

1. Information related to the course

Level of the programme-	Fellowship in Neonatology
Intake capacity-	04 students
Duration of Course	01 year
Eligibility	MD Pediatrics , DNB Pediatrics
Evaluation pattern:	
Examination at university level	- Annual
Examination at Institutional level	- Annual
Does Evaluation involve practical?	- Yes, Project work, clinical skill assessment and viva exam.

Curriculum

I. Statement of Goals & Specification of Objectives

A. Goal

- The goal of fellowship is to provide specialized training in Neonatology to produce competent super specialists.
- These specialists will be capable of providing care to the newborn infants in the community as well as clinical tertiary care centers.
- They would subsequently serve as teachers, trainers, researchers in the field of Neonatology.

B. Objectives

- After completing the fellowship in Neonatology the trainee will be able to recognize the importance of Neonatology in the context of health needs of the community & the national priorities in the health sector.
- The trainee will be able to provide primary, secondary, and tertiary care to all newborn infants including intensive care to the critically sick neonates and very low birth weight infants using advanced therapeutic and supportive modalities and skills.
- Teach newborn care to medical and nursing students as well as grass root health functionaries and develop learning resource materials for them.
- Seek analyze new literature and information on Neonatology, update the concepts and practice evidence based Neonatology.
- Demonstrate adequate managerial skills.
- Have the ability to set up level II and level III Neonatal units independently.
- Implement a comprehensive follow up and early intervention program for the “At risk” newborn infants, and plan, counsel and advise rehabilitation of the neuro-developmentally and physically challenged infants.
- Use and maintain the essential neonatal equipment and keep abreast with advances in neonatal care technology.
- Plan and carry out research in neonatal health in clinical, community settings.

II. Course Content

- Protocols and guidelines.
- The emphasis shall be on the practical management of the problem of the individual cases and the community within the available resources.

A. Basic Sciences

- Applied anatomy, embryology, physiology Feto-placental physiology Fetal growth
- Neonatal adaptation Metabolic pathways pertaining to glucose, calcium and magnesium
- Biochemical basis of inborn errors of metabolism
- Electrolyte balance
- Development pharmacology Mechanism of diseases

B. General Topics

- Research methodology
- Teaching methodology

C. Perinatology

- High risk pregnancy & impact on the fetus Fetal monitoring Intrapartum monitoring and procedures

- Genetic counseling
- Diagnosis and management of fetal diseases

D. Neonatology

- Neonatal resuscitation
- Management of normal newborn Management of LBW, VLBW, ELBW infants
- Management of sick neonate
- Neonatal ventilation
- Blood gas and acid base disorders
- Neonatal assessment
- Emergency neonatal care
- Thermoregulation
- Neonatal transport
- Fluid & electrolyte management
- Assessment of gestation, neonatal behavior, neonatal reflexes
- Developmental assessment
- stimulation techniques
- Respiratory system ,Cardiovascular system ,Gastrointestinal system ,Neurology Renal system ,Endocrine and metabolism ,Hematology
- Nutrition
- Neonatal Surgery and orthopedics
- Neonatal infections
- Neonatal ophthalmology
- Neonatal Hearing assessment
- Community neonatology
- Neonatal dermatology
- Neonatal Imaging
- Developmental assessment and follow up
- Organization of neonatal care
- Adoption
- Recent Advances
- Laboratory Medicine
- Neonatal procedures
- Therapeutic agents
- Biomedical equipments, use & maintenance

E. List of Skills

- Clinical Neonatal examination & anthropometry
- Developmental assessment
- Neonatal resuscitation
- Endotracheal Intubation
- Neonatal ventilation: CPAP, Mechanical ventilation,
- Blood sampling: Capillary, venous, arterial Insertion of peripheral venous, umbilical venous and arterial catheters
- Exchange transfusion
- Lumbar puncture and ventricular tap
- Placing of chest tube
- Monitoring: invasive, non-invasive
- Bed side tests: sepsis screen, hematocrit, glucose estimation, urine examination, CSF examination etc.
- Neonatal drug therapy
- Enteral feeding (katori-spoon, gavage, breastfeeding)
- Lactation management
- Parenteral nutrition
- Nursery

- house keeping routines
- Infection control & Universal precautions
- Handling, effective utilization and trouble shooting of neonatal equipment.
- Decision making, clinical diagnosis, & investigations
- Management of Neonatal problems Communication with parents, families and communities
- Teaching skills
- Learning needs assessment, literature search, evidence based practice

2. Duration: 1 Year

3. Training Facilities

I. Teaching Learning Methods and Activities

- Learning in fellowship program shall be essentially “Autonomous & Self directed”.
- Trainee students are encouraged to largely carry out self learning.
- They are expected to seek knowledge & skill on their own initiative.
- Sound knowledge of Neonatology is to be acquired entirely by self study & by participating in various teaching activities of the department.
- Departmental clinical work
- Research : The fellowship student will be also involved in various clinical research work being undertaken in the department by the faculty members.
- Each student is required to participate in at least one research project every year.
- Community neonatology: The training of fellowship students will involve learning experience “Derived from” or “Targeted to” the needs of the community.
- It shall Therefore be necessary to expose the students to community based activities.
- Throughout the course of training the emphasis shall be on acquiring knowledge, skill and attitudes through first hand experiences as far as possible.
- The emphasis will be on self learning rather than on didactic lectures.
- The entire period shall be ‘in service’ training program based on the concept of ‘learn as you work’ principle.

II. Training program

- There will be structured training program.
- The students are expected to learn in phasic manner starting with basic care progressing to advanced care management.

First quarter:

- Neonatal resuscitation protocol
- Care of normal newborn, low birth weight, preterm & sick neonates
- Neonatal ventilation
- Infection control policies
- Communication skills

Second quarter :

- All of above
- PLUS
- Neonatal transport
- Medical diseases of newborns
- Neonatal surgery
- Total parenteral nutrition
- Neonatal radiology including imaging techniques
- Perinatology
- Research methodology
- Cardiology

Third quarter :

- All of above
- PLUS
- Community neonatology
- Teaching methodology

- Neonatal autopsy
- Counseling skills

Fourth quarter :

- All of above
PLUS
- Follow up of high risk babies
- Developmental follow up
- Analytical & managerial skills
- Recent advances
- Research writing

Research project: To be submitted at the end of the course.

Examination

- Internal theory and practical assessment – Quarterly (50 marks each)
- Project work -- (50 marks)
- Final Examination at the end of the course -- (200 marks)
(Theory and practical)

III. Log book

- The fellowship students shall maintain a Record Book (Log Book) of the work carried out by them on day to day basis
- Training program undergone during the period of training including details of procedures carried out independently or assisted by the candidate.
- The log book will be checked by the faculty members imparting the training.
- Candidates will be required to produce log book duly certified by the guide at the time of practical examination.

IV. Development of attitude

- It is a very important aspect of management of newborns.
- It would be the constant endeavor of the faculty to develop desirable attitudes in the PG trainees during the course by personal examples, interaction and group discussion.
- Constant watch will be maintained during their work in the wards to ensure that this objective is being met.
- Although there will be no formal evaluation of attitude, some aspects of this domain would be covered during the formative evaluation as per the continued internal assessment

4. Teaching Faculty Details

- **Teaching Faculty Details**

1. Dr. Sudhir Malwade

Professor & Consultant Neonatologist

In-Charge Fellowship programme

DCH, DNB Pediatrics, Fellowship in Neonatology FINP (Australia)

Registration No. 81696

Experience 27 years (Regular)

2. Dr. Shailaja Mane

Professor and HOD

MD Pediatrics

Registration No. 70305

Experience 29 years (Regular)

3. Dr Sanjay Chavan

Professor

MD Pediatrics

Registration No. 2000/06/2247

Experience 23 years (Regular)

4. Dr Santosh Joshi
Consultant Pediatric Cardiologist
MD Pediatrics
Reg. No 2003/03/1109
Experience 20 Years (Full time Regular)

5. Dr Devika Jadhav
Associate Professor
MD Pediatrics
Reg. No 2010/04/1293
Experience 10 (Full time Regular)

6. Dr Sanika Sanjay Pimparkar
Neonatologist
MD Pediatrics
Reg. No 2019/04/2880
Experience 2 (Full time Regular)

Infrastructure

- Dr DY Patil NICU is a 20-bed tertiary care level III NICU well equipped with High frequency ventilator, Total Parenteral Nutrition and HFNC
- In-house 2D Echo and Neuro-sonography Hearing screen available
- Transcutaneous bilirubino-meter available

- Hearing screening available
- Facilities for complex neonatal cardiac surgeries available
- Antenatal counseling as well as genetic counseling provided
- Early Developmental Stimulation
- High risk OPD and follow up

5. Fees: 1,00,000/- (Rupees One Lakh Only)