Introduction to the CCRN® Exam
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Introduction

Caring for today’s acutely ill or critically ill adult requires highly skilled, competent, and knowledgeable nurses. One way to demonstrate the level of expertise of a progressive care or a critical care nurse is through certification. The CCRN® certification shows other health care professionals, employers, and patients that you are an expert progressive care or critical care nurse.

Introduction to the CCRN® Exam will guide you through the basics of preparing for the Certification Exam.

If you are interested in reviewing the anatomy, physiology and pathophysiology of key patient problems that are covered in the CCRN® Review course, please read the primers listed below.

1. Cardiovascular Critical Care Primer (2.0 c.h.)
2. Understanding Adult Hemodynamics (2.0 c.h.)
3. Shock and Infection in Critical Care Primer (2.0 c.h.)
4. GI, Endocrine & Renal Critical Care Primer (2.0 c.h.)
5. Pulmonary Critical Care (2.5 c.h.)

You may complete one or all of the primers depending on your learning needs. These underpinnings of knowledge are necessary to optimize your learning experience when you attend the CCRN® Exam Review Course.

The primers are available at www.tchpeducation.com.

Contact hours are awarded for each primer individually. Follow the instructions provided at the end of each primer for completing the post-test and receiving contact hours. Primers processed for contact hours for participants not from a TCHP organization (HCMC, MVAHCS, MVH & Northfield Hospital) will be assessed a $10 per contact hour processing fee.

TCHP also offers a program on Advanced 12 Lead EKG Interpretation. There is a primer associated with this program that provides introductory material related to 12 Lead EKG Interpretation. You may want to consider attending this program and/or completing the primer if you need additional education in this area.

The CCRN® Exam Review Course, designed for the experienced progressive care or critical care nurse, will help you review & identify areas where you may have learning needs and will help prepare you for the certification examination through lecture, interaction, and practice test questions.

Introduction to the CCRN® Examination
Written by

Linda Checky, BSN, RN, MBA, Program Manager of TCHP Education Consortium.
Lynn Duane, RN, MSN, Assistant Program Manager of the Twin Cities Health Professionals Education Consortium.

Learning Objectives

1. Identify the eligibility requirements and application process for the CCRN® Examination.
2. Describe the CCRN® Examination content.
3. Describe the best way to prepare for the exam.
CCRN® Certification

CCRN® signifies certification in critical care nursing and is provided only by the American Association of Critical Care Nurses (AACN) Certification Program. Contrary to popular belief, CCRN® does not stand for Critical Care Registered Nurse; rather it is a “registered service mark” of the AACN Certification Corporation that symbolizes certification in critical care nursing.

The CCRN® Exam

Eligibility

The applicant must possess a current, unencumbered licensure as an RN or APRN in the United States. An unencumbered license is not currently being subjected to formal discipline by any state board of nursing and has no provisions or conditions that limit the nurse’s practice in any way. This applies to all RN or APRN licenses you currently hold.

In addition to licensure, candidates must meet one of the following clinical practice requirement options:

- Practice as an RN or APRN for 1,750 hours in direct bedside care of acutely/critically ill patients during the previous 2 years, with 875 of those hours accrued in the most recent year preceding application.

  OR

- Practice as an RN or APRN for at least 5 years with a minimum of 2,000 hours in direct bedside care of acutely/critically ill patients, with 144 of those hours accrued in the most recent year preceding application.

A Bachelors Degree in Nursing is not required to sit for the CCRN® exam.

TESTABLE NURSING ACTIONS

The list below was developed by AACN and includes the testable nursing actions that CCRN® candidates must demonstrate. Having knowledge and experience in these areas will improve your understanding of the test questions. AACN recommends that if you are unfamiliar with a specific item, you may want to seek out clinical experiences to enhance your knowledge. Recommended experiences include:

- Assess pain considering patient's cognitive status and age
- Identify and monitor normal and abnormal diagnostic test results
- Manage patients receiving:
  - medications (e.g., safe administration, monitoring, polypharmacy)
  - complementary alternative medicine and/or non-pharmacologic interventions
- Monitor patients and follow protocols for pre- and postoperative care
- Recognize indications for and manage patients requiring:
  - central venous access
  - SVO2 monitoring
- Recognize normal and abnormal developmental assessment findings and provide developmentally appropriate care
- Recognize normal and abnormal:
  - physical assessment findings
  - psychosocial assessment findings
- Recognize signs and symptoms of emergencies, initiate interventions and seek assistance as needed
- Apply leads for cardiac monitoring
- Identify, interpret and monitor cardiac rhythms
- Monitor hemodynamic status, and recognize signs and symptoms of hemodynamic instability
- Recognize indications for and manage patients requiring:
  - 12-lead ECG
  - arterial catheter
  - cardiac catheterization
  - cardioversion
  - central venous pressure monitoring
  - defibrillation
  - invasive hemodynamic monitoring
  - IABP
  - percutaneous coronary interventions
  - vascular stenting
• Interpret blood gas results
• Recognize indications for and manage patients requiring:
  • endotracheal tubes
  • bronchoscopy
  • chest tubes
  • conventional modes of mechanical ventilation
  • non-conventional modes of mechanical ventilation (e.g., high-frequency)
  • noninvasive positive pressure ventilation
    o (e.g., biPAP, cPAP, high-flow nasal cannula)
  • oxygen therapy delivery device
  • prevention of complications related to mechanical ventilation (ventilator bundle)
  • prone positioning (lateral rotation therapy)
  • pulmonary therapeutic interventions related to mechanical ventilation:
    • airway clearance
    • intubation
    • weaning
    • extubation
  • respiratory monitoring devices (e.g., SPO2, SVO2, etcO2) and report values
  • therapeutic gases (e.g., oxygen, nitric oxide, heliox, eO2)
  • thoracentesis
  • tracheostomy
  • tracheostomy with mechanical ventilation
• Manage patients receiving transfusion of blood products
• Monitor patients and follow protocols pre-, intra-, post-intervention for hematologic and immunology problems (e.g., plasmapheresis, exchange transfusion, leukocyte depletion)
• Monitor patients and follow protocols related to blood conservation
• Monitor patients and follow protocols for gastrointestinal problems (e.g., eGD, peg placement)
  • Recognize indications for and manage patients requiring:
    • gastrointestinal monitoring devices
      (e.g., intra-abdominal compartment pressure)
    • gastrointestinal drains
• Recognize indications for and complications of enteral and parenteral nutrition
• Intervene to address barriers to nutritional/fluid adequacy (e.g., chewing/swallowing difficulties, alterations in hunger and thirst, inability to self-feed)
• Recognize indications for and manage patients requiring renal therapeutic intervention (e.g., hemo- dialysis, CRRT, peritoneal dialysis)
• Manage patients receiving electrolyte replacement
• Monitor patients and follow protocols pre-, intra-, post-renal procedure (e.g., renal biopsy, ultrasound)
• Recognize indications for and manage patients undergoing therapeutic integumentary interventions (e.g., wound VAs, pressure reduction surfaces, fecal management devices, IV infiltrate treatment)
• Manage patients requiring progressive mobility
• Monitor patients and follow protocols for neurologic procedures (e.g., pre-, intra-, post-procedure)
• Recognize indications for and monitor/manage patients requiring neurologic monitoring devices and drains (e.g., ICP, ventricular drain)
• Manage age-related communication problems
• Respond to behavioral emergencies (e.g., non-violent crisis intervention, de-escalation techniques)
• Recognize indications for and manage patients requiring:
  • behavioral therapeutic interventions
  • restraints
• Utilize behavioral assessment tools (e.g., delirium, alcohol withdrawal, mini-mental status)
• Recognize indications for and manage patients undergoing:
  • therapeutic hypothermia
  • intermittent sedation
  • continuous sedation
  • procedural sedation
    • minimal sedation
    • moderate sedation
    • deep sedation
The CCRN® Computer Based Exam
The CCRN examination is a computer-based test, three hours long, consisting of 150 multiple choice questions, of which 125 questions are scored. The most recent passing (cut) score for this exam is 87 questions correct out of the 125 questions that are scored. However, the passing point can vary a bit based on the equating process and minor variations in difficulty. [http://www.aacn.org/wd/certifications/content/exampassingscores.pcms?menu=certification](http://www.aacn.org/wd/certifications/content/exampassingscores.pcms?menu=certification)

The test is administered at Applied Measurement Professionals Inc. (AMP) Testing Assessment Sites. The nearest location in the Twin Cities metropolitan area is in Blaine, MN. For more information, go to: [http://www.goamp.com/Pages/default.aspx](http://www.goamp.com/Pages/default.aspx)

The AACN website [www.aacn.org](http://www.aacn.org) provides a link to assist you in locating a testing location.

There is a practice exam at the beginning of the test and it does not count towards your test-taking time. If you have a handicap, call the testing center to make special arrangements.

You will be able to flag questions that you aren’t sure of so that they pop up at the end of the exam. There is no penalty for wrong answers so it is in your best interest to answer all the questions.

No personal items are allowed in the testing area so leave them in your car. You may request scrap paper to write on but it must be surrendered before leaving.

Cost of the Exam
Initial CCRN certification fees are $225.00 for AACN members and $330.00 for non-members. Non-members may want to save money by joining AACN for $78.00/year, then registering for the exam at the reduced rate.

All fees are subject to change without notice. The AACN website [www.aacn.org](http://www.aacn.org) has the most up-to-date information.

Once your request and payment is processed, you will receive a confirmation with information on how to schedule your test.
Adult CCRN Test Plan

Applies to exams taken on or after October 15, 2015.

I. Clinical Judgment (80%)

A. Cardiovascular (18%)

1. Acute coronary syndromes (including unstable angina)
2. Acute myocardial infarction/ischemia (including papillary muscle rupture)
3. Acute peripheral vascular insufficiency
   a. Carotid artery stenosis
   b. Endarterectomy
   c. Fem-bop bypass
   d. Peripheral stents
4. Acute pulmonary edema
5. Arterial venous occlusion
   a. Peripheral vascular insufficiency
6. Cardiac/vascular catheterization
   a. Diagnostic
   b. Interventional
7. Cardiogenic shock
8. Cardiomyopathies
   a. Dilated
   b. Hypertrophic
   c. Idiopathic
   d. Restrictive
9. Dysrhythmias
10. Heart failure
11. Hypertensive crisis
12. Myocardial conduction system defects
13. Structural heart defects (acquired and congenital, including valvular disease)
14. Ruptured or dissecting aneurysm (e.g., thoracic, abdominal, thoracoabdominal)

B. Pulmonary (17%)

1. Acute pulmonary embolus
2. Acute respiratory distress syndrome (ARDS), to include acute lung injury (ALI) and respiratory distress syndrome (RDS)
3. Acute respiratory failure
4. Acute respiratory infection (e.g., pneumonia)
5. Air-leak syndromes
6. Aspiration
7. Chronic conditions (e.g., COPD, asthma, bronchitis, emphysema)
8. Failure to wean from mechanical ventilation
9. Pulmonary fibrosis
10. Pulmonary hypertension
11. Status asthmaticus
12. Thoracic surgery
13. Thoracic trauma (e.g., fractured rib, lung contusion, tracheal perforation)

C. Endocrine/Hematology/Gastrointestinal/Renal/Integumentary (20%)

1. Endocrine
   a. Acute hypoglycemia
   b. Diabetes insipidus
   c. Diabetic ketoacidosis
   d. Hyperglycemia
   e. Hyperglycemic hyperosmolar nonketotic syndrome (HHNK)
   f. Syndrome of inappropriate secretion of antidiuretic hormone (SIADH)
2. Hematology/Immunology
   a. Anemia
   b. Coagulopathies (e.g., ITP, DIC, HIT)
   c. Immune deficiencies
   d. Leukopenia
   e. Thrombocytopenia
3. Gastrointestinal
   a. Acute abdominal trauma
   b. Acute GI hemorrhage
   c. Bowel infarction obstruction/perforation (e.g., mesenteric ischemia, adhesions)
   d. Gastroesophageal reflux
   e. GI surgeries
   f. Hepatic failure/coma (e.g., portal hypertension, cirrhosis, esophageal varices, fulminant hepatitis, biliary atresia)
   g. Malnutrition and malabsorption
   h. Pancreatitis
4. Renal/Genitourinary
   a. Acute kidney injury (AKI), acute renal failure, acute tubular necrosis (ATN)
   b. Chronic kidney disease
   c. Incontinence
   d. Infections
   e. Life-threatening electrolyte imbalances
5. Integumentary
   a. IV infiltration
   b. Pressure ulcer
   c. Wounds
      i. Infectious
      ii. Surgical
      iii. Trauma

D. Musculoskeletal/Neurology/Psychosocial (13%)

1. Musculoskeletal
   a. Infections
   b. Functional issues (e.g., immobility, falls, gait disorders)

2. Neurology
   a. Brain death
   b. Encephalopathy
   c. Hemorrhage
      i. Intracranial (ICH)
      ii. Intraventricular (IVH)
      iii. Subarachnoid (traumatic or aneurysmal)
   d. Ischemic stroke
   e. Neurologic infectious disease (e.g., viral, bacterial, fungal)
   f. Neurosurgery
   g. Seizure disorders
   h. Space-occupying lesions (e.g., brain tumors)
      i. Traumatic brain injury (e.g., epidural, subdural, concussion, non-accidental trauma)

3. Behavioral/Psychosocial
   a. Agitation
   b. Antisocial behaviors, aggression, violence
   c. Delirium
   d. Dementia
   e. Medical non-adherence
   f. Mood disorders, depression, anxiety
   g. Post-traumatic stress disorder (PTSD)
   h. Risk taking behavior
   i. Substance dependence or abuse (e.g., withdrawal, drug seeking behavior, chronic alcohol or drug dependence
   j. Suicidal ideation and/or behaviors

E. Multisystem (14%)

1. Bariatric complications
2. Comorbidity in patients with transplant history
3. End of life
4. Healthcare-associated infections (HAI)
   a. Central line-associated bloodstream infections (CLABSI)
   b. Catheter-associated urinary tract infection (CAUTI)
   c. VAP (i.e., ventilator-associated event or VAE)
5. Hypotension
6. Infectious diseases
   a. Multidrug-resistant organisms (e.g., MRSA, VRE, CRE)
   b. Influenza (e.g., pandemic or epidemic)
7. Multi-organ dysfunction syndrome (MODS)
8. Multisystem trauma
9. Pain
10. Palliative care
11. Rhabdomyolysis
12. Sepsis continuum (systemic inflammatory response syndrome (SIRS), sepsis, severe sepsis, septic shock)
13. Shock states
   a. Distributive (e.g., anaphylactic, neurogenic)
   b. Hypovolemic
14. Sleep disruption (including sensory overload)
15. Thermoregulation
16. Toxin/drug exposure (including allergies)
17. Toxic ingestions/inhalations (e.g., drug/alcohol overdose)

II. PROFESSIONAL CARING & ETHICAL PRACTICE (20%)

A. Advocacy/Moral Agency
B. Caring Practices
C. Response to Diversity
D. Facilitation of Learning
E. Collaboration
F. Systems Thinking
G. Clinical Inquiry
The Synergy Model
In 1998, the AACN Certification Corporation adopted the Synergy Model as the conceptual framework for their certification programs. The Synergy Model places the patient at the center of nursing practice and views patients holistically, rather than utilizing the “body systems” medical model. Although the CCRN Exam does not test the Synergy Model directly, the exam is designed using this theoretical framework.

Prior to the adoption of the Synergy Model, the CCRN Exam included only the clinical judgment aspect of critical care nursing. As a result of integrating the synergy model into the CCRN framework, the exam now includes questions related to professional caring and ethical practice. The remaining 80% of the exam is dedicated to the clinical judgment aspect of critical care nursing.

What is the best way to practice for the exam?
AACN offers an online review course for the CCRN examination available for purchase. For more information, go to www.AACN.org. In the Twin Cities Metropolitan area, CCRN review courses are offered by the local AACN Chapter (a link is provided at www.aacn.org) as well as the Twin Cities Health Professional Education Consortium (TCHP). The AACN website has sample exam questions for review. Practice exams are available for purchase from AACN for a nominal fee. The nursing education department at your hospital may also have materials available. You may want to check your hospital’s library to see if they have any review books for checkout.

What are some test-taking strategies?
Any time that you are taking an important exam it is a good idea to plan your studying. Trying to cram in content from an entire review book will not work. You should systematically conduct your study over a month or more. Spreading the study over too long a timeframe is not good either, as you will forget much of it. A good rule of thumb is to compress the studying no more than 6 months from your planned test-taking time.

Do lots of practice test questions. These provide good insight into how questions will be worded and the types of answers that they are looking for. Be sure to look at the rationale for the answer—the rationale will guide you if there is a similar but not identical question on the exam. If you do not understand why a particular answer is right, look for explanation in the text or by asking the instructor of the review class. Most review books and classes use practice test questions.

Study your weak areas first and then focus on the large content areas such as pulmonary, cardiac and multisystem.

Just prior to the exam:
- Don’t cram the night before. Cramming usually serves to raise your anxiety level and undermine your confidence. Try to have a relaxing evening before testing day and go to bed at your usual time. Do not consume alcohol or sedatives.
- If possible, drive to the testing station ahead of time. You don’t want to be in a big panic if you have a bit of trouble finding the place. Likewise, leave plenty of time to arrive prior to your appointment in case of road construction, traffic, etc.
- Schedule yourself off the day of the exam. Having the nagging worry of having to get to work will impair your concentration. Likewise, do not work nights on the day you are taking the exam. A good night’s sleep is essential for your brain to do its best work.
- Eat breakfast (or lunch) before going to the exam. You will want to be sure you have something in your stomach for energy. Try to choose foods that are lower in fat as a heavy meal can make you sleepy.
- Adjust any medication you are taking with the exam in mind—you don’t want to have low blood sugar or become sleepy while the exam is in progress.
- Don’t drink too much coffee. While a cup of coffee may wake you up a bit, too much may cause the jitters. You also don’t want to have to visit the restroom during the exam if you don’t have to.
- Try some relaxation techniques, such as deep breathing, if you are feeling anxious.
- Bring a watch, sweater (in case the room is cold), your glasses (if needed) and two forms of identification that are current and contain your current name and signature. Note that the name on your forms of identification must match with your name on the confirmation postcard. One of the forms of identification must be a government-issued picture ID that contains a signature (such as a driver’s license); the second identification
card only needs to contain your current name and signature (such as a credit card). Employment, student or other temporary identification cards are not accepted.

- You must arrive to the testing station at least 15 minutes before your scheduled time. Thumbprints will be taken prior to testing. You will not be admitted to the testing site if you are more than 15 minutes late.

During the exam:

- Since there is no penalty for incorrect answers, make sure you answer all the questions.
- Do not waste time on questions you don’t know the answer to. With 150 questions over 3 hours your average time per question is just a little over 1 minute. If you have no idea what the answer is and all the answer options seem equally likely, guess right away and move on. The easy questions count just as much as the hard ones so focus on finishing all the questions. The easy questions may all be at the end—how will you know if you never get there?
- For questions that you think you might get right but need more time to think about it, make your best guess and flag it for review at the end. Better to venture a guess (which might be right) than to leave it blank and then run out of time.
- Read the question carefully. Look for qualifiers such as best, first, last, early, late, never, always, initially, priority, most, least, except, including, etc.
- Try to answer the question yourself first, then look at the answer choices. If an answer matches with how you would have answered, it is likely to be the right answer.
- Even if your answer matches, read all the options carefully and look for those qualifiers.
- Don’t assume any information that is not given. Information that is included is probably important so think carefully about why a given piece of information is present.

Here are a few hints on those questions that you are not sure about and want to increase your likelihood of answering correctly:

Hint #1: Cross off in your mind the answers you know are wrong. Reducing the # of choices increases the likelihood of getting the right answer.

Hint #2: If one of the answers is “call the doctor” it is probably not the right answer. The test usually wants you to demonstrate your own knowledge base.

Hint #3: Draw a picture. Visual learners especially gain insight from seeing it written out or in picture form.

Hint #4: Look for the same answer restated. If an answer is restated, both answers are likely to be wrong.

Hint #5: Assume that the top priority is to prevent death and that treatments will follow the ABCs (airway, breathing, then circulation). The second priority would be to prevent disability or a serious complication. The next concern would be for patient comfort.

Hint #6: Problems that are occurring right now take precedence over potential problems. For example, intubation for a respiratory arrest takes precedence over the potential complication of difficulty weaning from the ventilator.

Hint #7: Look for the answer that seems different from the others. For example, if three of the choices are all diuretics and the other choice is giving IV fluids, then administering IV fluids is probably the right answer.

In addition:

- Do not worry that others are finishing before you; they may not even be taking the CCRN exam as the testing center administers a variety of computer-based tests.
- If there is time, double-check your answers to the questions you flagged and all math problems. Math problems will tend to be calculations of medication drips.
- For case study questions it may be more time efficient to first read the question and then go back and read the case example.

How will I know if I pass the exam?

You will receive your final score immediately upon completion of the exam while you are still at the test site. Within 6-8 weeks you will receive a certificate and wallet card from the AACN Corporation.

During 2015, a total of 12,205 CCRN examinations were administered with a passing rate of 73.7%. These nurses became certified, earning the right to use the CCRN credential. As of January 2016, there were 1,208 CCRNs in Minnesota, and 72,904 CCRNs in the United States.
How do I recertify?
CCRN certification is valid for three years. A total of 432 hours of direct bedside care during the three year certification period is required, with 144 of those hours in the most recent year preceding renewal.

CCRN status may be renewed in one of two ways. The most common method is by accruing Continuing Education Recognition Points (CERPs). CERPs may be obtained in a variety of ways including continuing education, professional presentations or publications and other professional activities such as committee membership and precepting. A total of 100 CERPs are required for the three year period. The cost for renewing through CERP’s is $120.00 for AACN members and $200.00 for non-members.

An alternative method is to complete the renewal process by taking the CCRN exam. The cost for this exam for AACN members is $170.00. For non-members, the cost is $275.00.

The most up-to-date CCRN renewal information is available at the AACN website: www.aacn.org.

Summary
This program presented information regarding the basics of preparing for the CCRN® Exam.