Examination Content Blueprint

Overview

The material on NCCPA's certification and recertification exams can be organized in two dimensions:
(1) organ systems and the diseases, disorders and medical assessments physician assistants encounter within those systems; and
(2) the knowledge and skills physician assistants should exhibit when confronted with those diseases, disorders and assessments.

Please note that while the subject matter covered on the certification and recertification exams is the same, there is some difference in the *nature* of the questions on those exams. Generally, the questions on the initial certification exam are more specific, while questions on the recertification exam tend to address broader clinical issues. This difference is most apparent in the questions related to applying basic science concepts and reflects the different functions of the two exams.

The tables below illustrate the approximate percentage of exam questions you'll encounter in several categories, grouped as described above. Other content dimensions cross-sect those categories delineated in the tables. For example, up to 20 percent of the questions on any exam may be related to surgery, and up to two percent may cover legal or ethical issues.

% of Content	Diseases, Disorders & Medical Assessments of the:
16%	Cardiovascular System
5%	Dermatologic System
9%	Eyes, Ears, Nose & Throat
6%	Endocrine System
10%	Gastrointestinal System/Nutrition
6%	Genitourinary System
3%	Hematologic System
3%	Infectious Diseases
10%	Musculoskeletal System
6%	Neurologic System
6%	Psychiatry/Behavioral
12%	Pulmonary
8%	Reproductive System

% of Content	Knowledge & Skill Areas:
16%	History Taking and Performing Physical Examinations
14%	Using Laboratory & Diagnostic Studies
18%	Formulating Most Likely Diagnosis
10%	Health Maintenance
14%	Clinical Intervention
18%	Pharmaceutical Therapeutics
10%	Applying Basic Science Concepts

Each question you encounter will address a disease, disorder or medical assessment from a category in the table at left *and* a knowledge or cognitive skill area from the table above.

On the following pages, we have provided lists knowledge and skills areas you may encounter on your exam. Though these lists are not exhaustive, they can provide a foundation for your exam preparation. They serve as your blueprint to the exam content. You will find the list of diseases and disorders on a separate document.

Knowledge Areas and Skills

The lists of knowledge areas and skills that follow were identified as important to physician assistant practice through an intensive practice analysis. Many of these knowledge areas and associated cognitive skills are covered on NCCPA's examinations.

History Taking and Physical Examination

Knowledge of:

- ✓ Pertinent historical information associated with selected medical conditions
- ✓ Risk factors for development of selected medical conditions
- ✓ Signs and symptoms of selected medical conditions
- ✓ Physical examination techniques
- ✓ Physical examination findings associated with selected medical conditions
- ✓ Appropriate physical examination directed to selected medical conditions
- ✓ Differential diagnosis associated with presenting symptoms or physical findings

Cognitive skills in:

- ✓ Conducting comprehensive and focused interviews
- ✓ Identifying pertinent historical information
- ✓ Performing comprehensive and focused physical examinations
- ✓ Associating current complaint with presented history
- ✓ Identifying pertinent physical examination information

Using Laboratory and Diagnostic Studies

Knowledge of:

- ✓ Indications for initial and subsequent diagnostic or laboratory studies
- ✓ Cost effectiveness of diagnostic studies or procedures
- ✓ Relevance of common screening tests for selected medical conditions

- ✓ Normal and abnormal diagnostic ranges
- ✓ Risks associated with diagnostic studies or procedures
- ✓ Appropriate patient education related to laboratory or diagnostic studies

Cognitive skills in:

- ✓ Using diagnostic equipment safely and appropriately
- ✓ Selecting appropriate diagnostic or laboratory studies
- ✓ Collecting diagnostic or laboratory specimens
- ✓ Interpreting diagnostic or laboratory studies results

Formulating Most Likely Diagnosis

Knowledge of:

- ✓ Significance of history as it relates to differential diagnosis
- ✓ Significance of physical findings as they relate to diagnosis
- ✓ Significance of diagnostic and laboratory studies as they relate to diagnosis

Cognitive skills in:

- ✓ Correlating normal and abnormal diagnostic data
- ✓ Formulating differential diagnosis
- ✓ Selecting the most likely diagnosis in light of presented data

Clinical Intervention

Knowledge of:

- ✓ Management and treatment of selected medical conditions
- ✓ Indications, contraindications, complications, risks, benefits and techniques for selected procedures
- ✓ Standard precautions and special isolation conditions
- ✓ Sterile technique
- ✓ Follow-up and monitoring of therapeutic regimens
- ✓ Conditions that constitute medical emergencies
- ✓ Indications for admission to or discharge from hospitals or other facilities

- ✓ Discharge planning
- ✓ Available community resources
- ✓ Appropriate community resources
- ✓ Appropriate patient education
- ✓ Roles of other health professionals
- ✓ End-of-life issues
- ✓ Risks and benefits of alternative medicine

Cognitive skills in:

- ✓ Formulating and implementing treatment plans
- ✓ Recognizing and initiating treatment for life-threatening emergencies
- ✓ Demonstrating technical expertise related to performing specific procedures
- ✓ Communicating effectively
- ✓ Using counseling techniques
- ✓ Facilitating patient adherence and active participation in treatment
- ✓ Interacting effectively in multidisciplinary teams

Pharmaceutical Therapeutics

Knowledge of:

- ✓ Mechanism of action
- ✓ Indications for use
- ✓ Contraindications
- ✓ Side effects
- ✓ Adverse reactions
- ✓ Follow-up and monitoring of pharmacologic regimens
- ✓ Risks for drug interactions
- ✓ Clinical presentation of drug interactions
- ✓ Treatment of drug interactions
- ✓ Drug toxicity
- ✓ Methods to reduce medication errors
- ✓ Cross reactivity of similar medications
- ✓ Recognition and treatment of allergic reactions

Cognitive skills in:

- ✓ Selecting appropriate pharmacologic therapy for selected medical conditions
- ✓ Monitoring pharmacologic regimens and adjusting as appropriate
- ✓ Evaluating and reporting adverse drug reactions

Health Maintenance

Knowledge of:

- ✓ Epidemiology of selected medical conditions
- ✓ Early detection and prevention of selected medical conditions
- ✓ Relative value of common screening tests
- ✓ Appropriate patient education regarding preventable conditions or lifestyle modifications
- ✓ Healthy lifestyles
- ✓ Prevention of communicable diseases
- ✓ Immunization schedules and recommendations for infants, children, adults and foreign travelers
- ✓ Risks and benefits of immunization
- ✓ Human growth and development
- ✓ Human sexuality
- ✓ Occupational and environmental exposure
- ✓ Impact of stress on health
- ✓ Psychological manifestations of illness and injury
- ✓ Effects of aging and changing family roles on health maintenance and disease prevention
- ✓ Signs of abuse and neglect
- ✓ Barriers to care

Cognitive skills in:

- ✓ Using counseling and patient education techniques
- ✓ Communicating effectively with patients to enhance health maintenance
- ✓ Adapting health maintenance to the patient's context
- ✓ Using informational databases

Applying Basic Science Concepts

Knowledge of:

- ✓ Human anatomy and physiology
- ✓ Underlying pathophysiology
- ✓ Microbiology and biochemistry

Cognitive skills in:

- ✓ Recognizing normal and abnormal anatomy and physiology
- ✓ Relating pathophysiologic principles to specific disease processes

- ✓ Correlating abnormal physical examination findings to a given disease process
- ✓ Correlating abnormal results of diagnostic tests to a given disease process

Exam Development & Scoring

NCCPA's exam questions are developed by committees comprising PAs and physicians selected based on both their item writing skills, experience and references as well as demographic characteristics (i.e., practice specialty, geographic region, practice setting, etc.). The test committee members each independently write a certain number of test questions or items, referencing each to a recently published textbook (not journal articles). Each item then goes through an intense review by content experts and medial editors from which only some items emerge for pre-testing. Every NCCPA exam includes both scored and pre-test items, and examinees have no way of distinguishing between the two. This allows NCCPA to collect important statistics about how the pre-test items perform on the exam, which informs the final decision about whether a particular question meets the standards for inclusion as a scored item on future PANCE or PANRE exams.

When NCCPA exams are scored, candidates are initially awarded 1 point for every correct answer and 0 points for incorrect answers to produce a raw score. After examinees' raw scores have been computed by two independent computer systems to ensure accuracy, the scored response records for PANCE and PANRE examinees are entered into a maximum likelihood estimation procedure, a sophisticated, mathematically-based procedure that uses the difficulties of all the scored items in the form taken by an individual examinee as well as the number of correct responses to calculate that examinee's proficiency measure. This calculation is based on the *Rasch model* and equates the scores, compensating for minor differences in difficulty across different versions of the exam. Thus, in the end, all proficiency measures are calculated as if everyone took the same exam.

Finally, the proficiency measure is converted to a scaled score so that results can be compared over time and among different groups of examinees. The scale is based on the performance of a reference group (some particular group of examinees who took the exam in the past) whose scores were scaled so that the average proficiency measure was assigned a scaled score of 500 and the standard deviation was established at 100. The vast majority of scores fall between 200 and 800. More details on the reference group for each exam and the calculation of scores will be provided in the form of *Performance Interpretation Guidelines* published with your exam results.

Example Question

The questions on NCCPA exams are presented in multiple-choice format and most offer four or five answer choices. An increasing percentage of exam questions are based on information presented in a clinical vignette, which requires higher level thinking than some other common question formats.

A 58-year-old man who has a history of alcohol abuse complains of severe epigastric pain. He feels some relief from the pain when he leans forward. In the past 24 hours he has experienced nausea and vomiting. He appears acutely ill and restless. On physical examination, the patient is hypotensive and has a rapid pulse rate. Bowel sounds are hypoactive, and there is abdominal tenderness with muscular rigidity and distention. The diagnosis would be supported best by which of the following laboratory tests?

> (A) Determination of the serum amylase level
> (B) Electrocardiography
> (C) Examination of the stool for ova and parasites
> (D) Routine urinalysis
> (E) Upper gastrointestinal series