

# **FELLOWSHIP IN NEONATAL AND PEDIATRIC CARE NURSING**

## **ABOUT THE COURSE:**

Malla Reddy School of Nursing Science and Technology believes that registered nurses need to be trained in Neonatal and pediatric Care Nursing in clinical and community settings in order to provide competent care for prevention and management of high-risk neonates to enhance their quality of life. Nurses play vital role in prevention, promotion, curative and rehabilitative care. Expanding roles of nurses and advances in technology necessitate additional training to prepare them for effective participation in providing such vital role. This Fellowship program is designed for nurses to enhance their knowledge and skills towards neonatal and pediatric care nursing.

This fellowship course is developed to help the student to recognize the etiology, pathophysiology, symptomatology, diagnostic measures, and management of neonates with high-risk conditions affecting various systems. The course will further help the graduates to acquire knowledge and skills in providing comprehensive nursing care to such neonates and attempts to explore and expand nursing knowledge through nursing research.

## **OBJECTIVES:**

The graduates of fellowship students will be able to:

- Provide quality care for prevention and management of high-risk neonates.
- Manage & supervise care of high-risk newborns.
- Teach nurses, allied health professionals and family members in areas related to neonatal and pediatric care nursing.
- Conduct research in areas of neonatal and pediatric care nursing.

## **ELGIBILITY**

- Registered BSc Nursing in India or equivalent.

## **DURATION**

- 52 Weeks or One Academic Year

## **COURSE DESCRIPTION**

The course is designed to prepare registered BSc (N) with specialized knowledge, skills and attitude in providing advance quality care to high risk new born and pediatric care nursing at all the three levels of care.

## **EVALUATION**

The examination will be conducted by school of nursing science and technology, Malla Reddy Vishwavidhyapeeth deemed to be university.

## **CRITERIA TO APPEAR THE EXAM**

- 80% attendance in theory
- 100% attendance in practical

## **CRITERIA TO PASS**

- In order to pass a candidate should obtain 50% in theory and 50% in practical separately
- A candidate should get 50% in internal assessment.

## **AWARD OF CERTIFICATE**

Certificate will be awarded by Malla Reddy Vishwavidhyapeeth deemed to be university

| <b>S.No</b> | <b>COURSE CODE</b> | <b>SUBJECTS</b>   | <b>THEORY</b> | <b>LAB</b> | <b>CLINICAL</b> | <b>TOTAL</b> |
|-------------|--------------------|---|---------------|------------|-----------------|--------------|
| 1           |                    | Basic Nursing for Neonatal And Pediatric Care<br><b>(No Exam)</b> | 60            | 20         | 120             | 200          |
| 2           |                    | Neonatal And Pediatric Care Nursing – I                           | 80            | 20         | 300             | 400          |
| 3           |                    | Neonatal And Pediatric Care Nursing – II                          | 80            | 20         | 300             | 400          |

## BASIC NURSING FOR NEONATAL AND PEDIATRIC CARE NURSING

**Theory: 60 hours**

**Lab: 20 hours**

**Practical: 120 hours**

| Unit     | Hours | Learning objectives  | Content  | Teaching Learning Activity  | Assessment Methods   |
|----------|-------|--|--|---|--|
| Unit I   | 20    | -Understand human behavior in crisis<br>- Analyze individual differences and emotional responses<br>- Demonstrate effective communication and leadership in caregiving | <b>Psychology</b> <ul style="list-style-type: none"> <li>• Individual differences</li> <li>• Learning, Motivation, attention perception&amp;Emotions</li> <li>• Human behavior &amp; needs in crisis</li> <li>• Stress and coping in crisis situations</li> <li>• Leadership</li> <li>• Communication and IPR</li> <li>• Counseling</li> <li>• Attitude and humanizing care</li> </ul> | - Interactive lectures<br>- Case studies<br>- Role plays and group discussions<br>- Videos and simulations<br>- Peer teaching | - Written tests<br>- OSCE<br>- Reflective journals<br>- Role play performance assessment |
| Unit II  | 10    | -Understand social structures and their impact on health<br>- Analyze family dynamics and community resources  | <b>Sociology</b> <ul style="list-style-type: none"> <li>• Social organization &amp;community resources</li> <li>• Leadership roles in community</li> <li>• Family and family relationships</li> <li>• Socio-cultural influences on child rearing</li> </ul>  | Group discussions<br>- Case presentations<br>- Field visits/comm unity surveys  | - Group presentations<br>- Short answer questions<br>-Participation in discussion        |
| Unit III | 10    | -Understand concepts of immunity and infection<br>- Explain principles of asepsis and  | <b>Microbiology</b> <ul style="list-style-type: none"> <li>• Immunity</li> <li>• Infection</li> <li>• Principles of asepsis, Sterilization &amp; disinfection</li> <li>• Diagnostic tests in Microbiology &amp; related nurses' responsibility</li> </ul>  | - Demonstrations<br>- Laboratory visits<br>- Use of videos and posters  | - Practical examination<br>- Viva voce<br>- MCQs and objective tests                     |

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|         |    | disinfection<br>- Identify diagnostic tools and safety practices in microbiology   | <ul style="list-style-type: none"> <li>Standard safety measures &amp; biomedical waste management</li> </ul>   | - Simulation exercises   |  |
| Unit IV | 10 | - Understand structure and functions of major body systems<br>- Apply knowledge in clinical care   | <b>Applied Anatomy and Physiology</b> <ul style="list-style-type: none"> <li>Neurological system</li> <li>Respiratory system</li> <li>Cardiovascular system</li> <li>Gastrointestinal system</li> <li>Endocrine system</li> <li>Musculoskeletal system</li> <li>Genitourinary system</li> <li>Reproductive system</li> <li>Sensory organs</li> </ul>               | - Interactive lectures with models<br>- Diagrams and animations<br>- Group quizzes | - Written tests<br>- Oral quiz                             |
| Unit V  | 10 | - Understand pharmacokinetics and drug actions<br>- Identify drugs used in pediatric care and emergencies<br>- Ensure safe drug administration practices | <b>Pharmacology -Pharmacokinetics</b> <ul style="list-style-type: none"> <li>Analgesics/Anti-inflammatory agents</li> <li>Antibiotics, antiseptics</li> <li>Drug reaction &amp; toxicity</li> <li>Drugs used in neonatal resuscitation</li> <li>Blood and blood components</li> <li>Principles of drug administration, role of nurses and care of drugs</li> </ul> | - Drug charts<br>- Case-based learning<br>- Demonstration of drug administration   | - Drug calculations test<br>- OSCE<br>- Written assignment |

## NEONATAL AND PEDIATRIC CARE NURSING – I

**Theory: 80 hours**

**Lab: 20 Hours**

**Practical: 300 hours**

| Unit       | Hours | Learning objectives  | Content  | Teaching Learning Activity  | Assessment Methods  |
|------------|-------|--|--|---|---|
| Unit - I   | 10    | <ul style="list-style-type: none"> <li>- Describe the development of the fetus from conception to birth</li> <li>- Explain fetal circulation and its significance</li> </ul>                               | <b>Embryology</b> <ul style="list-style-type: none"> <li>• Development of fetus from conception to birth</li> <li>• Fetal circulation</li> </ul>   | <ul style="list-style-type: none"> <li>- Lecture with visual aids and animations</li> <li>- Chart preparation</li> <li>- Case discussion</li> </ul>                           | <ul style="list-style-type: none"> <li>- Written test</li> <li>- Diagram labeling</li> <li>- Oral quiz</li> </ul>                 |
| Unit - II  | 20    | <ul style="list-style-type: none"> <li>- Explain basic genetic principles and inheritance</li> <li>- Identify common genetic disorders</li> <li>- Understand nurses' role in genetic counseling</li> </ul> | <b>Genetics</b> <ul style="list-style-type: none"> <li>• Meaning of genetics and heredity</li> <li>• Mendelian laws of inheritance</li> <li>• Genetic disorders</li> <li>• Chromosomal errors</li> <li>• Inborn errors of metabolism</li> <li>• Multifactorial disorders (sickle cell anemia, thalassemia, hemophilia)</li> <li>• Genetic counselling</li> <li>• Nurses' role in genetic counseling</li> </ul>   | <ul style="list-style-type: none"> <li>- Interactive lectures</li> <li>- Case studies</li> <li>- Group presentations</li> <li>- Guest lecture by genetic counselor</li> </ul> | <ul style="list-style-type: none"> <li>- Written tests</li> <li>- Group assignments</li> <li>- Presentation assessment</li> </ul> |
| Unit - III | 20    | <ul style="list-style-type: none"> <li>- Describe national and community health programs focused on neonates</li> <li>- Understand the principles of health education and IMNCI</li> </ul>                 | <b>Community Health</b> <ul style="list-style-type: none"> <li>• National health mission (specific to neonate)</li> <li>• Maternal and child health services and programs</li> </ul> a) Organization of services<br>b) Reproductive and Child Health program (RCH) (specific to neonate)<br>c) National Immunization program (specific to neonate) <ul style="list-style-type: none"> <li>• Demography and family welfare</li> </ul> a) Definition, meaning, population trends—global and Indian <ul style="list-style-type: none"> <li>• Health education: concepts,</li> </ul> | <ul style="list-style-type: none"> <li>- Field visits</li> <li>- Health talks and role plays</li> <li>- Group discussions</li> <li>- Audio-visual aids</li> </ul>             | <ul style="list-style-type: none"> <li>- Field report</li> <li>- Health education project</li> <li>- Viva and MCQs</li> </ul>     |

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|         |    |   | <p>principles, approaches and methods</p> <ul style="list-style-type: none"> <li>Integrated Management of Neonatal and Childhood Illnesses (IMNCI)</li> </ul>  |   |   |
| Unit IV | 10 | <ul style="list-style-type: none"> <li>Explain normal and high-risk pregnancies</li> <li>Provide immediate and ongoing care to normal and high-risk neonates</li> <li>Identify drug implications during pregnancy for neonates</li> </ul> | <p><b>Obstetrics</b></p> <ul style="list-style-type: none"> <li>Pregnancy: Normal, High risk, Obstetrical disorders</li> <li>Labour: Normal, Abnormal</li> <li>Normal newborn – immediate care in labor ward</li> <li>High risk neonate – IUGR, post maturity, babies of high risk mothers</li> <li>Drugs used in obstetrics and their implications for the fetus/neonate</li> </ul> | <ul style="list-style-type: none"> <li>Demonstrations</li> <li>Case-based discussions</li> <li>Role plays</li> <li>Clinical postings</li> </ul>                         | <ul style="list-style-type: none"> <li>OSCE</li> <li>Case study evaluations</li> <li>Written test</li> </ul>                    |
| Unit V  | 10 | <ul style="list-style-type: none"> <li>Define and describe neonatal nursing</li> <li>Explain levels of neonatal care</li> <li>Identify risk factors in antenatal and intranatal periods</li> </ul>  | <p><b>Introduction to Neonatal nursing</b></p> <ul style="list-style-type: none"> <li>Definition, concepts and principles of neonatal nursing</li> <li>Definition of terms</li> <li>Risk factors for neonates in antenatal and intranatal period</li> <li>Nursing process: Levels of neonatal care and role of nurse</li> </ul>  | <ul style="list-style-type: none"> <li>Role play and storytelling</li> <li>Interactive lecture and group work</li> </ul>  | <ul style="list-style-type: none"> <li>Short answer test</li> <li>Peer review feedback</li> </ul>                               |
| Unit VI | 10 | <ul style="list-style-type: none"> <li>Demonstrate steps of neonatal basic and advanced life support</li> <li>Perform emergency procedures safely and effectively</li> </ul>  | <p><b>Neonatal Basic/Advance Life Support</b></p> <ul style="list-style-type: none"> <li>Basic Life Support</li> <li>Routine care</li> <li>Initial steps</li> <li>Bag and mask ventilation</li> <li>Chest compression</li> <li>Endo-tracheal intubation</li> <li>Drugs</li> </ul>  | <ul style="list-style-type: none"> <li>Hands-on skill labs</li> <li>Simulations and mannequins</li> <li>Video demonstrations</li> <li>Peer practice sessions</li> </ul> | <ul style="list-style-type: none"> <li>Return demonstration</li> <li>Skill checklists</li> <li>Simulation-based OSCE</li> </ul> |

## NEONATAL AND PEDIATRIC CARE NURSING – II

**Theory: 80 hours**

**Lab: 20 Hours**

**Practical: 300 hours**

| Unit    | Hours | Learning objectives  | Content   | Teaching Learning Activity  | Assessment Methods   |
|---------|-------|--|---|---|--|
| Unit-I  | 10    | <ul style="list-style-type: none"> <li>- Understand principles and roles in neonatal nursing</li> <li>- Communicate effectively with families and healthcare team</li> <li>- Support families emotionally</li> </ul> | <b>Introduction to neonatal nursing</b> <ul style="list-style-type: none"> <li>• Principles of neonatal nursing.</li> <li>• Attributes of a neonatal nurse</li> <li>• Family centered care</li> <li>• Communicating with parent, family and health care team</li> <li>• Normal mother-baby relationship</li> <li>• Impact of birth of a sick/abnormal baby on the family</li> <li>• Reaction of parents to the admission of their baby to NICU</li> <li>• Grief process</li> <li>• Breaking bad news</li> <li>• Causes, effects &amp; management of stress</li> <li>• The personal &amp; social problems of the family</li> </ul> | <ul style="list-style-type: none"> <li>- Case scenarios</li> <li>- Role play</li> <li>- Group discussions</li> </ul>  | <ul style="list-style-type: none"> <li>- Case study evaluation</li> <li>- Group presentations</li> </ul>             |
| Unit-II | 10    | <ul style="list-style-type: none"> <li>- Assess and care for a normal newborn</li> <li>- Recognize danger signs and provide appropriate care</li> </ul>  | <b>Normal Newborn</b> <ul style="list-style-type: none"> <li>• Definitions &amp; terminology</li> <li>• Examination of newborn</li> <li>• Recognition of danger signs in a baby</li> <li>• Common minor neonatal disorders</li> <li>• Care of normal newborn</li> <li>• Immediate care</li> <li>• Routine care – Transition care</li> <li>• Daily care- Home Care</li> </ul> Physiological adaptation of the neonate Fluid & electrolyte balance, <ul style="list-style-type: none"> <li>• Thermoregulation &amp; prevention of hypothermia</li> <li>• Kangaroo Mother Care</li> </ul>  | <ul style="list-style-type: none"> <li>- Demonstrations</li> <li>- Bedside teaching</li> <li>- Newborn care simulation</li> <li>- Peer skill check</li> </ul> | <ul style="list-style-type: none"> <li>- OSCE</li> <li>- Practical checklist</li> <li>- Short answer test</li> </ul> |

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| Unit - III | 10 | <ul style="list-style-type: none"> <li>- Understand principles of neonatal feeding</li> <li>- Manage various feeding techniques for normal and at-risk neonates</li> </ul> | <b>Neonatal Feeding</b> <ul style="list-style-type: none"> <li>• Physiology of breast and milk secretion</li> <li>• Principles of feeding &amp; nutrition</li> <li>• Feeding of normal babies</li> <li>• Breast feeding &amp; maintenance of lactation</li> <li>• Human milk bank</li> <li>• Managing breast feeding problems</li> <li>• Feeding of LBW babies</li> <li>• Artificial feeding – Enteral, Parenteral, Katori spoon, Gavage feeding</li> <li>• Total Parental Nutrition(TPN)</li> <li>• Fluid &amp; electrolyte therapy</li> </ul> | <ul style="list-style-type: none"> <li>- Demonstration and return demo</li> <li>- Lactation counseling role-play</li> <li>- Videos on feeding techniques</li> </ul> | <ul style="list-style-type: none"> <li>- Return demonstration</li> <li>- Viva</li> <li>- Skill competency checklist</li> </ul>   |
| Unit- IV   | 5  | <ul style="list-style-type: none"> <li>- Apply infection prevention principles in NICU</li> </ul>  | <b>Prevention of Infections</b> <ul style="list-style-type: none"> <li>• Principles of prevention of infections in NICU</li> <li>• Standard safety measures</li> <li>• Hand washing</li> <li>• Housekeeping routines</li> <li>• Disinfections &amp; sterilization</li> <li>Biomedical waste management</li> </ul>   | <ul style="list-style-type: none"> <li>- Demonstration</li> <li>- NICU visit</li> <li>- Visual aids/posters</li> </ul>  | <ul style="list-style-type: none"> <li>- Spot test</li> <li>- Practical demonstration</li> <li>- Quiz</li> </ul>                 |
| Unit- V    | 5  | <ul style="list-style-type: none"> <li>- Identify and manage LBW babies effectively</li> </ul>   | <b>Low birth weight baby (LBW)</b> <ul style="list-style-type: none"> <li>• Type of LBW</li> <li>• Etiology</li> <li>• Identification of preterm &amp; small for date babies</li> <li>• Management: principles, thermoregulation, feeding, monitoring, transportation, management of specific illnesses</li> </ul>  | <ul style="list-style-type: none"> <li>- Clinical demonstration</li> <li>- NICU rounds</li> <li>- Case studies</li> </ul>   | <ul style="list-style-type: none"> <li>- Clinical assessment</li> <li>- Written test</li> <li>- Observation checklist</li> </ul> |
| Unit- VI   | 10 | <ul style="list-style-type: none"> <li>- Monitor sick neonates</li> <li>- Identify and manage neonatal emergencies</li> <li>- Provide palliative care</li> </ul>           | <b>Neonate transfer</b> <ul style="list-style-type: none"> <li>• <b>Sick neonate</b> <ol style="list-style-type: none"> <li>a) Neonatal monitoring &amp; observations</li> <li>b) Danger signs in newborns</li> <li>c) Respiratory problems; asphyxia neonatorum, apnea, respiratory distress</li> <li>d) syndrome (RDS), meconium</li> </ol> </li> </ul>   | <ul style="list-style-type: none"> <li>- Simulation scenarios</li> <li>- Group case discussions</li> <li>- Videos and role play</li> </ul>                          | <ul style="list-style-type: none"> <li>- OSCE</li> <li>- Case study presentation</li> <li>- MCQs</li> </ul>                      |



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|           |    |  | aspiration syndrome,<br>respiratory infections<br>e) Neonatal sepsis<br>f) Neonatal jaundice<br>g) Convulsions & neurological disorders<br>h) Metabolic disorders<br>i) Necrotizing Enterocolitis (NEC)<br>j) HIV: transmission & Anti Retroviral Therapy (ART) and management of<br>k) neonates exposed to HIV<br>l) Emergency treatment of neonatal problems<br>Palliative care of neonates   |   |   |
| Unit-VII  | 10 | - Recognize and manage surgical conditions in neonates   | <b>Neonate with Surgical disorders</b> <ul style="list-style-type: none"> <li>• Birth trauma</li> <li>• Congenital malformations: identification &amp; management</li> <li>• Pre &amp; post operative nursing care of a neonate with various surgical</li> <li>• procedures: cleft lip &amp; palate, Esophageal atresia and tracheo-esophageal fistula, congenital hypertrophic pyloric stenosis, Hirschsprungs disease, imperforate anus, recto-vaginal fistula (RVF), Spina bifida, meningo myelocele, hydrocephalus, extrophy of bladder, congenital heart disease.</li> </ul> | - Surgical case reviews<br>- OT/NICU observation<br>- Diagrams and models | - Case study assignment<br>- Viva<br>- Short answer questions |
| Unit-VIII | 5  | - Understand management principles for NICU<br>- Apply supervision and quality assurance tools | <b>Supervision &amp; Management of neonatal care unit:</b> <ul style="list-style-type: none"> <li>• Definition &amp; Principles</li> <li>• Elements of management of neonatal care unit: Planning, Organizing, Staffing,</li> <li>• Reporting, Recording, and Budgeting</li> <li>• NICU management: - Time, material &amp; personnel</li> </ul>   | - Group discussion<br>- Audit tools demo<br>- Policy review activity      | - Audit project<br>- Short answer test<br>- Presentation      |

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|         |    |  | <ul style="list-style-type: none"> <li>• Layout and Design of NICU.</li> <li>• Neonatal transport services</li> <li>• Planning of transport of neonates</li> <li>• Planning men and material for transportation</li> <li>• An ideal transport incubator</li> <li>• Clinical Supervision</li> <li>• Introduction, definition and objectives of supervision</li> <li>• Principles &amp; Functions of supervision</li> <li>• Qualities of supervisors</li> <li>• Responsibilities of clinical supervisors</li> <li>• Practice Standard of Neonatal Units</li> <li>• Policies and Procedures</li> <li>• Establishing Standing and Protocols</li> <li>• Orientation programmed for new recruits</li> <li>• Quality Assurance Program</li> <li>• Nursing audit</li> <li>• Performance appraisal</li> <li>• Principles of performance evaluation</li> <li>• Tools of performance appraisal Rating scales, Checklist</li> </ul> |   |   |
| Unit-IX | 10 | <ul style="list-style-type: none"> <li>- Apply ethical principles in neonatal nursing</li> <li>- Understand evolving professional roles</li> </ul> | <b>Professional trends and ethics</b> <ul style="list-style-type: none"> <li>• Introduction in</li> <li>• Code of Ethics in Neonatal nursing care and professional conduction and practice standards of Neonatal Nursing in India</li> <li>• Ethical issues in neonatal care unit</li> <li>• Expanding role of the nurse: Neonatal Specialist nurse, Nurse Practitioner etc.</li> <li>• Professional organizations</li> </ul>   | <ul style="list-style-type: none"> <li>- Debate and discussions</li> <li>- Guest lectures</li> <li>- Reflective practice</li> </ul> | <ul style="list-style-type: none"> <li>- Essay writing</li> <li>- Ethics case scenarios</li> <li>- Group presentations</li> </ul> |

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| Unit-X | 5 | - Understand legal responsibilities in neonatal care<br>- Handle medico-legal issues professionally | <b>Medico-Legal aspects relation to neonatal care</b> <ul style="list-style-type: none"> <li>• Legislations and regulations relation to neonatal care</li> <li>• Consumer Protection Act (CPA)</li> <li>• Negligence &amp; Malpractice</li> <li>• Legal responsibilities of nursing Bill of rights of a patient</li> <li>• Case studies of judgment with regard to negligence of services in the Hospital</li> <li>• Medico-Legal Aspects</li> </ul> <p>Abandoned babies, transfer to orphanages, adoption services, loss of neonates from the unit, preservation of cadavers, transfer to various institutions</p> <ul style="list-style-type: none"> <li>• Records and Reports</li> <li>• Role of the nurse in legal issues</li> </ul> | - Legal case reviews<br>- Role play<br>- Documentary analysis | - Case-based evaluation<br>- MCQs<br>- Practical logbook check |
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### Research Activity:

Independent research is to be carried out by the student.

## **ESSENTIAL NEONATAL CARE NURSING SKILLS**

### **I. Procedures Observed**

1. CT scan
2. MRI
3. Echo cardiogram
4. Ultrasound head
5. ROP screening (Retinopathy of prematurity)
6. Heart/ Neuro/GI./ Renal Surgeries
- Any other

### **II. Procedures Assisted**

1. Advanced neonatal life support
2. Lumbar Puncture
3. Arterial Blood Gas /Arterial line//blood taking
4. Arterial B P monitoring
5. Umbilical catheterization- arterial and venous
6. ECG recording
7. Blood transfusion- exchange transfusion full and partial
8. IV cannulation therapy
9. Arterial Catheterization
10. Chest tube insertion
11. Endotracheal intubations
12. Ventilation
13. Insertion of central line/cvp line
14. APGAR Score
15. New born reflexes

### **III. Procedure Performed**

1. Airway Management
  - a) Application of Oro Pharyngeal Airway
  - b) Oxygen therapy
  - c) CPAP (Continuous Positive Airway Pressure)
  - d) Care of Tracheostomy
  - e) Endotracheal Intubation
2. Neonatal Resuscitation
3. Monitoring of Neonates- clinically & with monitoring, CRT (Capillary Refill Time), Assessment of jaundice, ECG
4. Gastric lavage
5. Setting of Ventilators

6. Phototherapy
7. Assessment of Neonates: Identification & assessment of risk factors, Apgar score, reflexes, Gestation age, Anthropometric assessment, weighing the baby, Newborn Examination, detection of life-threatening congenital abnormalities.
8. Admission & discharge of neonates
9. Feeding- management of breast feeding, artificial feeding, expression of breast milk, Orogastric (OG) tube insertion, gavage feeding, TPN, Breast feeding counselling.
10. Managing breast feeding problems-Feeding of LBW babies, Artificial feeding – Enteral, Parenteral, Katori spoon, Gavage feeding, Total Parental Nutrition (TPN)&Fluid & electrolyte therapy
11. Thermoregulation – Axillary temperature, Kangaroo Mother Care (KMC), Use of Radiant warmer, incubators, management of thermoregulation & control.
12. Administration of Drugs: I/M, IV injection, IV Cannulation & fixation infusion pump, Calculation of dosages, Neonatal formulation of drugs, use of tuberculin/ Insulin syringes, Monitoring fluid therapy, Blood administration.
13. Procedures for prevention of infections: Hand washing, disinfections & sterilization, Surveillance, fumigation.
14. Collection of specimens.
15. Setting, Use & maintenance of basic equipment: Ventilator, O2 analyser, monitoring equipment, Photo therapy unit, Flux meter, Infusion pump, Radiant warmer, Incubator, Centrifuge machine, Bili meter, Refractometer, laminar flow.

**Signature of Resident/SNO**