THE AMERICAN BOARD OF NEUROSCIENCE NURSING

Stroke Certified Registered Nurse (SCRN®)

2015 Candidate Handbook

Applications for each exam window **must be <u>submitted</u>** by the ABNN Office no later than 5:00pm (Central time). Late applications will not be accepted.

February Exam Window: *Sunday, February 1–Saturday, February 28, 2015*
Application Deadline: Friday, December 19, 2014.

May Exam Window: *Friday, May 1–Sunday, May 31, 2015*
Application Deadline: Friday, March 13, 2015.

September Exam Window: *Tuesday, September 1–Wednesday, September 30, 2015*
Application Deadline: Friday, July 17, 2015.

The American Board of Neuroscience Nursing
8735 W. Higgins Rd. Suite 300
Chicago, IL 60631
Toll-free: 888/557-2266 | 847/375-4733 | Fax: 847/375-6430
www.abnncertification.org

I.   American Board of Neuroscience Nursing Certification Examination

The American Board of Neuroscience Nursing (ABNN) is the independent, not-for-profit corporation established to design, implement and evaluate a certification program for professional nurses involved in the specialty practice of Neuroscience Nursing and its subspecialties. ABNN is solely responsible for the development, administration and evaluation of the certification programs. Neuroscience Nursing is the diagnosis and treatment of actual or potential patient and family responses to nervous system function and dysfunction across the healthcare continuum. The ABNN advances neuroscience nurses' practice and contributions to neurological health through certification of registered nurses.

Certification in Stroke Nursing is the formal recognition of the attainment and demonstration of a unique body of knowledge necessary for the practice of Neuroscience Nursing and its subspecialties. In awarding the Stroke Certified Registered Nurse (SCRN) credential, ABNN recognizes nurses who demonstrate the attainment of this knowledge through successful completion of the certification examination or renewal recertification through the accumulation of continuing education credits consistent with established policies. The SCRN certification program was developed to formally recognize the professional achievement and to promote excellence in Stroke Nursing.

II.   ABNN Purposes

- Encourage the study of Neuroscience Nursing and its subspecialties
- Promote and advance the practice of Neuroscience Nursing through specialty certifications
- Determine minimum requirements for individuals who seek certification in Neuroscience Nursing and its subspecialties
- Conduct an examination for certification of qualified candidates
- Provide a mechanism for recertification in Neuroscience Nursing and its subspecialties

III.   Test Dates and Locations

The SCRN exam is offered three times during the year in computer-based testing (CBT) format. The exam will be offered at approximately 200 sites throughout the United States and internationally. For a current list of sites, visit http://www.isoqualitytesting.com/mlocations.aspx. Please note that you will be unable to register for a testing site until you have submitted your completed online exam application to ABNN.

The CBT exam will be offered during the following windows:

- February 1-28
- May 1–31
- September 1–30

You can view a generic CBT Demo exam for candidates to see how to navigate the exam system, apply bookmarks, etc. at www.SMTTest.com select "Candidate" from the top menu, and then select "Demonstration Test".

IV.   SCRN Eligibility Requirements

1. The candidate must have current, unrestricted licensure as a Registered Nurse in the United States, Canada or in any of the U.S. Territories that grant licensure utilizing the U.S. State Board Test Pool Exam or National Council for Licensure Exam. Candidates from other countries will be considered if they meet a comparable licensure requirement and can read and understand the English Language. **All candidates for the SCRN exam will be subject to an audit to validate their current licensure.**
2. The candidate must be a professional nurse engaged in aspects of stroke care, including but not limited to stroke nursing clinical practice or employed as an administrator, consultant, educator or researcher clinical practice. The exam is **designed** for those who have had at least 2 years of direct or indirect Stroke Nursing practice as a Registered Nurse in the last five (5) years at the time of application. The examination does **not** test at the entry level. **Potential candidates should take into consideration that this specialty certification may not be appropriate for an individual just entering this specialty.** ABNN cautions that you may not be ready to attempt the examination if you have worked in the field for less than 2 years, however you are still eligible to sit.

a. Direct Stroke Nursing practice is defined as involvement in the nursing process in a clinical setting where the nursing actions and judgments are focused on a particular individual, family or group of individuals where there is continuing professional responsibility and accountability for the outcomes of these actions.

b. Indirect Stroke Nursing practice is defined as involvement that includes time spent in clinical supervision of students and/or staff, research or consultation.

3. The candidate must complete the online SCRN certification application and submit it with the appropriate fee, all of which must be received by the ABNN Office prior to the application deadline.

4. The ABNN does not discriminate against candidates for certification on the basis of age, race, religion, sex, national origin, marital status, sexual orientation, disability, or gender identity.

If you have any questions regarding eligibility, please email info@abnncertification.org

V. Application Deadline

Applications for each exam administration and the applicable fee **must be submitted** online by no later than 5:00pm (central time) by the deadlines listed below:

Exam Window:	February 1-28, 2015	May 1-31, 2015	September 1-30, 2015
Deadline:	Friday, December 19, 2014	Friday, March 13, 2015	Friday, July 17, 2015

Candidates are encouraged to submit the application and fee online well in advance of the deadline to allow time to supply any additional required information noted during the application review process. ABNN reserves the right to request additional documentation to verify experience eligibility. Deficiencies cannot be corrected after the deadline. If paying by check, complete the application online, hit "Save & Print" and mail to: ABNN, 8735 W. Higgins Rd. Suite 300, Chicago, IL 60631. **Faxed applications will not be accepted under any circumstances**. Candidates should keep a copy of the application for their records. If you need assistance completing the forms, or have questions about the status of your application, contact ABNN toll-free at 888/557-2266.

VI. Examination Application Fees

If paying by credit card:

AANN Member:	$285
Non-member:	$380

If paying by check:

AANN Member: (check payable to ABNN)	$310
Non-member: (check payable to ABNN)	$405

VII. Refund of Application Fees

A candidate who wishes to cancel their examination application must contact the ABNN office **14 days prior to the examination date**. Exam withdrawals **received** by the ABNN office at least 14 days prior to the exam will receive a refund of their application fee minus a **$100** administrative fee. **Please note:** If a candidate has already scheduled their examination date with the testing company, the candidate will be required to pay a **$25 fee** to the testing company. Exam withdrawals received by the office less than 14 days prior to the examination date receive no refund. An applicant that does not complete the audit process will not receive a refund.

VIII.   Register for the Exam

Once approved to sit for the exam, candidates will be sent scheduling instructions electronically by the testing company, Iso-Quality, no later than 14 days prior to the opening of the exam window.

Please look for an email in your inbox from registrations@isoqualitytesting.com with the subject line "*Online Candidate Registration Exam: Stroke Certified Registered Nurse*". This letter will include instructions for scheduling your exam date within the window and registering for a testing center. You should complete the online examination registration process as soon as you know your personal schedule surrounding these dates. The sooner you schedule online, the better the availability of a seat at the time and place you prefer to take the examination.

You can register to take the exam online in hundreds of locations throughout the United States and Canada through the Iso-Quality Testing, Inc. Web site at https://iqttesting.com. Please note that you must submit your completed exam application and fee to the ABNN Office before you will receive your User ID and Password needed to register for a testing site.

All notifications will be sent electronically.

Once you have received your User ID and Password from Iso-Quality, please use the following instructions to register for your exam site:

1)   Log on to https://iqttesting.com.
2)   If you receive a Security Alert, click "YES."
3)   Select "Exam Registration"
4)   Select "American Board of Neuroscience Nursing (ABNN)" from the first dropdown menu and the SCRN Exam will generate automatically in the second dropdown menu. Click Next.
5)   Enter your User ID and Password (included in your acceptance letter)
6)   Review your Candidate Profile Information. Update any contact information here. An email address is highly recommended. Click "NEXT."
7)   Select the test center and exam time of your preference, and Click "NEXT."
8)   Select and read the "IQT Examination Agreement." Check the box next to "I agree to the IQT Examination Agreement terms," and "Submit."
9)   Print the confirmation to bring with you to the testing center on the day of your examination. You will need the User ID and Passcode information to log in to your exam at the test center.
      Note: This **Passcode** needed to start your exam at the test center is **not** the same as the **Password** used to schedule the exam.
10)   You will automatically receive a confirmation of your exam registration by email.

Please note that User IDs and Passwords will not be given out over the telephone if you lose your email.

IX.   Rescheduling an Exam Date

If you need to reschedule your examination to a different date or time within the testing window, please use your computer-based testing login information to reschedule online or contact Iso-Quality Testing at 866.773.1114.
Please note that you will be required to pay a $25 rescheduling fee if you have already scheduled an examination time.

If you need to reschedule to another testing window, please follow the exam postponement instructions below.

X.   Exam Postponement

If you have not yet scheduled your exam date and wish to postpone to the next exam window, you will need to contact Iso-Quality Testing at 866.773.1114 to process this request. **You are only able to change your exam window one time.** If you have an extenuating circumstance and are requesting to postpone your exam window more than once, please contact info@abnncertification.org. ABNN will need to review your request. Requests to postpone must be received **at least 14 days** prior to

your selected examination window. If you do not postpone by the timeframe above, your original valid test window will not change. If you do not complete the exam by your valid test window you will be required to submit a new application and pay all associated fees.

XI.   Exam Cancellation

If you have already applied to take the SCRN examination and you need to cancel, please contact ABNN at info@abnncertification.org.

Withdrawal requests received by the ABNN office **at least 14 days** prior to the scheduled examination date will receive a refund of their application fee minus a $100 administrative fee. Examination withdrawals received by the office fewer than 14 days prior to the examination receive no refund.

XII.   Computer-Based Testing (CBT) Examination Procedures

- Report at least 30 minutes prior to test time, to allow time to park, locate the testing center, etc.
- Bring your Iso-Quality Testing Examination Receipt/Admission Letter (this is the confirmation you receive once you have registered online for your exam date).
- Bring a photo ID with signature (current driver's license, passport, and military ID are acceptable. Student IDs and bank cards are not acceptable).
- You are advised to bring a sweater or jacket in case the testing center is cold.

XIII.   Notification of Examination Results

1. All exam candidates will be notified of their unofficial pass/fail status once the exam is completed. Official scores will be mailed approximately 1 month after the close of the window. Certificates will be mailed with the official scores.

2. It is the candidate's responsibility to notify the ABNN office of any errors or changes in contact information prior to the examination. Candidates may also indicate address and name changes at the time of the examination on the provided form or computer screen. A $15 fee will be assessed to correct certificates with misspelled names if the candidate does not follow the above instructions. CBT candidates are prompted to verify name and address information when scheduling their exam online.

3. Any requests for rescoring of test scores must be submitted in writing to and **received by** ABNN within 30 days of the postmark date on the formal letter of notification of test results. Upon receipt of such a request, the answer sheet will be rescored and the results sent to the candidate within six (6) weeks. The candidate must assume the cost of rescoring.

4. Candidates who fail the certification examination may reapply to retake it as often as desired, provided they continue to meet the eligibility requirements, and submit a new application and fee for each attempt.

XIV.   Confidentiality of Examination Results

Examination results are released only to the candidate at the close of the exam and in writing. In response to specific inquiries, and with permission of the individual SCRN, verification of current SCRN status will be provided. Group data without individual identifying information may be used for research and study purposes, and may be released to other groups with a specific interest in nursing certification.

XV.   Application Audits

ABNN randomly audits 5% of certification applications. Applications may be audited to verify employment/work hour information, and the state board of nursing may be asked to verify current licensure. Other applications may be audited at the discretion of the ABNN Board. Failure to provide requested documentation for an audit will result in the denial of the candidate's application. Failure to complete an audit results in no refunds.

XVI.   Requests for Testing Accommodations

ABNN complies with the provisions of the Americans with Disabilities Act and Title VII of the Civil Rights Act, as amended, in accommodating individuals with a documented disability and demonstrated need for reasonable accommodations to the extent that the requested accommodation(s) does not fundamentally alter the exam or cause an undue burden to the organization. Reasonable accommodations provide candidates with disabilities an equal opportunity to demonstrate their knowledge and skill in the essential functions being measured by the examination.

Although disabilities are often viewed as life-long, the severity and impact may change over time. The reasonableness of the accommodation(s) is based upon an assessment of the current impact of the candidate's disability; therefore, the candidate must provide recent and appropriate documentation based on an evaluation conducted within the past five years. Candidates who submit older documentation or documentation that does not address the candidate's current need for accommodation will be asked to have the evaluation updated. The documentation should be provided with the application for testing and include a letter or report from a healthcare provider or other licensed professional who has first-hand knowledge of the candidate. The documentation should be submitted on the professional's letterhead and include his or her title, address, telephone number, original signature, and describe the nature of the disability and specific recommendations regarding the type of accommodation(s) required to address the disability.

A final determination on the candidate's request for accommodations will be made by the ABNN Executive Director in conformity with this policy and approved by the Trustees. The candidate will be notified in writing of the decision, and if applicable, the approved accommodations and test center arrangements.

XVII.   Duration of Certification

SCRN certification is effective for a period of five (5) years. The actual expiration date of a SCRN certificate is December 31, of the 5th year after certification (i.e., certification of SCRNs certified in February, May, or September 2015 expires on December 31, 2020). To renew certification prior to the expiration date, the certificant may either retake the certification exam or submit documentation of the required continuing education contact hours and work hours in stroke nursing during the 5th year of the certification cycle. Continuing education credits begin to be eligible toward recertification effective immediately following the date of successful examination. A total of fifty (50) continuing education hours related to stroke care is required to recertify the SCRN. ABNN will provide reminder information in the middle of the year that the candidate is due to recertify. However, it is ultimately the responsibility of the SCRN to initiate the recertification process. Applications for recertification will not be accepted prior to the 5th year of the certification cycle.

XVIII.   The SCRN Credential

Each passing candidate will receive a certificate indicating attainment of certification. Successful completion of the examination entitles the candidate to use the credential SCRN. Please note, however, that the SCRN does not replace use of the designation, RN.

XIX.   Revocation of Certification

Causes for revocation of certification include:
- The SCRN did not possess the required qualification and requirements for the examination, whether or not such deficiency was known to ABNN prior to the examination or at the time of issuance of the certificate;
- The SCRN made a material misstatement or withheld information on the application or in any representation to ABNN, whether intentional or unintentional;
- The SCRN engaged in irregular practices in connection with an examination, whether or not such practices had an effect on the performance of the SCRN on an examination;
- There has been a limitation or termination of any right of the SCRN associated with the practice of neuroscience nursing in any state, province or country, including the imposition of any requirement of surveillance, supervision or review by reason of violation of a statute or governmental regulation, disciplinary action by any nursing licensing authority, entry into a consent order, or voluntary surrender of license.

No certification shall be revoked unless the SCRN concerned is notified of the intent of ABNN and has an opportunity for a hearing before a select committee of ABNN. Such notification shall be sent by certified mail no less than 30 days prior to the hearing.

XX.   Irregularities in Testing

In addition to Revocation of Certification applicants should also understand that ABNN may or may not require a candidate to retake the examination, or a portion of the examination, if presented with sufficient evidence that the security of the examination has been compromised, notwithstanding the absence of any evidence of a candidate's personal involvement in such activities.

XXI.   Denial of Application and Appeal

Application to take the examination will be denied if the applicant is deemed ineligible for certification, or if documentation does not meet the requirements listed. Falsification of the application, including failure to provide material information, is grounds for denial of the application or for denial of certification. In such cases, the applicant will be notified in writing of the specific reason. There can be no appeal for failure to achieve a passing score on the examination, lack of current RN license, or failure to apply by the deadline. Any applicant whose application for certification is denied approval will automatically be sent information about how to appeal the decision, including steps in the appeal process and additional information required. Applicants denied application approval will receive a refund of the application fee, minus a $100 administrative fee.

XXII.   Copyrighted Examination Questions

All examination questions are the copyrighted property of ABNN. It is forbidden under federal copyright law to copy, reproduce, record, distribute or display these examination questions by any means, in whole or in part. Doing so may subject the candidate to severe civil and criminal penalties.

XXIII.   The Examination

The SCRN examination is a generalist exam, and is not intended to emphasize any particular level of care nor any particular developmental level. The exam consists of approximately 170 multiple-choice items with a total testing time of three (3) hours. Twenty out of the 170 items are pre- test items, which are not scored. (Note: the examination may include additional items that are being tested for future use.) Three levels of knowledge are tested: knowledge; interpretation; and problem solving and evaluation. The following lists include some of the actions associated with each of the knowledge levels.

Knowledge	Interpretation	Problem Solving and Evaluation
Define	Interpret	Compose
Repeat	Apply	Plan
Record	Use	Propose
List	Distinguish	Formulate
Describe	Analyze	Judge
Recognize	Compare	Rate
Explain	Solve	Value
Report	Inspect	Select
Review	Examine	Organize
Relate	Categorize	Evaluate

Commonly Asked Questions about the SCRN Examination

How is the passing score determined?

The passing score is established by a systematic procedure that employs the judgment of stroke nursing experts from around the country as well as the assistance of professional psychometricians from Schroeder Measurement Technologies, Inc. (SMT). The final determination of the passing score is made by the ABNN Board of Trustees.

What is a scaled score?

Candidate scores are not calculated as a raw score (the number of questions answered correctly) but rather as a scaled or weighted score. Although much care is taken to assure that all forms of the examination are similar, new forms may vary somewhat in level of difficulty from earlier ones. A raw score on one may not be comparable, therefore, to a raw score on a different version. Rather, scores are calculated as scaled or weighted scores that take into account the difficulty of the question. The degree of difficulty is determined by the stroke nursing experts referred to above. To prevent candidates who took a less difficult form of the examination from having an unwarranted advantage over those who took a slightly more difficult form, raw scores are converted to scaled scores that represent comparable levels of achievement.

The test consists of 170 questions; members of the Test Development Committee meet with the psychometricians to select 20 questions that do not meet the standards of the test. This may be through ambiguous stems or distractors, or through statistical analysis. The test is then scored once a total of 150 questions has been achieved. Each test will contain newly- appointed test questions; they may remain in the test, or they may be discarded, depending whether or not they meet the standards.

What is the best way to study for the exam?

There is no best way. Some suggest preparation materials include, but are not limited to:

AANN Comprehensive Review for Stroke Nursing
Core Curriculum for Neuroscience Nursing, Fifth Edition
SCRN Self-Assessment Examination
Pearls of Stroke Education Webcast

Please visit www.AANN.org to purchase these programs.

XXIV.   Scope of the Examination

Attainment of SCRN certification includes successful completion of a general stroke nursing exam that is intended to determine if the candidate possesses the basic knowledge needed to care for both stroke patient populations competently. Stroke nursing includes caring for patients across the lifespan and in a variety of settings. While questions may vary in their level of difficulty, the exam tests the candidate's knowledge of core stroke nursing principles.

XXV.   Examination Construction

ABNN conducted a role delineation survey during 2011-2012. The survey examined stroke health problems, human responses in stroke related health problems and specific nursing interventions used to describe Stroke Nursing practice. Based on the responses, the ABNN Role Delineation Task Force defined a framework for construction of the examination. Following are a detailed content outline of the exam, by categories of disorders, and the exam matrix showing the relative weights of the exam by disorder and type of nursing intervention. Although not all content or human responses are part of the SCRN Examination Matrix, the core of Stroke Nursing knowledge required for specialty practice is clearly represented.

XXVI.   ABNN SCRN EXAM

(Based on 2011-2012 Role Delineation Study)
Disorders - Detailed Content Outline

I.   **Anatomy and Physiology – 12%**

    A.   Correlate deficits or expected complications to site of injury.
    B.   Understand physiology at cellular level (penumbra).
    C.   Understand basic vascular anatomy.
    D.   Understand basic brain structures.
    E.   Understand stroke syndromes.
    F.   Understand stroke mimics.
    G.   Define stroke types.
    H.   Understand neuroplasticity and stroke recovery.

II.   **Preventive Care – 10%**

    A.   Provide individualized preventive care through health education.
        1.   Provide information about stroke, risk factors, lifestyle changes, and regular medical exams.
        2.   Identify learning needs.
        3.   Use appropriate teaching materials.
        4.   Understand the role of the nurse in health education for stroke prevention.
        5.   Provide education on the recognition of stroke symptoms and immediate access to care.
        6.   Establish goals for medication management.
    B.   Identify patients with risk factors
        1.   Assess modifiable and non-modifiable risk factors.
        2.   Identify individuals and populations who are at risk for developing stroke.
        3.   Refer patients identified as high risk for stroke to a medical provider.
    C.   Establish nursing diagnosis and develop plan of care.
    D.   Individualize care and education.
        1.   Identify patients' limitations to care treatments.
        2.   Assess patients' financial and social resources.
        3.   Refer to multidisciplinary teams
    E.   Participate in community health education regarding lifestyle changes.
        1.   Identify, promote, and participate in health education regarding lifestyle changes (e.g., diet, exercise, tobacco cessation).
        2.   Identify resources in community that have programs for lifestyle changes related to stroke prevention.
        3.   Refer patients to appropriate community or healthcare agency regarding lifestyle changes.

III.   **Hyperacute Care – 20%**

    A.   Perform initial triage.
        1.   Communicate effectively with pre-hospital personnel.
        2.   Establish ABCs.

      3. Differentiate between anterior and posterior circulation signs and symptoms.

      4. Differentiate between hemorrhagic and ischemic signs and symptoms.

B. Facilitate urgent diagnostics (e.g., telemedicine)

C. Perform baseline neuro assessment (e.g., NIHSS, physical exam).

D. Understand implications of various stroke scores (i.e., NIHSS, Hunt and Hess, GCS, ABCD 2, ICH, Fischer-Miller).

E. Take basic medical and symptom history.

F. Establish nursing diagnosis and develop plan of care.

G. Identify door to treatment times.

H. Administer thrombolytics.

      1. Calculate dosing.

      2. Identify inclusion and exclusion criteria.

      3. Know delivery method.

      4. Provide post-administration care.

      5. Identify post-administration complications.

I. Assess oxygenation.

J. Assess hydration.

K. Assess oral intake and swallow ability.

L. Manage blood pressure.

M. Manage blood glucose.

N. Stabilize patients for transfer to appropriate level of care.

O. Describe and facilitate advanced interventions for ischemic strokes (i.e., mechanical embolectomy, intra-arterial thrombolysis, hemicraniectomy).

P. Describe and facilitate interventions for hemorrhagic strokes.

      1. Correct coagulapathy.

      2. Understand need for ventriculostomy.

      3. Manage ICP.

      4. Understand surgical decompression.

IV. Stroke Diagnostics – 10%

A. Understand indication for the following diagnostic tests:

      1. CT scan

      2. CT angiogram

      3. CT perfusion

      4. MRI

      5. MR venogram

      6. MR angiogram

      7. MR perfusion

      8. Cerebral angiography

      9. Lumbar puncture

      10. Transcranial doppler

      11. Transthoracic echocardiogram

      12. Transesophogeal echocardiogram

      13. EEG

      14. EKG/ECG

      15. Carotid duplex

      16. Chest x-ray

      17. Lab work (e.g., metabolic panel, coags, CBC)

B. Understand the risks and benefits of the above-listed diagnostic

tests.

C. Understand the pre- and post-care of the above-listed diagnostic tests.

V. Acute Care – 25%

A. Implement generalized stroke care.
1. Perform proper health assessment to identify patient's needs.
    i.   Identify and prioritize patient's needs.
    ii.   Use proper neurological assessment techniques (e.g., NIHSS, GCS, Cincinnati stroke scale).
    iii. Conduct comprehensive assessment.
    iv.   Correlate patient's history with signs and symptoms.
    v.   Prioritize patient's needs based on assessment (e.g., seizure prophylaxis, communication abilities, mobility).
    vi.   Facilitate diagnostic tests according to stroke guidelines (e.g., echo, swallow study, MRI, Carotid studies, lab work).
    vii. Monitor patient safety before, during, and after procedures.
2. Establish nursing diagnosis and develop plan of care.
3. Collaborate with other healthcare teams to use holistic approach in providing quality nursing care based on patient's identified needs.
    i.   Implement emergency nursing measures if needed.
    ii.   Monitor, report, and document:
        a. Neuro assessments and vital signs
        b. Cardiac rate and rhythm
        c. Proper oxygenation and ventilation
        d. Readiness for activity
        e. Pain assessment and management
    iii. Manage blood glucose.
    iv.   Manage body temperature.
    v.   Provide safety measures:
        a. Aspiration precautions
        b. Fall precautions
        c. Seizure precautions
        d. Skin precautions
        e. Infection prevention protocols
        f. VTE prophylaxis
        g. Stress ulcer prophylaxis
    vi.   Provide personal care measures:
        a. Patient positioning (e.g., affected extremities, splinting, turning)
        b. Early mobilization
        c. Range of motion
        d. Elimination (i.e., bowel and bladder management)

    vii.   Provide a therapeutic environment.
- a. Establish appropriate levels of stimulation.
- b. Orient to time, place, and person.
- c. Establish alternative means of communication if necessary.
- d. Adapt environment according to patient's deficit.
- e. Promote sleep hygiene.

    viii.   Provide spiritual and psychosocial care.
- a. Encourage verbalization of feelings.
- b. Identify positive coping mechanisms.
- c. Respect patient's culture.
- d. Assess patient's healthcare beliefs.
- e. Facilitate patient's spiritual needs.
- f. Assess and manage depression, anxiety, and fatigue.

    ix.   Facilitate care goals and decision making:
- a. Palliative care
- b. Organ donation

    x.   Provide individualized education:
- a. Patient
- b. Family

    xi.   Assess patient's capabilities to perform ADLs and provide alternative means if necessary.

    xii.   Manage nutrition (i.e., specialty diets, consistency of diet, alternate forms of feeding).

B. Implement care specific to ischemic stroke.
1. Manage blood pressure:
   - i. Permissive hypertension
   - ii. Orthostatic hypotension
2. Manage and assess patient post-thrombolytic administration:
   - i. Frequency of monitoring
   - ii. Angioedema
   - iii. Hemorrhagic conversion
   - iv. Other bleeding
3. Manage patient post-interventional procedures and assess for complications:
   - i. Site and distal extremity assessment
   - ii. Arterial sheath management
   - iii. Hematoma
   - iv. Arterial dissection
   - v. Arterial thrombosis
   - vi. Pseudo-aneurysms
4. Recognize signs of reperfusion syndrome.
5. Manage hydration (e.g., euvolemia).
   - i. Select proper IV solutions.
   - ii. Monitor oral fluid intake.
6. Understand treatment options:
   - i. Carotid endarterectomy

        ii.   Carotid stenting
        iii.   PFO management
        iv.   Atrial fibrillation management
        v.   Medical management

C. Implement care specific to hemorrhagic stroke.
1. Monitor and maintain blood pressure within identified parameters:
        i.   Aneurysmal subarachnoid pre- and post-treatment
        ii.   Arterio-venous malformation rupture
        iii.   Intracerebral hemorrhage
        iv.   Intraventricular hemorrhage
2. Understand treatment options:
        i.   Coiling
        ii.   Embolization
        iii.   Clipping
        iv.   Radiosurgery
        v.   Craniotomy and craniectomy
        vi.   Intraventricular thrombolysis
        vii.   CSF diversion
            a. Ventriculostomy
            b. Shunt
        viii.   Medical management
3. Monitor and prevent increased ICP.
4. Monitor and mitigate vasospasm:
        i.   Transcranial doppler
        ii.   Endovascular management
5. Manage fluid and electrolyte balance (e.g., sodium, magnesium, osmolarity).

D. Identify associated stroke disorders:
1. Transient ischemic attack
2. Cerebral venous thrombosis
3. Dissection
        i.   Carotid
        ii.   Vertebral
4. Moya Moya disease
5. Hypercoaguable states
6. Vasculitis
7. Arterio-venous fistula
8. Cavernous angioma
9. Intracranial and extracranial stenosis
10. Dural arterio-venous fistula

VI. Medications – 10%

A. Understand the indications for the following classes of medications:
1. Antiplatelets
2. Anticoagulants
3. Antithrombotics
4. Antihypertensive
5. Vasopressor agents
6. Lipid lowering agents

7. Nimodipine
8. Diuretics
9. Anticonvulsives
10. Glycemic control
11. Antispasmotics
12. Antidepressants
13. Neurostimulants
14. Atypical neuroleptics
15. Analgesia

B. Understand the contraindications of the above-listed classes of medications.
C. Understand the interactions of the above-listed classes of medications.
D. Understand the side effects of the above-listed classes of medications.
E. Understand the timing of the above-listed classes of medications.
F. Understand the dosage of specific medications.

VII. Post-acute Care – 8%

A. Understand roles within the multidisciplinary team.
B. Understand levels of rehabilitative care (e.g., acute rehab, subacute rehab, home health, outpatient rehab)
C. Establish nursing diagnoses and develop plan of care.
D. Coordinate early rehabilitation and discharge planning.
    1. Assist patient toward maximum functional capacity.
    2. Involve patient's family and significant others in decision making and care plan.
    3. Initiate rehabilitation upon admission.
    4. Assist patient in performing ADLs along with other healthcare team members.
    5. Encourage adherence to medications.
    6. Demonstrate transfer techniques and assistive devices.
    7. Provide options for adherence to outpatient follow-up.
    8. Assess caregiver dynamics.
    9. Utilize appropriate assessment scales (e.g., modified Rankin, Barthel, Rancho Los Amigos).
    10. Assess psychosocial impact of stroke.
E. Assist in sustaining and maintaining patient's healthy, productive lifestyle.
    1. Provide guidelines for home care.
    2. Establish goals and provide discharge plan:
        i. Activity and exercise
        ii. Medication regimen
        iii. Symptoms needing referral
        iv. Nutrition
        v. Medical follow-up
        vi. Sexual function
    3. Facilitate referrals to resources and community support groups.
    4. Involve patient in activities that will enhance self-esteem.
    5. Guide patient in adaptation to lifestyle changes based on identified risk factors.

    F.   Understand specialized rehab treatments

VIII. Systems and Quality Care – 5%

    A.   Understand rationale for use of the following:
        1.   Protocols or pathways
        2.   Stroke units
        3.   Acute stroke team
        4.   Chain of survival
    B.   Apply quality improvement techniques to improve stroke outcomes.
    C.   Understand criteria for stroke center certification.

Domain 1: Anatomy and Physiology – 12%

Domain 2: Preventive Care – 10%

Domain 3: Hyperacute Care – 20%

Domain 4: Stroke Diagnostics – 10%

Domain 5: Acute Care – 25%

Domain 6: Medications – 10%

Domain 7: Post-acute Care – 8%

Domain 8: Systems and Quality – 5%