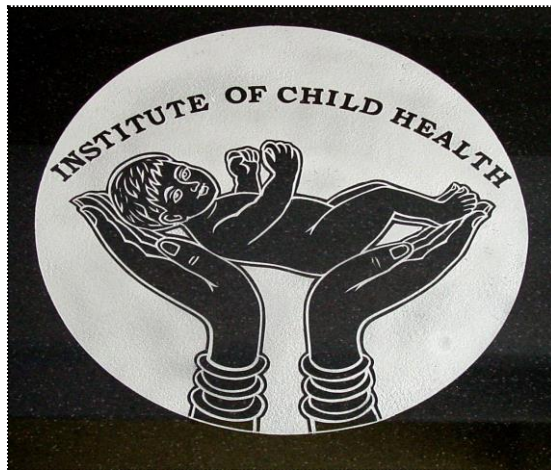


**INDIRA GANDHI INSTITUTE OF CHILD HEALTH
AUTONOMOUS INSTITUTE OF GOVT. OF KARNATAKA
(A Post Graduate Institute of Higher Medical Sciences)
South Hospital Complex,
Dharmaram College Post, (Near NIMHANS)
Bengaluru-560 029.**

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**(AFFILIATED TO RAJIV GANDHI UNIVERSITY OF HEALTH
SCIENCES, KARNATAKA)**



**PROSPECTUS
FOR
FELLOWSHIP IN PAEDIATRIC ORTHOPEDICS**

**INDIRA GANDHI INSTITUTE OF CHILD HEALTH,
South Hospital Complex,
Dharmaram College Post, (Near Nimhans)
Bangalore-560 029.**

**FELLOWSHIP IN – PAEDIATRIC ORTHOPEDICS
(Affiliated by Rajiv Gandhi University of Health Sciences)**

**FORMAT FOR DESIGNING CURRICULUM FOR FELLOWSHIP PROGRAMME IN
PAEDIATRIC ORTHOPEDICS**

1) Name of the subject: Pediatric orthopedics

2) Please describe:

a. Goals:

According to 2011 population statistics total population of karnataka is 61.1 million and out of which 6.72 million are children between the age group 0 to 6 yrs, however statistics for children between 6 to 14 yrs is not available. For these many children Indira Gandhi Institute of Child Health is the only hospital which is dedicated to child's health care. There are about 2000 children born with club foot deformity alone. There are many birth anomalies which affects various parts of the musculoskeletal system. The bone and joints can be affected by means of injury ,birth anomalies, infections, tumors ,and metabolic problems. There are very few specialist who are trained to treat these problems. The routine orthopaedic training for a post graduate available in the present curriculum is inadequate and difficult to deliver a quality health care for these children. In Karnataka only Manipal University is offering fellowship in pediatric orthopaedics and there is no institute offering fellowship under Rajiv Gandhi university of health sciences. By establishing this course we can improve the musculoskeletal health of children. Training orthopaedic surgeons in this field will bring down the work load of general orthopaedic surgeons.

The primary goal of this course will be to train interested and committed orthopaedic surgeons in the sub-specialty of paediatric orthopaedics.

- Introduction towards the sub speciality.
- Evaluate an infant or a child with a common pediatric orthopedic problem.
- Investigation of a child with musculo skeletal problem
- Counsel families

b. Statement of objectives of the Course:

The objectives of this course will be to provide trainees (Fellows) with

Knowledge –to equip orthopedic surgeons with ability to recognize, investigate, manage and counsel the commonest orthopedic disorders seen in children .understanding the the basics of pediatric from the embryonic stage, neurological development, ossification in bones, patho physiology of various disorders, understanding the bone metabolism, natural course of trauma healing, congenital deformities affecting musculoskeletal system. to be involved with the overall development of a child, to work in co ordination with other specialities in the child care..neuro developmental problems need a team approach and needs a active role of a orthopedic surgeon. the trainee will get to interact with pediatrician, neurologist, development clinic, physiotherapy etc. the working atmosphere will expose the fellow to understand the childs physiology, psychology, and growth aspects which is not taught in their post graduate training. Some of the out patient care like plaster technique, minor procedures can be mastered well by the fellow to treat some of the birth anomalies. is a good opportunity to be involved in the research projects as it is a research institute.

Skills – To enable orthopedic surgeons to acquire appropriate skills in the specialty for providing quality care to children and adolescents to attain the optimal results in the management of musculoskeletal disorder. The course will also provide trainees with operative skills in the management of children of various musculoskeletal problems in which the decision making will be different compared to the adult care.

Communication abilities – the fellow will get to interact with a child who can reciprocate and the parents as a part of training. The trainee will be actively involved in out patient care, where he will be involved in interacting with different specialities which provides ample oportunities to learn about the inter personnel relationships

c. **Course contents (syllabus):** Curriculum attached as Annexure A.

Essential knowledge: The curriculum gives details of all the topics that will be covered during the training period.

d. **Teaching / Learning activities:**

The faculty will provide intensive hands-on training for all the trainees in all outpatient clinics. The trainee will also actively participate in discussion with other specialties in the holistic management of patients seen. The trainee will function as a consultant in training and hence will learn all aspects of management of patients in order to be able to manage and counsel the The trainee will be given every opportunity to participate in all teaching / learning and research activities of the department to enrich his/her knowledge of the subject. He/she will be encouraged to present cases for clinical discussions daily.

The fellow will get a chance to assist in all the surgical procedures and will be allowed to operate independently under the supervision .

Clinical lectures will be organized weekly to cover theoretical topics from the proposed curriculum. In addition, the trainee will be expected to attend any important and relevant lectures or training programmes in Bangalore, provided the regular clinical duties of the trainee are not disrupted.

The trainee will also attend clinical pathology discussions, mortality meetings, journal clubs, seminars, symposia and other teaching activities of both institutions.

He / she will be expected to present posters and oral presentations in national and international conferences and prepare and publish case reports in consultation with senior colleagues in the department

The trainee will be expected to undertake a short and focused clinical project during the course with the aim of publication of this work in an indexed journal.

e. Participation in departmental activities:

1. **Journal review meetings:** Once a week
2. **Clinical lectures and seminars:** Once a week
3. **Clinico Pathological meetings:** once a month
4. **Inter-Departmental Meetings:** Radiology,pediatrics,pediatric surgery. once a week
5. **Community Work:** – Camps / field visits: visits to special education schools and training units.
6. **Clinical rounds:** – daily
7. **Outpatient clinics:** everyday in the assessment of patients.
8. **Participation in Conferences / presentation of papers:** National and state courses and conferences once year. International conference if possible in training period
9. **Any other:**special clinics like club feet clinic, cerebral palsy clinic.

f. Monitoring of Teaching / Learning activities:

- (a) Methods: Journal reviews, seminars, case presentations, and maintenance of a log book.
- (b) plaster technique in club foot.
- (c) Schedules or Checklists, log books, diary: The department will have a trainee handbook . Log books will be maintained by the trainee. Diary of all clinical cases seen and handled will also be kept.

g. Scheme of Examination: (Total marks: 400).

- (a) Written: Two theory papers – 100 marks each, two essays 20 marks each, six short notes questions 10 marks each
- (b) Clinical: Number & Type of cases: 2 to 4 clinical cases (100 marks) and “spotters” (50 marks)
- (c) Viva Voce (50 marks)

h. Recommended Books and Journals:

- 1.pediatric orthopedics in clinical practice. By scoles.
- 2 fractures in children by rockwood.
- 3.pediatric orthopedic secrets by staheli
4. tachdjia’s pediatric orthopedic 3volumes.
5. lovell and winter pediatric orthopedics
- 6 .review of orthopedics by miller.

(2). Rotation and posting in other departments

one month roatation posting to trauma unit sanjay Gandhi institute of trauma ‘ to have hands-on training in common pediatric trauma.

One month rotation in oncology institute to get exposure in musculoskeletal tumors in children.

(3). Orientation Programme:

- (a) Use of Library: regular use will be encouraged.
- (b) out patient procedures like plaster application, removal of plaster in children, tenotomy procedures in club foot, examination and evaluation of spastic child in out patient.
- (c) National Programmes: World disability day.
- (d) Any other: visits to special needs schools and evaluation of children with physical and intellectual disability

(4). Training in Teaching Skills and Research Methodology:

The candidate will be expected to present cases and clinical signs in outpatient by way of case presentations, seminars and bedside teaching etc in the wards.

Patient and parent education and of other paramedical health professionals regarding implications and management of disorder involved in the treatment will be undertaken by the trainee under supervision.

A research methodology course for 3-5 days will be arranged every year.

Topics to be covered during the one year fellowship programme in Paediatric

Orthopaedics

- **Basic principles of Paediatric Orthopaedics:**
 - Growth and development: normal growth and development, Orthopaedic related disorders of growth and development.
 - Orthopaedic clinical history taking and assessment of physical growth and developmental milestones.
 - Orthopaedic clinical examination including musculoskeletal examination, gait analysis, neurological examination and clinical application.
 - Anatomical aspects of musculoskeletal system including the surgical anatomy knowledge and its application.
 - Kinetics and Kinematics of musculoskeletal system of the child.
- Clinical assessment and decision making in the management of paediatric orthopaedic conditions.
- Radiological evaluation of paediatric orthopaedic patient.
 - Interpretation of child's radiographs.
 - Radiographic techniques including image guided procedures.
 - Application of various advanced radiological techniques including computer tomography, MRI, radio nucleotide bone scanning, musculoskeletal ultrasonography.
 - Interventional radiographic procedures including arthrograms, ultrasound or CT guided procedures.
- Rehabilitative treatment including physiotherapy, occupational therapy as well as Orthotics and prosthetics usage for various types of paediatric orthopaedics problems.
- Clinical care of in-patients including the day care patients, ward patients and ICU patients.
- Surgical training of candidates in all the varieties of paediatric orthopaedic problems.

These concepts will be covered in clinical modules in everyday patient management. The trainees are expected to be involved in the comprehensive management of various types of paediatric orthopaedic disorders. The details of the common paediatric orthopaedics conditions which can be expected to be seen in the institute during the fellowship period are given below. The trainee is expected to learn the management under the sub headings mentioned. The candidate will maintain a log book of all the cases in which he/ she is involved in the management. The log book will also be expected to contain all the academic activities of the candidate during the fellowship period.

Paediatric Spinal problems:

- **Scoliosis and kyphosis:**

- Screening for Spinal deformities.
- Clinical features and examination.
- Radiological evaluation.
- Pre operative evaluation.
- Non operative management: Brace therapy, Cast therapy.
- Surgical management- indications, Surgical goal, surgical approach, Surgical techniques.

Developmental Dysphasia of Hip:

- Screening and Clinical evaluation
- Radiographic evaluation.
- Treatment: Non-operative- Harness treatment, traction, Closed reduction, Plaster treatment and Brace therapy.
- Treatment: Surgical- Open reduction, femoral osteotomies, pelvic osteotomies, **Acetabular shelf procedures and other reconstructive procedures.**

Perthes disease:

- Clinical and radiological evaluation and Decision making.
- Classification and staging of Perthes disease.
- Treatment: Non-surgical- orthotic management, traction and symptomatic treatment.
- Treatment: Surgical- containment procedures, femoral osteotomies, pelvic osteotomies.

Slipped Capital Femoral epiphysis:

- Clinical and radiological evaluation.
- Classification
- Treatment: non surgical and surgical treatment.

Disorders of knee: Discoid menisci, osteochondritis, bursitis and tendinitis conditions, patella femoral instability.

- Clinical and radiological evaluation.
- Non operative / operative management.
- Rehabilitation programme.

Disorders of the legs: Genu varum/ valgus deformities, tibial torsions, bowing of Tibiae, congenital pseudarthrosis of Fibula etc.

- Clinical and radiological evaluation.
- Non operative / operative management.
- Rehabilitation programme.

Disorders of feet: CTEV, Flat feet, vertical talus, tarsal coalitions, toe deformities, neurogenic abnormalities etc.

- Clinical and radiological evaluation.
- Non operative / operative management.
- Rehabilitation programme.

Cerebral palsy and other neuromuscular conditions:

- Classification and clinic radiological evaluation.
- Management of foot involvement in CP including equinus, equinovarus, pes valgus, cavus, ankle and Hallux valgus.
- Management of knee involvement including knee contractures.
- Rotational abnormalities of femur and Tibia.
- Management of Hip conditions including contractures and hip subluxations and dislocations.
- Management of upperlimb and spine problems including scoliosis, spondylolisthesis.
- Management of post polio paralytic deformities and contractures of extremities and spine.
- Clinicroadiological evaluation and management of muscular dystrophies, peripheral nervous system disorders, nerve palsies.

Skeletal dysplasias and syndromes affecting musculoskeletal system:

- Evaluation of Achondroplasias, hypochondroplasias, Spondylo epiphyseal dysplasias, multiple epiphyseal dysplasias and metaphyseal dysplasias.
- Evaluation of various syndromes including Marfan's syndrome, Beal's syndrome, Larsen's syndrome, Down's syndrome, Neurofibromatosis, Storage disorders, Arthrogryposis multiplexa congenita etc.
- Operative and non operative management including rehabilitation.

Infections of the musculoskeletal system:

- Neonatal septic arthritis- clinic radiological evaluation, severity assessment and surgical as well as non surgical management. Follow-up and management of complications and sequel of septic arthritis.
- Osteomyelitis: acute, sub acute and chronic osteomyelitis- comprehensive management including medical treatment, surgical debridement, bone and soft tissue reconstruction and rehabilitation.
- Tubercular infections including Spondylodiscitis, hip and knee arthritis, psoas abscesses etc.
- Soft tissue infections including tenosynovitis, cellulitis, necrotizing fasciitis, neuropathic and other types of ulcers management.

Musculoskeletal tumors:

- Classification, clinical features, radiographic features, staging and treatment of various types of tumors.
- Benign tumors including simple bone cysts, aneurysmal bone cysts, Fibrous dysplasias, osteochondromas, Solitary and multiple enchondromatosis, chondroma, osteoid osteoma, osteoblastomas, Langerhans cell Histiocytosis, Synovial chondromatosis etc .
- Malignant bone tumors: osteosarcomas, ewing's sarcoma, Chondrosarcoma, soft tissue sarcomas- Clinical, laboratory and radiological evaluation. Biopsy, Staging and treatment of these patients.

Musculoskeletal trauma:

- Spinal injuries: cervical spine, Thoracic and lumbar spine injuries- Classification, Clinical and radiological evaluation, Surgical and non surgical management. Comprehensive management of patient with neurological deficits.
- Upper and lower extremity trauma: birth fractures of Clavicle, physeal injuries, all types of traumatic fractures and dislocations including open injuries, pathological fractures, neglected trauma, post traumatic deformity management. A comprehensive care including first aid, resuscitation in polytrauma cases, clinical and radiological evaluation, surgical and non surgical management, rehabilitation and orthotic and prosthetic advice.

Metabolic and rheumatological bone diseases:

- Rickets of various types, renal osteodystrophy, pituitary related skeletal diseases, osteogenesis imperfect etc. Clinical laboratory and radiological work-up and medical as well as surgical management.
- Arthritis including Juvenile rheumatoid arthritis- pauciarticular and polyarticular RA- clinical, laboratory and radiological evaluation. Medical treatment, physical and occupational therapy, surgical management.
- Synovitis of Hip joint, spondyloarthropathy, neuropathic arthropathy etc: clinicoradiological evaluation and management.

Duration of Course:

12 Months (full time work as per RGUHS guidelines and not permitted to work elsewhere)

Eligibility:

i) MS (Ortho), DNB or its Equivalent / post Diploma with 3 years experience qualification.

Selection:

- 1) Candidates will be selected from 4 member panel by interview
(Approved by RGUHS)
- 2) If necessary entrance test will be conducted.

Fees & Stipend:

Fees for the course	:As per IGICH norms
Monthly stipend	:Rs.60000/- Per Month

*In the event of the candidate leaving the course by discountenance or otherwise and thus failing to complete course;

1. The fee paid by candidate will not be refunded.
2. The stipend drawn by the candidate from the Institute during the period of the Fellowship programme to be paid to Institute.

Experience:-

Preference will be given to candidates having three years experience after post graduation in the concerned specialty.

Attendance & Leave:

As per University Guidelines

Faculty:

Staff from Indira Gandhi Institute of Child Health, Bangalore.

SCHEME OF EXAMINATION

THEORY EXAMINATION – includes 2 theory papers 100 marks each.

- Two long essays(20 marks each)
- Remaining six short essays (10 marks each)

PRACTICAL EXAMINATION – 2 Cases – 75 marks each

VIVA VOCE – 50 marks

Total – 400 marks

Copies of certificates to be enclosed with application (Originals at the time of Interview)

1. Photos –2
2. SSLC Marks card.
3. MBBS Degree Certificate and marks cards for all the four years.
4. MS (Ortho)Certificates / Marks card / Convocation Certificates
5. KMC Registration Certificate(updated qualification)
6. Application of in-service candidates should be routed through proper channel only.
7. Experience Certificate if any.

*** This Fellowship Programme is not recognized by Medical Council of India.**

