



BLDE **(DEEMED TO BE UNIVERSITY)**

Department of Paediatrics

Curriculum

Fellowship Course

Neonatology

2020-21

Published by

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(DEEMED TO BE UNIVERSITY)

Declared as Deemed to be University u/s 3 of UGC Act, 1956

The Constituent College

SHRI B. M. PATIL MEDICAL COLLEGE, HOSPITAL & RESEARCH CENTRE, VIJAYAPURA

Smt. Bangaramma Sajjan Campus, B. M. Patil Road (Sholapur Road), Vijayapura - 586103, Karnataka, India.

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BLDE(DU)/REG/Fellowship-Neon./2020-21/ 187/8

May 12, 2020

NOTIFICATION

Sub: Curriculum for Fellowship Course in Neonatology

Ref: 1. Minutes of the meeting of the 5th Standing Committee Academic Council of the University held on 06- 05-2020.

2. Approval of Board of Management dtd.08-05-2020

3. Approval of Hon'ble Vice-Chancellor vide order no.1834, dtd.09-05-2020

In accordance with the Rule-09 (ii) of the Memorandum of Association (MoA) of the Deemed to be University, the Board of Management (BoM) has approved the Curriculum for **Fellowship Course in 'Neonatology'**.

The curriculum shall be effective from the Academic Session 2020-21 onwards, for Fellowship in the constituent College of the University viz. Shri B. M. Patil Medical College, Hospital and Research Centre, Vijayapura.

**REGISTRAR
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**BLDE (Deemed to be University)
Vijayapura-586103. Karnataka**

To,
The Dean, Faculty of Medicine & Principal,
Shri B. M. Patil Medical College,
Hospital and Research Centre,
Vijayapura

Copy to:

- The Secretary, UGC, New Delhi
- The Dean, Faculty of Medicine & Principal
- The Vice Principal
- The Medical Superintendent
- The Controller of Examinations
- The Coordinator, IQAC
- The Prof. & HoDs of Pre, Para and Clinical Departments
- PS to Hon'ble Vice-Chancellor

PREAMBLE:

Neonatology means knowledge of the human newborn. The term was coined by Alexander Schaffer. In the past fifteen years, neonatology has grown from the preoccupation of a handful of pioneers to a major subspecialty of paediatrics. Knowledge in this area has expanded in last few years.

Although the perinatal mortality rate has declined over the years, the best presently attainable survival rates have not been achieved throughout the world. India has high neonatal mortality rates. The infant mortality rate is high as most deaths occur in neonatal period. New knowledge and improvement in the coordination of services for mother and child are needed to drive down perinatal mortality further. Greater emphasis must be placed on morbidity, so that surviving infants can lead full and productive lives.

In this past decade, neonatology, as a recognized subspecialty of paediatrics, has come into being around the intensive care-premature nursery. The problems of prematurity are far from solved.

The NICU involves management of prematurity, sepsis, jaundice, perinatal asphyxia, congenital anomalies, surgical conditions of the neonate, failure to thrive, nutritional problems, genetic, neurologic, and biochemical diseases, and a host of conditions involving delayed maturation. Thus one can conceive of a subspecialty with special training like fellowship sharply limited in age to early infancy but broad in its study of the interaction of normal physiology and disease processes.

Objectives of the course

The objective of the postgraduate course of fellowship in NICU are:

1. To provide training of postgraduate MD/DNB/DCH doctors about NICU management of neonates.
2. To evaluate the fellows' performance in NICU.

Course Duration : One year for post MD candidates
One year and 6 months course for post DCH.

Eligibility criteria: MD / DNB/DCH from a recognized university.

Intake capacity : 2 seats per year

Career opportunity: Trained fellows can get appointment in any hospital intensive care unit as Neonatal Intensivist.

Core department: NICU, Dept. of Pediatrics Shri BM Patil Medical College Hospital & Research Centre Vijayapur.

Fee structure Registration fees Rs 15000
 Tuition fees Rs 25000
 Examination fees will be as per university notifications.

Teaching strategies :

Bedside hands on training in all NICU invasive and noninvasive monitoring, procedures and management of Neonates including Functional Echocardiogram and Neurosonogram and Therapeutic Hypothermia.

Project:

Before the completion of one year fellowship, the candidates will submit a research project on neonatology.

It is assumed that there will be 1200 teaching hours in one year period for fellowship out of these, 30% i.e. 360 hours will be for class room teaching and 840 hours will be for practical training.

One credit will be awarded for 03 contact (Teaching Learning & evaluation) hours. Thus there will be total 400 credits for fellowship. Out of these, 120 credits will be allocated for class room teaching and 280 credit will be allocated for outside class room (practical) training.

The theory training will be primarily from cognitive domain while practical training will be from cognitive, psychomotor and affective domain.

The practical training will be further subdivided into Demonstration (15% of credit hours), Observation (15% of hours), hands on training (20% of performance).

Theory training: - There will be 120 credits of training and will be divided in 4 groups. The students will be evaluated at the end of each group. Students' evaluation will be done as under

Attendance- 10% (3% for theory and 7% for practical)

Home assignments and projects 30%

Participative learning 30%

Log book evaluation (30%)

Candidates should participate in regional and national NICU conferences and CMEs

COURSE SYLLABUS FOR THEORY & PRACTICAL TRAINING:-

The details of each group and the credit hours allotted will be as under.

Group	Topics to be covered	Total teaching hours	Total credits
Unit – I	ANTENATAL AND POSTNATAL MANAGEMENT		
	Fetal assessment and Prenatal diagnosis	1	
	Diabetes Mellitus	5	
	Thyroid Disorders	4	
	Preeclampsia and related conditions	1	
	Neonatal Resuscitation	5	
	Birth Trauma	3	
	High risk newborn: management	5	
	History and examination of newborn	4	
	Care of well newborn	1	

	Common Genetic problem in newborn	1	
	Multiple Births	2	
	Care of ELBW	1	
	Developmentally supportive care	1	
	Follow up of High risk neonate	3	
	Interactive sessions (journal club, seminars, home assignments, projects, participative learning)	20	
	Neonatal Transport	02	
	Discharge Plan	02	
	Ethics in NICU	02	
	Management of End-of-Life care & bereavement follow up	02	
	Pain management	6	
	Thermoregulation	10	
	Management of Hypothermia	10	
	Total Teaching hours	90	30
Unit -2	NUTRITION		
	Growth curves	08	
	IWL	01	
	Fluid requirement	04	
	Feeding normal neonate	09	
	Feeding LBW	07	
	Excretory functions and acid base balance	06	
	Fluid, electrolyte correlation	04	
	Dehydration	04	
	Nutritional requirements	04	
	Monitoring of nutrition	04	
	Breast Feeding	18	
	Interactive Session (journal club, seminars, home assignments, projects, participative learning)	32	
	Total Teaching hours	90	30
Unit -3	Systemic diseases of Neonate I		
	Neonatal sepsis, severe infection due to aerobic and anaerobic bacteria, viruses, fungal and parasites,	12	
	Nosocomial infection	04	
	Infection in the NICU	06	
	Antimicrobial therapy	06	
	Immunocompromised neonate	06	

	Neonatal Diarrhoea	02	30
	Jaundice	08	
	NEC	07	
	Bowel obstruction	02	
	Abdominal surgery	02	
	Interactive Session (journal club, seminars, home assignments, projects, participative learning)	34	
	Total Teaching hours	90	
Unit -4	Systemic Diseases of Neonate II		
	Respiratory Diseases of neonate	04	
	Neonatal Seizures	04	
	Intracranial Bleed	04	30
	Hypoglycemia	02	
	Meningitis	04	
	Anemia, Bleeding Neonate	02	
	Birth Asphyxia	05	
	IEM	02	
	ROP	01	
	Disorders of sex developments	01	
	INTERVENTIONS AND PROCEDURES		
	Endotracheal intubation & LMA	04	
	Maintenance of airway	04	
	Securing central line	02	
	Emergency cricothyrotomy	03	
	Managing mechanical ventilation	06	
	Basic interpretation of X-rays,CT/MRI, ABG	02	
	Bladder catheterisation	01	
	Placement of intercostal tube	02	
	Placement of gastric tube	01	
	Arterial cannulation for monitoring & ABG	01	
	Venous cannulae and techniques	01	
	Methods of sterilization	01	
	Asepsis and Theatre techniques	01	
	Interactive sessions (journal club, seminars, home assignments, projects, participative learning)	20	
	Neonatal Resuscitation	06	
	Training NALS	06	
	TOTAL TEACHING HOURS	90	30
	Total Teaching hours	360 hrs	120 hrs

Total teaching hours for theory will be 360 hours. Total credits earned by the students will be 120.

Practical Session

Unit no	Topic to be covered	Demonstration	Hours for observation	Hours for hands on training	Hours for assisted performance	Hours for independent performance	Total hours	Credit hours allocated
UNIT ONE	ECG machine & recording of ECG	2	1	1	1	5	10	
	ABG machine recording & interpretation of reports	4	2	2	2	20	30	
	Bed side monitors, warmer, phototherapy	10	10	10	10	40	80	
*	Ventilators	10	10	10	10	60	90	
	TOTAL HOURS						210	70
UNIT - Two	Endotracheal intubation	10	20	20	20	50	120	
	Maintenance of airway	10	10	10	5	15	50	
	Securing central line	5	5	10	5	15	40	
	TOTAL HOURS						210	70
UNIT THREE	Emergency cricothyrotomy	10	10	5	5	30	60	
	Placement of PA, PICC catheter	10	5	5	5	5	30	
	Ventilators and Managing mechanical ventilation, in diseases	10	10	10	20	50	100	

	Basic interpretation of X-rays, CT/MRI, ABG	5	02	02	01	10	20	
	TOTAL HOURS						210	70
UNIT FOUR	Bladder catheterisation	02	01	01	02	04	10	
	Placement of intercostal tube	10	10	10	10	40	80	
	Placement of gastric tube	02	02	02	04	10	20	
	Arterial cannulation for monitoring & ABG	10	10	10	10	20	60	
	a) Venous cannulae and techniques b) Methods of sterilization	05	05	10	10	10	40	
	TOTAL HOURS						210	70
	Total Hours & Credits						840	280

The students will be assessed at the end of unit one & unit two as well as unit three & four by formative evaluation.

Total teaching hours at end of unit one & unit two will be 420 hours.

Total teaching hours at the end of unit three & four will be 420 hours.

CGPS:-

The students will be evaluated on CGPS system. The 9 point scale will be used for evaluation. The details of calculations of credits will be as follows

Percentage secured by student	Grade	Credits on 9 Point Score
90 - 100	A+	9.0
80 - 89	A	8.0
70 - 79	B+	7.0
60 – 69	B	6.0
50 – 59	C+	5.0
40 – 49	C	4.0
30 – 39	D+	3.0
20 – 29	D	2.0
10 – 19	E	1.0
Less than 10	F	00

Student should secure at least 5.0 credits in each activity. They should get at least 30 credits, of which 20 credits should be from bypass mechanics.

Reference-

1. Nelson Textbook of Paediatrics 21st Edition
2. Textbook of Paediatrics by Suraj Gupte
3. Manual of neonatal medicine by Cloherty 6th Edition
4. Neonatology by Avery 8th Edition