THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY, CHENNAI

REVISED CURRICULUM FOR COMPETENCY BASED TRAINING OF M.S. ORTHO CANDIDATES

ORTHOPAEDICS 2010

CONTENTS

MAJOR GOALS

Patient care ability: A candidate in orthopaedics surgery at the end of its 3 year course should develop proper clinical acumen to interpret diagnostic results and correlate them with symptoms. He should become capable to diagnose common clinical conditions/diseases in the speciality and to manage them effectively with success without making any serious complications and sincere to take such accurate decision for the patient's best interest. He should be able to decide for making a referral to consultation with a more experienced colleague/professional friend while dealing with any patient with a difficult problem.

Teaching ability: He/she should be able to teach MBBS students about the commonly encountered conditions in orthopaedics, pertaining to their diagnostic features, basic pathophysiological aspects and the general and basic management strategies.

Research Ability: He/she should also acquire elementary knowledge about research methodology, including record-keeping methods, and be able to conduct a research inquiry including making a proper analysis and writing a report on its findings.

Team work: He/she should be capable to work as a team member. He/she should develop general humane approach to patient care with communicating ability with the patients' relatives, especially in emergency situations such as in casualty department, while dealing with cancer patients and victims of accidents.

Academic Activities: He/She should acquired theory knowledge from the prescribed books which is the basic for application of the clinical practice.

He/she should also maintain human values with ethical considerations.

OBJECTIVES TO BE ACHIEVED BY AN INDIVIDUAL AT THE END OF 3 YEARS OF MS ORTHOPAEDICS:

A candidate at the end of a 3-year course should acquire the following:

Cognitive knowledge: Describe embryology, applied anatomy, physiology, pathology, clinical features, diagnostic procedures and the therapeutics including preventive methods (medical/surgical) pertaining to musculoskeletal system.

Clinical decision making ability & management expertise: Diagnose conditions from history taking, clinical evaluation and investigations and to develop expertise to manage medically as well as surgically the commonly encountered disorders and diseases in different areas.

Teaching: Acquire ability to teach the MBBS students in simple and straightforward language about the common orthopaedic ailments/disorders, especially about their signs/symptoms for diagnosis with their general principles of therapy.

Research: Develop ability to conduct a research enquiry on clinical materials available in hospital and in community.

Patient doctor relation: Develop ability to communicate with the patient and his/her relatives pertaining to the disease condition, its severity and options available for the treatment/therapy.

Preventive Aspect: Acquire knowledge about prevention of common conditions especially in children such as poliomyelitis, congenital deformities, cerebral palsy and common orthopaedic malignancies.

Tentative Schedule for three years of MS Orthopaedics

CLINICAL POSTING

Spend 3 (Three) months in orientation programme including exposure to casualty.

Learns bedside history taking in ward, OT exposures, casualty, ICU requirement and their visit to related disciplines such as physical medicine and rehabilitation/Anaesthesia.

Care of indoor (medical preoperative and postoperative) patients for a minimum period of 3 months and learn techniques of traction, wound care and splintage.

Attends operation theatre and emergency operations for acclimatization. Assists ward rounds and visits other wards with senior colleagues to attend call/consultation from other departments.

Participates in the teaching sessions in wards for bedside clinical teaching in the weekly afternoon seminar/journal club.

MAIN POSTINGS

Speciality Postings - 2 Months

Advanced Training in the centre of excellence – 1 Month

Attends orthopaedic OPD 2 days in a week

Discuss problematic cases with consultant (s) in OPD/ward

Attends operation room/theatre 2 - 3 days in a week

Attends 2 morning rounds/week

Care of the indoor patients on beds allotted to him/her.

Attends the weekly journal Club and seminar and presents the

same by rotation.

Attends speciality clinics, viz Sports medicine, Spine clinics, polio, hand, Paediatric, arthritis clinics and presents cases; participates in discussions including therapy-planning etc.

During the course, the resident must attend the combined teaching Programme of the department of Pathology, Forensic Medicine, Anatomy, Vascular Surgery and Plastic Surgery, i.e. clinical meetings, CPC‘s of students and staff of the whole hospital.

Surgicopathological conference in pathology department, with surgeons.

Does 24 hours-emergency duty once a week/as per roster of the department.

Attends lectures by the visiting faculty to the department/college from India/abroad.

Attends/participates/presents papers in State / Zonal /National / International conferences.

Actively participates/helps in organization of departmental workshop, courses in specialized areas like Arthroplasty, Arthroscopy, Spine, and Hand Surgery from time to time.

Actively participate in the orthopaedic skills lab, Orthopaedic Cadaveric Skills Lab training programmes Exposure to the bone bank activities.

- ❖ Continuous Medical Education (CME) – 50 hrs
- ❖ Research Work – Atleast 2 in Number
- ❖ National/ Regional Conferences – Minimum 3 Papers
- ❖ Academic Activity – 100 Case Presentation in 3 years
- ❖ 30 Academic Presentation inside the department
- ❖ Compulsory programme of documentation, clinical research and medico legal aspect to be the part of curriculum.

THESIS

Research methodology/reporting on research: Learns the basics in research methodology.

Problem oriented record keeping including the use of computer.

Use of medical literature search through the internet or library.

Attends Biostatistics classes by arrangement.

Research Report œ preparation and writing of Protocol for

Research/Thesis.

Writing an abstract/short paper/presentation style (slide-making & audiovisual aids).

Preparation of a report on a research project/Thesis.

Humanity/Ethics: Lectures on humanity, personality development, team spirit and ethical issues in patient care and human relationship including, public relations, by Psychologist and public relation officers are to be arranged by the department/college.

METHODS OF TRAINING AND TEACHING

The following learning methods are to be used for the teaching of the postgraduate students:

1) Journal Club : 1 hour duration œ Paper presentation/discussion œ once per week (Afternoon).

2) Seminar : One seminar every week of one hour duration (Afternoon)

3) Lecture/discussion : Lectures on newer topics by faculty, in place of seminar/as per need.

4) Case presentation in the ward and the afternoon special clinical (such as Scoliosis/Hand clinics), Resident will present a clinical case for discussion before a faculty and discussion made pertaining to its management and decision to be recorded in case files.

5) Case Conference œ Residents are expected to work-up one long case and three short cases and present the same to a faculty member and discuss the management.

6) X-ray Classes œ Held twice weekly in morning in which the radiologic features of various problems are discussed.

7) Surgicopathological Conference : Special emphasis is made on the surgical pathology and the radiological aspect of the case in the pathology department such exercises help the orthopaedics/Pathology/Radiology Residents.

8) Combined Round/Grand Round : These exercises are to be done for the hospital once/week or twice month involving presentation of usual or difficult patients. Presentation of usual or difficult patients. Presentations of cases in clinical combined Round and a clinical series/research data on clinical materials for benefit of all clinicians/Pathologists/other related disciplines once in week or fortnightly in the Grand round.

9) Emergency situation: Casualty duty to be arranged by rotation among the PGs with a faculty cover daily by rotation.

10) Afternoon clinics: Clinical classes should be taken in the afternoon from 2 to 4pm daily in the form of case presentation, lectures, CME programmes.

11) Besides clinical training for patient care management and for bed side manners : Daily for ² to one hour‘s during ward round with faculty and 1-2 hours in the evening by senior resident/faculty on emergency duty, bed side patient care discussions are to be made.

12) Clinical teaching : In OPD, ward rounds, emergency, ICU and the operation theatres: Resi-

dents/Senior Residents and Faculty on duty in respective places œ make discussion on clinical diagnosis/surgical procedures/treatment modalities, including postoperative care and preparation of discharge slip.

13) Plaster room training: 1 month of posting at plaster room in the time of OPD should be the part of curriculum.

14) Special posting in paediatric orthopaedics, rehabilitation, hand and plastic surgery, vascular surgery and anaesthesia each 15 days or mandatory for completion of course.

15) Advanced technology exposure in centre of excellence is optional 1 month duration in 3rd year of curriculum.

ASSESSMENTS/ EXAMINATIONS

CONCURRENT EXAMINATION/ASSESSMENT

The purpose of the c4oncurrent assessment is to give regular feed back to the MS candidates about their performance and to prepare them for the final terminal examination by giving them exposure to the examination pattern. As a part of the concurrent evaluation the MS candidates will be assessed every six months by an independent local appraiser from the same institution (Professor/ Associate Professor)/ from the same university. This would include theory examination (100 marks of three hours duration) containing 10 short structured question related to the topics covered during the preceding six months.

The practical examination (300 marks) will include long case, short case, spots, ward round, viva voce on the topics covered during the period by the hospital/institution.

FINAL EXAMINATION

The Final Examination shall consist of

1) Theory exams four papers

2) Practical Exams

THEORY PAPERS

Theory: There shall be total of four papers: Each being of three hours duration. Each paper will have 2 essays and 6 short questions from the curriculum (Old pattern).

PAPER I	Basic Sciences as applied to Orthopaedics (Anatomy, Physiology, Biochemistry, Pathology, Pharmacology, Microbiology)
PAPER II	Traumatology and recent advances
PAPER III	Orthopaedics and recent advances
PAPER IV	Sub Speciality (Arthroplasty, Arthroscopy, Spine, Sports Medicine, Oncology, etc)

Candidate must pass each component separately. Event if a candidate fails in one component, the candidate is deemed to have failed in the whole examination.

GUIDE LINES

Each candidate should be examined by a minimum of One Internal and One External Examiner.

Long Case

1. For examining the candidate by the examiners, a minimum of 30 minutes per candidate should be taken.
2. 30 minutes for a student for examining long case and 10 minutes for writing case sheet.

Short case

1. For examining the candidate by the examiners, a minimum of 10 minutes for each short case should be taken.
2. 10 minutes for examining each short case.
3. No case sheet writing for short case.

Hand Written Log Book

The Hand written Log Book must be presented to the examiners for evaluation and questioning.

Hand written Log Book has to be maintained by the candidate throughout the 2 years. It has to be certified by the Head of the Department every year. Every quarterly it must be reviewed by the Unit Chief. Every month it should be checked by the Unit Assistant Professor.

ANNEXURE- I, THEORY SYLLAB US

BASIC SCIENCES

Development of skeleton, histology of cartilage histology & histopathology of bone, physiology of fracture healing, delayed and non-union of bones, histology of skeletal muscle, collagen, physiology and mineralization of bone, physiology of cartilage, biophysical properties of bony and bone disease and related dysfunction of parathyroid glands.

PRINCIPLES & PRACTICE OF ORTHOPAEDICS

Bone infections (Pyogenic, tuberculosis, syphilis, mycotic infections, salmonella & brucella osteomyelitis), congenital deformities (upper & lower extremities, spine and general defects), developmental conditions (osteogenesis imperfecta, dysplasias, hereditary multiple exostosis etc.) diseases of the joints (osteoarthritis, rheumatoid arthritis, neuropathic joints, ankylosing spondylitis, sero-negative spondyloarthropathy, traumatic arthritis etc.) orthopaedic neurology, tumors of bony. Disorders of hand & their management.

GENERAL SURGICAL PRINCIPLES & ALLIED SPECIALITIES

General surgery, oncology, and medicine as applicable to the musculo-skeletal disorders/disease.

Radiology, Imaging œ computed tomography and magnetic resonance imaging and interventional radiology and angiography as related to orthopaedics.

General pathologic aspects such as wound healing and also pa-

thology and pathogenesis of orthopaedic diseases, pharmacology, molecular biology, genetics, cytology, haematology, and immunology as applicable to orthopaedics.

General principles of traumatology.

Plastic surgery as applicable to orthopaedics

Pediatric orthopaedics- The student should be exposed to all aspects of congenital and developmental disorders such as CTEV (club-Foot), development dysplasia of hip, congenital deficiency of limbs. Perthe‘s disease and infections, and also to acquire adequate knowledge about the principles of management of these disorders.

Orthopaedic oncology- The resident is expected to be familiar with the tumours encountered in orthopaedic practice. The recent trends towards limb salvage procedures and the advances in chemotherapy need to be familiar to him.

Management of Trauma- Trauma in this country is one of the main causes of morbidity and mortality in our demographic statistics. The student is expected to be duly conversant with trauma in its entirety. In any type of posting after qualification the orthopaedic surgeon would be exposed to all varieties of acute trauma. Hence, it is his responsibility to be able to recognize, assess and manage it including the medico legal aspects.

Sports Medicine œ A lot of importance is being given to sports medicine especially in view of the susceptibility of the athlete to injury and his failure to tide over them. Sport medicine not only encompasses diagnostic and therapeutic aspects athletic injuries but also their prevention, training schedules of personnel and their selection.

Physical Medicine and Rehabilitation œ The student is expected

to be familiar with this in all its aspects. Adequate exposure in the workshop manufacturing orthotics and prosthetics is mandatory, as is the assessment of the orthopaedically handicapped.

Orthopaedic Neurology œ The student should be exposed to all kinds of nerve injuries as regards their recognition & management cerebral palsy and acquired neurological conditions such as post polio residual paralysis and peripheral nerve injuries also need to be emphasized in their entirety.

Spine Surgery -The student is expected to be familiar with various kinds of spinal disorders such as scoliosis, kypho-scoliosis, spinal trauma, PIVD, infections (tuberculosis and pyogenic), & tumours as regards their clinical presentations and management.

Radiology œ Acquire knowledge about radiology/imaging and to interpret different radiological procedures and imaging in musculoskeletal disorders.

There should be collaboration with Radiology department for such activities.

Psychological and social aspect œ Some elementary knowledge in clinical Psychology and social, work management is to be acquired for management of patients, especially those terminally ill and disabled-persons and interacting with their relatives.

YEAR WISE BREAK UP OF SYLLABUS

First Year

Humanity/Ethics -Lectures on humanity, personality development, team spirit, Ethical issues in patients, Doctor- patient relationship and interpersonal relationship- 3 lectures

Basic Sciences-Development of skeleton, Histology & Histopathology of cartilage & bone, Histology of skeletal muscle, collagen, Physiology of cartilage, Biophysical properties of bone and bone diseases and related dysfunction of parathyroid glands, Physiology of

fracture healing, Delayed union & non-union of bones

Emergency management of the Injured patient including critical care-lectures by Anaesthetist for airway maintenance & shock management, Basic splintage and transportation techniques, ATLS

Medical record keeping and bio-statistics

Preparation for thesis/ protocol

History taking and clinical examination of the patient

Common fractures/dislocations diagnosis and management including traction techniques

Interpretation of plain x-rays and clinico-radiological co-relation

Diagnosis and management of acute and chronic orthopaedic infections

Second Year

Pediatric Orthopaedics with emphasis on CTEV, CDH, Perthes disease, S.C.F.E., club hand

Physical Medicine & Rehabilitation: with emphasis on electro diagnosis and various physiotherapy and occupational therapy techniques

Orthopaedic neurology including Polio, Cerebral palsy, spina-bifida

- Hand Surgery
- Plastic Surgery related to orthopaedics

Interpretation of C.T., MRI, Bone Scanning - Techniques and

clinico- radiological co-relation.

Orthopaedic Oncology

Surgical stabilizations of orthopaedic trauma

Peripheral nerve injuries

Clinical orthopaedics

Biomaterials in orthopaedics

Vascular surgery

Third Year

Reconstructive orthopaedics

Sports medicine and arthroscopy

Arthroplasty

Spinal disorders including scoliosis, trauma, infections, degeneration and tumours

Clinical orthopaedics

Recent advances in orthopaedics

One month optional posting in Centre of Excellence

Thesis Submission

Research Publication

Revision courses

ANNEXURE-II, DETAILS OF THE SKILLS TO BE ACQUIRED DURING THE TRAINI NG PERIOD

Clinical procedures, which the candidates must know

S. No	*Name of procedure*	*As Observer*	*As first Assistant*	*Number of procedure able to per-form*
FIRST YEAR				
1	**ORTHOPAEDICS** Skin traction			Yes
2	Skeletal traction of upper Tibia, distal Tibia, lower Femoral, Trochonteric screw, Olecranon, Calcaneal and Skull traction			Yes
3	Closed reduction of Fractures & Dislocations: Clavicle, Shoulder dislocation, proxi-mal Humerus, shaft of Hume-rus, supra-condylar / inter condylar and distal humeral fracture, dislocation Elbow, Fracture of both bones fore-arm, Monteggia and Galleagi fracture- dislocation, Colles‘ and other distal radial frac-tures, Scaphoid fracture, per-ilunar dislocations, and re-lated carpal dislocations, dis-locations of hip, fracture shaft of femur in children, tibial			Yes

S. No	*Name of procedure*	*As Observer*	*As first Assistant*	*Number of procedure able to perform*
	shaft fracture, Ankle fractures& dislocations.			
4	Management of open fractures - Debridement, external fixation - Soft tissue reconstruction including bone coverage			Yes Yes
SECOND YEAR				
5.	Open reduction and internal fixation of Fractures Plate Osteosynthesis in shaft Humerus and both bones forearm fractures Tension band wiring of Olecranon, Patella & Medial malleolus fractures Kirschner wire fixation of supra condylar fracture of humerus Cannulated screw fixation for fracture neck of femur Dynamic Hip Screw of trochanteric fracture Intramedullary nailing for femoral shaft fracture - Fixation of Potts fracture Excision of Head Radius			Yes Yes Yes Yes Yes Yes Yes
6	Bone & Joint Infections Aspiration of joint Drilling/ Decompression of metaphysic			Yes Yes

S. No	*Name of procedure*	*As Observer*	*As first Assistant*	*Number of procedure able to perform*
	Drainage of abscess			Yes
	Sequestrectomy& saucerisation			Yes
	Girdlestone/Excision arthroplasty of Hip			Yes
7.	Bone tumors			
	Biopsy from tumor			Yes
	Excision of ostochondroma			Yes
	Curettage & Bone grafting			Yes
	THIRD YEAR			
8.	Fixation of Fractures like proximal Humeral, Supracondylar Femur, Proximal tibia & Talus fracture - dislocation Interlocking Nail- Femur, Tibia		Yes	
9.	Spine			
	Exposure to spine by posterior, anterior and anterolateral approaches		Yes	
10.	CTEV Manipulation and POP			Yes
	application			Yes
	Tendo Achilles lengthening			
11.	Postero-medial soft tissue release	Yes		
	Bony procedures including triple arthrodesis	Yes		

S. No	*Name of procedure*	*As Observer*	*As first Assistant*	*Number of procedure able to perform*
12	High tibial osteotomy	Yes		
13	Tendon repair	Yes		
14	Poliomyelitis Hamstring Release & Posterior Capsulotomy Flexor Abductor release Corrective osteotomies of Humerus, Femur and Tibia Knee & Ankle arthrodesis Pantalar and triple arthrodesis Limbs lengthening / Illizarov procedure	Yes	Yes Yes Yes Yes	
15	Arthrolysis of Elbow joint	Yes	Yes	
16	Amputations			Yes
17	Limbs salvage procedures		Yes	
	DESIRABLE PROCEDURES Endoscopy Arthroscopy of knee Joint replacement Hip joint Knee joint Peripheral nerve repair Tendon transfer procedures Spinal stabilization procedures like pedicular screw	Yes Yes Yes Yes	Yes Yes Yes Yes Yes Yes	

INVESTIGATIONS/ TESTS WHICH THE CANDIDATES MUST KNOW TO INTERPRET

Name of Investigations	***Tests***
Hematological investigations in	- CBC
	- C-reactive protein,
Orthopaedic conditions like	- Rheumatoid factor,
	- HLA-B27,
	- Serum Electrophoresis,
	- Serum Ca, P, Alkaline phosphatase, Acid phosphatase, Uric acid, Total proteins & A.G. ratio
	- Elisa
Urine	- Bence Jones proteins,
	- 24hr Urinary Ca
Radiological investigations	- Plain radiography
	- CT Scan, MRI
	- Radio- isotope bone scan
Histopathological slides of common	- Interpretation of Tubercle,
Orthopaedic conditions like	- Myeloma
	- Osteosarcoma
	- Ewing Sarcoma
	- Giant cell tumor

ANNEXURE III, SAMPLE CASES FOR PRESENTATION AND DISCUSSION

LONG CASES

Fixed/ Ankylosed hip

Neglected fracture Neck of femur

Tubercular Hip

Neglected traumatic dislocation hip

Potts paraplegia

Extra dural cord compression

Prolapsed intervertebral disc

Spinal Canal stenosis

Cauda equina syndrome

Avascular Necrosis of Hip

Traumatic paraplegia

SHORT CASES

Cubitus varus/ Valgus

Non union Humerus with or without radial nerve palsy

Non union lateral condyle of Humerus

Infected non union

Chronic osteomyelitis

Post polio flail shoulder/ paralysed elbow

Neglected unreduced Dislocation Elbow

Neglected unreduced Dislocation Shoulder

Malunited Colles Fracture

Carpal tunnel Syndrome

Bone tumors like Ostesarcoma, Ewing‘s Sarcoma, Giant cell tumor, Osteochondroma, Osteiod osteoma etc

Genu varum/ Genu Valgum

Ruptured Tendo Achillis

Erb‘s palsy/ Brachial plexus injury

Nerve injuries-Median Nerve, Radial Nerve, Ulnar Nerve, Sciatic

Nerve, Common Peroneal Nerve

SPOTS

Pathological Specimens-Giant cell Tumor, Osteosarcoma, Ewings Sarcoma, Sequestrum, Madura foot

Bones

Instruments

X-Rays

Orthotics/ Prosthetics-Patellar tendon bearing prosthesis, Cock up Splint, Denis brown splint, Ischial weight relieving caliper, Jaipur foot

ANNEXURE-IV, SAMPLE QUESTIONS FOR SIX MONTHLY ASSESSMENTS

What is informed consent? What is its relevance?

How would you declare the news of a dead patient to the relatives?

How would you explain the complications of a surgical procedure and its significance?

How much one should inform to patient about the disease?

Essay/ short notes on-Histology of Bone, Joint Lubrication, Cartilage/Chondrocyte Culture & its use in orthopaedics, Bone Metabolism, Spaces of Hand, Posterior approach to hip, Initial resuscitation of a poly traumatized patient, Fat Embolism, Gas gangrene, Tetanus, Tourniquet, Application of Chi Square test

Russel Traction

Techniques of application of skull traction

Thomas Splint

Clinical features, Diagnosis and Management of Supra condylar fracture of Humerus

Myositis ossificans

Causes of Nonunion of bone

Principles of management of Nonunion

Acute osteomyelitis of Proximal tibia- Diagnosis & management

Tuberculosis of Hip- Clinical & radiological staging

Pathoanatomy of Congenital Talipes equinovarus

Classification of various stages of Perthes disease

Management of Perthes disease

Management of Dysplastic hip

Clinical manifestations of congenital dislocation of hip

Management of slipped capital femoral epiphysis

Short notes on-Club hand, Short wave diathermy, Electromyography, Strength duration curve, Continuous passive motion, Tecnicium 99 bone scan

Aneurysmal Bone cyst

Osteochondroma

Limb salvage in Tumors

Chemotherapy for Osteosarcoma

Multiple Myeloma

Claw Hand

Tendon transfer in Radian nerve injury

Foot drop

Nerve grafting

Silicon in orthopaedics

Ceramics in orthopaedics

Metal on metal joints

Bone cement

Clinical features of Meniscal Injury

Anterior cruciate ligament repair

Bankart‘s repair

Management of caries spine with neurological deficit

Spondylolisthesis- Its complications & Management

Lumbar Canal stenosis

Discography

Laminoplasty

Complication of Total Hip Replacement

Peri prosthetic fractures

Unicondylar Knee

Articular Surface replacement

ANNEXURE - V, BOOKS AND JOURNALS WHICH THE CANDIDATE MUST READ

FIRST YEAR

1) Mercer‘s orthopaedics surgery, Duthie, Edward Arnold
2) Campbell’s Operative Orthopaedics, Canale and Beaty
3) Outline of orthopaedics, Crawford Adams, Churchill Livingston
4) Closed treatment of fractures, H. John Charnley, Churchill Livingston
5) Apley’s

SECOND YEAR

6) Text book of orthopaedics, Samuel Turek
7) Campbell’s Operative Orthopaedics, Canale and Beaty
8) Exposures in Orthopaedic Surgery, Hoppen Field
9) AO Principles of internal fixation
10) AO Principles of external fixation
11) Chapman’s Orthopaedics
12) Watson Jones fractures and joint injuries, J.N. Wilson, Churchill Livingston

THIRD YEAR

13) Fractures in adults and children, Rockwood, Greens

14) Campbell’s Operative Orthopaedics, Canale and Beaty

15) AO Spinal fixation

16) KIRK

17) Orthopaedics diseases, Aegerter & Kirkpatrick, Saunders

18) Tumours and tumourous conditions of bones and joints, Jaffe, Lea Febiger

19) Clinical Evaluation – DAS, McRay, Panday

20) SM TULI Tuberculosis of musculoskeletal system

21) Limb reconstruction procedures

22) Arthroscopy

JOURNALS

Indian journal of orthopaedics

Journal of bone and surgery (British and American volumes0

Orthopaedics clinics of North America

Clinical orthopaedics and related research

Yearbook of orthopaedics

Journal of rehabilitation

INJURY

British journal of Rheumatology and physical medicine

Journal of Arthoplasty

Journal of Arthroscopy

ANNEXURE-VI, GUIDELINES FOR WRITING THESIS/DISSERTATION

Research shall form an integral part of the education programme MS Orthopaedics. The Basic aim of requiring the candidates to write a thesis/dissertation is to familiarize him/her with research methodology. The members of the faculty guiding the thesis/dissertation work for the candidate shall ensure that the subject matter selected for the thesis/dissertation is feasible, economical and original.

GUIDELINES

1. The thesis may be normally restricted to the size to 100 pages. To achieve this, following points may be kept in view;

   i) Only contemporary and relevant literature may be reviewed.

   ii) The techniques may not be described in detail unless any modification/innovations of the standard techniques are used and reference may be given.

   iii) Illustrative material may be restricted.

   iv) Since most of the difficulties faced by the residents relate to the work in clinical subject or clinically oriented laboratory subjects the following steps are suggested:

For prospective study, as far as possible, the number of cases should be such that adequate material, judged from the hospital attendance, will be available and the candidate will be able to collect the case material within a period of 6-12 months so that he/she is in a posi-

tion to complete the work within the stipulated time.

The objectives of the study should be well defined.

As far as possible, only clinical or laboratory data of investigations of patients or such other material easily accessible in the existing facilities should be used for the study.

Technical assistance, wherever necessary, may be provided by the department concerned. The resident of one speciality taking up some problem related to some other speciality should have some basic knowledge about the subject and he/she should be able to perform the investigations independently, wherever some specialised laboratory investigations are required a co-guide may be co-opted from the concerned investigative department, the quantum of laboratory work to be carried out by the candidate should be decided by the guide and co-guide by mutual consultation.

The Clinical residents may not ordinarily be expected to undertake experimental work or clinical work involving new techniques, not hitherto perfected or the use of chemicals or radio isotopes not readily available. They should however, be free to enlarge the scope of their studies or undertake experimental work on their own initiative but all such studies should be feasible within the existing facilities.

The residents should be able to use freely the surgical pathology/autopsy data if it is restricted to diagnosis only, if however, detailed historic data are required the resident will have to study the cases himself with the help of the guide/co-guide.

The same will apply in case of clinical data.

Statistical methods used for analysis should be described in detail.

Rules for Submission of Thesis/ Dissertation by MS Orthopaedics candidates

(i) The protocol of Thesis/ Dissertation should be submitted to the office of the Ethical Committee through head of the institutions within three (3) months of joining the training in Medical college/university.

(ii) No correspondence will be made in regard to acceptance of the protocol except only in the case of rejected protocols for which individual will be informed by office through mail/website.

(iii) The guide will be a recognized PG teacher in Medical college or university or NBE Accredited institutions. The teacher should have the experience of 5 years in speciality after obtaining the post graduate degree. The certificate of PG teaching and being Guide recognized by University/NBE must be enclosed along with thesis/dissertation. The Guide can guide one MD/MS candidate and one university diploma candidate desirous of taking the DNB examination, or one direct NBE candidate. Total number of candidates should be two including all sources.

(iv) Candidates who will be appearing in the subject under the heading Super Speciality (like Cardiology & Cardio Thoracic Surgery etc.) need not write their thesis/dissertation if they have already written their thesis during their MD/MS/NBE examinations. However they have to submit a proof in support of their having written thesis during their MD/MS examination.

(v) If the candidates appearing in the broad specialities have already written their thesis in the MD/MS examination, they need not submit the thesis/dissertation. However they are required to submit a copy of the letter accepting the thesis by the University.

(vi) If thesis is rejected or needs to be modified for acceptance, the University will return it to the candidate with suggestion of assessors in writing for modification. The result of such candidate will be kept pending till the thesis is modified or rewritten, accordingly as the case may be and accepted by the assessors of the University

(vii) If any unethical practice is detected in work of the Thesis, the same is liable to be rejected. Such candidates are also liable to face disciplinary action as may be decided by the University.

NOTE

Thesis will be sent to two external examiners evaluating for 50 marks each, who will be different from the examiners coming for the Clinical Examinations.

The last date for submitting the Thesis will be four months before the schedule date of Exam April 15th (i.e. 31st December).

1) If the candidate has failed in the thesis, the examiners have to furnish their comments on the thesis and the rectification to be done in the thesis.

2) The result of the candidate will be withheld.

3) The candidate has to rectify the deficiencies pointed out by the examiners and resubmit the thesis to the University within 3 (three) months.

4) The resubmitted thesis will be sent to the 3rd examiner for their opinion. After the report received from the 3rd examiner the result for the PG examination will be published.

5) The Report on the thesis evaluated alone b obtained from the

examiners and the thesis evaluated is not required.

GUIDELINES FOR WRITING OF THESIS/DISSERTATION

Title - Should be brief, clear and focus on the relevance of the topic.

Introduction œ Should state the purpose of study, mention lacunae in current knowledge and enunciate the Hypothesis, if any.

Objectives of the study

Review of Literature œ Should be relevant, complete and current to date.

Material and Methods- Should include the type of study (prospective, retrospective, controlled double blind) details of material & experimental design procedure used for data collection & statistical methods employed; statement of limitations ethical issues involved.

Observations œ Should be Organized in readily identifiable sections Having correct analysis of data be presented in appropriate charts, tables, graphs & diagram etc. These should be statistically interpreted.

Discussion- Observations of the study should be discussed and compared with other research studies. The discussion should highlight original findings and should also include suggestion for future.

Summary and Conclusion

Bibliography - Should be correctly arranged in Vancouver pattern.

Appendix– All tools used for data collection such as questionnaire, interview schedules, observation check lists etc should be put in

the annexure.

ANNEXURE-VII, GUIDELINES FOR LOCAL APPRA-IZAL

1) Prepare one paper containing ten short questions in the areas covered by the hospital/ institution in the last six months.

2) Conduct the theory examination for the candidates in the subject in the hospital.

3) Review the thesis progress and log book records for each candidate.

4) Conduct practical examination for the MS candidates in the discipline.

5) Should be kept as internal assessment

6) Give suggestion for improving the MS training and appraisal.

GUIDELINES FOR LOCAL APPRAISERS

1. University is pleased to suggest your name as local appraiser. The purpose of introducing six monthly appraisals in institutions is to further improve the quality of training, assess the training infrastructure for the MS candidates and also assist the local institutions to develop in to a centre of academic excellence. This would further add value to the services being rendered in these accredited hospitals/institutions. Please do not think that this assessment has negative connotation. Please plan your appraisal in such a way as to minimally affect the routine working of the department.

2. The University expects the local appraiser to be a post graduate in the speciality with teaching and research experience. He/She should have enough time and expertise to carry out the following activities in the allotted hospitals/Institutions:

2.1 He/she should participate in thesis protocol/progress presentation & discussion; assist the MS candidates in their thesis work by giving them suggestions and monitoring their progress. He/she should give specific remarks to improve the Thesis work after reviewing the objectives, methodology (sample size, sampling technique, data collection tools etc.), data analysis plan and statistical tests, results and discussion plan etc. of thesis of each candidate. These remarks should also be communicated in writing to the supervisor and the concerned candidate by the appraiser and a copy be sent to University.

2.2. He /she is expected to examine the log book maintained by the candidates and give specific remarks to improve the log book maintenance after reviewing the contents of the log book (name of procedure, details of the case, salient findings, remarks of the supervisor for the improvement of the candidate etc). These remarks should also be

communicated in writing to the supervisor and the concerned candidate by the appraiser and a copy be sent to University.

2.3 He/ should prepare question paper containing ten short structured questions in the speciality on the topics covered during the preceding six months and evaluate the answer sheets. He/she will maintain total confidentiality in these activities. The arrangements for six monthly theory and practical examination will be made by local accredited hospitals/institutions.

2.3. He/she will formally conduct practical examination (On the topics/areas covered in preceding six months). The practical will have long case, short cases; ward round, spots and viva voce.

2.4. He/she will communicate the result of assessment to the concerned candidates along with detailed feed back on their performance. He/she will give detailed suggestions to each candidate in writing for improving his/her performance. He/she will act as counsellor and give specific remarks for improving the overall performance level of the candidate. These remarks should also be communicated in writing to the supervisor and the concerned candidate by the appraiser and a copy be sent to University.

2.5. He/she will prepare the Examination worksheet for each candidate and submit the same to the concerned hospital for records with a copy of the same to the University.

2.6. He/she will submit the report to the Executive Director, University on the format (enclosed herewith).

2.7. He/she will also send six monthly report on the infrastructure, patient load and manpower in the concerned speciality of the accredited hospital, to the University

FORMAT FOR ASSESSOR FOR DOING ASSESSMENT OF THE MS CANDIDATES AT THE END OF SIX MONTHS

FROM_____TO _____

Name and registration number of the candidates	Score in Theory	Score in Practical	Remarks of the assessor for improving the overall performance level of the candidate in the examination, like how to improve attempting theory and practical. These held at the end of six months and a copy be sent to University
			held at the remarks should also be communicated in writing to the end of six supervisor and the concerned candidate by the appraiser

THESIS WORK ASSESSMENT

Name and Specific remarks of the assessor to improve the Thesis work after reviewing registration number the objectives, methodology (sample size, sampling technique, data of the candidates collection tools etc.), data analysis plan and statistic al tests, results and discussion plan etc. of thesis of each candidate. These remarks should also be communicated in writing to the supervisor and the concerned candidate by the appraiser and a copy be sent to University

LOG BOOK ASSESSMENT

Name and Specific remarks of the assessor to improve the log book maintenance after registration number reviewing the contents of the log book (name of procedure, details of the of the candidates case, salient findings, remarks of the supervisor for the improvement of the candidate etc. These remarks should also be communicated in writing to the supervisor and the concerned candidate by the appraiser and a copy be sent to University

WORK- SHEET FOR ASSESSMENT OF CANDIDATE BY LOCAL APPRAISER

Date:_____

Name & Address of Hospital _____

Name of the candidate and registration No.

Training Year of the candidate - First/ second/ Final

Name of Appraiser _____

Clinical Examination

Case	Agreed Diagnosis	Marks Awarded History	Clinical Examination	Diagnosis	Management	Total Marks In words	In Figure Max.
Long case -I							60
Short case -I							40
Short case -II							40
Short case-III							40
Total							180

Sub Total I + II (Max. Marks = 220)

II. Ward Round Marks in Awarded in

M. Marks = 40 words figure In words
In figure

III. Viva voce Max. Marks = 80

Instrument

Operative

Marks Pathology X-rays Orthotics

surgery Total

prosthetic

Maximum

Marks Awarded (In words)

Marks Awarded (In figure)

IV. Grand Total (Sum of I+II+III) Max. Marks = 300

Marks Awarded in words

Marks Awarded in figure

V. Result _____

VI. Specific description of the strong points in case of pass candidate and of weak points in case of failed candidate. Please list out the specific details which need to be communicated to the candidate to help him improve.

VII. Examiner‘s Name & Signature _____

BACK FORMAT FROM MS CANDIDATES UNDER-GOING TRAINING IN THE HOSPITAL

Instructions to the MS candidate-This feedback format is meant for knowing your views and suggestions for improving training programme in your hospital. You may not reveal your identify on the format. The information given by you will be used for improving your training.

Name of the Hospital and Address

II. Name of the department

III. Please respond to the following questions related to your MS training in past six months

3.1 Have you refereed to the MS curriculum for your specialty in the last six months, if yes how many times ?

3.2 How many times you have consulted the MS coordinator in your hospital in the last six months?

3.3 How many seminars you have attended in the last six months?

3.4 How many cases you have presented to your consultant(s) in last six months?

3.5 How many times you have attended the formal lectures covering various aspects of your speciality curriculum?

3.6 How many guest lectures have been held in your speciality in the last six months in your hospital?

3.7 How many times you have used internet for your studies in your hospital in the last six months?

3.8 How many times your thesis progress has been reviewed by your thesis guides/ external appraiser in the last six months?

3.9. Please mention the names of any three standard text books in your speciality which are available in the library of your hospital and you have referred to them in the last six months-

3.10. Please mention the names of any one National and any one International journal which you have referred to in your hospital library in the last six months-

3.11. How many clinical procedures you have done under supervision in last six months Please mention names and number of any three of them

3.12. How many clinical procedures you have done independently in last six months Please mention names and number of any three of them.

3.13. Please give five suggestions to improve your training in your speciality

ANNEXURE- VIII, FORMAT FOR LOG BOOK

Instructions for the supervisor

P.G. Training Programme - The post graduate programme broadly should include lecture/demonstration on applied basic sciences, bed side clinics, case presentations. Faculty lectures, symposia/seminar journal clubs, biopsy, radiology discussions and graded clinical responsibility.

Evaluation - It is essential that the trainee maintains a detailed account of the work done by him.

The record book will in addition remind the trainee of what he should observe, learn and perform in a programmed and phased manner during the course of training. It is hoped that this record will stimulate the trainee towards greater effort in areas where he is below par and also record his progress. It forms the basis for assessment and evaluation of the trainees progress. Some of the possible criteria on the basis of which a trainee could be evaluated are - soundness of knowledge, application & judgment, keenness to learn, punctuality and promptness, initiative, reliability, clinical skill, behaviour with patients, attitudes towards patient‘s relatives, colleagues, seniors and other staff, ability to express

Depending on the qualities and the level of attainments a candidates could be considered for appraisal, on the basis, for example, of the following 5 letter grading system.

A Excellent Above 75% B Good 60% - 65%

C Satisfactory 50%- 60% D Poor 30% - 50%

E Bad Below 30%

Besides the grading as indicated above, each student should also be given a formal feed back on his/her weak points and how to over-come his/her deficiencies.

ALL THE CANDIDATES MUST WRITE THE LOG BOOK IN DETAILS WITH REMARKS FROM

THE SUPERVISORS AND THESE ENTRIES MUST BE CHECKED BY THE LOCAL

APPRAISERS EVERY SIX MONTHS.

1. Name of Trainee :_____

2. Name of Hospital/Institution :_____

3. Address :_____

4. Specialty :_____

5. Name of Supervising Specialist :_____

6. Name of Medical

Director/Superintendent :_____

Date :_____ Signature of Supervising Specialist

Name (Block Letters) :

Passport Permanent Address :

Photograph

Date of Birth :

Fathers Name & Address :

Education :

MBBS Specimen Signature

Name of the College	Date of Joining	Date of Passing	No. of attempts	Prizes

House-job

Subject	Date of joining	Date of leaving	Period

Primary Diplomat of N.B.

Subject Date of Passing No. of Attempts

Final Diplomat of N.B.

Subject Date of joining

Posting schedule

S. No. Specialty From To Period

Lectures

S. No. Date Topic and name of the resource person

Seminars

S. No. Date Topic and name of the facilitators Evaluation

Journal Clubs

S. No. Date Topic and name of the facilitators Evaluation

Clinical Procedures/Operations Performed

S. No. Date Details of the patients and the procedures/Operations performed; names and signatures of the supervisors

Clinical Procedures/Operations Assisted

S. No. Date Details of the patients and of the procedures/Operations performed along with the names signatures and of the supervisors

Presentations

S. No. Date Details of the Case Names and signatures Evaluation of the consultants /resourc e persons

Emergencies

S. No. Date Details of the patients and management of emergency cases

Panel Discussions

(A) Radiology

S. No. Date Details of the case discussed Names of panelists

(b) Biopsy

S. No. Date Details of the case discussed Names of panelists

(C) Death review

S. No. Date Details of the case discussed and names of the resource persons

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