



Certification Exams, the Passing Standard, and Candidate Passing Rates

In response to faculty inquiries in spring 2022, this document covers:

- Which organization accredits PNCB exams
- How exam items and exam forms are developed
- The type of questions written
- Statistics produced for exam forms
- How the cut score (or passing standard) is determined
- Passing rate percentage compared to the passing standard
- Factors that PNCB monitors
- Faculty and student factors
- Sources of candidate support

The Primary Care Certified Pediatric Nurse Practitioner (CPNP-PC) and Acute Care Certified Pediatric Nurse Practitioner (CPNP-AC) exams validate entry-level knowledge of graduates from master's degree or DNP degree programs or postgraduate certificate programs for pediatric nurse practitioners (PNPs). The exams are accredited by the National Commission for Certifying Agencies (NCCA) and meet the National Council of State Boards of Nursing's APRN criteria for certification programs.

We're in This Together

Your graduates make the difference for pediatric health care. We're in this together to provide children, teens, and young adults access to the highly qualified workforce they need and deserve.

In May 2022, PNCB talked with key leaders from both the Accreditation Commission for Education in Nursing (ACEN) and the Commission on Collegiate Nursing Education (CCNE) to gain an understanding of their criteria for program passing rates. The national passing rates of PNCB exams are distinct from the required program passing rate needed to achieve and maintain academic accreditation from ACEN or CCNE.

PNCB understands faculty concerns about program passing rates and has provided its past six years' passing rate data, also available [publicly on the website](#), to both ACEN and CCNE. In support of PNP programs and faculty, PNCB will continue to meet with these nursing education accreditors.

There are numerous factors which affect the rate at which candidates pass a national board certification exam. The factors related to PNCB start with building a national board certification exam that is worthy of meeting certification program accreditation standards, which is distinct from ACEN and CCNE accreditation. Some of these factors are listed with questions and answers below, but in brief, factors include meeting the highest quality standards to ensure our programs adhere to modern standards of practice in the certification industry.

Certification program accreditation means the certification is an appropriate measure of knowledge and skills, and that it follows protocols to be fair and unbiased. Accreditation for certification programs provides impartial, third-party validation that a program has met recognized national credentialing industry standards for development, implementation, and maintenance of certification programs. To be accredited, a certification program must perform and document a standard setting study that relates performance on the examination to proficiency, so that the program can set a passing score appropriate for the certification. In addition, the certification program must employ and document sound psychometric procedures for scoring, interpreting, and reporting examination results.

Which organization accredits PNCB exams?

PNCB exams are accredited by the National Commission for Certifying Agencies (NCCA). Known as “high stakes” exams needed for licensure, the CPNP-PC and CPNP-AC exams have continuously met rigorous accreditation standards after first being accredited in 1996 and 2005, respectively. [NCCA-accredited programs](#) certify individuals in a wide range of professions and occupations including nurses, automotive professionals, respiratory therapists, counselors, emergency technicians, crane operators, and more. To date, NCCA has accredited more than 315 programs from more than 130 organizations. Renewal of accreditation for PNCB exams occurs every 5 years, with interim statistics reported annually.

Just like academic programs must meet criteria established by Accreditation Commission for Education in Nursing (ACEN) or Commission on Collegiate Nursing Education (CCNE), all PNCB exams must meet accreditation criteria to remain viable. Since pediatric nurse practitioner exams are a proxy for licensure, accreditation standards serve to protect both the exam candidates and the public.

Our accreditation status was not interrupted by the 2019 breach of the CPNP-AC exam, because PNCB used sound, industry-accepted procedures to create a new testing opportunity and maintain candidate eligibility.

How are exam items and exam forms developed?

The exam development process continues to follow best practices in test development. PNCB cannot create exam forms in isolation and must rely on hundreds of volunteer subject matter experts who are working or teaching in the field. Each item is written by a [volunteer](#), referenced from a textbook, reviewed by a committee of volunteers and mapped to the specific exam content outline, and then pre-tested with at least 100 to 140 candidates before it can ever be used as a part of calculating a candidate’s score. We currently work with one of the largest exam development vendors in the industry ([PSI](#)); their staff, including psychometricians, prepare the exam forms to specific parameters.

Review these pages from our website which explain the steps in exam development.

- [Exam Development](#) provides an overview of the elements that go into creating psychometrically sound exam items and exam forms.
- [Policies](#), some specific to exam development.

How is PNCB exam content written?

Questions are written in one standard format: multiple choice with a single correct response. Any change in this format would necessitate a planned notification to program faculty and candidates. No change is anticipated at this time.

These are sample items from a CPNP-AC practice test showing how questions are written with one (1) correct answer and three (3) plausible (but incorrect) distractors:

Early initiation of enteral feeds in acutely ill patients aids in preventing:
A) stress related ulcers
B) bacterial translocation
C) decreased triglyceride level
D) long term use of parenteral nutrition

How do you know that PNCB exams are valid measurements of candidate knowledge?

PNCB exams are “criterion-referenced” exams, meaning that a candidate’s knowledge is compared to the passing standard, or criterion. Each candidate’s knowledge stands on its own and is not compared to another candidate’s knowledge or score.

The following information or statistics are calculated for every exam form published each year, and for a calendar year timeframe. The statistics are reported to our accrediting body and have weight in their decision to grant renewal of accreditation.

- **Total administrations on each form:** The number (N) of candidates who tested on a distinct exam form.
- **Mean score achieved by examinee:** The sum of all scores divided by the total number of scores; the central midpoint.
- **Standard deviation of scores:** A measure of the amount of variation in scores relative to the mean.
- **KR-20 reliability estimate:** A measure of internal consistency.
- **Subkoviak Decision Consistency:** An estimate of the consistency of pass-fail decisions.
- **Standard Error of Measurement:** The average amount of variability in scores attributed to factors other than candidate ability.

How is the passing standard (cut score) determined?

The passing standard is determined in concert with other key activities:

1. First, for an established credential, job task analysis research is performed on a regular basis; it is required by industry standards as an essential step in developing a certification that is defensible and eligible for accreditation.
2. The job task analysis then results in an updated exam content outline, based on survey findings.
3. The passing standard is [recalculated about every 4 to 7 years](#) when the updated exam content outline is published. Standard setting is performed in partnership with psychometricians and the process uses current industry psychometric methods, such as Item Response Theory and Modified Angoff Scoring.
4. This new passing standard is applied to exam forms which have been constructed from this updated content outline.

How is the national candidate passing rate distinct from the passing standard on the exam?

While the passing standard of the exam (the cut point) is determined in most cases before candidates are tested on the form, the national candidate passing rate is a direct, unfiltered follow-on reflection of the percentage of candidates who met or exceeded that threshold. Additionally,

- The passing standard of the exam does not predict the candidate passing rate.
- If candidates must pass with a scaled score of 400, then 400 is the passing standard.
- The percentage of candidates who pass (e.g., xx%) is how the national candidate passing rate is determined.

What else is monitored?

PNCB also monitors exam form passing rates monthly, to ensure that multiple forms are randomized, and the forms are performing as anticipated. Over the past 13 to 15 years, these internal monitoring reports indicate that the average **failing** scaled scores and average **passing** scaled scores are stable, showing wide differences in scores on an individual candidate level for those who pass and those who fail.

Candidates who fail are typically not failing by just a few points, and conversely, candidates who pass are achieving scores more than 100 points above the scaled passing score of 400.

PNCB staff monitor and produce reports of program performance. For example, as of June 1, 2022, the overall pass rates for acute care PNP programs are:

- 63% of CPNP-AC programs have a passing rate of 80% or higher.
- 13% of CPNP-AC programs have a passing rate of 70-79%.
- 24% of CPNP-AC programs have a passing rate of 69% or less.

Which factors are beyond PNCB's control?

The factors below obviously also impact the candidate passing rates for the exam in a given year.

Academic Programs

- **Admission Criteria**
 - Factors such as minimum grade point average, applicant grades in previous science, math, and nursing courses, years of prior nursing experience – among others.
- **Curriculum and instruction**
 - Possible lack of exposure to didactic and clinical content aligned with all topics on the exam content outline.
 - Faculty tenure or turnover.
- **Clinical rotations**
 - From anecdotal conversations with candidates who have failed multiple times, these candidates seemed to have had little to no variety in their clinical placements. As expected, this issue was amplified during the worst of the COVID impact.
 - Preceptor quality and bandwidth as well as the robustness of the precepted experience as compared to the depth and breadth of the exam content outline topics.
- **Quality of tests within the program and coverage of exam content topics on these tests**
 - Are students exposed to closed book exams without access to references, similar to the national certification exam?

- Consider that academic tests which include alternative item types, like Multiple Answer, True/False, or negatively worded questions do not help to prepare candidates for a national board certification exam. These faculty-written exams may assess learning in a variety of ways, but closer to graduation we suggest that candidates need to encounter questions similar to those seen on the certification exam.
- We encourage all faculty involved in developing test questions for students to use our free learning activity, [Item Writing 101 – For Faculty](#). This module is an in-depth online guide to writing psychometrically sound assessment questions. The content presented is required learning for all PNCB exam item writers and awards 2.5 accredited contact hours for successful completion.

Candidate Dynamics

- Preparation:
 - Method of study during the academic program: did the student digest textbook references and consensus-based guidelines, or was preparation more superficial?
 - Throughout the program, did the student gradually assume more responsibility for decision-making about patient assessment, diagnosis, and management?
 - From PNCB review several years ago, the top reason for candidates not passing the exam included taking it in close proximity to a stressful event, such as a wedding, birth of a baby, death of a family member, or major move.
 - Time the candidate has waited to test since graduation; did the person test soon after graduation or delay testing for several years?

Review Courses and Other Candidate Support

PNCB does not create its own review courses. Students can explore organizations and companies that offer review courses. Note that PNCB cannot endorse a particular review course.

Below is the list of **PNCB practice tests** related to PNP programs. Practice test items are written with the same methods as exam questions, but the content is distinct and never used in the exam banks. This list is current as of June 2022.

CPNP-AC	• Acute Care Practice Test 601 – 75 Questions with Rationales • Acute Care Practice Test 602 – 75 Questions with Rationales • Acute Care Practice Test Drill – 50 Questions, No Rationales
CPNP-PC	• Primary Care Practice Test 502 – 75 Questions with Rationales • Primary Care Practice Test 601 – 75 Questions with Rationales

In addition, PNCB's [CE modules](#) offer current topics and evidence-based knowledge that may help a candidate prepare. Upon request, PNCB will provide an alignment document to show which modules share a connection with an exam's content outline.

New PNCB support resources are being developed in 2022. We will facilitate **content outline overview webinars** this fall to support candidates' understanding of key topics on this essential document and effective ways to

integrate it into their study plans. In the near future, we will offer added resources **to address test taking strategies and test anxiety.**

We're Here for You

PNCB is always available to answer any questions you may have about our certification programs. Our promise to you is transparent communication to support your understanding of our work here and how it interplays with your program and students. Please contact exam@pncb.org anytime so we can be a resource for you.