

## General Assessment and Management

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### ASSESSMENT OF THE AT-RISK PATIENT

- Several patient populations will have high-risk patients and need focused screening during history and physical assessment.
  - Elderly
    - Functional assessment—evaluate:
      - Mobility, hearing, vision
      - Ability to carry out activities of daily living safely
      - Changes in cognition
    - Nutrition
      - Thorough dietary history
      - Weight loss or gain
      - Ability to go the grocery store
      - Dentition
    - Financial stability
  - Social support/caregiver issues
  - Presence of anxiety/depression
- Homeless
  - Living conditions
  - Length of homelessness

- Presence of untreated illness
  - Mental illness/depression
  - Malnutrition
  - Dentition
- Patients with chronic illness
  - Screening
    - Cardiovascular disease
      - Abdominal aortic aneurysm
        - One-time ultrasound for men 65 to 75 years of age
        - No routine screening for women
    - Aspirin use
      - Used by men age 45 to 79 years when potential benefit of decreased risk of myocardial infarction outweighs risk of gastrointestinal bleeding
      - Used by women age 55 to 79 years when potential benefit of decreased risk of ischemic stroke outweighs risk of gastrointestinal bleeding
      - Insufficient evidence for use in patients age 80 or older
      - Not recommended for stroke prevention in women younger than 55 years of age and myocardial prevention in men younger than 45 years of age.
    - Hypertension
      - Blood pressure screening for adults over 18 years of age
    - Diabetes
      - Screen for type 2 diabetes in asymptomatic adults with blood pressure (treated or untreated) > 135/80 mm Hg
    - Hyperlipidemia
      - Screen men age 35 and older
      - Screen men 20 to 35 for lipid disorders if at increased risk for coronary artery disease
      - Screen women aged 45 and older for lipid disorders if at increased risk of coronary artery disease
      - Screen younger women 20 to 45 if history is strong for coronary artery disease
      - No recommendation for or against routine screening for lipid disorders in men 20 to 35 or in women 20 and older who are not at risk for coronary artery disease
    - Osteoporosis
      - Screen periodically in women > 65 years or > 60 if at risk
    - Cancer
      - Breast cancer—mammography
        - Women > 40 years of age every 1 to 2 years
      - Colorectal cancer
        - Screen adults > 50
        - Occult blood yearly
        - Sigmoidoscopy every 5 years or colonoscopy every 10 years
      - Pap smear
        - Within 3 years of onset of sexual activity or 21 to 65 years of age
- Obesity/malnutrition
  - Assess for physical inactivity
  - Screen for diet and exercise

- Tobacco and substance abuse
  - Smoking cessation counseling/screening
  - Alcohol use and screening
  - National Institute of Drug Abuse (NIDA)
    - Modified Alcohol, Smoking, and Substance Involvement Screening Test
      - Web-based interactive tool
      - Generates score that suggests level of intervention needed
  - Fast Alcohol Screening Test (FAST)
    - Similar to CAGE test
    - Four-question test
    - Used in emergency department and clinics
  - CAGE
    - Four-question test that evaluates alcohol problems over a lifetime
- Occupational risk and exposure
  - ChemSTEER—Chemical Screening Tool for Exposures and Environmental Releases
    - Estimates occupational inhalation and dermal exposure to chemicals during industrial and commercial manufacturing
  - Exposure to ionizing radiation
- Environmental risk and exposure
  - Secondhand tobacco smoke
  - Pesticides
  - Lead
  - Mercury
- Screening tools for risk assessment
  - Health risk assessment tools
    - Several forms exist
    - Evaluate a variety of factors
      - Lifestyle
      - Biometric and laboratory results
      - Compliance with recommended preventive screenings
      - Existing chronic illness
      - Future disease risk
      - Workplace productivity
  - Subjective Global Assessment (SGA)
    - Method of evaluating malnutrition
    - Used at the bedside
    - Classifies patients into one of three categories
      - SGA grade A—well-nourished
      - SGA grade B—moderately or suspected malnutrition
      - SGA grade C—severely malnourished
  - Surgical patients
    - Cardiac risk stratification for non-cardiac surgery
      - Presence of coronary artery disease, congestive heart failure, cerebrovascular disease, or chronic kidney disease due to atherosclerosis
      - Presence of diabetes—cardiovascular disease equivalent that increases risk of cardiac complications

- Major abdominal, thoracic, and vascular surgeries—higher risk of post-operative complications
- Revised Cardiac Risk Index
  - Tool used to assess and communicate cardiac risk
  - Incorporated in some perioperative management guidelines
- Non-invasive ischemia test (stress test) for high revised cardiac risk index, congestive heart failure, or angina symptoms
  - Risk stratification for cardiac surgery
    - Society of Thoracic Surgeons (STS) online risk calculator
    - EuroSCORE—European System for Cardiac Operative Risk Evaluation
      - Both used in coronary artery bypass and valvular surgery
    - Both provide objective way of stratifying risk

## Development of Differential Diagnoses

- The development of differential diagnoses is derived from the data collected from the history and physical examination.
- Data from the chief complaint, history of present illness, past medical history, family history, and review of symptoms are particularly helpful.
  - Identify abnormal findings.
  - Localize the finding anatomically.
    - Localized symptoms may lead directly to the problem: a sore, inflamed throat, for example.
    - More generalized symptoms may make it more difficult to pinpoint the source; for example, chest pain may be cardiac, gastrointestinal, or musculoskeletal.
  - Interpret the findings in terms of what is probable based on signs and symptoms.
  - Form a hypothesis (or hypotheses) about the nature of the problem.
  - Consult the clinical literature for evidence-based decision-making.
- Steps in clinical decision-making
  - Select the most specific and critical findings to form the diagnostic hypothesis.
  - Match the findings with all conditions associated with them.
  - Eliminate diagnostic possibilities that fail to explain the findings.
  - Weigh the competing possibilities and choose the most likely diagnosis from among the conditions that might be responsible for the patient's findings.
  - Pay special attention to possible explanations that may be life-threatening and treatable; for example:
    - Meningococcal meningitis
    - Acute myocardial infarction
    - Aortic dissection
    - Bacterial endocarditis
    - Pulmonary embolism
    - Subdural hematoma
  - Always include the worst-case scenario in the list of differential diagnoses.
- Order additional testing to confirm or rule out the tentative diagnosis (diagnoses).
- Once a working diagnosis is confirmed, discuss the treatment plan with the patient.
- Manage the data.

- Separate clusters of observations and analyze one cluster at a time.
  - By body system
  - By associated symptoms

## Clinical Management & Health Promotion

- Assisting individuals obtain optimum states of health.
- Evidence-based practice
  - Apply evidence to the development, implementation, and evaluation of effective programs in the healthcare field.
  - The practice of health promotion has a direct link with the research that supports its effectiveness.
- Disease and age-related risk factors
  - Cardiovascular disease (hypertension, coronary artery disease, heart failure, stroke) is the leading cause of death in the United States.
    - Primary prevention includes lifestyle modifications such as exercise, healthy nutrition, tobacco cessation, stress reduction, and modification of all risk factors such as hypertension, hyperlipidemia, and diabetes mellitus.
  - Osteoporosis
    - Preventing fractures involves maintenance of bone density by:
      - Maintaining endocrine control of bone density (selective estrogen receptor modifiers, bisphosphonates, calcitonin)
      - Adequate intake of calcium and vitamin D
      - Weight-bearing activities
    - Higher risk for falls and injuries
      - Prevention includes maintaining strength of the lower extremities, balance training, environmental modifications, and review of medications as a potential contributing factor.
  - Diabetes mellitus type 2
    - Development most often occurs between ages 50 and 60.
    - Prevention includes lifestyle modifications such as exercise, healthy nutrition, and maintaining a healthy weight.
  - Osteoarthritis is the most common disease affecting older adults.
    - Excessive weight increases the risk.
    - Prevention and reduction in symptoms includes proper exercise (conditioning), proper training for activities, and the use of assistive gait devices when necessary.
  - Polypharmacy
    - Older adults are at higher risk for multiple medication use and drug interactions.
    - Healthcare providers must be aware of polypharmacy and review medications frequently.
    - Encourage patients to use only one pharmacy so medications from multiple providers can be monitored and evaluated.

## Patient Education

- Self-care strategies
  - The successful management of many disease processes and chronic health conditions requires the compliance of the patient and their families.
  - Compliance requires education.
  - Before education, an assessment of the patient's needs, beliefs, goals, judgment standards, and comprehension of skills must be undertaken.
  - Development of positive behaviors is the goal.
- Considerations for adult learners
  - Create a climate for collaboration.
  - Determine the adult learner's preferred method of learning—how he or she learns the best.
  - The learner brings personal experiences to the educational session.
  - Social roles play a part in readiness to learn.
  - Immediate application of knowledge will increase the potential for behavioral change.
- Determining learning needs
  - Assess the patient's and family's motivation to learn.
  - Assess the existing knowledge base for the topic at hand.
  - Determine past experiences with this type of health-related issue.
  - Identify by what method the patient learns best.
  - Ask how culture might play a role in his or her willingness to adapt new behaviors.
  - Assess the patient's literacy level.
  - Identify what educational materials are available on the topic at hand.
  - Determine what motivates the patient to change behavior.
  - Identify any barriers to learning.
  - Ask how the education and behavioral change will be evaluated.
- Coaching through behavioral changes
  - Assists in improving self-management of chronic illness
  - Assessment of and attention to the emotional status of the patient is important to success.
  - Appropriate use of educational materials should be individualized.
  - Development of a trusting and caring relationship between the learner(s) and educator is imperative for success.
  - Develop a collaborative set of goals with the learner.
  - The use of open-ended questions allows the learner to focus on his or her needs and concerns.
  - Affirming the learner's strengths instills confidence.
  - The use of reflective listening demonstrates the educator's interest.

## EVALUATING THE PLAN OF CARE

### Description

Once the complex tasks of assessment, diagnosis, and care planning have been completed by the acute care nurse practitioner (ACNP), an essential clinical management piece remains: evaluation of the patient's progress and response to interventions. This includes evaluation of the patient's and family's response to teaching interventions. Evaluation of the patient, as well as the plan of care, is an ongoing process that guides modification of the treatment plan and optimization of expected patient outcomes.

### Etiology

- The basis for the standard of professional practice by the ACNP as a care provider is best described using the nursing process as framework. The ACNP:
  - Performs **assessments** that collect and incorporate data from a variety of sources to support clinical decision-making
  - Determines accurate **diagnoses** as a basis for interventions
  - **Identifies** appropriate and measurable patient-specific **outcomes**
  - Develops an interdisciplinary, cost-effective **care plan** designed to reach those outcomes
  - Implements the plan of care through **advanced nursing interventions**
  - **Evaluates** patients' responses to interventions and progress toward anticipated goals
- The ACNP incorporates advanced practice competencies, critical thinking, continuing education, and the use of relevant theory and research into this framework and provides evidence-based care planning and advanced nursing care to acutely and critically ill patients.

### Incidence and Demographics

- In 2008, there were nearly 160,000 credentialed nurse practitioners (NPs) in the United States; most were certified as adult or family NPs, with 5.6% holding certification as ACNPs.
- A 2008 national survey specific to ACNP practice found that the overwhelming majority of practitioners are White females with an average age of 42, hold master's degrees in nursing as one of their highest degrees, and practice in inpatient hospital settings.
- A recent review of 69 studies published between 1990 and 2008, analyzing outcomes of the care provided by advanced nursing practitioners, found similar or better patient outcomes in numerous clinical areas compared to care provided by physicians. The review also found that advanced practice nurses consistently provided safe, effective, quality care.

### Risk Factors

- Planning care for the patient with chronic, acute, and critical illness should include an evaluation for risk factors that could lead to complications while undergoing treatment. Interventions should be modified accordingly.

- The ACNP should consider, when possible, the need to screen patients for potential undetected health problems based on data collected in the history and physical exam, the presence of risk factors, or pertinent findings from lab or test results. Complications of coronary artery disease, cerebrovascular disease, or diabetes often present acutely when patients are critically ill. Disease-specific interventions for prophylaxis and enhancement of risk reduction must be implemented whenever possible.
- The acutely ill patient is at risk for exacerbation of previously stable chronic health problems as well, despite continuation of home treatment regimens. Modifications to treatment for chronic health problems should be incorporated into the plan of care when indicated.
- It is necessary to perform ongoing assessments of the patient's risk for or development of adverse responses to complex medical treatment and hospitalizations and plan or modify interventions accordingly. Those risks can be:
  - **Physiological**, including complications from invasive tests and procedures, exacerbation of chronic health problems, and the side effects of:
    - Medications
    - Prolonged immobility
    - Fluid and electrolyte shifts
    - Impaired nutrition
  - **Psychological** risks associated with separation from family and significant others, sleep deprivation, effects of psychoactive medications, impaired communication in the presence of invasive tubes, environmental factors such as lack of privacy, and the stress of coping with life-threatening diagnoses and illness.
  - **Healthcare system risks**, which are a challenging part of providing care to complex patients with multiple providers and include lack of care coordination and continuity of care, polypharmacy, and suboptimal communication between team members and with patient and family members as common barriers to achieving success in meeting expected outcomes in a timely, cost-effective manner.
- The ACNP must consider that care ultimately may be provided at a variety of acute and outpatient care settings, and that the focus of care at times may be on palliative treatment. Creating a sustainable care plan requires comprehensive initial planning and ongoing modifications to the plan after evaluating each patient's unique and dynamic response to illness and treatment.
- Factors such as the patient's financial resources and support system, his or her ability or willingness to respond to education or comply with treatment, and recognition that interventions may need to be carried out across the continuum of care also play a role in care plan modification. Ensuring a successful outcome requires the ACNP to take a leadership role in communicating changes in the patient's clinical status and goals of care to all members of the multidisciplinary team, and to provide clear and thorough documentation of the care plan and the care provided.
- Nurse practitioners are licensed and credentialed, and are therefore at risk for the disciplinary and legal processes associated with violating practice standards. The most common sources of liability for NPs are:
  - Failure to diagnose or a delay in diagnosis
  - Treatment errors
  - Medication errors

- A breach of confidentiality can result in a malpractice claim. Because communication among interdisciplinary team members, patients, and families often falls to the nurse practitioner coordinating care delivery, confidentiality and protection of sensitive information must always remain a priority.
- Clear, confidential documentation is a crucial component of safe practice in care planning and plan modification by the ACNP. Documentation should be available to all healthcare team members and provides a record of the care plan and the team members accountable for the care provided.

## Prevention and Screening

- Maintaining knowledge of health risks and common health problems specific to patients' age, gender, ethnicity, and family history is as important in the acute care setting as it is in the outpatient arena. Nurse practitioners are responsible for staying informed on current recommendations for health maintenance, chronic disease management, risk factor modification, and disease prevention. These recommendations should be incorporated into the plan of care when appropriate.
- Nurse practitioners have a duty to follow up on any potentially serious health concerns for patients in their care until such issues have resolved. Although not every issue identified merits a comprehensive inpatient workup, significant findings must be communicated to outpatient providers and consultants to ensure continuity of care.
- Knowledge of quality indicators that reflect the provision of safe, cost-effective, evidence-based care is essential. Thromboembolic events, gastritis, hospital-acquired infections, or the development of decubitus ulcers are often preventable. Whether planning initial acute care interventions, modifying the care plan based on ongoing evaluation of the patient's response to treatment, or transitioning the patient to a different care setting, prophylaxis against common complications of acute care should be incorporated into the ACNP's care plan.

## Assessment

- Planning for patient care delivery and outcomes is optimized not just through a comprehensive physical assessment, but by a thorough assessment of the patient's community resources, family support, personal and financial resources, belief system, and culture, before individualizing the plan for physical care and patient/family teaching.
- Modification of the plan of care is based on continual assessment of the patient's changing condition in response to interventions.

## Management

- Patients' responses to illness and treatment are dynamic and clinical pictures can change rapidly. Patients may progress as expected or more quickly than expected in response to intervention. Conversely, patients can deteriorate due to the complexity of ongoing illness and hospitalization, despite the most thoughtful, comprehensive care plan. Therefore, the management plan must be dynamic as well.

- As a patient's condition changes, or fails to change, the ACNP must evaluate interventions and identified outcomes, and be prepared to modify the plan of care. Outcomes should be individualized and continuously modified based on:
  - The patient's clinical status and mutually agreed-upon goals of treatment
  - The ethics, financial implications, and costs of providing ongoing care
  - Potential risks and benefits of interventions and treatment
  - The quality of care that can be provided
  - Resources that are available to the patient across healthcare settings
  - The patient's demonstrated compliance or noncompliance with therapy
  - The patient's and family's beliefs regarding planned interventions and therapy
- Successful outcomes are enhanced and strengthened when interventions are evidence-based, shaped by multidisciplinary and patient/family input, and sustainable across a variety of healthcare settings.
- When the patient's goals are not compatible with those of their providers because of financial, psychosocial, and—at times—ethical considerations, interventions and outcomes must be modified accordingly to reflect mutually agreed-upon treatments and endpoints of care.

### **Nonpharmacologic Treatment**

- Information technology, medical equipment, and monitoring devices are important tools in care planning. Such modalities can help to assess, diagnose, treat, evaluate, and modify treatment, both historically and in real time.
- Medical and information technology can be a vehicle for clinical assessment, information management, documentation, or communication with members of the healthcare team, or used for staff and patient education. They aid critical thinking and evaluation of patients' response to treatment; provide efficiency in modifying care plans; and facilitate provision of quality, coordinated, evidence-based care.

### **Pharmacologic Treatment**

- The ACNP often plays a key role in prescribing and modifying pharmacological interventions for the acutely or critically ill patient. It is important that interventions are based on scientific evidence, consistent with the desired outcomes of care, and prescribed and manageable within the nurse practitioner's scope of practice, particularly when managing pain.
- Medication management in the setting of polypharmacy can be complex and challenging when patients are critically ill. The ACNP must consider the costs of therapy, the goals of care, the sustainability of treatment, and the risk or benefit to the patient before initiating new pharmacologic interventions.
- Collaboration, careful documentation, and communication with all members of the healthcare team, particularly physicians, pharmacists, and the bedside nurse, aid in delivery of safe, effective, and timely implementation of pharmacological interventions.
- When medications are modified day by day, and at times minute by minute, patients are at risk for adverse drug reactions, synergistic side effects, medication errors, the burden of multiple medication costs, and noncompliance with prescribed regimens. The ACNP must be vigilant in ensuring the plan of care for pharmacologic treatment is continually reassessed and modified for safety, quality, appropriateness, and cost-effectiveness.

## Special Considerations

### Patient Teaching

- Planning and providing for patient and family education plays a vital role in achieving successful patient outcomes. Education should be incorporated into the ACNP's care plan and the response to teaching should guide plan modification. Teaching helps patients and families:
  - Understand disease processes and the complications that develop when treating complex, chronic, and acute illnesses.
  - Understand treatment options and the goals of planned interventions and therapies.
  - Make informed treatment and discharge planning decisions.
  - Enhance compliance with medication regimens and follow-up.
  - Enhance compliance with nonpharmacologic therapies.
- Teaching by the ACNP may be carried out informally in response to a situational knowledge deficit demonstrated by a patient or family member, or in a formal setting with an individualized teaching plan. Teaching may be delegated to qualified individuals.
- Patients may learn best in classroom settings, with personalized instruction, or both. Appropriate electronic resources or written material may be suitable for teaching as well. The ACNP must perform an educational assessment and determine the teaching method most appropriate to the patient's age, educational level, and preferred learning style.
- Like all aspects of care planning, support for patient's and family's educational needs should be individualized. Whether participating in family care conferences in the hospital, setting aside time for answering questions from patients and family members, or providing electronic resources that supplement formal or informal teaching, the nurse practitioner often has a leadership role in communicating with patients and families, determining knowledge deficits, and planning appropriate educational interventions.

### Cost-Effectiveness

- In today's healthcare environment, healthcare dollars must be spent wisely, whether a patient is insured, uninsured, or underinsured. Care of the patient experiencing acute or critical illness often entails a rapid escalation toward complex interventions and technologically driven treatments. Whether prescribing medication or planning for transition to the next level of care, interventions should be carried out ethically, but with a concern for the patient's disease processes, financial resources, ability and willingness to comply with ongoing treatment, and goals of care.
- Although quantifying the financial benefit of care provided by the ACNP and the best strategies for third-party reimbursement of NP care continues to be difficult, outcome studies consistently demonstrate the benefits of care provided by nurse practitioners versus physicians in terms of quality and cost-effectiveness.
- The ACNP, no matter the practice setting, always must consider the financial impact of care when planning interventions and treatments, and incorporate cost-effectiveness and quality benefits into the changing plan of care.

## When to Consult, Refer, or Hospitalize

- Licensing, credentialing, hospital bylaws, and scope of practice legislation define the general role of the nurse practitioner. Nevertheless, the ACNP must always be aware of situational limitations on practice. Having the education and expertise needed to perform each specific job function must be balanced with referring care, when appropriate, to specialized practitioners. Expert consultation for management of complex medical issues is always appropriate, as is a transition to either a higher level of care or palliative and end-of-life care providers. It is important, if possible, to define the threshold for such referrals when designing the plan of care.

## Follow-up

### Expected Outcomes

- The ACNP ideally designs a healthcare delivery plan that is patient-centered, collaborative, coordinated, evidence-based, and cost-effective. Achievement of successful outcomes is driven by continuous patient evaluation and modification of the care plan-based on the patient's response or lack of response to interventions.
- Continuity of care as the patient transitions across care settings is supported by ongoing discharge planning, clear discharge instructions, communication with providers in the outpatient setting or at the next level of care, and careful documentation.

### Complications

- Multiple factors can derail the most thorough care plan. Failure to set mutually agreed-upon goals of care with patients and families can lead to patient noncompliance, unwanted financial burdens for the patient, and ethical challenges for the healthcare team. Failure to consider social and financial circumstances that preclude a successful discharge leads to relapsing medical conditions and rehospitalizations. Lack of continuity in care can be a result of poor documentation or communication with members of the healthcare team and the patient.
- The ACNP should be prepared for the challenges associated with planning care for complex acutely ill patients who can have dynamic and highly individualized responses to illness. Interdisciplinary collaboration and communication, and using resources necessary to plan evidence-based interventions, are key factors in avoiding setbacks and preventable complications in delivery of care.

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