



2017 CANDIDATE GUIDE

NEONATAL INTENSIVE CARE NURSING

Congratulations on taking the next step in your career

– earning your RNC-NIC credential!

INFORMATION INCLUDED:

Fees & General Policies	2-5
About the Exam	6
Examination Content	7-17
Study Resources	18
Sample Questions	19
Scoring & Score Report	20-21
Terms of Certification and Certification Maintenance	22-23

IT IS IMPORTANT TO READ THE INFORMATION IN THIS GUIDE. IT WILL ANSWER YOUR QUESTIONS AND WILL EXPLAIN ALL POLICIES TO WHICH YOU WILL BE SUBJECT.

NCC core and subspecialty programs are accredited by the National Commission for Certifying Agencies

ABOUT THIS GUIDE

This guide lists fees, general policies and provides information that will help you prepare for the examination including sample questions to familiarize you with question format, competency statements and examination content in outline form. Study resources are also suggested for your review. It is recommended that you familiarize yourself with the information in this guide.

NCC examinations are offered in several different test administrations options. The NCC publication ***Guide to Testing Methods*** will explain the different rules and policies based on how you are taking the examination. Please download this publication from the NCC website and review the exam administration options. It should answer your questions about the NCC examination process.

If you have other questions, please feel free to contact NCC through the NCC website at NCCwebsite.org.

NCC'S PHILOSOPHY OF TESTING

Certification is an evaluative process that provides the opportunity for nurses in the obstetric, gynecologic and/or neonatal specialty to demonstrate publicly what they know and to be recognized for the special knowledge they possess. The NCC certification credential carries no licensing authority. The ability to practice as a nurse is regulated by the state boards of nursing, and while certification may be required in some states for advanced practice roles, NCC has no regulatory power to require states to recognize NCC certification for this purpose. Practice and educational standards are reflected in the certification process, but the responsibility for development of such standards rests with the professional nursing specialty organizations and the nursing educational community. NCC encourages individual nurses to seek out information about how certification relates to state licensure requirements, program accreditation of the educational institutions attended, the educational and practice standards of national nursing specialty organizations, and employment expectations in the community.

FEES & GENERAL POLICIES

EXAMINATION AND RELATED FEES

EXAMINATION FEES*

Computer Exam Fees are \$325 which includes the non-refundable \$50 application fee.

Professional Education Center (PEC) Exam Fees are \$275 which includes the non-refundable \$50 application fee.

Institutional Certification Program (ICP) Exam Fees are pre-paid by your institution.

**Examination fees are subject to change.*

CHANGE REQUEST

Candidates who cannot take their currently scheduled examination, have missed their testing date or need to take a different exam - can request a change for a fee of \$125. Details are on the NCC website.

WITHDRAWAL FEE

A computer testing candidate who withdraws from testing will receive \$160 of their \$325 payment. PEC and ICP candidates cannot withdraw.

RETEST FEE

Retest candidates must pay full application and examination fees. There are no discounts and they must wait at least 90 days before resubmitting an application for testing.

SUBSTITUTION FEE

Candidate substitutions are not allowed for ineligible, withdrawal, or candidates who filed a change request.

THIRD PARTY PAYMENTS

Applicant fees paid by third parties will be reimbursed to the third party in the event the applicant is determined ineligible or withdraws within the specified time. Reimbursement will be in accordance with stated refund policies.

NO REFUNDS WILL BE CONSIDERED

- after the candidate has taken an examination
- for any candidate that is not successful in achieving certification
- for candidates who failed to take the exam via computer within their 90 day testing window and did not submit a change request within stated time frames

Computer exam candidates can change their scheduled testing date to another date within their window *once for free.*

Candidates must handle this directly with PSI/AMP.

Refer to the NCC testing guide for details.

FEES & GENERAL POLICIES

PAYMENT INFORMATION

- All applications are subject to a nonrefundable application fee.
- All fees are nonrefundable except where otherwise noted.
- Payments can be made by credit card (Visa, American Express and MasterCard only).
- Payments can be made by check: bank routing number and account number required.
- For payments made by third parties, any refund reimbursement will be issued to the third party and not to the applicant.
- All payments must be in US funds.
- NCC does not accept debit cards or split payments (part check and part credit card).
- Exam fees can be submitted only online at the NCC website. Applications will not be accepted by mail, phone or fax.
- NCC will accept group payments for certification exams from institutions. Details are on the NCC website.

OTHER PAYMENT RELATED FEES

INCOMPLETE APPLICATION FEE

Incomplete applications are those missing any requested information or documentation, contain wrong or no fees, or for any other reason results in an inability to determine applicant eligibility status. Such applications, are subject to a **\$30 re-processing fee** and all documents and fees must be reconciled in full no later than 21 days prior to the exam.

INELIGIBLE FEE

Any applicant determined ineligible (for any reason) will be assessed the **\$50 nonrefundable application fee**. The examination fee will be refunded.

RETURNED CHECK FEE

A **\$30 fee** will be assessed to any applicant whose check or e-check is returned to NCC for any reason. Remittance thereafter of all fees and applications must be in the form requested by NCC. Contact NCC for requirements.

CREDIT CARD CHARGEBACK

A **\$30 fee** will be assessed if an applicant's credit card company issues a notice of retrieval or a chargeback in response to the cardholder's dispute of the credit card charge. Remittance thereafter of all fees and applications must be in the form requested by NCC. Contact NCC for requirements.

THIRD PARTY PAYMENTS

Applicant fees paid by third parties will be reimbursed to the third party in the event the applicant is determined ineligible or withdraws within the specified time. Reimbursement will be in accordance with stated refund policies.

Certification will be revoked or withheld if a returned check or a chargeback request on a credit card payment results in loss of income to NCC and the monies are not recovered in an alternate payment. Fees received at any time will first be applied to any unpaid prior certification/special fees.

FEES & GENERAL POLICIES

GENERAL POLICIES

VERIFICATION OF CERTIFICATION

Third party notification of status will not be released without authorization from the RNC. A \$30 fee is required for any third party notification or issuance of duplicates of test results reports. Verification requests can only be submitted after official written results have been received in the mail.

Verification requests can only be made via the online verification system on the NCC website. NCC does not issue verifications via the mail or fax.

UNSUCCESSFUL CANDIDATES

A candidate who sits for the examination and does not receive a passing score is not eligible for any refund nor for any credit on any later NCC exam.

EXAM CATEGORY CHANGES

Requests to change examination category must be made prior to making an appointment to take the test. You can only request an exam category change by completing a **Change Request Form** on the NCC website and submitting with non-refundable payment of \$125. **Candidates are only allowed one change option** (e.g. if you reschedule your exam date, you will not be able to change your exam category). All change requests must be approved by NCC. **There will be no refund of original or Change Request Form fees.** Eligibility must be re-established for the new exam category, and additional documentation and fees may be required. The time to consider eligibility for the new category will count toward the original 90 day window assigned to take the examination. Examinees must take the exam for which they have been determined eligible. No changes will be permitted on examination day. If a candidate knowingly or unknowingly takes an examination other than the one she/he was found eligible to take, the examination will not be scored. No refunds will be allowed, and all fee policies will apply if the candidate reapplies for an examination.

RETEST POLICY

You may retake the examination if you do not pass. You must reapply, submit all applicable fees and documentation, and re-establish eligibility according to the appropriate deadlines. There is no limit to the number of times you may retake the examination however candidates must wait at least **90 days before making application to retake the examination** by computer or paper and pencil. All submission deadlines for application for paper and pencil testing must be met. No accommodation will be given to those who are retesting via paper and pencil mode if they cannot meet application deadline because of the 90 day wait rule. The **maximum number of times a candidate can take the same NCC test in a calendar year is two.**

AMERICANS WITH DISABILITIES ACT

Special testing accommodations will be provided pursuant to the Americans with Disabilities Act. Contact the NCC office for further information before submitting your application.

FEES & GENERAL POLICIES

GENERAL POLICIES (CONTINUED)

REVIEW COURSES AND MATERIALS

NCC does not offer or sponsor review courses or review materials for its certification examinations. Examination candidates should review any purported course of study as being independent of NCC. You should carefully examine the merits of any individual exam preparation offering before you participate.

**POLICIES ARE SUBJECT
TO CHANGE
WITHOUT NOTICE.**

TEST DISCLOSURE

NCC does not make test questions available for review. Because test questions may be used for more than one examination administration, distributing this information would compromise the security of the test questions and would increase the cost of certification if the questions had to be replaced each year.

APPEALS PROCEDURE

Any request to waive any policy of the NCC Board of Directors relative to eligibility, administration, examination content issues, or certification maintenance must be received in writing within 60 days of the dispute. The correspondence should contain a detailed account as to why the NCC policy should be waived or the candidate's status should be changed. Such requests are referred to the NCC Policy Review Committee of the Board of Directors. All decisions will be provided in writing. Cases not resolved by the Policy Review Committee will be referred to the full Board of Directors.

NONDISCRIMINATION

It is the policy of NCC that no individual will be excluded from the examinations as a result of age, sex, race, religion, national origin, ethnicity, disability, marital status, sexual orientation, military status or gender identity.

REVOCAION

Your certification may be revoked for falsifying any information submitted relative to eligibility to take the certification examination or for maintaining certification, for losing your license to practice nursing, or for failing to pay designated certification or maintenance fees.

ANSWER SHEET REVIEW OF PAPER AND PENCIL EXAMINATIONS

All answer sheets are scored electronically. If you believe there might be a discrepancy in your results, you may request a review of your answer sheet for a fee of \$40. This request must be submitted online at the NCC website within 60 days of the exam date. The online request form is under "Other helpful information" in the Certification Exam section of the "Get Certified" tab. You will be notified of the results by mail.

RETENTION OF ANSWER SHEETS AND EXAMINATION BOOKLETS

All answer sheets are kept for one year from the date of the examination. Examination booklets used by the candidates are kept for six months from the date of the examination. Computer answer strings are kept for at least one year from the date of the examination.

ABOUT THE EXAM

ABOUT THE EXAM

TIMED EXAMINATION

Three (3) hours are allotted to complete the examination.

EXAM FORMAT

The Neonatal Intensive Care Nursing examination consists of up to 175 test questions. 150 are counted for scoring and the remainder are embedded in the exam as pretest items. The pretest items do not count toward the examinee's final results.

- There is one question format used for all NCC examinations.
- Each question has a premise (stem) and three alternative answers.
- The answer options are alphabetized by the first word in each answer option to randomize the answers.
- Computer tests are delivered in a different random order for each candidate.
- Questions will test both basic knowledge and application of knowledge.
- Questions that contain laboratory data will show results in conventional units of measure with international units in parentheses.
- Drugs are listed in both generic and trade names where appropriate.

EXAMINATION CONTENT DEVELOPMENT

The development of NCC credentialing involves many individuals and involves a meticulous process of review. There are three major groups that contribute to the test development process:

ITEM WRITERS:

RNCs and others identified with special expertise have the responsibility of drafting test items per designated assignment for review by the content team and expert reviewers. Item writers are solicited from the RNC population and through recommendations.

REVIEWERS:

Reviewers are RNCs or other designated experts who assist the content teams in review of test items developed by the item writers. Reviewers are responsible for reviewing items for content relevance and confirming that references cited for the questions support the items as written.

CONTENT TEAMS:

Content team members are experienced practitioners and are appointed on an annual basis by the NCC President. Content teams are solicited from the RNC (Registered Nurse Certified) population, NCC item writer workshop participants and from experts in the field. To see the current membership composition of the Content Team responsible for the Neonatal Intensive Care Nursing examination, please visit the NCC website under the section on NCC Leadership.

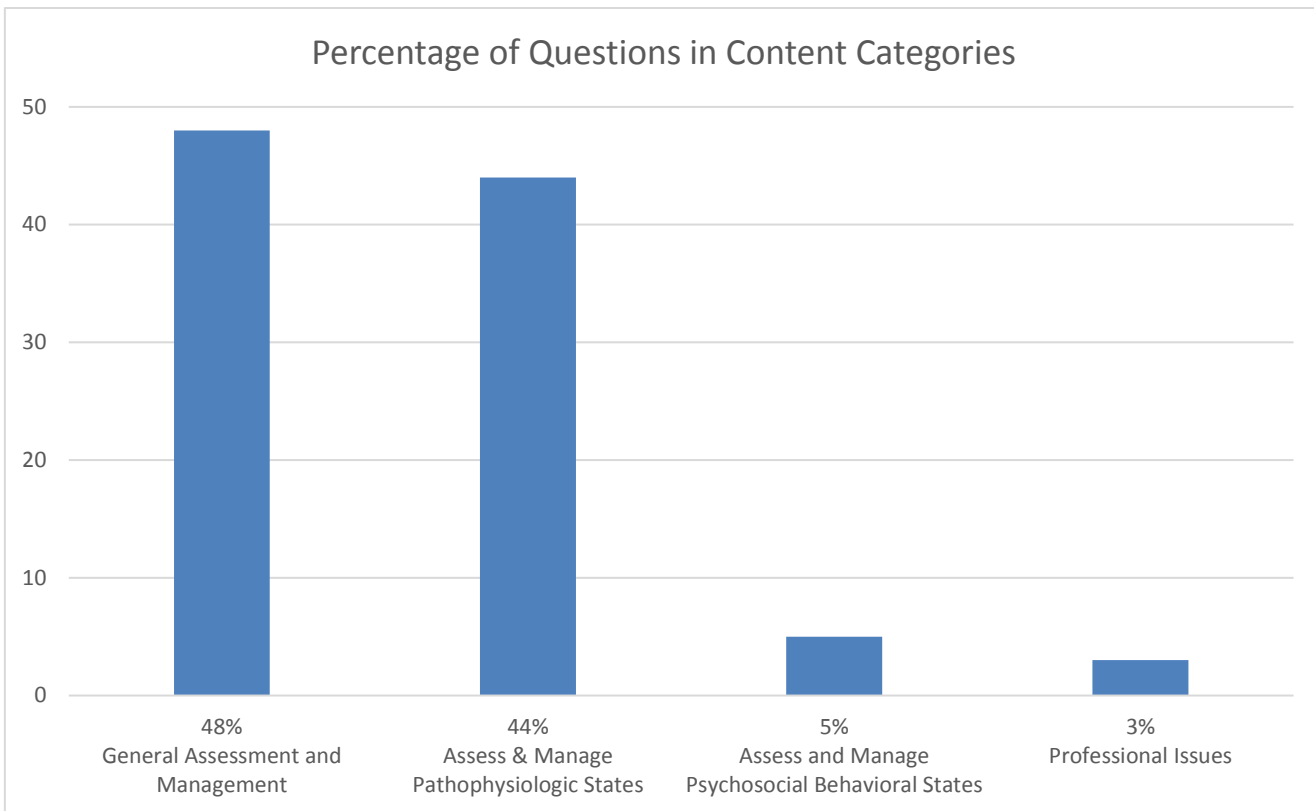
Content team members are RNCs or other identified experts who:

- develop and update the test outline and competency statements
- review test items developed by item writers
- set the pass/fail standard
- review item statistics from exam administrations and pretest examinations
- approve the exam forms to be administered
- review item banks
- undertake content validation studies

EXAMINATION CONTENT
CONDENSED EXAM OUTLINE



Neonatal Intensive Care Nursing exam



The above chart shows the percentage distribution of questions on the Neonatal Intensive Care Nursing exam across the major content categories covered on the examination. The major focus of the examination is on General Assessment and Management and Assess & Manage Pathophysiologic States having the most emphasis. Lesser emphasis is on Psychosocial Behavioral States and Professional Issues having the least number of questions assigned to this content category

EXAMINATION CONTENT

CONDENSED EXAM OUTLINE

CONDENSED EXAM OUTLINE

This is an outline of topics and areas which may be included in the Neonatal Intensive Care Nursing examination

- 11.00 General Assessment and Management (48%)

- 11.01 Maternal History and Risk Factor
- 11.02 Gestational Age (At Birth)
- 11.03 Physical Assessment
- 11.04 Resuscitation and Stabilization
- 11.05 Fluids and Electrolytes
- 11.06 Nutrition and Feeding
- 11.07 Oxygenation and Acid Base Homeostasis
- 11.08 Thermoregulation
- 11.09 Pharmacology
- 11.10 Developmental Care

- 12.00 Assess & Manage Pathophysiologic States (44%)

- 12.01 Cardiac
- 12.02 Respiratory
- 12.03 Gastrointestinal
- 12.04 Genitourinary
- 12.05 Hematopoietic
- 12.06 Neurological/Neuromuscular
- 12.07 Infectious Diseases
- 12.08 Metabolic/Endocrine
- 12.09 Genetic Disorders
- 12.10 Head, Eye, Ear, Nose Throat

- 13.00 Assess and Manage Psychosocial/ Behavioral States (5%)

- 13.01 Discharge Planning and Follow up
- 13.02 Grieving Process
- 13.03 Family Integration

- 14.00 Professional Issues (3%)

- including: Evidence Based Practice, Legal/Ethical/Communication Issues, Research, Patient Safety

EXAMINATION CONTENT

TEST CONTENT OUTLINE & ASSOCIATED COMPETENCIES

ASSOCIATED COMPETENCIES

- Identify antepartal and intrapartal indicators of neonatal risk and their potential significance
- Systematically assess all body systems utilizing physical examination, gestational age assessment and neurobehavioral assessment
- Apply knowledge of anatomy and physiology (maternal, fetal, transitional, newborn), pathophysiology, pharmacology, nutrition, and behavioral psychology to assess the neonate and differentiate abnormal from normal
- Recognize normal values and deviations in clinical laboratory and diagnostic data and identify potential significance
- Utilize biophysical monitoring techniques to identify body system alterations
- Develop an individualized plan of care for the restoration, maintenance and promotion of health for the high risk neonate and family unit during hospitalization and following discharge
- Implement diagnostic, therapeutic and educational plans in collaboration with other health care providers to provide direct care for the high risk neonate and family
- Assess the neonate's family, community and environment to identify areas of risk
- Identify life-threatening states and initiate appropriate interventions
- Evaluate the plan of care in collaboration with other health care providers and the family and modify the plan of care as indicated
- Identify professional nursing issues which impact on the role of the neonatal nurse

EXAMINATION CONTENT

TEST CONTENT OUTLINE & ASSOCIATED COMPETENCIES

GENERAL ASSESSMENT AND MANAGEMENT

I. Maternal History and Risk Factors

- Effects of maternal medical complications
 - hematologic (thrombocytopenia)
 - hypertension (chronic, gestational hypertension, HELLP Syndrome)
 - infections (CMV, Toxoplasmosis, syphilis, herpes, hepatitis, HIV, gonorrhea, chlamydia)
 - renal disease
- Problems associated with amniotic fluid and membranes:
 - amniotic bands
 - oligohydramnios
 - polyhydramnios
 - PROM and chorioamnionitis
- Significance of findings:
 - alpha-fetoprotein/triple quad/screen
 - biophysical profile
 - diagnostic ultrasound
- Recognize neonatal significance of fetal heart rate patterns
 - altered variability
 - decelerations (early, late, variable)
 - tachycardia, bradycardia
- Effects of maternal medications on the neonate
 - tocolytics
 - analgesia, anesthesia
- Problems in labor - impact on the neonate
 - breech and other malpresentation
 - maternal hemorrhage
 - meconium
- Obstetric emergencies (impact on the neonate)
 - abruptio placenta
 - cord prolapse
 - placenta previa
- Impact of methods of delivery on the neonate (forceps, vacuum, cesarean)

II. Gestational Age (At Birth)

- Interpretation of growth curves (weight, length and head circumference)
 - Physical and neuromuscular characteristics
 - preterm
 - term
 - post-term
 - AGA
 - SGA
 - LGA
- Associated risks with
 - preterm
 - post-term
 - SGA/IUGR
 - LGA

III. Physical Assessment

- Normal/abnormal findings regarding:
 - general appearance
 - head
 - eyes, ears, nose & throat
 - neck
 - chest
 - cardiovascular
 - respiratory
 - abdomen
 - genitalia
 - extremities
 - spine/back
 - skin
 - maintaining skin integrity
 - neuromuscular and reflexes

IV. Resuscitation and Stabilization

- Neonatal Cardiopulmonary Resuscitation (*Per the American Heart Association & the American Academy of Pediatrics*)
 - initial evaluation (ABC)
 - indications for ventilation
 - indications for intubation
 - indications for cardiac compressions
 - medications

EXAMINATION CONTENT

TEST CONTENT OUTLINE & ASSOCIATED COMPETENCIES

- Use of drugs
 - epinephrine
 - volume expanders
- Resuscitation and stabilization of the neonate with
 - diaphragmatic hernia
 - hydrops fetalis
 - perinatal asphyxia
 - upper airway obstruction

V. Fluids and Electrolytes

- Normal fluid and electrolyte requirements
- Monitoring fluid and electrolyte status
 - electrolytes
 - urine output
- Effects of
 - humidity
 - maturity
 - temperature
- Specific problems
 - dehydration and overhydration
 - gastrointestinal abnormalities
 - insensible water loss
 - patent ductus arteriosus
 - post-asphyxia
 - third spacing
- Parenteral fluid therapy

VI. Nutrition and Feeding

- Nutritional requirements and effects of excess & deficiency
 - calories
 - carbohydrates
 - fat
 - minerals
 - protein
 - vitamins
- Enteral feeding
 - minimal enteral feedings (gut priming)
- gavage feeding
- bolus vs continuous feedings
- feeding cues
- feeding techniques
- bottle feeding
 - formula composition

- breast feeding
 - stimulating production
 - composition of breast milk
 - donor milk
- Parenteral nutrition
 - indications
 - composition
 - complications
- Dietary supplements
 - breast milk fortifiers
 - glucose polymers
 - iron
 - MCT
 - Vitamins
 - probiotics
- Nutritional management for
 - bronchopulmonary dysplasia
 - prematurity
 - short gut syndrome

VII. Oxygenation/Ventilation and

Acid Base Homeostasis

- Oxygenation: interpretation and management
 - hypoxia/hypoxemia
 - oxygen saturation
 - principles re: increasing/ decreasing FiO₂ levels
 - pulse oximeter
- Methods of oxygenation/ ventilation
 - (indications, complications)
 - noninvasive ventilation
 - extracorporeal membrane oxygenation (ECMO)
 - high flow nasal cannula
- Mechanical ventilation
 - conventional
 - high frequency
 - other methods of oxygen delivery (hood, nasal cannula)
- Blood gases: interpretation and management
 - metabolic acidosis (compensated & uncompensated)
 - metabolic alkalosis (compensated & uncompensated)
 - respiratory acidosis (compensated & uncompensated)
 - respiratory alkalosis (compensated & uncompensated)
 - mixed
 - serum lactate

EXAMINATION CONTENT

TEST CONTENT OUTLINE & ASSOCIATED COMPETENCIES

VIII. Thermoregulation

- Mechanisms of heat loss and production
 - assessment of thermal state
 - responses to hypothermia and cold stress
 - responses to hyperthermia
- Maintaining a neutral thermal environment
- Management of thermoregulation problems
 - evaporation
 - conduction
 - convection
 - radiation
 - hypothermia and cold stress
 - hyperthermia
- Equipment
 - Incubators and radiant warmers
 - Heat mattresses and wraps

IX. Pharmacology

- Principles of neonatal pharmacology
 - administration methods/issues
 - absorption from GI tract, skin and muscle
 - blood drug levels (toxic vs therapeutic)
 - drug distribution in the body
 - drug excretion
 - drug incompatibilities
 - drug withdrawal (therapeutic drugs)
 - drug resistance
- Dosage calculations
- Common drugs
 - anesthetics and analgesia (sedatives)
 - antibiotics
 - anticonvulsants
 - antiviral drugs
 - bronchodilators
 - cardiovascular agents
 - CNS stimulants (caffeine, etc)
 - diuretics
 - muscle relaxants
- Management of the drug exposed neonate
 - Fetal alcohol syndrome
 - Neonatal abstinence syndrome and scoring
 - Substance use and abuse
- Laboratory drug testing

X. Developmental Care

- Neurobehavioral development
 - habituation
 - motor organization
 - state organization
 - sensory/interaction capabilities
- Self regulatory (stability) and stress responses
 - autonomic
 - motoric
 - state/sleep cycles
 - attentional
- Impact of the NICU environment
 - physical
 - light
 - sound
 - social
 - caregiver-infants interactions
 - patterns of caregiving
- Intervention strategies
 - reducing noise levels
 - reducing light levels/diurnal patterns
 - altering care patterns
 - handling/positioning
 - positioning
 - kangaroo care/skin-to-skin
 - nonnutritive sucking
 - provision of sensory experiences
 - auditory
 - tactile
 - visual
 - vestibular and proprioceptive
- Pain
 - assessment
 - non-pharmacologic interventions

EXAMINATION CONTENT

TEST CONTENT OUTLINE & ASSOCIATED COMPETENCIES

ASSESS AND MANAGE PATHOPHYSIOLOGIC STATES

I. Cardiac

- Transition to Extrauterine Life

- Cyanosis
 - central vs peripheral
 - cardiac vs pulmonary

- **Specific Problems**

For all problems: presentation/ assessment causes, management, complications, outcome

- arrhythmias
- cardiac tamponade
- congestive heart failure
- congenital heart defects
 - AV canal
 - coarctation of the aorta
 - hypoplastic left heart
 - pulmonary stenosis and atresia
 - tetralogy of fallot
 - transposition of the great vessels
 - total anomalous pulmonary venous return
 - ventricular septal defect
- cyanotic vs acyanotic disease
- hypertension
- patent ductus arteriosus
- shock
- Cardiovascular assessment
 - blood pressure
 - EKG
 - cardiopulmonary monitoring
 - indwelling lines

II. Respiratory

- Normal pulmonary function, surfactant

- Specific respiratory problems

For all problems: presentation/ assessment causes, management, complications, outcome

- apnea of prematurity
- bronchopulmonary dysplasia

- diaphragmatic hernia/paralysis
- hypoplastic lungs
- meconium aspiration
- persistent pulmonary hypertension
- pneumothorax/air leaks
- pulmonary hemorrhage
- respiratory distress syndrome
- transient tachypnea of the newborn

- Specific therapies

For all problems: presentation/ assessment causes, management, complications, outcome

- endotracheal intubation
- suctioning
- surfactant replacement therapy
- chest tubes and drainage systems

III. Gastrointestinal

- Normal gastrointestinal function

- Maturation of GI tract

- Specific GI problems

For all problems: presentation/ assessment, causes, management, complications, outcome

- GE reflux
- GI bleeds perforation/peritonitis
- Hirschsprung's disease
- intestinal obstructions (duodenal, jejunal, ileal, imperforate anus)
- meconium ileus/plug
- malrotation/volvulus
- necrotizing enterocolitis
- omphalocele/gastroschisis
- short gut syndrome
- ostomy care
- colitis
- bloody stools
- protein allergies

EXAMINATION CONTENT

TEST CONTENT OUTLINE & ASSOCIATED COMPETENCIES

IV. Genitourinary

- Renal function/urinary output
- Specific genitourinary problems

For all problems: presentation/ assessment, causes, management, complications, outcome

Genital

- ambiguous genitalia
- inguinal hernia
- testicular torsion

Urinary tract

- asphyxial renal damage
- renal abnormalities
- renal failure
- renal vein thrombosis

V. Hematopoietic

- Interpret laboratory values
 - CBC
 - hematocrit, hemoglobin
 - platelets
 - total and direct serum bilirubin
 - direct and indirect antibody test
 - Kleihauer Betke test
- Developmental differences
 - fetal vs adult hemoglobin
 - RBC differences
- Administration of blood and blood products
 - techniques
 - risks
- Hyperbilirubinemia
 - physiologic jaundice
 - causes of direct hyperbilirubinemia
 - causes of indirect hyperbilirubinemia
 - phototherapy
- Specific hematologic problems
 - anemia
 - coagulopathies/DIC
 - polycythemia and hyperviscosity
 - Rh and ABO incompatibility/ hydrops fetalis
 - thrombocytopenia

VI. Neurological/ Neuromuscular

For all problems: presentation/ assessment, causes, management, complications, outcome

- Birth injuries (neuromuscular)
- Hydrocephalus
- Hypoxic ischemic encephalopathy
- Neural tube defects
- Germinal matrix hemorrhage
- Intraventricular hemorrhage
- Periventricular leukomalacia
- Seizures
- Subdural hemorrhage

VII. Infectious Diseases

For all infections: presentation/ assessment causes, management, complications, outcome

- Interpret laboratory values
 - WBC and differential
 - cerebrospinal fluid
- Immature host defenses
- Neonatal sepsis/meningitis
- Viral and fungal infections
 - candidiasis
 - cytomegalovirus
 - hepatitis B
 - herpes
 - HIV/AIDS
 - toxoplasmosis
 - varicella
- Specific bacterial infections such as
 - E coli infection
 - Group B Streptococcal infection
 - Early/late onset
 - staphylococcal infection
 - syphilis
 - enterovirus
- Infection control procedures
 - nosocomial infection

EXAMINATION CONTENT

TEST CONTENT OUTLINE & ASSOCIATED COMPETENCIES

VIII. Metabolic/Endocrine

- Interpret laboratory values
 - calcium, phosphorus magnesium
 - glucose
- Metabolic screening
 - PKU
 - Thyroid
 - CAH
 - Sickle cell
 - Galactosemia
- Glucose homeostasis
- Specific metabolic/endocrine problems
For all problems: presentation/assessment, causes, management, complications, outcome
 - hypocalcemia and hypercalcemia
 - rickets
 - hypoglycemia and hyperglycemia
 - infant of diabetic mother
 - thyroid disorders
 - adrenal disorders

IX. Genetic Disorders

- Mendelian inheritance patterns
 - autosomal recessive
 - autosomal dominant
 - sex-linked
- Chromosomal anomalies and diseases
 - Trisomy 13
 - Trisomy 18
 - Trisomy 21
 - Multifactorial diseases
 - DiGeorge
 - Turners

X. Head, Eyes, Ears, Nose and Throat

- Eye prophylaxis
- Specific problems
For all problems: presentation/assessment, causes, management, complications, outcome
 - cephalhematoma
 - choanal atresia
 - cleft palate/lip
 - retinopathy of prematurity
 - tracheal stenosis/atresia
 - tracheomalacia
 - tracheostomy
 - vocal cord paralysis
 - subgaleal
 - trachea-esophageal atresia (TEF)
 - esophageal atresia
 - micronathia

EXAMINATION CONTENT

TEST CONTENT OUTLINE & ASSOCIATED COMPETENCIES

ASSESS AND MANAGE PSYCHOSOCIAL/BEHAVIORAL ADJUSTMENT

I. Discharge Planning and Follow-Up

- General discharge planning and parent teaching
 - car seats
 - CPR
 - CCHD screening
 - feeding
 - immunizations
 - SIDS/safe sleep/plageocephaly
 - Visitors
 - Shaken baby
- Discharge planning and parent teaching for infants with special needs
 - nutrition
 - medications
 - special equipment needs
 - special care needs
 - developmental follow up
 - visual screening
 - hearing screening
 - motor delay (including cerebral palsy)
 - cognitive/language delay

II. Grieving Process

- Anticipatory grief
- Stages of grieving and common behaviors and interventions
- Factors which impede/enhance grief process
- Pathologic responses
- Maternal/paternal differences (incongruent grieving)
- Specific circumstances
 - chronic sorrow
 - death of a twin (triplets, etc)
 - repeated obstetric loss (recurrent abortion, stillbirth, preterm delivery)
 - sibling responses
- Support systems and referrals
 - bereavement groups
 - parent support groups

III. Family Integration

- Parent-infant attachment behaviors
- Parental stress responses
 - high risk birth
 - changes in status
 - transfer
- Barriers to parent infant interaction
- Specific circumstances
 - adolescent parents
 - grandparents and other extended family
 - long distance nurturing of parent/ infant attachment
 - sibling responses and interventions
- Specific interventions with parents and extended family
 - counseling techniques
 - parent teaching
- Shared decision making
 - parent-staff disagreements
 - regarding treatment
- Principles of culturally sensitive care
- Maternal psychiatric issues
 - Post traumatic stress disorder
 - Post-partum depression

EXAMINATION CONTENT

TEST CONTENT OUTLINE & ASSOCIATED COMPETENCIES

PROFESSIONAL ISSUES

Ethical Principles

- Autonomy
- Beneficence
- Non-maleficence
- Justice

Professional/Legal Issues

- Professional Regulation Practice
- Staffing issues
- Legal liability
 - Consent
 - Documentation/medical records
 - Negligence/malpractice

Evidence based practice

- Terminology
 - Reliability
 - Validity
 - Significance
 - Levels of Evidence
- Quality Improvement
- Research utilization

Patient Safety

- Communication
- Interprofessional practice

EXAMINATION CONTENT

STUDY RESOURCES

STUDY RESOURCES

- Blackburn, Maternal, Fetal, & Neonatal Physiology, Elsevier, 2013
- Fanaroff, et al., Klaus & Fanaroff's Care of the High-Risk Neonate, Elsevier-Saunders, 2015.
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SAMPLE QUESTIONS

NEONATAL INTENSIVE CARE NURSING SAMPLE QUESTIONS

Listed below are five sample questions to acquaint you with the test question format. These questions do not reflect the scope or the difficulty level of the questions on the actual examination. The reference from which each question is derived is also cited. However, other references might substantiate a different answer, and the answer shown here might be substantiated by other references.

The rigorous review to which actual test questions are subject is not applied to these sample questions. The focus that should be attended to in reviewing these items is format, not content.

1. Functional closure of the ductus arteriosus occurs as a result of
- A. fibrosis of the ductal muscle
 - B. increased arterial oxygen tension
 - C. increased left atrial pressure

Answer: B

Gardner, et al., Handbook of Neonatal Intensive Care, Mosby Elsevier, 2016, p. 680.

2. A premature neonate has been consistently engaging in hand-to-mouth movements. The nurse should
- A. provide a time out for care giving activities
 - B. recognize these behaviors as a form of self consolation
 - C. swaddle and hold the infant for awhile

Answer: B

Gardner, et al., Handbook of Neonatal Intensive Care, Mosby Elsevier, 2016, p. 291.

3. After six hours of IV calcium replacement, the serum calcium level of a neonate remains below normal. Which of the following laboratory values should be obtained as the next step in evaluating the neonate's condition?
- A. Serum magnesium
 - B. Serum phosphorus
 - C. Urine calcium

Answer: A

Gleason, et al., Avery's Diseases of the Newborn, Elsevier Saunders, 2012, p. 1265.

4. The primary etiology of transient tachypnea of the newborn is thought to be
- A. asphyxia at birth
 - B. retained lung fluid
 - C. surfactant deficiency

Answer: B

Verklan, et al., Core Curriculum for Neonatal Intensive Care Nursing, Saunders Elsevier, 2015, p. 457.

5. A 1300 gm neonate wearing only a diaper is placed in a single walled incubator with an inside temperature of 35°C (95°F). By what method is the neonate most likely to experience heat loss?
- A. Convection
 - B. Evaporation
 - C. Radiation

Answer: C

Gardner, et al., Handbook of Neonatal Intensive Care, Mosby Elsevier, 2016, p. 117.

SCORING & SCORE REPORT

HOW EXAMS ARE SCORED

NCC examinations are criterion-referenced. This means the passing score is based on a predetermined criterion. This criterion is a statistical ability level established by the Content Team based on evaluation of criticality of content and the test questions' past statistical performance. Questions used to determine pass/fail have proven statistical history that demonstrates the question is appropriate for use to measure an individual's ability level.

There is no set percentage passing level. **An ability level for each candidate is calculated based on the number of questions they answer correctly (there is no penalty for wrong answers).** Pass/fail is determined based on this ability level as compared to pass/fail standard which is a predetermined ability criterion. When different forms of the examination are used, a process called equating is initiated. This procedure converts all results to a common scale. So someone who takes a slightly more difficult form of the exam will need to answer fewer questions correctly than someone who takes a slightly easier form of the exam.

NCC utilizes the item response theory of psychometrics for the analysis of its examinations. Item response theory (Rasch analysis) is the study of test and item scores based on assumptions concerning the mathematical relationship between abilities and item responses. This is a commonly used system, and such examinations as the NCLEX and other health related certification examinations utilize this type of psychometric analysis.

Test results reports will identify a pass/fail status and will give feedback on the various content areas of the examination in the form of word descriptors: very weak, weak, average, strong and very strong. No percentage or standard score will be given.

SCORING & SCORE REPORTS

SAMPLE SCORE REPORT

Whether you take the computer or paper and pencil version of the examination, you will receive an official test results report from NCC. Shown below is a sample test result report for a candidate who has passed the examination.

NEONATAL INTENSIVE CARE NURSING EXAMINATION

Test Results

NAME

DATE

ADDRESS

Pass/Fail: PASS

Exam Content Report

The following provides information regarding your performance on the different content areas tested on the examination.

This report is provided for informational purposes only to assist in identifying your areas of strength and weakness. There is no requirement that a certain number of questions in each content category must be answered correctly to pass the examination. Passing the examination is based on the total number of questions answered correctly on the entire examination.

Content Area & Percentage

Your Results:

Range of Questions Asked:

General Assessment and
Management
(45-50%)

AVERAGE

Assessment and Management
of Pathophysiologic States
(40-45%)

VERY STRONG

Psychosocial/Behavioral
Adjustment and Professional Issues
(5-10%)

WEAK

TERMS OF CERTIFICATION AND CERTIFICATION MAINTENANCE

WHEN YOU PASS THE EXAM

CREDENTIAL

Your NCC certification status entitles you to use the credential RNC-NIC (Registered Nurse Certified – Neonatal Intensive Care Nursing)

TERMS OF CERTIFICATION

NCC certification is awarded for a period of three years.

The effective date for certification is the date on the official NCC letter that tells you that you have successfully completed the certification process.

**NO CONTINUING
EDUCATION IS ISSUED FOR
TAKING THE
NEONATAL INTENSIVE CARE
NURSING EXAM.**

MAINTAINING YOUR CERTIFICATION

- NCC certification must be maintained on an ongoing basis every three years.
- Certification that is not maintained will expire
- The NCC certification maintenance program allows you to continue your certification status by obtaining specific hours of continuing education credit as defined in your Education Plan, generated by your Specialty Assessment
- For continuing education credit to be used for certification maintenance it must be earned **AFTER you have taken your Specialty Assessment and in the areas defined by your Education Plan** before your maintenance is due.
- The maintenance process includes filing a maintenance application prior to your maintenance due date with appropriate fees and requested documentation. Using NCC CE modules does NOT automatically maintain your certification. You must file a maintenance application and pay a maintenance fee in addition to any CE fees.

You may apply for maintenance up to 1 year prior of your maintenance date. As long as you have obtained the required contact hours of continuing education credit—**you do not need to wait until your maintenance deadline to apply**. Maintenance will be due in the quarter in which you were notified of your certification (*not the date on which you took the examination*). Please refer to the following for guidance:

Date of Notification of Certification	Certification Maintenance Due Dates
January-March 2017	March 15, 2020
April-June 2017	June 15, 2020
July-September 2017	September 15, 2020
October-December 2017	December 15, 2020

The NCC website has more detailed information

For more information about the certification maintenance program, click the purple "Maintain your Certification" box.

For more information on your Education Plan and the Continuing Competency Initiative, click on the green "Continuing Competency Specialty Assessment" box.

TERMS OF CERTIFICATION AND CERTIFICATION MAINTENANCE

**VISIT THE NCC WEBSITE
AND DOWNLOAD YOUR
CONTINUING COMPETENCY
INITIATIVE BROCHURE FOR
COMPLETE DETAILS!**

CONTINUING COMPETENCY INITIATIVE

NCC views certification as a process that functions throughout an individual nurse or nurse practitioner's career. It reflects life-long learning, ongoing professional development and is supported by maintaining specialty knowledge competencies.

The standard process for the NCC Professional Development Certification Maintenance Program makes use of a specialty assessment tool and resulting personal education plan:

- Complete the specialty assessment tool that reflects the current knowledge competencies aligned with your certification specialty at the beginning of each new certification maintenance cycle.
- Earn CE as specified by the education plan developed from your specialty assessment. Your education plan outlines the CE needed to maintain your NCC certification. ***Only CE earned after you have taken your specialty assessment can be used to maintain your certification. It must meet the CE needed in your educational plan.***

This program provides continuing validation that NCC certified nurses and nurse practitioners are maintaining their specialty knowledge competencies based on current practice and examination content.

Download Continuing Competency Initiative brochures for details by clicking the links below.

<http://www.nccwebsite.org/resources/docs/2013-cci-steps.pdf>

<http://www.nccwebsite.org/resources/docs/2013-cci-plan.pdf>