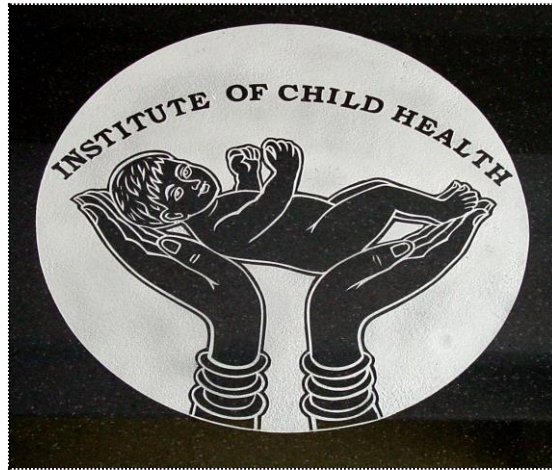


**INDIRA GANDHI INSTITUTE OF CHILD HEALTH
AUTONOMOUS INSTITUTE OF GOVT.OF KARNATAKA
(A Post Graduate Institute of Higher Medical Sciences)
South Hospital Complex,
Dharmaram College Post, (Near NIMHANS)
Bengaluru-560 029.**

**Phone: 080-22443143 & 22442421 Telefax:080-26541799
email: ihealthchild@yahoo.in / igichfellowship@gmail.com
Web : www.igich.karnataka.gov.in**

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



**PROSPECTUS
FOR
FELLOWSHIP IN RADIOLOGY**

CURRICULUM FOR FELLOWSHIP PROGRAMME IN PAEDIATRIC RADIOLOGY AT RAJIV GANDHI UNIVERSITY OF HEALTH SCIENCES

COURSE CONTENTS (SYLLABUS)

GOALS:

To enable the trainee to become clinically competent and to consistently interpret the results of pediatric investigations accurately and reliably. Where appropriate, trainees should also be capable of providing a comprehensive and safe interventional diagnostic and therapeutic service.

OBJECTIVES:

The aim of establishing a curriculum for subspecialty training in paediatric radiology is to ensure that trainees;

- consolidate and develop their practical skills
- develop an in -depth understanding of paediatric diseases
- Increase their familiarity with children's disease and the practice of children's diology, emphasinsing the differences from adult practice
- Understand the role of radiology in the management of sick children
- Become sufficiently trained to become an integral member of the multidisciplinary teams now required in hospitals providing full services to children
- Acquire clinical knowledge relevant to medical land surgical management of paediatric diseases such that the trainee may confidently discuss the appropriat imaging strategy for the clinical problem with the referring clinician
- Detailed knowledge of current developments in the specialty
- Direct practical exposure with appropriate graded supervision in all forms of paediatric imaging and intervention
- Knowledge and skills to enable safe practice of analgesia and sedation
- The trainee should be fully competent in paediatric life-support.
- The expected outcome at the end of this subspecialty training will b e that the trainee can select the appropriate imaging strategy for paediatric problems, supervise (and perform where appropriate) the examination (s) and accurately report on the findings. The trainee should be competent in all aspects of paediatric imaging and intervention.

OVERVIEW OF TRAINING:

The trainee undergoing subspecialty training should ideally be actively involved in paediatric radiology within an educational environment with graduated supervision.

The training department must provide access to appropriate computed tomography (CT),MR, ultrasound (US), and fluoroscopy.

Clinical knowledge will be acquired by a variety of means, including close liaison with appropriate medical, surgical and oncological teams and combined clinical and radiological meetings. Multidisciplinary meetings should be emphasised. The following inter/relationships are important.

- Pediatric surgery
- Pediatric medicine
- Neonatal unit
- Obstetric unit
- Community pediatrics

Additional clinical knowledge may be acquired through participation in appropriate ward rounds, tending outpatient clinics and theater session. Training may require secondments to appropriate specialist hospital to gain experience in neonatal radiology and/or paediatric neuro radiology.

The pediatric radiology experience acquired during core training will count towards the total experience of subspecialty training in paediatric radiology.

The trainee should be encouraged and given the opportunity to attend and lead appropriate clinic radiological and multidisciplinary meeting.

Trainees will be expected to be familiar with current paediatric radiological literature.

The trainee should be encouraged to participate in research, and to pursue one or more projects up to and including publication. An understanding of the principles and techniques used in research, including the value of clinical trials and basic biostatistics, should be acquired. Presentation of research and audit results at national and international meetings should be encouraged.

Towards the completion of training, a trainee will be expected to provide expert advice and guidance to clinical colleagues as to the most appropriate imaging methods for investigation of paediatric clinical problems.

REQUIREMENTS OF SUBSPECIALTY TRAINING:

A sound understanding of the basis of paediatric imaging including.

- The embryology, anatomy, normal variants, developmental abnormalities and relevant physiology of children.
- The pathological processes of both benign and malignant disease in the paediatric age group.
- Local, national and where appropriate, international imaging guidelines.

Knowledge of the full range of radiological diagnostic techniques available, in particular.

- the indications, contra-indications and complications of each imaging method
- the factors affecting the choice of contrast media and radiopharmaceuticals
- the effects and side effects of these agents

Particular emphasis should be placed on the strengths and weaknesses of the different imaging methods in various pathological conditions. The appropriate choice of imaging techniques and \or the appropriate sequence of imaging techniques in the investigation of specific clinical problems should be emphasized.

Acquisition of specific skills to enable the conduct, supervision and accurate interpretation of all imaging techniques used in the investigation of paediatric diseases to a high professional standard. Where appropriate the safe and effective practice of interventional techniques good communication with patients, their parents and professional colleagues accurate informed consent to be obtained continuing accreditation of paediatric life-support status.

A clear understanding of the role of multidisciplinary meeting, including;

- planning of investigations including the selection of appropriate tests and imaging techniques for the diagnosis of benign and malignant disease
- staging of malignant disease
- planning and outcomes of treatment.
- the detection of errors in diagnosis and complications of treatment
- promoting an understanding of relevant paediatric pathology

Detailed knowledge of dose reductions techniques in paediatric radiology.

Procedural competence will need to be reviewed at intervals, and this regular review should also assess the number of cases required in order to ensure competence. During the training period it is recommended that the trainee obtains experience in the following;

- ❖ plain radiography, to include the full range of clinical subspecialties, example
- ❖ trauma accident and emergency, orthopedics rheumatology, chest and abdomen.

Undertaking and reporting US examination

- of the abdomen, gastrointestinal (GI) tract (including bowel), genitourinary tract, chest, head and musculoskeletal system.
- Doppler studies, including spectral, basic color and power Doppler, as well as basic calculations.
- Undertaking and reporting routine fluoroscopic examinations of the GI and urinary tract, together with more complex investigations such as;
 - small bowel enema
 - reductions of intussusception
 - management of neonatal distal intestinal obstruction
 - velopalatal competence and studies of phonation
 - disorders of swallowing

Undertaking and reporting paediatric CT and magnetic resonance examinations

Undertaking and reporting basic paediatric radionuclide imaging examinations;

- static and dynamic renal studies, including cystography
- musculoskeletal imaging
- ventilation and perfusion lung scintigraphy
- GI studies, including pertechnetate studies for Meckel's diverticulum,
- identification of a GI bleeding site
- thyroid imaging
- MIBG studies
- dynamic biliary examination

A trainee will keep abreast of all other imaging techniques relevant to their practice.

INTERVENTIONAL TECHNIQUES:

Trainees should acquire experience in the following procedures;

- ❖ biopsy procedures
- ❖ abscess drainage
- ❖ insertion of percutaneous nephrostomies
- ❖ joint aspiration, eg hip

Trainees should acquire experience in all the practical procedures listed above, and the number of cases undertaken should be recorded in their log book.

Understanding of the medico-legal aspects of paediatrics.

Regardless of the imaging technique or procedure, the consultant trainer must be satisfied that the trainee is clinically competent, as determined by an in-training performance assessment, and can consistently interpret the results of investigations accurately and reliably.

The techniques listed and the time devoted to each will be reviewed at intervals. It is recognised that some studies will become obsolete and new imaging techniques will be developed.

The trainee should become familiar with providing analgesia and \or sedation where required, as well as the necessary continuous monitoring required to perform this safely.

The trainee should be aware of local and national guidelines on consent, and be capable of obtaining informed consent for practical procedure

TEACHING AND LEARNING ACTIVITIES

1. Academic session
2. Conference, CME and work shop
3. Research activity
4. Publication

PARTICIPATION IN DEPARTMENTAL ACTIVITIES

1. Journal review meeting
Each candidate shall present at least 6 journal reviews in one year.
2. Seminars
Each candidate shall present at least 6 seminars/symposium in one year.
3. Participation in conference/presentation of papers. - Should attend national and state level meets, present papers.
4. Teaching - The candidate will assist and be involved in teaching of students

External posting – one month posting in NIMHANS – for neuroimaging and interventional procedure

15 dates posting in Bangalore Inst. Of Oncology – basic paediatric radionuclide imaging.

MONITORING OF TEACHING AND LEARNING ACTIVITIES

1. Formative evaluations
Internal assessment by the teaching faculty of the department
2. Summative evaluation
Assessment by internal and external examiners designated by rgus at the end of the course.

FORMATIVE EVALUATION

Academic programmes and participation.

Log book - Comprehensive record of all academic events during one year course.

Academic activity

Radiological survey achieved

Should work on a subject for thesis presentation

RECOMMENDED PAEDIATRIC BOOKS AND JOURNALS

1. Caffey's Paediatric Diagnostic Imaging (2 Volumes)
2. Diagnostic Imaging Paediatric -Donnelly
3. Paediatric Neuroradiology Head, Neck and Spinal 2 volumes - Donati
4. Paediatric Neuroimaging - James Barkovich
5. Practical Paediatric Imaging - kirks
6. Paediatric CT - siagel
7. Differential diagnosis in Paediatric Radiology - Ebli/Theme
8. Emergency Imaging of the acutely ill child - Swischuk
9. Paediatric Gastrointestinal Imaging and Intervention - Stringer
10. Paediatric Radiography - Hardy
11. MRI - The Basis - Hashemi
12. Fetal and Paediatric ultrasound - Cohen
13. Grainger and Allison's Textbooks of Radiology
14. Seminars in Ultrasound, CT and MRI
15. Paediatric Radiology Journal

Duration of Course:

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

Eligibility:

- i) MD(**Radiology**) / DNB OR its equivalent / DMRD with Three year experience

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.

SCHEME OF EXAMINATIONS

1. WRITTEN ;- THEORY – 2 papers 3 hours duration

(100 marks) paper1- embryology, anatomy, normal variant, developmental abnormalities and relevant physiology of children contrast media

100 marks paper 2-the pathological process of both benign and malignant disease in the paediatric age group

- National and international imaging guidelines
- Radiation protection guideline
- Recent advances and journals

2. PRACTICAL EXAMINATION.

Long case-one [50 marks]

Short case-two[25 marks each]

3. VIVA VOCE

Instruments and contrast media[50 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. MD(Paediatrics)/DCH 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.**

