

**RECOMMENDATIONS FOR POSI ACCREDITATION
OF
PAEDIATRIC ORTHOPAEDIC FELLOWSHIPS**

**CRITERIA FOR APPROVAL OF CENTRES FOR
TRAINING, SYLLABUS & TRAINING SCHEDULE**

Document approved by POSI Accreditation & Credentialing Committee

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BROAD OBJECTIVE

The objective of this Fellowship is to train young Orthopaedic surgeons to deal with Paediatric Orthopaedic problems effectively.

1. SPECIFIC OBJECTIVES

The specific objectives of this training programme would be to :

1. Make the trainee competent to diagnose a wide range of Paediatric Orthopaedic conditions that are encountered in India.
2. To make the trainee competent to arrive at the diagnosis in a cost-effective manner with a judicious use of investigative modalities.
3. To make the trainee conversant with available options for treatment and to choose the most appropriate option which is applicable to conditions prevailing in India.
4. To sensitize the trainee for the need for improvement of health-care delivery in the field of Paediatric Orthopaedics in India with reference to preventive, diagnostic, curative and rehabilitative services.

2. CURRENT STATUS IN INDIA : NEED & RELEVANCE

India has a large population of children & a large proportion of patients who attend Orthopaedic departments in India are children. The current management of several Orthopaedic conditions in children in India is far from satisfactory. To cite a few examples;

- i. Majority of cases of congenital dislocation of the hip are diagnosed only after the children have begun to walk.
- ii. A sizeable proportion of neonatal osteomyelitis and pyogenic arthritis are diagnosed only after irreparable damage to the skeleton has occurred.
- iii. Compartmental syndromes and consequent Volkmann's ischaemic contracture occur with unacceptable frequency.
- iv. Often no attempt is made to diagnose the exact nature of major congenital limb anomalies (eg. Proximal focal femoral deficiency, tibial hemimelia) and often no attempt is made to treat them. Hence there is a need to improve the quality of care of paediatric orthopaedic conditions in India. This can only be achieved if more surgeons are trained in this field.

3. FUTURE DEVELOPMENTS

It is likely that in due course more centres in India will be in a position to train young Orthopaedic surgeons and eventually it will lead to the development of a MCh course in Paediatric Orthopaedics

REQUIREMENTS FOR THE FELLOWSHIP PROGRAM

(i) FACULTY :-

CORE FACULTY

Institutions intending to conduct the Fellowship in Paediatric Orthopaedics should have a Paediatric Orthopaedic Surgeon with adequate qualifications, experience and commitment to teaching and research to co-ordinate the course.

Qualifications:

The Co-ordinator should have:

a) Basic qualification in Orthopaedics (M.S of a recognised University / MCh. Orthopaedics / Dip. NB Orthopaedics). Fellowship training in Paediatric Orthopaedics would be desirable.

b) Experience: -

At least 10 years experience in the field.

c) Practice: The Co-ordinator of the programme should preferably be a full-time staff of the centre intending to offer the training programme or dedicate a significant amount of time per week (not less than 50%) at that centre. At least 75% of his / her professional time should be devoted to the practice of Paediatric Orthopaedics.

d) Research and Publications:

The Co-ordinator should have commitment to research in the field of Paediatric Orthopaedics. At least 5 scientific articles should have been published from the Unit in the field of Paediatric Orthopaedics in peer-reviewed, indexed journals during the course of the preceding 10 years.

e) Membership of the Paediatric Orthopaedic Society: The Co-ordinator must be an active member of the Paediatric Orthopaedic Society of India. The Co-ordinator should also have Ethics Committee experience and ideally GCP (Good Clinical practice) & GRP certification.

f) If there is any other person in the Unit, he/she should be of Associate Consultant or Associate Professor status and should have at least 5 years experience in Paediatric Orthopaedics post-qualification.

(ii) INFRASTRUCTURAL FACILITIES :-

a) Bed strength: The minimum bed strength of the paediatric orthopaedic unit in a public institution should be at least 20 beds. In a corporate set-up, an annual admission of at least 10 occupied beds should be the criteria. The Outpatient Clinic should see at least 200 cases / month i.e. 2400 patients annually & at least 400 surgeries should be performed annually (out of which 25% could be minor or daycare procedures) in order to cater to one Fellow. Specialty clinics for clubfoot, cerebral palsy, metabolic bone diseases, hand etc. are also desirable.

b) Equipment : Apart from a fully equipped orthopaedic operation theatre it is desirable that the following equipment is available in the centre:

- Image intensifier, spica table suitable for children, pneumatic tourniquets
- Limb lengthening equipment – ring fixator and/or monolateral fixator

- Instrumentation for mini, small and large fragment surgery, osteotomes set, bone cutters, wiring equipment, spine instruments, Implants required for Orthopaedic surgery in children
 - Powered drill and drivers, burrs, saws
 - Specialised orthopaedic table
- c) List of important teaching equipments
Digital camera, Teaching Board, LCD Projector, computer, access to internet and online journals
- d) Paramedical and radiology support
- The centre should ideally have a physiotherapy department and an occupational therapy department.
 - An artificial limb centre on-site or an artificial limb service in the near vicinity is also desirable.
 - Supporting services / laboratory facilities
 - Well-equipped departments of Radiodiagnosis (with MRI, spiral CT & Ultrasound facilities), Pathology, Microbiology and Biochemistry departments either on-site or in the nearby vicinity
- e) Library
A library with a collection of books and journals related to both general orthopaedics and books devoted exclusively to paediatric orthopaedics is recommended
The library should subscribe to the following journals:
- The Bone & Joint Journal
 - The Journal of Bone & Joint Surgery
 - Journal of Pediatric Orthopedics
 - Journal of Pediatric Orthopedics - B / Journal of Children's Orthopaedics
 - Online journals

THE SELECTION PROCEDURE

The selection procedure would be as approved by the institution, but preferably should enroll candidates who have at least one year working experience after the basic qualification of MCI recognized Orthopaedic degree. The selection could be held after widely advertising for the course and fulfilling institutional norms for such admissions.

THE NUMBER OF TRAINEES

It is emphasised that for any admission year not more than two Fellows (depending on the case load of that unit) should be under training in one Unit. The number of candidates to be enrolled per year would depend on the operating list and annual workload, apart from the number of orthopaedic postgraduates posted in the department.

An outpatient clinic of 50 patients a week and 25 major cases per month apart from the other 100 minor procedures, is the minimum requirement for one fellow per year. If considering two Fellows, then outpatients of 80 per week and 40 major cases per month apart from the other 160 minor procedures, must be the minimum requirement for that unit.

The number of trainees can be increased if the Unit has over 40 beds and at least 2 Paediatric Orthopaedic Surgeons who have the requisite qualifications as outlined earlier in Section 2.

THE TRAINING PROGRAMME

1. DURATION OF THE COURSE

The duration of the course would be TWELVE or TWENTY-FOUR calendar months, depending upon the official sanction given to that center as well as the interest and commitment shown by the candidate. The 2nd year of any initially allotted 2-year Fellowship will be continued only if the 1st year assessment of that candidate has been found to be satisfactory.

2. ROTATION OF POSTING

The candidate would be posted in the Paediatric Orthopaedic Service Unit of the Department for twelve months of the year for the TWELVE month fellowship and at least 22 months for the TWENTY-FOUR month fellowship. The peripheral postings for the fellow in the related departments listed below may be organized as indicated :

- Physical medicine and rehabilitation including gait lab for : two weeks
- Orthotics & Artificial limb centre : two weeks
- Developmental Paediatrics / Paediatric Neurology / NICU or PICU : two weeks
- Paediatric surgery / Hand surgery / Plastic surgery / Neurosurgery : two weeks

The Head of the Paediatric Orthopaedic Service could co-ordinate with the associated faculty members and enable the candidate to witness the treatment of cases of paediatric subspecialty problems if they require treatment under another orthopaedic subspecialty such as paediatric spine etc.

3. CURRICULUM TO BE COVERED

Being a higher speciality training course the emphasis will be on self learning with seminars and journal clubs organized to cover the spectrum of disorders in Paediatric Orthopaedics.

The specific areas of training would be divided into the following 12 modules, each to be covered in one month

- i) Evaluation of the paediatric orthopaedic patient
- ii) Normal and abnormal development of the musculoskeletal system
 - Congenital & developmental anomalies of the upper limb
 - Congenital & developmental anomalies of the hip
 - Congenital & developmental anomalies of the knee and leg
 - Congenital & developmental anomalies of the foot
 - Congenital & developmental anomalies of the spine
- iii) Paralytic problems including poliomyelitis, spina bifida, multiple congenital contractures, obstetric palsy, muscular dystrophy
- iv) Cerebral palsy
- v) Abnormalities of epiphyses
- vi) Limb length inequality
- vii) Metabolic bone disease
- viii) Bone tumours
- ix) Infections of bone and joints
- x) Fractures and joint injuries of the upper limb / Fractures and joint injuries of the lower limb & spine
- xi) Complications in paediatric orthopaedics / Controversies in paediatric orthopaedics
- xii) Newer developments in paediatric orthopaedics and Paediatric orthopaedic challenges in the developing world

Detailed syllabus is attached as a separate document.

4. PRACTICAL SKILLS TO BE GAINED

4.1 CLINICAL SKILLS

It is envisaged that at the end of the period of training the candidate would have acquired the following clinical skills:

To diagnose, evaluate and effectively plan treatment for the following conditions:

- Common angular and torsional deformities of the limbs
- Acute osteomyelitis
- Septic arthritis
- Congenital clubfoot
- Developmental dysplasia of the hip in the neonate and infant
- Perthes' disease
- Congenital pseudarthrosis of the tibia
- Osteogenesis imperfecta
- Limb length inequality

To undertake a comprehensive evaluation of children with:

- Cerebral palsy
- Spina bifida

To effectively perform the following diagnostic and therapeutic procedures:

- Arthrography of the hip
- Myo-neural blocks for spasticity in cerebral palsy

To effectively treat by non-operative means the following conditions in the manner stated:

- Manipulation of clubfoot and application of clubfoot casts
- Wedging of plaster casts for correction of individual deformities in clubfoot
- Closed reduction and plaster spica application for developmental dysplasia of the hip
- Tone inhibitions casts for spasticity in cerebral palsy
- Closed reduction of forearm, elbow, leg and ankle fractures

To be conversant with the prescribing and checking the fitting of the following:

- Foot abduction brace for clubfoot
- Pavlik harness for DDH
- Orthoses for the lower limb for polio
- Orthoses for spina bifida
- Orthoses for cerebral palsy

To become conversant with a logical approach to the diagnosis of the following conditions:

- Skeletal dysplasias
- Rhizomelic, mesomelic and acro-mesomelic dysplasias
- Rickets of renal tubular origin
- Proximal tubular, distal tubular disorders

It should be ensured that the candidate receives "hands on" experience in surgery during the period of training in a supervised graduated manner.

The candidate should maintain a log book of procedures witnessed, assisted and performed both under supervision and independently.

At the end of the period of training the candidate should be competent to perform the following operations independently:

- Arthrotomy and drainage of septic arthritis of any joint of the upper or lower limb

- Posteromedial soft tissue release for clubfoot
- Mid-tarsal osteotomy / tarsal curettage / talectomy
- Tendon transfer eg. SPLATT /Tibialis posterior transfer
- Tendon lengthening procedures around the ankle, knee and hip for cerebral palsy
- Proximal femoral osteotomy for Perthes' disease or for DDH
- Corrective osteotomies of the tibia or femur to correct angular deformities
- Pinning of slipped upper femoral epiphysis
- Open reduction of developmental dysplasia of the hip
- Managing all trauma of the upper and lower limb in a child
- Managing a child with osteogenesis imperfecta
- Manage benign lesions of the bone and soft tissues, understand principles of biopsy for malignant tumors and be able to do wide excision of minor tumors

5. RESEARCH SKILLS TO BE GAINED

The candidate would be actively involved in the on-going research activities of the Unit. The candidate would be expected to complete at least one project per year (two in a 2 year fellowship) the year and prepare a paper on the work for publication in a peer-reviewed journal.

The candidate would also be expected to present a paper at the annual conference of the Paediatric Orthopaedic Society of India

It is hoped that the candidate would gain some insight into the methodology of clinical research including the design and planning, analysis of data, simple statistical methods and finally the nuances of logical presentation of the data in a scientific communication.

6. STIPEND & ACCOMMODATION

Fellows should be paid a monthly stipend as per the existing pay-scales for senior residents & fellows. Low-cost accommodation should also be available, preferably within the campus. POSI has no financial obligations in the Fellowship & all remunerations will be paid by the centre where the training is performed and / or by the Co-ordinator of the course.

EVALUATION

1. INTERNAL EVALUATION

Periodic internal assessment would be carried out to assess the progress of the candidate during the training. The format of the assessment is appended. It is emphasised that the assessment is not only on acquisition of theoretical knowledge but an overall assessment of the candidate's performance as a surgeon. An internal assessment report in the standard format may please be sent to the accreditation committee of POSI for all Fellowship candidates at 9 months, and again at 21 months for those Fellows doing a 2-year Fellowship.

2. EXTERNAL EVALUATION

On completion of 12 months fellowship training, the candidate would be eligible for appearing for the exit examination at 10 months +, provided the periodic internal evaluation has been rated as satisfactory. Candidates opting for 2-year Fellowship will only be allowed to continue into their 2nd year if their 1st year assessment is deemed satisfactory. The 2nd year exit exam for these candidates will be conducted at 22 months+.

The examination would be conducted by the department.

2.1 THEORY EXAMINATION

The theory examination of 100 marks would include

*MCQ's : 50 marks (with negative marking)

*Restricted response questions: 50 marks

The candidate is expected to score 50% in each to pass.

Care would be taken to ensure that all aspects of Paediatric Orthopaedics included in the 12 modules are included in the range of questions and that equal weightage would be given for each module.

2.2 CLINICAL EXAMINATION

The candidate would be permitted to appear for the clinical examination ONLY after qualifying in the theory examination.

It is recommended that the practical examination should include Objective Structured Clinical examination in addition to case discussion.

The centre: The centre would be in candidates' own institution.

Examiners: There would be one internal examiner and one external examiner appointed by the department.

2;3 VIVA-VOCE

Care would be taken to ensure that the viva-voce covers areas not evaluated in the theory and practical examination.

AWARD OF THE FELLOWSHIP DIPLOMA

The Fellowship Diploma would be awarded by the institution after the panel of examiners has certified that the candidate has successfully passed all the sections of the exit examination. POSI will certify that the candidate has completed the fellowship based on the recommendations of the head of the department of the accredited department and institution

HOW TO APPLY

Senior POSI members desirous of applying for POSI accreditation of their centre's fellowship may apply to the Secretariat with the following documents:

1. Application forwarded through the Medical Director / CEO of the hospital offering the fellowship
2. CV of the principal Co-ordinator of the Fellowship
3. List of other faculty members in the Unit with details of their CV, teaching experience, designations etc
4. Details of the fellowship structure as described earlier

After scrutiny by the Accreditation & Credentialing Committee of POSI, POSI will appoint two members of this committee to visit the centre and inspect the facilities & infrastructure provided. TA / DA to the visiting inspectors will be provided by the centre requesting for accreditation. The accreditation will be valid for a period of 3 years & can be further extended in 3-year blocks subject to re-certification.

Pediatric Orthopedic Fellow Evaluation Form

Fellow's Name:

Evaluator's Name:

Date:

Scoring:

1 = Performance consistently below minimum standards.

2= Below average or marginal.

3= Average or better.

4= Excellent.

SCORE

1. Medical Knowledge:

1 = limited and fragmented

4= Extensive and well-integrated

2. Problem Solving:

1 = Fails to critically assess information, risks, and benefits; does not identify major issues.

4= Critically assesses information, risks and benefits; makes timely decisions.

3. Ambulatory Care Skills:

1 = Very poor ability to diagnose, treat, and coordinate care for outpatients.

4= Excellent ability to diagnose, treat, and coordinate outpatient care.

4. Management of Hospitalized Patients:

1 = Very poor ability to diagnose, treat and coordinate care for inpatients.

4= Excellent ability to diagnose, treat and coordinate care for inpatients.

5. Surgical Skills:

1 = Indecisive, inadequately prepared, lack of anatomic and procedural knowledge.

4= Skilled, decisive, knowledgeable technician.

6. Respect:

1= Shows inadequate appreciation of patients' and families' needs for medical information and informed participation in medical discussions.

4= Always shows exceptional personal commitment to honoring the choices and rights of other persons, especially regarding their medical care.

7. Compassion:

1= Shows inadequate appreciation of patients' and families' special needs for comfort and help, or develops inappropriate emotional involvement.

4= Always appreciates patients' and families' special needs for comfort and help, but avoids inappropriate emotional involvement.

8. Responsibility:

1 = Does not accept responsibility for own actions and decisions; blames patients or other

professionals,

4= Fully accepts responsibility for own actions and decisions.

9. Integrity and Ethical Values:

1 = Shows inadequate commitment to honesty, integrity and trustworthiness,

4= Consistently shows exceptional commitment to honesty, integrity and trustworthiness.

10. Relationship with Orthopedic colleagues:

1 = Difficult; often in competition with residents,

4= Mature; always sharing; good teacher and role model for residents.

11. Relationship with Operating Room Staff

1 = Troublesome, overly demanding relationship with OR nurses, techs, and anesthesia staff.

4= Excellent. The Operating Room Staff like the fellow and want us to keep them on staff.

12. Relationship with office staff and other hospital staff including outpatient clinic, surgical floor, ED, PT, OT, and Ortho Techs:

1 = Problems, frequent difficulties, staff complaints.

4= Excellent, Staff like to work with the fellow, and they appreciate the fellow's commitment to patient care, Fellow willing to work as part of a team and acknowledges contributions of other disciplines.

13. Overall Clinical skills:

1 = Very poor overall clinical skills

4= Outstanding clinical skills.

14. Development of Research Projects:

1 = Minimal progress, low interest level

4= Outstanding progress

15. Comments:

Signature of Evaluator

Date