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Saudi Commission for Health Specialties

Neonatal Critical Care Nursing

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بسم الله الرحمن الرحيم

CONTRIBUTORS

Prepared and updated by Curriculum Scientific Group
DR. ELHAM ALI BUKHARI DR. HIND ABDO AL NAJJAR DR. WAFAA ALAROUSEY
Supervision by
Prof. Zubair Amin Dr. Sami Alshammari
Reviewed and Approved by
Dr. Sami Al Haider

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P.O. Box: 94656
Postal Code: Riyadh 11614
Contact Center: 92-001-9393

Website: www.scfhs.org.sa
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GENERAL TRAINING REQUIREMENTS

1) The trainee should adhere to the training regulations and obligations set by the Saudi Commission for Health Specialties (SCFHS).

2) Training is a full-time commitment. The trainee shall be enrolled in full-time, continuous training for the entire duration of the program.

3) Training shall to be conducted in institutions accredited for nursing training by the SCFHS.

4) Training will be comprehensive in the specialties of neonatal intensive nursing care.

5) The trainee shall be actively involved in patient care, with gradual progression in responsibility.

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ADVANCED NURSING PRACTICE DIPLOMA IN NEONATAL INTENSIVE CARE

Introduction:

The World Health Organization's (WHO) Global Strategy for Women's, Children's and Adolescents' Health, 2016–2030 emphasizes the importance of ensuring health and well-being for all at all ages. To achieve this goal, efforts to reduce newborn mortality are needed. This will require better prevention and management of preterm births, inpatient supportive care of ill and small newborn babies, and management of severe infections. For the post-neonatal period, greater efforts are needed to scale up the coverage of new vaccines, and to improve treatment coverage for pneumonia and diarrhea.

Globally, an estimated 2.7 million babies die every year in their first month of life, with a neonatal mortality rate of 19 per 1,000 live births, and a similar number are stillborn. Within the first month, up to half of all deaths occur within the first 24 hours of life, and 75% occur in the first week (WHO, 2016). The 48 hours immediately following birth is the most crucial period for newborn survival. This is when the mother and child should receive appropriate care to prevent and treat illness. In 2015, the major global causes of neonatal mortality were prematurity, birth-related complications (birth asphyxia), and neonatal sepsis, while the leading causes of child death in the post-neonatal period were pneumonia, diarrhea, injuries, and malaria (WHO, 2016). To reach the target of a neonatal mortality rate of 12 deaths per 1,000 live births by 2030, as set by the United Nations' (UN) Sustainable Development Goal 3, sixty-three countries need to accelerate progress. At the time of birth, a baby's chance of survival increases significantly with delivery in a health facility in the presence of a skilled birth attendant. After birth, essential care of a newborn should be provided (WHO 2016). Nurses are the essential members of health care teams that provide the needed care 24/7, whether in the delivery room, nursery, or intensive care unit.

The quality of healthcare in the Kingdom of Saudi Arabia (KSA) has progressed significantly over recent years at all levels of health services. In addition, the accessibility and quality of health care services in the KSA have improved greatly, as these services are considered a top priority by, and, thus, receive much attention from, the KSA's leaders. This is evidenced by increasing the number of hospitals from 74 to 415 between 1970 and 2009. In addition, the Ministry of Health's strategy has particularly emphasized expanding critical care services and promoting their accessibility and feasibility. This is reflected in the global ranking of the KSA's health services: according to the WHO, the Saudi health care system is ranked 26th among the world's 190 health care systems (Al-Omari *et al.,* 2015).

The overall infant mortality rate in Saudi Arabia rate is currently 18.5 per 1,000 live births (2005-2010), having fallen considerably from 57.0 per 1,000 live births in 1985 (UN, 2011). The WHO (2016) estimated the global mortality rate for children under five years of age at 5.9 million in 2015, with a global under-five mortality rate of 42.5 per 1,000 live births. In comparison, the KSA's mortality rate of children under five years is 14.5 deaths per 1,000 live births.

Although significant progress has been made, barriers affecting its quality are still apparent as the general population increases, causing patients' health care needs and demands to also rise. Factors affecting the quality of healthcare can be categorized into patient factors (such as health literacy, access to care, and culture) and provider factors (including medical care, workload, culture, and job satisfaction). The delivery of premature and low birth weight infants presents serious challenges for health care professionals. Additionally, medical technology has

become more sophisticated, adding another dimension to the skill requirements of neonatal nurses. This will increase the need for trained neonatal intensive care nurses, equipped with the knowledge and critical thinking abilities required to use evidence-based practices (EBPs) to provide highest quality care, not only to maximize the chances of neonates' survival but also to achieve optimal outcomes for both the infant and their family.

Program Overview

Like all other Advanced Nursing Practice programs of the SCFHS, this program is module-based, containing comprehensive, evidence-based nursing theory and practice. It aims to equip trainees with advanced knowledge and clinical experience in neonatal intensive nursing care, producing qualified, competent nurses able to deliver high quality nursing care to multicultural patients in a neonatal intensive care unit (NICU), in line with international nursing care standards.

It is a practically focused program, in which trainees will have opportunities to apply the knowledge and skills they gain in real practice in the NICU setting. It also focuses on enhancing trainees' ability to formulate case studies and conduct research, thus helping to improve the quality of nursing care in the practical environment. It aims to improve trainees' critical thinking skills, which are necessary for making rapid yet sound nursing judgments in a variety of critical neonate care cases, such as prematurity, congenital anomalies, and respiratory distress, using available resources to support clinical reasoning. Furthermore, the program will enable trainees to use available electronic resources to provide better care for neonates.

This program is implemented under the supervision of the SCFHS. The program's graduates will earn an Advanced Nursing Practice Diploma in Neonatal Intensive Care.

Program Objectives

Upon completion of the Advanced Nursing Practice Program in the specialty of Neonatal Intensive Care, trainees will be able to:

1. Assess patients' conditions systematically by applying the health assessment principles to accurately identify patients' requirements.
2. Develop a focused nursing care plan for promotion of health and prevention of disease.
3. Deliver basic, specific, and advanced nursing care for neonates using the specialized knowledge and skills gained.
4. Incorporate neonatal resuscitation principles and skills in the management of neonates who require intensive nursing care.
5. Provide care for infants admitted to the nursery within the first 28 days of life.
6. Care for premature or sick full-term infants requiring respiratory support, intravenous (IV) therapy, specialized feeding, incubator care, or technology-intensive care, such as ventilation, high-frequency oscillating ventilation, and nitric oxide, as well as minor surgery.
7. Provide a family-centered care approach to managing neonates.
8. Implement infection control principles and protocols when managing neonates.
9. Apply an evidence-based and research-supported approach in evaluating nursing practice within the NICU.
10. Incorporate ethical-related issues and quality improvement standards in all nursing practices delivered for neonates in the NICU.
11. Lead and manage competently the critical situations within the work environment.

12. Develop a research project in the field of neonatal intensive nursing care.
13. Demonstrate proactive interaction and effective communication skills.

Admission Requirements and Process

To be eligible to enroll in the program, an applicant must conform with:

A- the application requirements of the Saudi Council of Health Specialties.[1] Trainees should refer to the executive policy of admission and registration available on the SCFHS website, as the application requirements are subject to future changes.

B- the program's admission criteria, which are as follows:

1. Hold a Bachelor of Nursing (BSN) degree or equivalent.
2. Provide two professional letters of reference.
3. Have a current nursing license from the SCFHS.
4. Be prepared to study on full-time basis.
5. Provide a letter from their current employer allowing participation.
6. Be physically fit.
7. Possess valid Basic Life Support (BLS) and Neonatal Resuscitation Program (NRP) certification.
8. Have a minimum of one year's clinical experience in one of the neonatal-related specialties (e.g., NICU, Nursery, and Neonatal Intermediate Care) or a pediatric specialty.

Admission Process

Please refer to the updated executive policy of SCFHS on admission and registration.
Website: www.scfhs.org.sa

[1]https://www.scfhs.org.sa
[2]https://www.scfhs.org.sa

Program Requirements:

To obtain an Advanced Nursing Practice Diploma in Neonatal Intensive Care, the trainee must fulfill the following requirements:

1. The period of two calendar years for completing this program.
2. Forty-six weeks per calendar year, allowing four weeks of annual leave and one Eid holiday (as stated in the relevant executive policy). A total of 92 weeks for the entire study period.
3. A total of 48 hours of didactic and clinical hours each week.
   - 3.1 Clinical rotations of eight-hour shifts, excluding lunch time, or 12-hour shifts to complete a minimum total of 36 hours per week.
   - 3.2 12 didactic hours per week, which can be distributed across different educational activities, such as unit educational activity (in-service), class room educational sessions, etc.
4. The language of instruction for the program is English.

Leave:

Please refer to the updated executive policy of SCFHS on admission and registration. Website: www.scfhs.org.sa

Program Clinical Competencies

The Advanced Nursing Practice Diploma in Neonatal Intensive Care comprises sixteen modules covering the education and training of nurses who will provide intensive nursing care to neonates. Each one of these modules includes specific competencies. The program's clinical competencies are adopted from Mosby's online nursing skills database. Each trainee will be issued a username and a password to access Mosby's Nursing Consult database. The trainee is expected to complete an online competency test. The test results will be monitored by the assigned clinical instructor. Based on the trainee's online exam score, the assigned clinical instructor will schedule a competency check of the trainee's nursing skills in a laboratory or clinical rotation setting. The attached checklist is used to monitor each trainee's competency development.

[3]For further information on leave, refer to article (14), chapter seven of the General Bylaws of Training in Postgraduate Programs: https://www.scfhs.org.sa/en/MESPS/Pages/Regulations--.aspx

Methods of Teaching

The methods of teaching and learning in the program include, but are not limited to:

1. Interactive lectures and discussion.
2. Computer-assisted interactive instructional programs.
3. Weekly reading assignments and use of the SCFHS Medical E-library.[4]
4. Simulations and workshops.
5. Clinical skills demonstrations and re-demonstrations.
6. Group discussion of case studies.
7. Brainstorming and individual learning.
8. Clinical observation.
9. Objectives-based clinical practicum.

Clinical Practicum Elements:

1. Theory to precede related clinical assignments (as needed).
2. Post-clinical debriefing sessions to be conducted once or twice weekly as per individual need to address identified knowledge and skills gaps and to promote understanding, focusing on safe and high-quality neonatal care.
3. Team preceptorship process in which the nurse manager, assigned preceptor, preceptee, and nurse instructor are involved in the trainee's guidance, training, and evaluation.

Case Presentation Guidelines:

Each trainee will present a case study of a newborn whom they cared for in the clinical setting. The case presentation should include the neonate's health assessment data, with appropriate findings and interpretation, nursing diagnoses, and the needed interventions to achieve optimal outcomes. Presentations should last approximately 15 minutes, with trainees facilitating the post-presentation discussion. The discussion should compare the care plan with any related EBP standards for neonatal nursing care.

Hospital/Clinical Rotations

Trainees must be given adequate specialty experience, enabling them to have confidence and competence in terms of the assessment and overall management of common neonatal health problems. Therefore, they should receive training in the three levels of neonatal care: the nursery unit, intermediate care unit, and intensive care unit. At the end of each rotation, trainees

[4]The SCFHS Medical E- library provides instructors and trainees with access to diverse electronic learning resources providing full texts for evidence-based best practice, such as Ovid Medical Collection, Mosby's Nursing Consult, Lexicomp, PubMed Central Journal and UpToDate. The Medical E- library can be accessed through: https://scfhs.ac-knowledge.net/main-page.

should have acquired knowledge, skills, and attitudes, and be able to demonstrate the core competencies.

Guidelines

- Hospital rotations should begin in the nursery (after the introductory course), followed by the neonatal intermediate care unit, and finally the neonatal intensive care unit.
- Labor and delivery (L&D) rotation should be considered for practicing immediate care and neonatal resuscitation.

Note: If a training center cannot provide a required clinical rotation due to facility limitations or low case volumes, trainees may be referred to another accredited facility with the required clinical facility unit, with the prior notification of and approval from the SCFHS Nursing Board.

Content

The core content of the knowledge and skills of neonatal intensive nursing care should be attained during appropriate hospital rotations, as described for each rotation.

Learning Methods

- Demonstration and clinical practice in the NICU and nursery.
- Clinical rounds with case discussion.
- Chart reviews.
- Clinical and topics presentations.
- Self-directed learning and conferences.
- Simulation and workshops.
- Small group discussions.
- Learning with other healthcare professionals (dietician, educator, etc.).

SCFHS Online Universal Topics

The universal topics were developed by the SCFHS as learning resources for trainees. These are topics that are important for trainees because they are either very common or concern important clinical conditions. The pre- and post-test multiple-choice questions (MCQs) are provided to aid learning and to ensure that trainees have learned the materials. These are not meant to be assessment tools in a more conventional sense. Of course, the conditions described in the universal topics can be assessed in various forms of examinations.

Pass score: As stated earlier, these topics are intended to be learning resources. Pre- and post-test MCQs should be viewed as learning aids, rather than examinations. However, to ensure that trainees have actually reviewed the online lectures, they must achieve 60%-80% correct answers in the post-test MCQs as proof of learning. Trainees may review the lectures and take the post-test as many times as needed. The duration of each topic's lecture is around 90 minutes.

Completion of the universal topics: The assigned topics should be completed within the allocated year. Trainees and their mentors should take personal initiative to complete the universal topics on time. If, due to any extraneous circumstances, the trainee fails to complete the assigned universal topics within a given year, they may be allowed to complete them in the

following year(s). Trainees, however, must complete all the universal topics before sitting their final exam.

For this program, trainees are expected to cover the selected online universal topics set out below, in accordance with the set timeline[5]. The universal topics modules are streamlined with the program curriculum.

Important note for program coordinators and trainees:

Objectives listed in Universal Topics modules that are not within the scope of nurses' responsibility do not need to be completed by the nursing trainees.

Universal Topics

First Year	Second Year
Module 1: Introduction	Module 5: Acute Care
Module 3: Diabetes and Metabolic Disorders	
Module 7: Ethics and Healthcare	

[5]Instructors and trainees should refer to the SCFHS Online Universal Topics, which can be accessed at: http://www.scfhs.org.sa/en/MESPS/Pages/UniversalTopics.aspx

SCFHS Online Universal Topics: First Year

Module 1: Introduction

1) Safe drug prescribing
2) Hospital-acquired infections (HAIs)
3) Blood transfusion

Safe drug prescribing: At the end of this Learning Unit, you should be able to:

a) Recognize the importance of safe drug prescribing in healthcare.
b) Describe the various adverse drug reactions, citing examples of commonly prescribed drugs that can cause such reactions.
c) Apply principles of drug-drug interactions, drug-disease interactions, and drug-food interactions into common situations.
d) Apply the principles of prescribing drugs in special situations, such as renal failure and liver failure.
e) Apply the principles of prescribing drugs in elderly, pediatrics age group patients, and during pregnancy and lactation.
f) Promote evidence-based cost-effective prescribing.
g) Discuss the ethical and legal framework governing safe drug prescribing in Saudi Arabia.

Hospital-Acquired Infections (HAIs): At the end of this Learning Unit, you should be able to:

a) Discuss the epidemiology of HAIs, with special reference to HAIs in Saudi Arabia.
b) Recognize HAIs as one of the major emerging threats in healthcare.
c) Identify the common sources and set-ups of HAIs.
d) Describe the risk factors of common HAIs, such as ventilator-associated pneumonia, MRSA, CLABSI, and Vancomycin-resistant Enterococcus (VRE).
e) Identify the role of healthcare workers in the prevention of HAIs.
f) Determine appropriate pharmacological (e.g., selected antibiotic) and non-pharmacological (e.g., removal of indwelling catheter) measures in the treatment of HAIs.
g) Propose a plan to prevent HAIs in the workplace.

Blood Transfusion: At the end of the Learning Unit, you should be able to:

a) Review the different components of blood products available for transfusion.
b) Recognize the indications and contraindications for blood product transfusion.
c) Discuss the benefits, risks, and alternatives to transfusion.
d) Undertake consent for a specific blood product transfusion.
e) Perform the steps necessary for safe transfusion.
f) Develop understanding of the special precautions and procedures necessary during massive transfusions.
g) Recognize transfusion-associated reactions and provide immediate management.

Module 3: Diabetes and Metabolic Disorders

1. Recognition and management of diabetic emergencies.
2. Management of diabetic complications.

Recognition and Management of Diabetic Emergencies: At the end of the Learning Unit, you should be able to:
a) Describe the pathogenesis of common diabetic emergencies, including their complications.
b) Identify risk factors and groups of patients vulnerable to such emergencies.
c) Recognize a patient presenting with a diabetic emergency.
d) Institute immediate management.
e) Refer the patient to the appropriate next level of care.
f) Counsel patient and families to prevent such emergencies.

Management of Diabetic Complications: At the end of the Learning Unit, you should be able to:
a) Describe the pathogenesis of important complications of Type 2 diabetes mellitus.
b) Screen patients for such complications.
c) Provide preventive measures for such complications.
d) Treat such complications.
e) Counsel patients and families with special emphasis on prevention.

Module 7: Ethics and Healthcare

1. Patient advocacy.
2. Ethical issues: transplantation/organ harvesting; withdrawal of care.
3. Ethical issues: treatment refusal; patient autonomy.
4. Role of doctors in death and dying.

Patient Advocacy: At the end of the Learning Unit, you should be able to:
a) Define patient advocacy.
b) Recognize patient advocacy as a core value governing medical practice.
c) Describe the role of patient advocates in the care of patients.
d) Develop a positive attitude towards patient advocacy.
e) Be a patient advocate in conflicting situations.
f) Be familiar with local and national patient advocacy groups.

Ethical issues: transplantation/organ harvesting; withdrawal of care: At the end of the Learning Unit, you should be able to:
a) Apply key ethical and religious principles governing organ transplantation and withdrawal of care.
b) Be familiar with the legal and regulatory guidelines regarding organ transplantation and withdrawal of care.
c) Counsel patients and families in light of applicable ethical and religious principles.
d) Guide patients and families to make informed decisions.

Ethical issues: treatment refusal; patient autonomy: At the end of the Learning Unit, you should be able to:
a) Predict situations where a patient or family is likely to decline prescribed treatment.
b) Describe the concept of 'rational adult' in the context of patient autonomy and treatment refusal.
c) Analyze key ethical, moral, and regulatory dilemmas in treatment refusal.
d) Recognize the importance of patient autonomy in the decision-making process.
e) Counsel patients and families declining medical treatment in light of the patients' best interests.

Role of Doctors in Death and Dying: At the end of the Learning Unit, you should be able to:
a) Recognize the important role a doctor can play during the dying process.
b) Provide emotional and physical care to a dying patient and their family
c) Provide appropriate pain management to a dying patient.
d) Identify and refer suitable patients to palliative care services.

SCFHS Online Universal Topics: Second Year

Module 5: Acute Care

1. Pre-operative assessment.
2. Post-operative care.
3. Acute pain management.
4. Chronic pain management.
5. Management of fluids in hospitalized patients.
6. Management of acid-base and electrolyte imbalances.

Pre-Operative Assessment: At the end of the Learning Unit, you should be able to:
a) Describe the basic principles of pre-operative assessment.
b) Preform a pre-operative assessment of an uncomplicated patient, with special emphasis on:
    i. General health assessment;
    ii. Cardiorespiratory assessment;
    iii. Medications and medical device assessment;
    iv. Drug allergies;
    v. Pain relief needs.
c) Categorize patients according to risks.

Post-Operative Care: At the end of the Learning Unit, you should be able to:
a) Devise a post-operative care plan, including monitoring of vitals, pain management, fluid management, medications, and laboratory investigations.
b) Hand-over patients properly to the appropriate facilities.
c) Describe the process of a patient's post-operative recovery.
d) Identify common post-operative complications.
e) Monitor patients for possible post-operative complications.
f) Institute immediate management of post-operative complications.

Acute Pain Management: At the end of the Learning Unit, you should be able to:
a) Review the physiological basis of pain perception.
b) Proactively identify patients who might be in acute pain.
c) Assess a patient with acute pain.
d) Apply various pharmacological and non-pharmacological modalities available for acute pain management.
e) Provide adequate pain relief for uncomplicated patients with acute pain.
f) Identify and refer patients with acute pain who can benefit from specialized pain services.

Chronic Pain Management: At the end of the Learning Unit, you should be able to:

a) Review the bio-psychosocial and physiological bases of chronic pain perception.
b) Discuss various pharmacological and non-pharmacological options available for chronic pain management.
c) Provide adequate pain relief for uncomplicated patients with chronic pain.
d) Identify and refer patients with chronic pain who can benefit from specialized pain services.

Management of Fluids in Hospitalized Patients: At the end of the Learning Unit, you should be able to:

a) Review the physiological basis of water balance in the body.
b) Assess a patient for his/her hydration status.
c) Recognize a patient with over- and under-hydration.
d) Order fluid therapy (oral and/or intravenous) for a hospitalized patient.
e) Monitor fluid status and response to therapy through history, physical examination, and selected laboratory investigations.

Management of Acid-Base and Electrolyte Imbalances: At the end of the Learning Unit, you should be able to:

a) Review the physiological bases of acid-base and electrolyte balances in the body.
b) Identify the diseases and conditions likely to cause or be associated with acid-base and electrolyte imbalances.
c) Correct acid-base and electrolyte imbalances.
d) Perform careful calculations, checks, and other safety measures while correcting acid-base and electrolyte imbalances.
e) Monitor response to therapy through history, physical examination, and selected laboratory investigations.

FIRST YEAR TRAINING MODULES

Module I: Foundations of Neonatal Nursing

Module Description:

The normal processes of pregnancy, delivery, and postpartum recovery usually fall outside the scope of neonatal nurses' practice. However, understanding of these will enable trainees to comprehend the factors that impact fetal development, especially of high-risk neonates. Accordingly, this module discusses the common prenatal and natal risk factors and their effects on fetal development. In addition, it provides an overview of the normal physiologic changes expected to be found in a healthy mother.

Learning Objectives:

At the end of this module, trainees will be able to:
1. Comprehend the role and responsibilities of a registered, professional, neonatal nurse.
2. Identify the normal physiologic changes of each system in pregnancy.
3. Identify factors affecting fetal development.
4. Describe low-risk management, including fetal monitoring guidelines.
5. Categorize maternal and neonatal risk factors that may exist during pregnancy and the postpartum period.

Content Outlines:

1. Role and responsibilities of neonatal nurses:
   a. Scope of practice in labor and delivery;
   b. Scope of practice in nursery;
   c. Scope of practice in the NICU.
2. Normal maternal physiologic changes by system.
3. Uncomplicated antepartum, intra-partum, and post-partum care.
4. Antepartum and intra-partum complications.
5. Stages of normal labor and delivery.
6. Neonatal extra-uterine adjustments.
7. Management of low-risk patient in labor.
8. Maternal and neonatal risk factors.

Competencies:

By the end of this module, trainees must be competent in the following:
1. Maternal health assessment.
2. Cardiotocography (CTG).
3. Preparation of neonatal delivery environment.
4. Management of low-risk patient.
5. Parents and family education.

Module II: Foundation of Neonatal Nursing Practicum

Module Description:

This module aims to provide trainees with both basic and essential neonatal nursing knowledge and skills, equipping them to deliver basic nursing care that is both high quality and safe for normal newborns, as well as for neonates at minor to moderate risk.

Learning Objectives:

By the end of this module, trainees will be able to:
1. Determine Apgar scores for newborns.
2. Assess a newborn's gestational age.
3. Discuss the characteristics of a normal newborn in order to make accurate assessments.
4. Demonstrate understanding of the normal growth and development of a newborn.
5. Compare expected versus unexpected assessment parameters of a newborn.
6. Perform precise and justified health assessments for normal newborns.
7. Maintain a newborn's temperature by applying accurate thermoregulation principles and measurement methods.
8. Provide safe basic nursing care to normal newborns.
9. Administer appropriate vaccination for neonates.
10. Perform required screening procedures, (e.g., newborn screening, hearing assessment)

Content Outlines:

1. Health assessment of normal newborn:
   a. Apgar score;
   b. Gestational age assessment;
   c. General body proposition and posture;
   d. Vital signs;
   e. Physical examination;
   f. Maternal history.
2. Normal growth and development of the newborn:
   a. Principles of growth and development;
   b. Influences on growth and development;
   c. Nurse's role related to growth and development.
3. Thermoregulation for normal newborn in nursery:
   a. Principles of thermoregulation in neonates;
   b. Methods for maintaining body temperature of neonates;
   c. Management of complications.
4. Basic nursing care to normal newborns in nursery:
   a. Neonatal bathing;
   b. Cord care;
   c. Eye care.
5. Vaccination.
6. Screening measures and procedures.

Competencies:

By the end of this module, trainees are expected to be competent in the following:
1. Neonatal health assessment.
2. Apgar score assessment.
3. Gestational age assessment.
4. Vital signs measurement for newborns.
5. Newborn screening tests.
6. Neonatal bathing.
7. Vaccination administration.
8. Neonatal feeding.
9. Blood glucose measuring.
10. Medication administration.
11. Phlebotomy.
12. Urine analysis.
13. Weight and length measurement.

Module III: Neonatal Resuscitation and Stabilization of the Newborn

Module Description:

Neonatal resuscitation skills are essential for all health care providers involved in the delivery of newborns. This module provides trainees with essential knowledge and skills for resuscitating a newborn following the American Academy of Pediatrics and American Heart Association guidelines.

Learning Objectives:

At the end of this module, trainees will be able to:
1. Identify the needed preparation for neonatal resuscitation.
2. Demonstrate the initial steps of neonatal resuscitation.
3. Decide the appropriate action needed to resuscitate a newborn based on newborn-specific parameters.
4. Identify the indications for practicing positive pressure ventilation and chest compression to resuscitate the newborn.
5. Apply the American Academy of Pediatric/American Heart Association guidelines in resuscitating a newborn in the delivery room.
6. Illustrate a nurse's role in transporting a neonate.

Content Outlines:

1. Preparation required for neonatal resuscitation.
   a. Anticipation of potential problem(s);
   b. Resuscitation equipment;
   c. Trained personnel.
2. Thermoregulation during resuscitation.
3. Airway management.
4. Stimulation.
5. Positive pressure ventilation.
6. Cardiovascular support and chest compression.

7. Management of the special problems during resuscitation (i.e., extreme prematurity, meconium stained amniotic fluid, choanal atresia, tracheoesophageal fistula, diaphragmatic hernia, hydrops fetalis, omphalocele and gastroschisis, etc.).
8. Immediate post-resuscitation nursing management and stabilization of the condition:
   a. Maintenance of airway and ventilation;
   b. Fluid and electrolyte management;
9. Controversies in neonatal resuscitation.
10. Withholding and discontinuing resuscitation.
11. Transportation of neonates:
    a. Types of transportation;
    b. Emergency transfer;
    c. Arrival at the referring hospital.

Competencies

A trainee must be a certified NRP and BLS provider.

Module IV: Neonatal Pathophysiology

Module Description:

This module helps trainees to understand the nature of neonatal health problems. It emphasizes the pathophysiological changes that occur as a result of disease and homeostatic changes in the neonate. The mechanisms, etiology, risk factors, and complications of neonatal disease processes will be emphasized.

Learning Objectives:

At the end of this module, trainees will be able to:
1. Describe the common pathophysiological changes occurring during the perinatal and neonatal period.
2. Relate pathophysiological changes to the assessment findings of common neonatal disorders in different body systems.
3. Interpret complications related to pathological conditions.
4. Interpret abnormalities related to acid-base balance and blood gases.

Content Outlines:

1. Alterations of cardiovascular function:
   a. Fetal circulation;
   b. Neonatal circulation.
2. Cyanotic and acyanotic congenital heart disease.
3. Congestive heart failure.
4. Alterations of pulmonary function:
   a. Respiratory distress syndrome;
   b. Transient tachypnea of the newborn;
   c. Pulmonary air leaks;
   d. Persistent pulmonary hypertension in infants;
   e. Meconium aspiration syndrome;
   f. Apnea;

g. Neonatal hypoxia;
h. Diaphragmatic hernia.

5. Alterations of digestive function:
   a. Impairment in digestion, absorption, and nutrition;
   b. Disorders in biliary metabolism and transport;
   c. GIT structural abnormalities (i.e., cleft palate and cleft lip, esophageal atresia and tracheoesophageal fistula, biliary atresia, duodenal atresia, pyloric stenosis, and Hirschsrpung disease);
   d. Necrotizing enterocolitis;
   e. Diarrhea.
6. Alterations of hematologic function:
   a. Neonatal jaundice;
   b. Disorders of erythrocytes;
   c. Disorders of coagulation and platelets.
7. Alteration in metabolic function:
   a. Inherited metabolic disorders;
   b. Common metabolic errors.
8. Alterations of genitourinary function:
   a. Structural abnormalities;
   b. Urinary tract infection;
   c. Hydronephrosis;
   d. Hydrocele;
   e. Ambiguous genitalia;
   f. Hypospadias;
   g. Bladder extrophy.
9. Neurologic function alterations:
   a. Structural malformation;
   b. Intraventricular/intracranial hemorrhage;
   c. Hypoxic-ischemic encephalopathy (HIE);
   d. Seizure disorders;
   e. Hydrocephalus.
10. Endocrine function alterations:
    a. Mechanism of hormonal alteration;
    b. Infant of diabetic mother;
    c. Hypoglycemia;
    d. Congenital hypothyroidism.
11. Musculoskeletal alterations:
    a. Skeletal dysplasia;
    b. Developmental dysplasia of the hip (DDH);
    c. Birth trauma.
12. Alterations in immunity, inflammation, and infection:
    a. Congenital infection;
    b. Neonatal sepsis;
    c. Shock.
13. Alteration in fluid and electrolytes.

Module V: Essential Nursing Practices in the NICU

Module Description:

The module equips trainees with the common advanced practices in the NICU, developing them into safe, competent nurses able to deliver quality care to critically ill neonates admitted with urgent, life-threatening conditions. It focuses on the professional roles and physical responsibilities of nurses working in the NICU. The basic fluid and nutritional requirements of ill neonates are explored. The nursing implications for appropriate assessment of pre-procedural and post-procedural care are also discussed.

Learning Objectives:

At the end of this module, trainees will be able to:

1. Demonstrate effective management of neonatal critical care nursing units.
2. Identify fetal malformations that need surgical correction.
3. Describe the role of a neonatal nurse in controlling the heat balance of a premature infant.
4. Describe the common popular complementary and alternative medicine in the NICU, such as kangaroo care (skin-to-skin holding) and infant massage.
5. Identify the risk factors associated with fluid and electrolyte imbalances.
6. Maintain appropriate fluid and electrolyte balances, especially in extremely premature and low birth weight infants.
7. Provide the basic nutritional requirements of preterm and high-risk infants, while avoiding the physiologic stress related to the delivery of enteral and parenteral nutrition.
8. Describe the mechanisms, behavior responses, and long-term consequences of neonatal pain.
9. Use pharmacological and non-pharmacological measures to alleviate pain.
10. Demonstrate ability to assess, plan, and provide evidence-based nursing care for a neonate on a ventilator.
11. Describe the nursing management for neonates with a blood transfusion or exchange transfusion.
12. Elaborate pre-procedural and post-procedural care related to birth, prematurity, illness, or congenital malformation.
13. Develop a discharge plan for a neonate in the NICU.

Content Outlines:

- Fetal therapy:
  - Fetal malformation requiring surgical correction;
  - Multidisciplinary collaborative approach to fetal therapy.
- Thermoregulation:
  - Heat loss and heat production;
  - Mechanism of neonatal heat regulation;
  - Factors affecting thermoregulation in neonates;
  - Neutral thermal environment;
  - Radiant warmer/incubator care;
  - Skin care.
- Neonatal developmental support.

- Intravenous access management:
  - Peripheral access;
  - Peripherally inserted central catheter (PICC) line;
  - Umbilical catheterization.
- Fluid and electrolyte management:
  - Reviewing fluid and electrolyte balances;
  - Distribution of body fluids and electrolytes;
  - Movement of body fluids and electrolytes;
  - Regulation of body fluids and electrolytes;
  - Calculation of fluid requirements.
- Nutritional management:
  - Nutritional needs of neonates;
  - Nutritional assessment;
  - Types and methods of feeding;
  - Types of enteral feeds;
  - Parenteral nutrition (PN);
  - Management of total parenteral nutrition (TPN).
- Pain and pain relief:
  - Biology of pain and sedation;
  - Pain processing;
  - Pain management.
- Airway Management:
  - Positioning;
  - Suctioning: nasopharyngeal, oropharyngeal, endotracheal tube, and tracheostomy;
  - Tracheostomy tube: stoma care, change, suctioning, and decannulation.
- Oxygenation and ventilation management:
  - Pulse oximetry monitoring;
  - Oxygen therapy: indications, safe use, and side effects;
  - Endotracheal tube intubation and extubation;
  - Auto-positive end-expiratory pressure calculation;
  - High-frequency oscillatory ventilation;
  - Manual ventilation devices;
  - Mechanical ventilation: conventional mode;
  - Noninvasive positive pressure ventilation;
  - Weaning from mechanical ventilation;
  - Arterial blood gas analysis;
  - Chest tube management.
- Cardiac management:
  - Arterial catheter: insertion assistance and management;
  - Cardiac monitoring;
  - Electrocardiography (ECG);
  - Echocardiography (indications and nursing care);
  - Cardiac catheterization (pre-, during, and post-procedure nursing care).
- Wound healing and care:
  - Drain/wounds: care and management.
- Other diagnostic/ management procedures:
  - X-ray imaging;
  - Ultrasonographic imaging;
  - Magnetic resonance imaging (MRI);

- Genetic testing;
- Bladder aspiration/catheterization;
- Lumber puncture;
- Cool Cap;
- Defibrillation;
- Neonatal screening.

– Discharge plan

Competencies:

1. Nursing care of neonate on continuous positive airway pressure (CPAP).
2. Nursing care and management of ventilated neonate.
3. Chest tube management.
4. Oxygen therapy and pulse oximetry in neonate.
5. Defibrillation.
6. Neonatal screening.
7. Heel prick.
8. Central venous catheter competency.
9. 12 & 15-lead ECG placement.
10. Cool cap.
11. Bladder aspiration/catheterization.
12. Endotracheal intubation and extubation.
13. Suctioning.
14. Tracheostomy care and suctioning.
15. TPN.
16. Blood transfusion and exchange transfusion.
17. Administration of vaccines.
18. Kangaroo care.

Module VI: Ethics in Nursing and Care Dimensions

Learning Objectives:

At the end of this module, trainees will be able to:

1. Examine the nature and role of ethical theories in guiding sound ethical decision-making in workplace settings.
2. Discuss the ethical and legal context of professional nursing practice.
3. Examine key ethical issues occurring in nursing and related health care contexts.
4. Discuss processes for achieving desired moral outcomes in nursing and healthcare domains.
5. Analyze conflicting duties and rights inherent in moral dilemmas.
6. Discuss the impact of current issues related to health care delivery.
7. Use ethical reasoning to synthesize standards of practice, ethical principles, and legal/regulatory requirements in the resolution of ethical dilemmas.
8. Discuss ethical issues relevant to critically ill neonatal patients.

Content Outlines:

A. Introduction to moral and legal concepts.
B. Credentialing and licensing.

C. Autonomy and paternalism.
D. Life and death.
E. Public health.
F. Ethical issues related to neonatal intensive care.

Competences:

1. Demonstrate ability to implement basic ethical principles in neonatal management.
2. Demonstrate understanding of the differences between moral and legal concepts in neonatal diagnosis and treatment.
3. Able to ethically identify life and death considerations applied in the KSA.
4. Able to critically illustrate the common ethical dilemmas related to neonates.

Module VII: Epidemiology

Learning Objectives:

At the end of this module, trainees will be able to:
1. Describe the mechanisms and dynamics of disease transmission in populations and the risk factors determining their distribution.
2. Calculate the measures of morbidity and mortality incidence and prevalence.
3. Assess the validity and reliability of diagnostic and screening tests.
4. Explain the different mechanisms used to describe disease prognosis in quantitative terms for groups of patients.
5. Assess the efficacy of preventive and therapeutic measures via randomized trials.
6. Conduct epidemiological study designs (cohort, cross-sectional, retrospective, and prospective).
7. Differentiate between association and causation.
8. Identify potential biases, confounders, and interacting factors in an epidemiological study.
9. Explain the role of genetic and environmental factors in disease causation.
10. Apply epidemiologic methods to evaluate screening programs.
11. Identify the sources of information on disease occurrence.
12. Develop critique of medical and health research studies.

Content Outlines:

A. Definition of epidemiology and health.
B. Dynamics of disease transmission.
C. Infectious disease epidemiology.
D. Measuring the occurrence of disease.
E. Assessing the reliability and validity of diagnostic and screening tests.
F. Assessing the efficacy of preventive and therapeutic measures through randomized trials.
G. Cohort studies.
H. Case control and cross-sectional studies.
I. Estimating risk ratio and measure of association.
J. Estimating the potential for prevention.
K. From association to causation: deriving inferences from epidemiologic studies.
L. Bias, confounding, and interaction.
M. Roles of genetic and environmental factors in disease causation.
N. Ethical and professional issues in epidemiology.

Competences:

1. Demonstrate understanding the basic principles of epidemiology.
2. Illustrate competently the dynamics of disease transmission and incidence.
3. Demonstrate knowledge by determining disease associations and estimating the potential for disease prevention.
4. Able to articulate the roles of genetic and other environmental factors in diseases' causation and incidence.
5. Demonstrate ability in identifying the reliability and validity of screening tests

Module VIII: Biostatistics

Learning Objectives:

At the end of this module, trainees will be able to:
1. Demonstrate familiarity with statistical terminology and the purpose of statistics.
2. Identify ways of organizing data.
3. Recognize measures of central tendency and variability.
4. Demonstrate understanding of the analysis of statistical data within the research context.
5. Provide necessary statistical background for analyzing data and drawing inferences from that analysis.
6. Discuss the logic of hypothesis testing.

Content Outlines:

A. Descriptive Statistics, frequencies, shapes, and measures of central tendency.
B. Univariate descriptive statistics, measures of variability, range of standard deviation scores within a distribution, and Z-scores standardized distribution.
C. Bivariate descriptive statistics
D. Inferential statistics, probability, sampling distribution, and hypothesis testing.
E. Power analysis, type I and type II errors, level of significance/critical regions, confidence interval, one-tailed and two-tailed tests, and parametric tests.
F. Bivariate inferential statistics, t-tests for independent groups, and paired t-tests (dependent groups).
G. ANOVA, between-group versus within-group, non-parametric tests, chi square, test for independence, bivariate inferential statistics, and Pearson's R as inferential statistics.

Competences:

1. Demonstrate understanding of the statistical terminology listed in the module.
2. Able to organize data competently.
3. Correctly implement the central tendency and variability measures.
4. Analyze data and draw inferences from the analysis.
5. Illustrate the logic of hypothesis testing.

SECOND-YEAR TRAINING MODULES

Module IX: Introduction to Research and Evidence-Based Practice

Learning Objectives:

At the end of this module, trainees will be able to:
1. Define the basic concepts of research methodology.
2. Differentiate between research designs.
3. Describe the scientific process and its use in nursing research.
4. Design a research proposal project.
5. Explain the steps of the research process in the proposal and/or conduct of a circumscribed nursing research project.
6. Identify research problems and the literature review process related to nursing practice.
7. Compare and contrast research designs.
8. Discuss appropriate statistical techniques in data analysis.
9. Critique current studies of nursing practice.
10. Describe the utilization of research findings.
11. Define the historical perspective of EBP.
12. Define and apply evidence-based nursing practice principles, which are identified through nursing research. Please refer to Appendix 3 for the Nursing Research Project Guidelines.

Content Outlines:

A. Overview of nursing research.
B. Research methodology and process.
C. Research designs.
D. Data collection and analyses.
E. Evidence-based research and application.

Competences:

1. Demonstrate understanding of research terminology.
2. Recognize the differences between the research designs and methodologies.
3. Correctly conduct a literature review by applying systematic principles.
4. Gather and interpret relevant data to make judgments.
5. Utilize evidence-based principles in practical applications.
6. Comprehend the application of a critical appraisal approach.
7. Critique journal articles.
8. Formulate a research proposal for a topic of interest within the neonatal intensive care specialty.
9. Design and implement a research project.
10. Compose a manuscript for publication.

Module X: Advanced Neonatal Health Assessment

Module Description:

The advanced health assessment module provides trainees with the opportunity to apply their theoretical knowledge in performing comprehensive physical examinations and health assessments of critically ill neonates. The module also helps trainees to develop the skills and techniques required for comprehensive assessment within the legal/ethical framework of the nursing profession. Systematic health-assessment and critical-thinking skills will be used to analyze and document the obtained data.

Learning Objectives:

At the end of this module, trainees will be able to:

- Describe health assessment components.
- Identify the antenatal history affecting neonatal health.
- Identify the techniques of physical examination.
- Use a systematic approach in performing health assessments of critically ill neonates.
- Discriminate between normal and abnormal findings of screening physical assessment.
- Demonstrate competency in performing a systematic health assessment of critically ill neonates.
- Document health assessment findings.

Content Outlines:

1. History-taking techniques.
2. Assessment of premature and extremely low birth weight infants.
3. Systematic physical assessment following the head-to-toe approach, including assessment of:
   a. General appearance;
   b. Skin;
   c. Lymph nodes;
   d. Head and neck;
   e. Respiratory system;
   f. Cardiovascular system
   g. Abdomen;
   h. Genitourinary system;
   i. Back and extremities;
   j. Neurology.
4. Nursing documentation using system approved in the health care organization

Competencies:

– Trainees must become competent in performing a comprehensive health assessment and systematic physical examination of critically ill neonates.

Module XI: Pharmacology in Neonatal Intensive Nursing Care

Module Description:

This module is designed to enhance trainees' knowledge of the pharmaco-therapeutics for common classifications of drugs used to care for neonates. Pharmacokinetic and pharmacodynamic principles, their clinical application, and the use of pharmacologic agents in the prevention of illness and the restoration and maintenance of health are emphasized. The module also covers indications for correct drug choice, usual dose, routes of administration, pharmacological mechanisms in association with drug interactions, adverse effects; and contraindications for use. Drug toxicity, anesthetic agents, and vaccines are also considered.

Learning Objectives:

At the end of this module, trainees will be able to:

1. Describe the principles of pharmacokinetics and pharmacodynamics and drug interactions in neonates.
2. Discuss the factors affecting the action and use of medications in neonates.
3. Distinguish between neonates' and other children's responses to drug therapy.
4. Integrate pharmacology, pathophysiology, and symptomatology.
5. Recognize the effect of antenatal drugs on neonates' health.
6. Discuss the factors affecting medication errors and the strategies to avoid them.
7. Identify the emergency medications in the NICU.
8. Interpret the adverse reactions associated with drug therapy.
9. Comprehend the indications for correct drug choice, usual dose, routes of administration, pharmacological mechanisms, contra-indications, toxicity, and allergies of drugs used in the NICU.
10. Illustrate the common medication used in the NICU to manage different body system disorders.
11. Identify the anesthetic agents and analgesics commonly used in pediatric practices.
12. Calculate drug dosage and infusion flow rate following different rules and methods.
13. Apply safety measures in relation to neonatal drug administration.
14. Document drug practice using appropriate format.
15. Describe the vaccinations needed in the NICU.
17. Select the appropriate routes for medication administration.
18. Check types, rate, amount, and indications for different IV fluids prescribed for newborns.
19. Discuss the nursing responsibilities associated with the holistic management of drug therapy.
20. Describe the nurse's role as regards the ethical and legal issues related to prescribing and administering drugs.
21. Teach parents about drug preparation and administration of medication before patient discharge.

Content Outlines:

1. Introduction to neonatal pharmacology.
2. Pharmacokinetics.
3. Pharmacodynamics.
4. Factors affecting the action and use of medications in neonates.
5. Drug calculations and routes of administration.

6. Mechanisms of actions, interactions, contra-indications, adverse reactions, toxicity, and allergies of drugs used in the NICU.
7. Pregnancy drugs and their effect on neonates.
8. Emergency drugs.
9. IV fluid used in the NICU.
10. Common medications used in the NICU: ampicillin, gentamicin, ferrous sulfate, multivitamins, cefotaxime, caffeine citrate, furosemide, vancomycin, surfactant, ibuprofen/indomethacin, phenytoin, metolazone, sodium bicarbonate, etc. (see Appendix A).
11. Vaccinations in the NICU.
12. Drug documentation.
13. Medication errors.
14. Nurses' responsibilities in drug administration and monitoring.
15. Parents' education related to drug administration.

Competencies:

1. Drug calculation.
2. Safety measure application principles in relation to neonatal drug administration.
3. Effective administration of drugs with different routes.
4. Administration of vaccinations.
5. Demonstrate understanding of adverse reactions to and the side effects of medications.
6. Administer IV fluids to neonates with accurate amount and rate, and demonstrate understanding of indications for different IV fluids prescribed for newborns.
7. Parents' education related to drug administration.

Module XII: Infection Control and Patient Safety

Module Description:

Infection, particularly hospital-acquired types, is one of the important causes of neonate morbidity and mortality. HAIs are also called nosocomial infections. The most important and frequent mode of transmission of nosocomial infections is by direct contact. Therefore, the best way to prevent cross-infection in the NICU is thorough hand-washing. This module aims to equip neonatal nurses with knowledge and experience of the infection-related aspects, means of control, and preventive measures applicable to the care of neonates, as required to deliver safe and infection-free nursing care to NICU patients.

Learning Objectives:

At the end of this module, trainees will be able to:
1. Explain infection control and patient safety concepts.
2. Demonstrate understanding of infection-control-related policy and procedures in the neonatal unit.
3. Correctly apply infection control principles and guidelines.
4. Correctly perform hand-washing, donning, and gloving, as well as the N95 test.
5. Compare between hand hygiene and hand scrub.
6. Implement and select the appropriate infection-control modalities, based on a patient's condition.
7. Identify risk factors for neonatal sepsis.

8. Discuss the causes of infection in neonates.
9. Describe modes of transmission of infection in the NICU.
10. Provide effective nursing preventive measures in respect of infectious neonates, based on the source of infection.

Content Outlines:

1. Infection control in the NICU:
   a. HAIs/nosocomial infections.
2. Host defenses in the newborn:
   a. Physical defenses;
   b. Cellular immunity;
   c. Phagocyte function;
   d. Humoral immunity.
3. Risk factors for neonatal sepsis:
   a. Neonatal factors;
   b. Environmental factors.
4. Causes of infection in neonates.
5. Modes of transmission of infection.
6. Common infectious diseases in neonates, based on the source of infection:
   a. Bacterial infection in the newborn;
   b. Viral infection;
   c. Systemic fungal infection;
   d. Congenital infection.
7. Preventive measures to control infection, including staff vaccination.

Competencies:

The trainee must be competent in performing the following nursing procedures:
1. Hand hygiene;
2. Donning and Doffing;
3. N95 test.

Module XIII: Advanced Nursing Care of Critically Ill Neonatal Patients

Module Description:

This module places significant emphasis on trainees' ability to recognize and evaluate complex problems associated with the dysfunction of different body systems. It includes concepts related to specialized knowledge and skills, as well as advance care planning, that are required to ensure the quality and holistic care of critically ill neonates and their families. It develops trainees' critical reasoning and skills in using EBP data to develop nursing care plans.

Learning Objectives:

At the end of this module, trainees will be able to:
– Analyze appropriate tests used to diagnose dysfunction in different body systems of critically ill infants.
– Integrate knowledge of the pathophysiological processes in developing a nursing care plan for critically ill neonates with dysfunction in different body systems.

- Synthesize critical thinking skills in caring for critically ill neonates with dysfunction in different body systems.
- Demonstrate hemodynamic monitoring used in critically ill neonates with dysfunction in different body systems.
- Demonstrate competence in providing pre- and post-care of critically ill neonates undergoing interventional techniques.
- Use pharmacological and non-pharmacological measures to alleviate a neonate's pain.
- Demonstrate patient care management and monitoring of neonates on mechanical ventilation.

Content Outlines[6]:

- Nursing care of extremely premature/low birth weight infants:
  - Risk factors;
  - Assessment;
  - Care of very-low-birth-weight (VLBW) infants.
  - Fluid and nutritional requirements of premature and VLBW infants.
  - Retinopathy of prematurity.
- Nursing care of neonates with cardiovascular disorders:
  - Common diagnostic procedures;
  - Cyanotic and acyanotic congenital heart disease;
  - Rhythm disturbances;
  - Congestive heart failure;
  - Coarctation of aorta and posterior descending artery (PDA);
  - Pre-/post-operative cardiac management.
- Nursing care of neonatal respiratory disorder:
  - Common diagnostic procedures;
  - Respiratory distress syndrome;
  - Transient tachypnea of the newborn;
  - Pulmonary air leaks;
  - Pneumonia;
  - Persistent pulmonary hypertension;
  - Meconium aspiration syndrome;
  - Pulmonary hemorrhage;
  - Plural effusion;
  - Apnea;
  - Neonatal hypoxia;
  - Congenital anomalies affecting respiratory function;
  - Diaphragmatic hernia.
- Nursing care of neonates with gastrointestinal (GI) disorders:
  - Common diagnostic procedures;
  - Problems with ingestion:
    - Cleft plate and cleft lip;
    - Esophageal atresia and tracheoesophageal fistula;
    - Gastroesophageal reflux;
    - Pyloric stenosis;

[6]Refer to Appendix B: list of the common diseases in the NICU.

  - Problems with digestion:
    - Biliary atresia;
    - Duodenal atresia;
  - Problems with elimination:
    - Hirschsrpung disease;
    - Necrotizing entercolities;
    - Short gut syndrome;
- Nursing care of neonates with hematologic disorders:
  - Common diagnostic procedures;
  - Neonatal jaundice;
  - Anemia;
  - Polycythemia;
  - Common coagulation disorders in newborns;
  - Blood and blood component therapy/exchange transfusion.
- Nursing care of neonates with genitourinary disorders:
  - Common diagnostic procedures;
  - Assessment of the genitourinary system;
  - Urinary tract infection;
  - Acute renal failure;
  - Hydronephrosis;
  - Ureteral obstruction;
  - Hydrocele;
  - Ambiguous genitalia;
  - Hypospadias;
  - Bladder extrophy;
- Nursing care of neonates with neurologic disorders:
  - Common diagnostic procedures;
  - Intraventricular/intracranial hemorrhage;
  - HIE;
  - Seizure disorders;
  - Birth injury
  - Hydrocephalus;
  - Central nervous system (CNS) infection: meningitis and encephalitis.
- Nursing care of neonates with endocrine disorders:
  Common diagnostic procedures;
  - Infant of diabetic mother;
  - Congenital hypothyroidism.
- Nursing care of neonates with musculoskeletal disorders:
  - Skeletal dysplasia;
  - DDH;
  - Birth trauma.
- Nursing care of neonates with metabolic disorders:
  - Prenatal and neonatal diagnosis of inherited metabolic disorders;
  - Neonatal screening;
  - Common metabolic errors.
- Nursing care of neonates with infection:
  - Common diagnostic procedures;
  - Congenital infection;
  - Neonatal sepsis;
  - Shock.

Competencies

Develop nursing care plan for neonates with different health problems (one for each system).

Module XIV: Family-Centered Care

Module Description:

This module provides trainees with the essential knowledge and skills required to apply the family-centered care (FCC) approach in the NICU. It includes family-structured functions and theories. The psychosocial aspects of families having a newborn with critical health problems are also explored.

Learning Objectives:

At the end of this module, trainees will be able to:

1. Articulate the concepts of FCC.
2. Understand the definition, purpose, and philosophical underpinnings of FCC in the NICU.
3. Demonstrate ability to assess the family structure and function.
4. Explore the current barriers to and facilitators of delivering FCC in the NICU
5. Demonstrate effective communication techniques when interacting with parents and other family members of critically ill neonates, adopting a respectful and appropriate manner, using effective listening, nonverbal, questioning, and narrative skills.
6. Be alert to nonverbal clues while caring for families.
7. Discuss the impact of hospitalization on parents.
8. Identify the sources, types, signs, and symptoms of stress and the methods of overcoming stress among parents.
9. Provide necessary support to minimize family anxiety and grief resulting from hospitalization and separation.
10. Respect family values, attitudes, and beliefs regarding health and illness.
11. Plan and implement health teaching strategies to support and help families to take care of their neonates.
12. Maximize parents' participation and engagement in developing care plans for their neonates.
13. Provide resources (community, clinical, peer support, and others) to help and support parents.
14. Ensure that complex psychosocial needs are addressed.
15. Identify interventions to optimize culturally sensitive family care and facilitate positive partnering with parents.
16. Implement appropriate interventions for families exhibiting anger, aggression, and crisis indicators.
17. Recognize evidence-based steps to increase and enhance the FCC approach.

Content Outlines:

1. Family concepts, characteristics, and theories.
2. Socio-cultural and religious influences on child health promotion.

3. Family assessment:
   - Family structure;
   - Family function;
   - Family life cycle.
4. Psychosocial impact of illness and hospitalization on parents of critically ill neonates.
5. Definition of FCC.
6. Principles of family- and child-centered care.
7. Impact of an FCC initiative on NICU care, staff, and families.
8. Barriers to FCC.
9. Core concepts
10. Components of FCC in the NICU:
    - Breastfeeding support;
    - Unlimited parent presence;
    - Palliative care support;
    - Parent participants in care and decision-making;
    - Empowering activities;
    - Transport support;
    - Sibling support;
    - Parent education seminars;
    - Bereavement support;
    - Kangaroo care;
    - Parent education/readiness for discharge;
    - Parent-to-parent support.

Module XV: Nursing Informatics

Learning Objectives:

At the end of this module, trainees will be able to:

1. Describe the foundations of nursing informatics as an NIC field in the nursing profession.
2. Identify key factors and legislative organizations that help to shape nursing informatics.
3. Discuss the evolving models and theories of informatics that define the role and competencies of nursing informatics.
4. Explain the implications of nursing informatics for nursing practice, administration, education, and research.
5. Demonstrate skills in the acquisition and retrieval of nursing information using the health information systems within the institution, the World Wide Web, and various other electronic resources.
6. Apply approaches that safeguard data and information integrity, while maintaining privacy and confidentiality

Content Outlines:

A. Introduction of nursing informatics and overview.
B. Nursing informatics goals, standards, and scope of practice.
C. Nursing informatics competencies (i.e., computer literacy skills, informatics literacy skills, etc.).
D. Models and theories of informatics.
E. Internet, search engines, and electronic databases and resources.
F. Selection of health care information systems.

G. System implementation, maintenance, and development.
H. Data integrity, security, and confidentiality.
I. Intranet, extranet, and network integration.
J. Information technology in patient education.
K. Integrating computers and information technology in nursing education and practice.

Competences:

1. Correctly apply information and communication technology in managing patient-related data.
2. Identify models of computerized nursing records and their benefits for patient care.
3. Differentiate between models of health information management systems.
4. Assess the impact of the information technology revolution on nursing practice.
5. Demonstrate ability to access, create, store, and retrieve nursing-related information from the World Wide Web.
6. Able to integrate nursing informatics into areas of nursing administration, education, clinical practice, and research.
7. Implement security regulations to safeguard patients' and organizations' data and information.

Module XVI: Nursing Leadership and Management

Learning Objectives:

At the end of this module, trainees will be able to:
1. Analyze the components of organizational structure and culture.
2. Apply theories of effective leadership and management within selected health care arenas.
3. Utilize the skills of nursing processes, critical thinking, ethical decision-making, communication, and therapeutic nursing intervention in managing culturally competent and cost-effective care of client groups across the wellness/illness continuum.
4. Collaborate with multidisciplinary health care team members in prioritizing and coordinating quality/cost effective healthcare.
5. Demonstrate leadership and management of a care-giving team comprising individuals with varied cultural backgrounds and varied levels of clinical knowledge and competencies.
6. Utilize skills of inquiry and research to enhance one's knowledge base, facilitate change, and improve quality of care.
7. Demonstrate professional accountability for effective leadership in nursing practice.
8. Contribute to organizational strategic planning and its implementation at different levels within healthcare organizations.

Content Outlines:

A. Organizational structure and culture.
B. Application of leadership and management theories.
C. Organizational and personal mission, vision, and goals.
D. Critical thinking, problem solving, and effective decision-making.
E. Quality and risk management.
F. Budgeting, cost, care delivery models, and staffing.
G. Communication, motivation, and team building.
H. Change and conflict management.

I. Role transition and delegation.
J. Strategic planning and strategic management.
K. Career planning.

Competences:

1. Demonstrate familiarity with the structure and environment of the health care organization in which they are trained.
2. Implement the concepts of leadership and management theories in dealing with patients and health care workers.
3. Apply the principles of quality and risk management to ensure the safety of neonates.
4. Demonstrate ability to think critically and solve patients' related conditions and situations by making the most appropriate decisions and delegation choices.
5. Communicate positively with patients' families and other health care workers.
6. Demonstrate ability to manage the conflict that might exist in the clinical setting.

EVALUATION AND ASSESSMENT

Overall, the evaluation and assessment of trainees is performed according to the SCFHS training and examination rules and regulations. Assessment is divided into two parts:

a. Formative assessment
b. Summative assessment

A. Formative Assessment

The goal of the formative assessment is to monitor trainees' learning through continuous evaluation and feedback, which can be used by the instructors to improve trainees' teaching and learning. The annual criteria for formative assessment cover the three aspects of learning: knowledge, skills, and attitude. Each learning aspect will be measured based on selected assessment formats.

In this program, the following formats[7] are selected to measure each domain.

Learning Aspects	Assessment Formats
Knowledge	1- Specific Academic Tasks, including Quizzes, Case Based Discussion* (CBD), and Seminar Evaluation**. 2- End-of-year written promotion examination
Skills	1- Objective Structured Clinical Examination (OSCE). 2- Research activity. 3- Log book 1- Community Activities (i.e., patient safety or quality improvement project)
Attitude ***	1- In-training evaluation reports (ITERs) 2- Direct Observation of Procedural Skills (DOPS)

***Case Based Discussion:** case study of a patient cared for by the trainee in the clinical setting. The case presentation should include:

- Neonates medical and surgical history;
- diagnosis/treatment history;
- nursing diagnosis with appropriate assessment findings;
- current neonatal nursing care plans, identifying the optimal outcomes.

[7]For more information on these assessment formats, refer to the executive policy for continuous assessment and the General Exam Rules and Regulations on the SCFHS website: https://www.scfhs.org.sa/en/MESPS/TrainingProgs/RegulationBoard/Pages/default.aspx.

Presentations should last approximately 15 minutes, with the trainee facilitating the post-presentation discussion. The case study evaluation form must be completed and signed by the clinical instructor and the trainee (Appendix 9).

****Seminar Evaluation:** one group seminar will be held in each training year. Seminar topics should be selected by the trainee and approved by the assigned clinical instructor and the program director.

End-of-year written Promotion Examination: a written progress test will be held at the end of first year of the program. Successful completion will enable the trainee to advance to the second training year. This exam's main objective is to assess the theoretical knowledge and critical thinking skills of trainees in relation to the topics and clinical experience covered in the first training year. The exam format, including number of items, eligibility, and pass scores, will be in accordance with the SCFHS General Exam Rules and Regulations, available on the SCFHS website.[8]

****In-training evaluation reports** could include attitude aspects in addition to the knowledge and skill levels of trainees during their placement at the training center. In this program, the reports aim to provide objective feedback obtained from those involved in the training process (i.e., the preceptor). The following continuous evaluation reports will be used in this program:

- Feedback from the assigned clinical instructor: this feedback should be obtained and documented every month and as needed (Appendix 6);
- Feedback from the assigned preceptor: this feedback should be obtained and documented every month and as needed (Appendix 5);
- Feedback from the assigned head nurse/nurse manager: this feedback should be obtained every month and as needed (Appendix 7);

B- Summative Assessment

This assessment component includes final (end-of-program) written and clinical examinations coordinated centrally by the SCFHS.

1. Final Written Examination

This exam assesses the theoretical knowledge and critical thinking skills of trainees in relation to the topics and clinical experience covered in the entire program. The exam format, including number of items, eligibility, and pass scores, will be in accordance with the SCFHS General Exam Rules and Regulations, available from the SCFHS website.[9]

2. Final Clinical Examination

An objective structured clinical examination (OSCE) exam will be held to assess the trainees' clinical skills, including data gathering, patient management, communication, and counseling skills. This examination will include a specific number of stations designed to achieve the training objectives. The examination format, including number of items, eligibility, and pass scores will be according to the SCFHS General Exam Rules and Regulations, available on the SCFHS website (refer to the link in footnote 9).

[8]https://www.scfhs.org.sa/en/MESPS/TrainingProgs/RegulationBoard/Pages/default.aspx
[9]https://www.scfhs.org.sa/en/MESPS/TrainingProgs/RegulationBoard/Pages/default.aspx

Methods of Evaluation

To determine the successful completion of training requirements in an academic year, the trainees' performance will be evaluated based on the following scoring system:

Score	Less than 50%	50% - 59.4%	60% - 69.4%	70% and above
Description	Clear Fail	Borderline fail	Borderline Pass	Clear Pass

Trainees must achieve a minimum of a **"Borderline Pass"** in each of the above assessment formats applicable to each learning aspect. In certain situations, a trainee with a **"Borderline Fail"** for one assessment format can be considered for promotion provided they achieve a **"Clear Pass"** for another assessment format. For more information, refer to the new executive policy for continuous assessment on the SCFHS website.

Method of Assessment

- Knowledge/Cognition:
  MCQs and extended-matching items

- Clinical skills and Behavior:
  1. Portfolio and logbook[10]
  2. Case-based discussion (case presentation)
  3. Competency assessment form

Certification

The certificate of training completion will only be issued upon the trainee's successful completion of all program requirements, including training modules, rotations, continuous assessments, etc. Trainees completing the program will be eligible to sit the final examinations; on successful completion of those exams, they will be awarded a postgraduate "Advanced Nursing Practice Diploma in Neonatal Intensive Care."

[10]The instructor and trainee should refer to the electronic logbook and instructions at: http://www.scfhs.org.sa/en/MESPS/TrainingProgs/ElectrobookCases/Pages/default.aspx and http://www.scfhs.org.sa/en/MESPS/TrainingProgs/ElectrobookCases/Pages/Instructions.aspx To view the video tutorial, see: www.youtube.com/watch?v=ZncCbDhehns and www.scfhs.info/medical/Bmedical/login.php.

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Appendix 1

Didactic and Clinical Rotations (1st Year)

First Year			
Courses	**Duration**	**Theoretical**	**Clinical**
Module I: Foundations of neonatal nursing	6 Weeks	(1 day per week) **48 Hours**	(4 days per week) **192 Hours** Simulation and workshop, Labor and Delivery (L&D)
Module II: Foundations of neonatal nursing practicum	8 weeks	(1 day per week) **64 Hours**	(4 days per week) **256 Hours** L&D and nursery
Module III: Neonatal resuscitation and stabilization of the newborn	2 Weeks	(1 day per week) **16 Hours**	(4 days per week) **64 Hours** L&D
Module IV: Neonatal pathophysiology	6 weeks	(1 day per week) **48 Hours**	**192 Hours** (4 days per week) Intermediate care in NICU
Module V: Essential nursing practice in NICU	14 weeks	(1 day per week) **112 Hours**	(4 days per week) **448 Hours** Intermediate care in NICU and NICU
Modules VI: Ethics in Nursing and Care Dimensions *	6 Weeks	(1 day per week) **48 Hours**	(4 days per week) **192 Hours** Intermediate care in NICU
Module VII: Epidemiology *	2 Weeks	(5 days per week) **80 Hours**	Computer lab and library
Module VIII: Biostatistics *	2 Weeks	(5 days per week) **80 Hours**	Computer lab and library
Total	**46 Weeks**	**496 Hours**	**1344 Hours**

*These are didactic modules.

Appendix 2

Didactic and Clinical Rotations (2nd Year)

Second Year			
Courses	**Duration**	**Theoretical**	**Clinical**
Module IX: Introduction to Research and Evidence-Based Practice *	4 Weeks	(2 days per week) **64 Hours**	(3 days per week) **96 Hours** Consolidate rotation in the research area of interest and in areas that provide resources for nursing research (e.g., nursing researchers, biostatisticians, librarians, etc.)
Module X: Advance neonatal health assessment	6 Weeks	(1 day per week) **48 hours**	(4 days per week) **192 Hours** NICU
Module XI: Pharmacology in neonatal intensive nursing care	6Weeks	(1 day per week) **48 Hours**	(4 days per week) **192 Hours** NICU
Module XII: Infection control and patient safety	6 Weeks	(1 day per week) **48 hours**	(4 days per week) **192 Hours** Intermediate care in NICU
Module XIII: Advanced nursing care of critically ill neonates	14 Weeks	(1 day per week) **112 Hours**	(4 days per week) **448 Hours** NICU
Module XIV: Family-centered care	6 Week	(1 day per week) **48 hours**	(4 days per week) NICU **192 Hours**
Module XV: Nursing Informatics*	2 Weeks	(2 days per week) **32 Hours**	(3 days per week) **48 Hours** Rotations with nursing informatics staff and/or working with healthcare informatics systems
Module XVI: Nursing Leadership and Management*	2 Weeks	(1 day per week) **16 Hours**	(4 days per week) **64 Hours** Rotations with Nurse Managers
Total	**46 Weeks**	**416 Hours**	**1424 Hours**

*Didactic modules.

Appendix 3

Nursing Research Project Guidelines[11]

Under the guidance of their adviser, the student takes three credit hours for their research project and submits it to the adviser. A clinical research project, under the supervision of a faculty member, should employ the scientific process in analyzing a clinical problem or issues related to advanced nursing practice. Projects should have tangible application to the practice setting.

Learning Objectives:

At the end of this module, trainees will be able to:

- Demonstrate ability to collect, analyze, synthesize, and evaluate information.
- Formulate research questions on problems of clinical significance in advanced nursing practice.
- Critically analyze and apply studies pertinent to client care.
- Interpret research findings and recommendations for clients, agencies, and health care professionals.
- Write a scholarly paper in a form suitable for professional publication.

CLINICAL RESEARCH PROJECT GUIDELINES

Utilization Studies

A student may create a research utilization project that is relevant to nursing. Examples include the design of clinical protocols for implementation of previous research findings.

Pilot Studies

A student may wish to conduct a small-scale study that serves as a foundation for future research. This might include a pilot study (based on a smaller sample or refined methodology), descriptive survey of a group targeted for a later study, an intervention study, or a study that establishes or extends tool reliability and validity.

Replicated Studies

A student may conduct an exact or approximate (under similar conditions) replication of a prior study in order to extend the findings of previous research.

[11]These guidelines are adopted from the McNeese State University College of Nursing Graduate Program 2012-2013, retrieved from: http://www.mcneese.edu/.

Advisor

For each research project, one faculty member will function as the advisor. Their responsibilities comprise: giving final approval for the student to register for the course, advising the student during implementation of the project, verifying that all requirements for the project and written report have been met, and submitting the final course grade. The graduate faculty will allocate faculty members to the role of advisor.

Preliminary approval (prior to registration for project module)

- Choose one of the allocated project advisors with expertise or interest in the area of your proposed clinical research.
- Provide a description of the project, including the following:
  - Problem statement;
  - Purpose and objectives of the project;
  - Significance of the project.

Enrollment in project module

- Register for project module.
- Assigned to advisor.
- Obtain research ethics approval from the organization within which the research project will be conducted.
- Attend conferences with the advisor as recommended or requested
- Submit working drafts of research report to faculty advisor (suggested).
- Submit copies of written research report to the advisor.

Evaluation

a. Written research report.
b. Completion of the clinical research project, as outlined.

Grading Criteria

The maximum score for this paper is 100 points. Each item is weighted for its importance in fulfilling the purposes of the project.

Appendix 4

SCFHS Guidelines for Mentor

Goals

- Guide residents towards personal and professional development through continuous monitoring of progress.
- Early identification of both struggling residents and high achievers.
- Early detection of residents at risk of emotional and/or psychological disturbances.
- Provide career guidance.

Roles of the Mentor

The mentor's primary role is to nurture a long-term professional relationship with their assigned residents. The mentor is expected to provide an "academic home" for the residents, enabling them to feel comfortable in sharing their experiences, expressing their concerns, and clarifying issues in a non-threatening environment. The mentor is expected to keep sensitive information about the residents in confidence.

The mentor is also expected to make an appropriate and early referral to the Program Director or Head of Department if they identify a problem that would require expertise or resources beyond their own capacity. Examples of such a referral might include:

- Serious academic problems;
- Progressive deterioration in academic performance;
- Potential mental or psychological issues;
- Personal problems interfering with academic duties;
- Professional misconduct, etc.

However, the following are NOT expected roles of a mentor:

- Provide extra tutorials, lectures, or clinical sessions;
- Provide counselling for serious mental and psychological problems;
- Being involved in residents' personal matters;
- Provide financial or other material supports.

Roles of the Trainee

- Submit resume at the start of the relationship.
- Inform mentor of short- (1 year) and long-term (2 years) goals.
- Take primarily responsibility in maintaining the mentoring relationship.
- Schedule monthly meeting with the mentor in a timely manner; do not request an ad hoc meeting except in an emergency.
- Recognize self-learning as an essential element of specialty training.
- Report any major events to the mentor in a timely manner.

Who can be mentor?

Any faculty member of consultant grade and above within the specialty program can be a mentor. No special training is required.

Number of Trainees per Mentor

As a guideline, each mentor should not have more than 4-6 trainees. As much as possible, each mentor should have a mix of trainee-mentees from both the first and second years of training. This will create opportunities for senior trainees to guide junior trainees.

Frequency of Meetings and Duration of Engagement

The recommended minimum frequency of meetings is once every four weeks. Each meeting might last between 30 minutes and one hour. It is also expected that, once assigned, the mentor should continue with the same trainee for the entire duration of the training program, i.e., two years.

Tasks during each Meeting

The following are suggested tasks for completion during each meeting:

- Discuss the trainee's overall clinical experience, with particular attention given to any concerns raised.
- Review the trainee's logbook or portfolio to determine whether they are on target to meet their training goals.
- Revisit earlier concerns or unresolved issues, if any.
- Explore any non-academic factors seriously interfering with training.
- Document excerpts of the interaction in the logbook.

Mandatory Reporting to the Program Director or Head of Department

- Consecutive absence from three scheduled meetings without any valid reason(s).
- Unprofessional behavior.
- Consistent underperformance, despite counselling.
- Serious psychological, emotional, or physical health problems that may potentially cause unsafe patient care.
- Any other serious concerns held by the mentor.

Appendix 5

Advanced Nursing Practice Diploma in Neonatal Intensive Care

Performance Assessment of the Trainee
(To be completed by the Preceptor[12] on completion of the monthly required clinical rotation in the specialty.)

Trainee Name:…….ID Number:……

Evaluation for the Period from:…….to:……..

Performance Indicators: Weak: 1; Fair: 2; Good: 3; Very good: 4; Excellent: 5.

Skill Assessment Criteria	1	2	3	4	5
Demonstrates the ability to effectively assess, diagnose, plan, implement, and evaluate patient care.					
Implements nursing interventions and makes individualized therapeutic decisions related to patient health conditions and planned outcomes.					
Demonstrates safe medication administration practices at all times.					
Demonstrates understanding of NICU equipment (e.g., incubator, ventilator, phototherapy, etc.).					
Participates in formal and informal teaching/training.					
Maintains professional behavior at all times.					
Maintains complete documentation according to hospital policies.					
Works collaboratively with the multidisciplinary team (preceptor, manager, physicians, etc.) to achieve training goals.					
Requests assistance, support, and supervision appropriately as needed.					
Shares goals/objectives with preceptor for each clinical day.					
Shows initiative in identifying and articulating training needs.					
Completes all responsibilities for care associated with designated patients each clinical day.					
Demonstrates effective time management, organization in planning, and appropriate performance in nursing responsibilities.					

[12]Appendices 5, 6, and 7 are adopted from the Advanced Practice Clinical Nursing Diploma in Oncology, 2014.

Displays punctuality, and provides appropriate absence notification based on hospital policy.					
Displays professional behavior and appearance (uniform and ID).					
Demonstrates accountability and responsibility for own practice.					
Accepts constructive feedback.					
Adheres to the code of ethics.					
Demonstrates family-centered care approach.					
Maintains patient confidentiality at all times.					
Demonstrates respect for cultural differences.					
Total			**/105**		

Comments: Preceptor:

_____

_____

_____

Preceptor Name: _____

Signature: _____

Date: _____

Trainee Name: _____

Signature: _____

Date: _____

Note: Electronic evaluation forms approved by the SCFHS could be utilized whenever applicable.

Appendix 6

Advanced Nursing Practice Program in Neonatal Intensive Care

Performance Assessment of the Trainee

(To be completed by the Clinical Instructor on completion of the required monthly clinical rotation in the specialty.)

Trainee Name:…….ID Number:……

Evaluation for the Period from:…….to:……..

Performance Indicators: Weak: 1; Fair: 2; Good: 3; Very good: 4; Excellent: 5

Skill Assessment Criteria	1	2	3	4	5
Collects relevant patient information in order to form a comprehensive care plan.					
Conducts a thorough physical assessment and documents findings in the patient's medical records according to organizational policies.					
Identifies, based on assessment findings, appropriate patient outcomes.					
Develops a comprehensive care plan to ensure continuity of care, considering the family-centered care approach.					
Provides appropriate interventions based on the patient's care plan.					
Adheres to safety standards/protocols as outlined in hospital policies and procedures.					
Communicates with parents using family-centered care principles.					
Evaluates patient's progress based on planned outcomes and revises care plan accordingly.					
Shows initiative in identifying and taking responsibility for their own practice.					
Accepts constructive criticism and acts upon suggestions for improvement.					
Demonstrates punctuality and reports absence or sickness through the right channels, according to hospital policies.					
Participates in staff and trainees' education.					
Submits completed written assignments on time.					

Cooperates with and supports other members of the health care team.					
Adheres to code of ethics.					
Maintains patient confidentiality and privacy at all times.					
Communicates effectively with multidisciplinary team members.					
Utilizes evidence-based practice in developing patients' care plans.					
Total	/ **90**				

Comments: Clinical Instructor:

_____

_____

Clinical Instructor Name: _____

Signature: _____

Date: _____

Trainee Name: _____

Signature: _____

Date: _____

Note: Electronic evaluation forms approved by the SCFHS could be utilized whenever applicable.

Appendix 7

Advanced Practice Clinical Nursing Program in Neonatal Intensive Care

Performance Assessment of the Trainee

(To be completed by the Nurse Manager on completion of the required monthly clinical rotation in the specialty.)

Trainee Name:…….ID Number:……

Evaluation for the Period from:…….to:……..

Performance Indicators: Weak: 1; Fair: 2; Good: 3; Very good: 4; Excellent: 5

Skill Assessment Criteria	1	2	3	4	5
Actively participates in departmental activities (meetings, education, etc.).					
Assists with development, updating, and implementation of clinical guidelines.					
Proactively intervenes in challenging situations within the clinical setting.					
Attends and actively participates in hospital committees, as needed.					
Adheres to relevant standards of care and follows hospital policies at all times.					
Coordinates with other departments within the hospital to promote optimal continuity of care.					
Accepts constructive criticism and acts upon suggestions for improvement.					
Demonstrates punctuality and reports absence or sickness through the right channels, according to hospital policies.					
Participates in staff and trainees' education.					
Submits completed written assignments on time.					
Cooperates with and supports other members of the health care team.					
Adheres to the code of ethics.					
Maintains patient confidentiality and privacy at all times.					
Communicates effectively with multidisciplinary team members.					
Utilizes evidence-based practice in developing patients' care plans.					
Total			/ **75**		

Comments: Nurse Manager:

_____

_____

_____

_____

Nurse Manager Name: _____

Signature: _____

Date: _____

Trainee Name: _____

Signature: _____

Date: _____

Note: Electronic evaluation forms approved by the SCFHS could be utilized whenever applicable.

Appendix 8

Case Based Discussion (CBD)

Trainee Name: ……..……

☐ Year 1 ☐ Year 2

Assessor name: …… **Date**: ……..……

Clinical Rotation: ……..……

☐ L&D ☐ Nursery ☐ Intermediate NICU ☐ NICU

Focus of clinical encounter:

☐ Clinical assessment ☐ Management ☐ Record keeping ☐ Professionalism

Complexity of case: ☐ Low ☐ Average ☐ High

Please rate the trainee against the standards you would expect in their current training year.

Theme	Unsatisfactory			Satisfactory			Superior			Not Observed
1. Medical record keeping	1	2	3	4	5	6	7	8	9	n/o
2. History taking	1	2	3	4	5	6	7	8	9	n/o
3. Clinical findings and interpretation	1	2	3	4	5	6	7	8	9	n/o
4. Management plan	1	2	3	4	5	6	7	8	9	n/o
5. Follow-up and future planning	1	2	3	4	5	6	7	8	9	n/o
6. Professional qualities	1	2	3	4	5	6	7	8	9	n/o
Overall clinical judgment										

Strengths:	Suggestions for development:

Time taken for discussion: ……min

Time taken for feedback……min

Trainee to complete reflections on this CBD using the Gibbs framework for reflection

Assessor satisfaction with CBD:	LOW	1	2	3	4	5	6	7	8	9 HIGH
Trainee satisfaction with CBD:	LOW	1	2	3	4	5	6	7	8	9 HIGH

Assessor's signature: ……

Trainee's signature: ……..

Appendix 9

Direct Observation Procedure (DOP) Evaluation Form

Trainee Name: ……..……

☐ Year 1 ☐ Year 2

Assessor name: …… **Date**: ……..……

Clinical Rotation: ….……..……

☐ L&D ☐ Nursery ☐ Intermediate NICU ☐ NICU

Focus of clinical encounter:

☐ Clinical assessment ☐ Management ☐ Record keeping ☐ Professionalism

Complexity of case: ☐ Low ☐ Average ☐ High

Please rate the trainee against the standards you would expect in their current training year.

Theme	Unsatisfactory			Satisfactory			Superior			Not Observed
1. Demonstrate understanding of indications anatomy & technique	1	2	3	4	5	6	7	8	9	n/o
2. Obtain informed consent	1	2	3	4	5	6	7	8	9	n/o
3. Perform pre-procedure preparation	1	2	3	4	5	6	7	8	9	n/o
4. Consider Patient Safety	1	2	3	4	5	6	7	8	9	n/o
5. Follow Antiseptic technique	1	2	3	4	5	6	7	8	9	n/o
6. Show technical ability	1	2	3	4	5	6	7	8	9	n/o
7. Seek help where appropriate	1	2	3	4	5	6	7	8	9	n/o
8. Perform post-procedure management	1	2	3	4	5	6	7	8	9	n/o

9. Demonstrate communication skills	1	2	3	4	5	6	7	8	9	n/o
10. Demonstrate professionalism	1	2	3	4	5	6	7	8	9	n/o
Overall clinical judgment	1	2	3	4	5	6	7	8	9	n/o

Strengths:	Suggestions for development:

Time taken for discussion: ……min

Time taken for feedback……min

Trainee to complete reflection on this DOP on the back of this form using the Gibbs framework for reflection

Trainee satisfaction with DOP:	LOW 1	2	3	4	5	6	7	8	9	HIGH

Assessor's signature: ……

Trainee's signature: ……..

Appendix 10

Trainee Reflection Form

Description of the event:
Feelings and Thoughts (Self-awareness):
Evaluation and Analysis:
Conclusion:

Appendix 11

Progress notes

NAME _____ YEAR/MODULE: _____

Date	Patients Data	Clinical Problem	Management	Learning Points

Appendix 12

Written Exam Blueprint

The cognitive level of questions ranges from recalling facts and understanding principles/concepts to using knowledge/procedures to perform tasks and undertake analysis, synthesis, and evaluation.

#	Module			Cognitive Level of Questions				
		Weeks	Weight	Remembering	Understanding	Applying	Analyzing	Evaluating	Creating (Essay)
I	Foundations of neonatal nursing	6	10		2	4	2	2	
II	Foundations of neonatal nursing practicum	8	12		2	4	3	3	
III	Neonatal resuscitation and stabilization of the newborn	2	4			1	1	2	
IV	Neonatal pathophysiology	6	10		2	4	2	2	
V	Essential nursing practice in the NICU	14	22		4	7	7	4	
VI	Ethics in Nursing and Care Dimensions	6	8		2	2	2	2	
VII	Epidemiology	2	4		1	2	1		

VIII	Biostatistics	**2**	**4**		**1**	**2**	**1**		
IX	Introduction to research and evidence-based practice	**4**	**6**		**1**	**3**	**2**		
X	Advanced neonatal health assessment	**6**	**10**		**2**	**4**	**2**	**2**	
XI	Pharmacology in neonatal intensive nursing care	**6**	**10**		**2**	**4**	**2**	**2**	
XII	Infection control and patient safety	**6**	**10**		**2**	**4**	**2**	**2**	
XIII	Advanced nursing care of critically ill neonatal patients	**14**	**22**		**4**	**7**	**7**	**4**	
XIV	Family-centered care	**6**	**10**		**2**	**4**	**2**	**2**	
XV	Nursing informatics	**2**	**4**		**1**	**2**	**1**		
XVI	Nursing leadership and management	**2**	**4**		**1**	**2**	**1**		
	Total		**150Q**		29	56	38	27	

Appendix 13: OSCE BLUEPRINT

	Health assessment Assessment of gestational age	Procedure Skills	Case management/ Case discussion	Documentation	Health education and family-centered care	Total (10 stations)
Labor and Delivery	Assessment of Apgar score and whether normal newborn	NRP	Immediate care of neonate	Applied to all OSCE stations	Neonatal health promotion: vaccination, breast feeding, bathing, etc.	2 Station
Nursery	Assessment of gestational age	Nasogastric tube insertion Monitor blood sugar level Neonatal screening Vaccination	Routine care of newborn		Neonatal health promotion: vaccination, breast feeding, bathing, growth and development, follow up	1 Station
Intermediate NICU	Assess and interpret growth	Oxygen therapy NGT insertion and feeding Monitor blood sugar level Neonatal screening	Care of neonatal jaundice Care of neonate with respiratory distress syndrome (RDS) Care of infant of diabetic mother (IDM)		Health education about caring for premature infant after discharge	3 Stations

	Assessment of neonate with moderate illness	Vaccination	Care of neonate with sepsis		Breast milk expression and storage	
		Suctioning				
		Nebulizer	Care of premature infant		Care of neonatal jaundice	
		Phototherapy				
		Medications				
		Kangaroo care				
NICU	Advanced health assessment of critically ill neonates	Care of neonate on ventilator/ CPAP	Pre-operative care		Care of premature neonate after discharge	4 Stations
		Chest tube care	Post-operative care			
		Care of central line	Care of neonate with congenital anomaly		Care of neonate with congenital anomaly	
		Medications/ nebulizer				
		TPN care	Care of neonate with sepsis			
		Wound care	Care of neonate with fluid and electrolyte imbalances		Breast milk expression and storage	
		Suctioning/ tracheostomy care				
		Blood transfusion	Care of neonate with RDS			

Appendix 14

Competency Checklist

1. ☐ Airway Positioning
2. ☐ Apical Pulse
3. ☐ Arterial Catheter Insertion (Assisting), Care, and Removal
4. ☐ Arterial Catheter Radial Insertion: Advanced Practice
5. ☐ Arterial Catheter: Blood Sampling
6. ☐ Arterial Puncture: Arterial Blood Gas Sampling
7. ☐ Aspiration Precautions
8. ☐ Assessment: Abdomen, Genitalia, and Rectum
9. ☐ Assessment: Cardiovascular
10. ☐ Assessment: Head and Neck
11. ☐ Assessment: Intake and Output
12. ☐ Assessment: Musculoskeletal and Neurologic
13. ☐ Assessment: Nutrition Screening
14. ☐ Assessment: Orthostatic Vital Signs
15. ☐ Assessment: Respirations
16. ☐ Assessment: Thorax and Lungs
17. ☐ Assessment: Wound
18. ☐ Automated External Defibrillator (AED)
19. ☐ Blood Glucose Monitoring

20. ☐ Blood Pressure (Systolic): Palpation
21. ☐ Blood Pressure: Upper Extremity
22. ☐ Blood Products Administration
23. ☐ Blood Specimen Collection: Blood Cultures
24. ☐ Caps, Masks, and Eye Protection
25. ☐ Cardiac Monitor Setup and Lead Placement
26. ☐ Central Venous Catheter Insertion
27. ☐ Central Venous Catheter: Blood Sampling
28. ☐ Chest Physiotherapy: Postural Drainage
29. ☐ Chest Tube: Closed Drainage Systems
30. ☐ Code Management
31. ☐ Electrocardiogram: 12-Lead
32. ☐ Endotracheal Tube and Tracheostomy Tube: Oxygen Administration
33. ☐ Endotracheal Tube Extubation and Tracheostomy Tube Decannulation
34. ☐ Endotracheal Tube Intubation
35. ☐ Endotracheal Tube: Skin and Oral Care
36. ☐ Esophageal Tracheal Double-Lumen Airway (Combitube)
37. ☐ External Jugular Venous Access
38. ☐ Feeding Tube: Medication Administration
39. ☐ Feeding Tube: Verification of Placement
40 ☐ Feeding Tube: PEG, Gastrostomy, and Jejunostomy Care

41. ☐ Gastric Lavage for Gastrointestinal Bleeding
42. ☐ Grief Support for Family
43. ☐ Hyperthermia Measures
44. ☐ Hypothermia Measures
45. ☐ IV Therapy: Discontinuation
46. ☐ IV Therapy: Dose and Flow Rate Calculation
47. ☐ IV Therapy: Dressing Change
48. ☐ IV Therapy: Solution Change
49. ☐ Laryngeal Mask Airway
50. ☐ Lumbar Puncture
51. ☐ Massive Transfusion
52. ☐ Mechanical Ventilation: Volume and Pressure Modes
53. ☐ Medication Administration: Continuous Subcutaneous Infusion
54. ☐ Medication Administration: Intermittent Infusion Methods
55. ☐ Medication Administration: Intradermal Injection and Allergy Skin Testing
56. ☐ Medication Administration: Intramuscular Injection
57. ☐ Medication Administration: Intravenous Bolus
58. ☐ Medication Administration: Local Infiltration and Topical Agents for Wound Anesthesia
59. ☐ Medication Administration: Mixing Medications in One Syringe
60. ☐ Medication Administration: Nasal Instillation
61. ☐ Medication Administration: Nebulized

62. ☐ Medication Administration: Oral
63. ☐ Medication Administration: Rectal Suppositories
64. ☐ Medication Administration: Subcutaneous Injection
65. ☐ Medication Administration: Topical
66. ☐ Nasal Cannula or Oxygen Mask Application
67. ☐ Nasogastric Tube: Insertion, Irrigation, and Removal
68. ☐ Nasopharyngeal Airway Insertion
69. ☐ Oral Airway Insertion
70. ☐ Oxygen Therapy and Oxygen Delivery
71. ☐ Pain Relief
72. ☐ Peak Expiratory Flow Measurement
73. ☐ Preoperative Care
74. ☐ Pressure Dressing
75. ☐ Pulse Oximetry
76. ☐ Seizure Precautions
77. ☐ Specimen Collection: Capillary Blood Gases
78. ☐ Specimen Collection: Midstream (Clean-Voided) Urine
79. ☐ Specimen Collection: Nose and Throat Specimens for Culture
80. ☐ Specimen Collection: Sputum
81. ☐ Specimen Collection: Stool
82. ☐ Specimen Collection: Timed Urine Specimen

83. ☐ Specimen Collection: Urine Screening for Glucose, Ketones, Protein, Blood, pH, and Specific Gravity
84. ☐ Splinting: General Principles
85. ☐ Staple and Suture Removal
86. ☐ Suctioning: Endotracheal and Tracheostomy Tube
87. ☐ Suctioning: Nasotracheal
88. ☐ Suctioning: Oropharyngeal
89. ☐ Tracheostomy Tube: Care and Suctioning
90. ☐ Urinary Catheter: Closed Continuous Irrigation
91. ☐ Urinary Catheter: Indwelling Catheter Care
92. ☐ Urinary Catheter: Indwelling Catheter Removal
93. ☐ Urinary Catheter: Straight and Indwelling Catheter Insertion (Female)
94. ☐ Urinary Catheter: Straight and Indwelling Catheter Insertion (Male)
95. ☐ Urinary Catheter: Suprapubic Catheter Care

Appendix 15

Logbook

Competencies	Trainee's signature	Preceptor's signature	*General comments

All competencies are included in the competency checklist.

*General comments: observed, assisted, did it with minimal assistance, did it with maximum assistance, did it independently.

Note: Electronic evaluation forms approved by the SCFHS should be utilized whenever applicable.

Appendix A

List of Common Medications Used in the NICU

Class	Generic Name
Antibiotics	1- Ampicillin 2- Gentamicin 3- Cloxacillin – Oxacillin – Flucloxacillin 4- Cefotaxime 5- Ceftazidime 6- Fluconazole 7- Meropenem 8- Amphotericin B (lipid Complex) 9- Vancomycin 10- Amikacin 11- Cefazolin 12- Ceftazidime 13- Metronidazole 14- Erythromycin Ointment 15- Ofloxacin Eye drops
Inotropes	1- Dopamine 2- Dobutamine 3- Epinephrine 4- Nor-epinephrine
Cardio	1- Adenosine 2- Hydralazine 3- Atropine 4- Enoxaparin 5- Amlodipine 6- Esmolol 7- Ibuprofen 8- KCL infusion 9- Heparin 10- Captopril 11- Phosphate Sandoz
CNS	1- Midazolam 2- Morphine 3- Fentanyl 4- Flumazenil 5- Phenobarb 6- Phenytoin 7- Levetiracetam 8- Naloxone 9- Rocuronium 10- Diazepam 11- Phenobarbitone

Diuretics	1- Furosemide 2- Hydrochlorothiazide 3- Spironolactone
Miscellaneous	1- Metoclopramide 2- Domperidone 3- Caffeine 4- Beractant 5- Vitamin D 6- Hydrocortisone 7- Omeprazole 8- Heparin 9- Enoxaparin 10- Insulin 11- Ursodeoxycholic Acid 12- Vitamin K infusion
Endocrine	1- Insulin
Immunity	1- Vaccine 2- Immunoglobulin
Analgesics	1- Paracetamol 2- Indomethacin
Prostaglandin	1- Prostin
Anti-Fungal	1- Nystatin
Anticholelithic	1- Ursodeoxycholic Acid

Appendix B

List of Common Diseases in the NICU

System	Common diseases
Respiratory	1- Congenital pneumonia 2- RDS 3- Tetralogy of Fallot (TOF) with pulmonary atresia 4- Preterm with RDS 5- Pulmonary hypertension 6- Hypoplastic lung 7- Meconium aspiration 8- Bronchopulmonary dysplasia (BPD) 9- Laryngomalacia 10- Pulmonary airleak syndrome 11- Transient tachypnea of the newborn (TTN) 12- Meconium aspiration syndrome (MAS) 13- Persistent pulmonary hypertension of the newborn (PPHN)
Cardiac	1- AV heart block 2- Tricuspid atresia 3- PDA 4- Coarctation of aorta 5- Complex cyanotic congenital heart disease 6- Hydrops fetalis, 7- Hypo-plastic left heart 8- Double outlet right ventricle (DORV) 9- Transposition of the great arteries (TGA)
Digestive	1- Imperforated anus 2- Abdominal mass 3- Duodenal/jejunal atresia 4- Gastrochisis/omphalocoele 5- Tracheoesophageal fistula (TEF) 6- Cleft lip and palate 7- Diaphragmatic hernia 8- Neonatal ascites 9- Omphalocele 10- Necrotizing enterocolitis (NEC)
Urinary	1- Polycystic kidney 2- Cystic hygroma 3- Single hypo-plastic kidney 4- Bilateral hydronephrosis 5- Bladder extrophy 6- Hypospadias

Endocrine	1- Hypoglycemia 2- Hyperinsulism 3- IDM
Neurological	1- Meningocoele 2- Potters syndrome 3- Hydrocephalus 4- Encephalocoele 5- Craniofacial dysplasia 6- Seizure 7- Spina bifida 8- Microcephaly 9- Myelomeningocele 10- Caput succedaneum 11- Cephalohematoma 12- Anencephaly 13- HIE (Hypoxic ischemic encephalopathy)
Dermatological	1- Epidermolysis bullosa
Congenital	1- Trisomy 21 2- Trisomy 13 3- Trisomy 18
Haematological	1- Sepsis 2- Thrombocytopenia 3- Hyperbilirubinemia 4- Anemia 5- Polycythemia
Musculoskeletal	1- Skeletal dysplasia 2- Skeletal deformities 3- Hypotonia 4- Non-lethal skeletal dysplasia
Developmental	1- Intrauterine growth restriction (IUGR) 2- Large for gestational age (LGA) 3- Low birth weight 4- Oligohydramnios 5- Premature infant