Anaesthesia: Pre-Operative Care. Intra-Operative Care. Post-Operative Care

(b) Resuscitation
(c) Intensive Care
(d) Multi-disciplinary Pain Clinic

As much as possible, adequate facilities should be available in all these areas to give the candidate enough practice both in quantity, quality and variety.

Related disciplines and ancillary facilities for investigation must also be available. These include the core departments of Internal Medicine, Paediatrics, Surgery, Obstetrics & Gynaecology, Pathology, Radiology, and Medical Records. Details of their equipment in all areas are given below:

(i) An Institution for Postgraduate Training in Pain Medicine must have a Department of Anaesthesia run by specialists in general and other subspecialties of anaesthesia, pain medicine and intensive care medicine, who are themselves Fellows of the National Postgraduate Medical College of Nigeria or are Fellows of other recognized Colleges or have equivalent qualifications. A minimum of two Fellows supported by residents in training would be required as a basic teaching unit.

(ii) As many branches of surgery as possible should be available in the hospital. These include General Surgery, Obstetrics & Gynaecology, Urology, Ophthalmology, E.N.T. Surgery, Orthopaedic and Trauma Surgery, Dental Surgery, Paediatrics and Plastic Surgery.

(iii) There must be an out-patient complex with Emergency Rooms and facilities for resuscitation, as well as out-patient theatre(s) for minor surgery and casualty.

(iv) Laboratories – The hospital must also have facilities for investigation in:
(a) Chemical Pathology
(b) Microbiology for routine and special investigations, and emergency. (c) Haematology and Blood Bank.

(v) There should be an Intensive Care Unit for the management of critically ill or traumatised patients.

(vi) There should be a Departmental laboratory for research.

(vii) There must be a suitable number of operating theatres to give the various specialties of surgery adequate operating time. Each theatre should have an anaesthetic room attached to it and should be fully equipped with anaesthetic, monitoring and resuscitation equipment. It is vital that there should be a recovery room equipped with monitors, resuscitation equipment to take a minimum of two to four beds depending on the number of theatres.

(viii) The Radiology Department must be capable to doing routine – X-rays and other sophisticated investigations (CT, MRI, contrast studies, Ultrasound, Doppler) which may be
required by existing specialties and such facilities should extend to theatre and ICU.

(ix) There must be a good library with current anaesthesia journals and books in anaesthesia and related subjects. Internet connectivity and subscription to data bases should be available.

(x) Other departments viz: Medicine, Paediatrics, Surgery, Obstetrics & Gynaecology and Psychiatry must be suitably well developed to give the residents in training some experience in these disciplines.
(xi) There must be a suitable number of Anaesthetic and Monitoring equipment in all areas of Anaesthetic service. In addition to service equipment, there should also be equipment and simulation devices for teaching and research including teaching aids, models, audio-tapes, computers, CD Rom, etc.

ii) Additional specific requirements for pain medicine
The institution must have full accreditation for training in anaesthesia. A dedicated Multidisciplinary Pain Clinic with appropriate staff and facilities is Mandatory:

The number of beds in the hospital as well as the total volume of work and the number of consultants will determine the maximum number of postgraduate trainees which can be handled by the department at any one time. The object of the training is to ensure that each resident does a minimum of 200 cases as specified in this curriculum. Details of additional specific requirements for accreditation in Pain medicine are indicated below.

STAFFING: At least one each of the following staff should be available:

- At least two consultant anaesthetists in the specialty of Pain Medicine one of whom must be a Fellow of the College are required for accreditation. Others include neuro-anaesthetists.
- Physiatrists (physician specializing in physical rehabilitation)
- Internists, Psychiatrists.
- Physical therapists
- Occupational therapists
- Nurses
- Psychologists

SPACE:
Operating room or Procedure room for Interventional Procedures, with a recovery area
Consultation rooms and waiting area
Offices for staff
Secretary's Office
Reception
Seminar Room
Other facilities to make the Clinic function as stand alone should be available eg, toilets, telephone, transport

Working Hours should be clearly stated for Outpatient management of referred cases
Should be linked to a hospital for admissions and In-patient management
Other facilities to make the Clinic function as stand alone should be available

EQUIPMENT
fluoroscopy, ultrasound machine, CT, MRI, Doppler

Other requirements:

a) Information on Neurosciences:

1. Neurology Unit
2. Number of qualified neurologists
3. Number of qualified neurosurgeons
4. Number of dedicated neurosurgical operation theatres
5. Number of tables for neurosurgical cases /week
6. Number of Neurosurgical operations / year (average over the last two years). Provide list of operations carried out in the last 12 calendar months
7. Number of Elective surgeries (last 12 months)
8. Number of Emergency surgeries (last 12 months)
9. Dedicated Neuro-ICU if available (NICU)
10. Number of admissions to Neuro-ICU in the last 12 calendar months
11. Separate Neuroradiology Department if available
12. Number of neuroradiological investigations carried out under anaesthesia in the last 12 calendar months

b) Facilities in the Procedure Room/ Interventional Pain management

1. Anaesthesia machines (No. & make /OT)
2. Monitors- ECG. NIBP. IBP. Pulse oximetry. Capnography. BIS. Neuromuscular transmission monitor.
3. Adjustable OT tables
4. Infusion pumps
5. Infusion syringes
6. Fibreoptic broncho-/laryngoscope
7. LMA’s
8. Any other airway devices
9. Intraoperative EEG for seizure surgery

10. Evoked potentials

c) Facilities in Neuroradiology

1. Angiography
2. CT Scan
3. MRI
4. Dedicated anaesthesia machine
5. Monitoring facilities: ECG. SPO2. NIBP/IBP. Capnography.
6. Infusion pump/Syringe
7. MRI-Compatible anaesthesiamachine/monitor

e) Staff of Pain Medicine

1. Number of other Consultant Anaesthetists doing PAIN
3. Number of Senior Residents
4. Number of Junior Residents
5. Number of Anaesthesia Technicians
6. Consultant coverage for ICU available
7. Number of Residents on Call
8. Number of Consultants for emergency

f) Proposed Teaching programmes

1. Number of seminars per week
2. Number of journal clubs per week
3. Number of case presentations per week (A minimum of three hours of class-room teaching is mandatory per week in addition to bed-side discussions)

g) Library

1. Books on anaesthesia (< 10-year-old editions)
2. Journals of anaesthesia- local and international
3. Pain Medicine Journals
4. Internet access for the programme
5. On-line material (books, journals subscribed for by the institution.

h) Seminar Room

1. Sitting capacity,
2. Computers/laptops
3. LCD projector / OHP