



PEDIATRIC NURSING CERTIFICATION BOARD

CPNP Item Writer Manual

CPNP National Exam for PNP's – Acute Care
Acute Care Self Assessment Exercise (SAE)

Table of Contents

Introduction.....	1
Important, Preliminary Principles of Item Writing.....	1-3
Getting Started.....	3
Item Format.....	4
The Clinical Stem.....	4
The Lead-in Question.....	5
Item Shells.....	6-7
Examples of Item Shells.....	7-8
Generic Item Shells Classified by Cognitive Operation.....	8
Multiple Choice Options.....	9-10
Documentation of Correct Responses.....	10
Editing Items.....	10-12
References for Item Writer Manual.....	12
Item Writer Referencing Information.....	13
CPNP Acute Care Exam Reference List.....	14
Item Submission to PNCB.....	15
Format for References.....	15
CPNP Exam Item Submission Format Example and Sample.....	16-17
CPNP SAE Item Submission Format Example and Sample.....	18-19
National Certification Exam Test Specifications.....	21-22
CPNP Acute Care Exam Content Outline.....	23-25
CPNP Acute Care SAE Curriculum.....	26

INTRODUCTION

The primary mission of the Pediatric Nursing Certification Board (PNCB) certification programs is to foster the delivery of high-quality health care to children and their families. This mission is achieved by providing relevant, rigorous professional certification and maintenance programs for pediatric nurse practitioners and pediatric nurses.

As you write items for Primary Care Exam or Acute Care Exam for Pediatric Nurse Practitioners or the Self-Assessment Exercises you become an integral part of this crucial mission, for as Robert Thorndike (1967) said many years ago: *test items are the basic building blocks of a good test*. Or, said another way, a test is only as good (or as valid, or as useful) as the items of which it is composed.

You already have the most important requisite skill for helping us maintain our high quality certification exams: an in-depth knowledge of your discipline and a rich history of clinical experience. Because certification examinations are meant to be practice-based and to test the knowledge, skills and abilities needed for practice, your involvement as a practicing nurse is essential to the validity of the examinations.

You are still faced with a relatively difficult task, however, and that is to develop items that will identify those clinicians who deliver the type of high-quality health care that you would demand for children in your family without having the luxury of actually observing this care. What you must do, therefore, is pose questions that state in clear, unequivocal terms **the cognitive tasks** you would require someone who treats pediatric patients to perform correctly. The purpose of this manual, then, is to share with you a distillation of several decades of psychometric advances in the science of item construction.

IMPORTANT, PRELIMINARY PRINCIPLES OF ITEM WRITING

Fortunately, writing good certification items can be broken down into a relatively small number of steps supported by well-established psychometric rules or principles. More important than any of these individual principles, however, is the necessity of always keeping the ultimate purpose of the examination itself in mind: which is to differentiate between exemplary and less-than-exemplary pediatric nurse practitioners. On a more visceral level, you may want to visualize your task as an attempt to write items capable of identifying practitioners both (1) to whom you would feel comfortable entrusting the treatment of your own child **and** (2) to whom you would **not** want to entrust treatment.

Since you are writing only a few items, the entire burden of this task obviously does not rest upon your shoulders. This means that your items should be quite specialized and focused. Our job here at the Board is to take items from many different nurses working in many different areas of practice and craft a comprehensive examination that covers all of the important areas of pediatric practice. It is our task to make sure that this examination is reliable (which means that it is an accurate measure) and valid (which means that it does indeed differentiate between exemplary and less-than-exemplary pediatric nurse practitioners).

Your role as an author of these items, however, is the most essential job of all. The only way that an examination can be *comprehensive, reliable, and valid* is if the individual items are *comprehensive, reliable, and valid*. The most important strategy for ensuring that your items will meet these criteria is to keep the ultimate purpose of the examination in mind: to validate an individual pediatric nurse's qualifications, knowledge, and practice. Tony LaDuca of the National Board of Medical Examiners states this most eloquently via the following dictum: "**Licensure tests ought to be aimed at behaviors that unimpeachably related to effective practice.**" The acceptance of this principle means that you will want to focus your efforts on writing items that adhere to the following principles.

The item’s topic should fit the test blueprint or content outline. This outline defines the content domain of the examination and indicates the knowledge and skills that will be tested.

1. **Items involve the application of knowledge rather than the recall of rote facts.** Someone who takes a child to a clinician is not interested in how many facts are in that clinician’s head. Instead he/she is interested in how well the clinician can apply this knowledge to solving the problem that precipitated the visit.

Memory items require the examinee to recall such things as definitions, terminology, and normal lab values; no understanding or interpretation is required. Application or reasoning items, however, require the examinee to interpret data, predict an outcome, explain why certain actions are recommended or not, etc. **DO NOT write items related to CPR procedures. Pediatric nurses are required to maintain CPR qualification and must pass a written exam where these types of questions appear. DO NOT write items that test general nursing knowledge typically found on an NCLEX exam. The content should be pediatrics specific.**

The following terms can guide you in assessing whether the item requires memory or application. First think about what the examinee must do mentally to respond to the item and then look at the list to determine whether the cognitive task corresponds to memory or reasoning.

Memory	Reasoning or Application		
Define	Apply	Compare	Differentiate
Describe	Analyze	Contrast	Evaluate
Identify	Anticipate	Decide	Justify
Recall	Assess	Develop	Prioritize

2. **Items involve real life, important, and relatively common clinical problems.** This is not to say that a certification test may not include rare, uncommonly seen conditions or that it may not contain unusual clinical scenarios. In general, however, when infrequently occurring events are tested, they should reflect situations whose mismanagement has the potential to result in *serious* consequences. Ask yourself whether the question being asked is important and relevant to current practices. Good items reflect the selection of realistic content.
3. **Items are not designed to “trick” the examinee.** Your job is to identify exemplary clinicians, not exemplary test takers. You want neither to punish a good clinician who is not adept at taking tests nor allow someone who could not perform a behavior in a clinical situation to answer your item based upon an inadvertent cue. Take special precautions to avoid writing “tricky” items, items in which you have consciously placed something that may cause someone who knows the correct answer to answer the item incorrectly.
4. **All items should be referenced in major medical or nursing textbooks.** Items should be referenced to appropriate advanced practice nursing texts for the CPNP exam. Items written for the CPNP exam should avoid using generalist texts as references. Items should reflect “evidenced based” practice. While journal articles are often good sources for test items for self-assessment exams and other “take-home” tests, item writers should attempt to use textbooks as primary references for items to be used on national certification exams. Separate lists of frequently used texts for CPNPs may be found at the end of the manual.

References considered acceptable for primary references for Self-Assessment Exercises are medical and pediatric medical and nursing and nurse practitioner journals. Please avoid the use of subspecialty journals as references. Instead use recognized and available texts as references for subspecialty items.

5. **Items are as clear and as unambiguous as possible.** Said another way, the examinees should be able to use their time demonstrating their clinical expertise, not in attempting to understand the items themselves. Each item, therefore, should ask a complete and well-focused question.
6. **Items center on important principles that could reasonably be answered without access to standard reference materials.** A competent clinician will have such materials available in her/his actual practice; hence it is not reasonable to test content that could easily be checked prior to performing a behavior or making a decision.
7. **Each item focuses on a single behavior** (such as diagnosis, testing, treatment, and referral). Avoid the temptation to try to learn as much about the examinee's ability as possible from a single clinical situation, since this will cloud what is being measured. Instead, each item should address a single testing point.
8. **Language used in each item is based on candidate's preparation.** The pediatric nurse practitioner items for both exam and self assessment should be written at the level of a graduate student. Vocabulary and language used in items should reflect practice, not be "tricky" or confusing to the candidate.

Adhering to these simple principles will greatly facilitate your writing valid items capable of measuring what you are trying to test. It will also help to ensure that you write *relevant* items, which is a synonym for *validity*.

GETTING STARTED

There are many ways to begin the process of writing a question. A good general rule, however, is to write down:

- the general content area or clinical problem you wish to focus on;
- the specific behavior (e.g. diagnosis, testing treatment, management or referral) you are interested in testing; and
- the rationale (in terms of clinical outcomes) for why it is important for a pediatric nurse to be able to diagnose, order the correct test for, treat, manage or appropriately refer for the specific problem.

The basic idea for the clinical content or behavior (or testing point) you wish to assess can come from a number of sources. You may have been asked to write items on a specific topic or you may already have some ideas in mind already. Other ideas can come from:

- your personal clinical experience,
- courses you have taken,
- current literature (journals and review articles),
- textbooks,
- common mistakes that you have observed in your practice,
- practice guidelines,
- outdated beliefs,
- recent clinical advances or discoveries, and
- drug side effects and interactions.

ITEM FORMAT

Once you have an idea for your item, it is a good idea to immediately begin framing it into the actual format you will use to present the cognitive task to the examinee. Although there are many types of excellent item formats that have been developed over the years, the one that we are asking you to use is called “one-best-option” multiple-choice item. It is comprised of the following three components:

1. A clinical stem that involves the presentation of a clinical case or situation,
2. An incomplete statement or a lead-in question that directly follows the stem and presents the actual task required of the examinee, and
3. The options which consist of one correct answer and three (3) plausible but incorrect answers.

Your items therefore will take on the following appearance:

(Clinical Stem) A 4-month-old comes in for a routine examination. The mother reports excessive tearing (epiphora) in baby’s left eye that appears larger than the right and on funduscopic examination shows cupping of the optic nerve. *(Lead-in question)* What is the most likely diagnosis?

(Options):

- A. Cataract
- B. Retinoblastoma
- C. Chorioretinitis
- D. Glaucoma

We are asking you to write all of your items in this format for two reasons. In the first place, research has not identified any format superior to this genre of “one-best-option” multiple choice item. Secondly, this format helps to guarantee that your item will measure higher level cognitive processes and applied clinical behavior rather than rote recall of facts. Let us therefore consider each of the three components of this type of item in turn.

The Clinical Stem

In general the clinical stem should be the longest part of an item, containing all of the essential information required to select the proper option. Examinees should not have to read through all the options to determine the intent of the item. This information often includes the age, gender, medical history, presenting symptoms, and laboratory values/examination results for the patient. As a rule, the stem should not include irrelevant information, however, unless this information is tied to an important misconception regarding the management-treatment decision represented by the options. Examinees should not have to sift through extraneous information or “window dressing.” In addition, it is important to avoid any bias, such as sexual, cultural, ethnic, religious or class in the stem or options. The patient does not need to have a name or gender if this is not pertinent to the response or disease process.

Here are two examples of the types of clinical stem found on our certification examination.

Example: A 2-month-old (*age*) presents with bilious vomiting (*symptom*) for 24 hours. Physical examination is unremarkable (*examination result*), and there is no weight loss (*examination result*).

Example: A 14-year-old (*age*), mildly obese, otherwise healthy (*examination result*) boy (*gender*) presents with a painful limp and pain in the right knee that has been increasing in intensity for the past few days (*symptom*). There is no history of trauma (*clinical history*). Physical examination is significant for external rotation and limitation in abduction of the left hip and knee (*examination result*).

The Lead-in Question or Incomplete Statement

The stem can either present an incomplete statement or pose a lead-in question that immediately follows the clinical stem. Each serves as the link to the options. Incomplete statements and lead-in questions should be short and to the point, clearly directing the examinee to the desired cognitive task. For example, using the previous stem:

(Incomplete Statement) A 2-month-old presents with bilious vomiting for 24 hours. Physical examination is unremarkable, and there is no weight loss. The diagnostic study of choice to establish the diagnosis of malrotation is:

(Lead-in Question) A 2-month-old presents with bilious vomiting for 24 hours. Physical examination is unremarkable, and there is no weight loss. What is the diagnostic study of choice to establish the diagnosis of malrotation?

An additional rule is to **avoid having a blank in the stem** in which to “insert” an option. This requires the examinee to read the stem multiple times and makes taking the test itself more stressful than necessary. The item below, for example, tests identical content to the examples above, but it takes more time to answer.

(Blank in the Clinical Stem) - The diagnostic study of choice to establish the diagnosis of malrotation is ____ for a 2-mo.old who presents with bilious vomiting for 24 hrs. Physical exam is unremarkable, & there is no weight loss.

Here are some examples of lead-in questions that tend to be more likely to assess higher level cognitive processes, that is, to test application/reasoning rather than memory or rote recall.

- a. Which of the following tests should be ordered?
- b. What is the most likely result to be obtained?
- c. Which is the most likely diagnosis?
- d. Which of the following should be administered?
- e. What should be the first course of action?
- f. Which of the following is the most likely cause?
- g. What is the most appropriate next step?
- h. Which of the following medications would be most appropriate?
- i. Which of the following medications is the most likely cause of this symptom?

Lead-in questions are usually the *least* difficult part of an item to write. However, they **should not** include negatives such as “Which of the following is the *least* likely diagnosis?” Also, take care to ensure grammatically consistent links between the question and the options.

DO NOT use “EXCEPT” in the lead-in question. For example, our previous lead-in question “What is the diagnostic study of choice to establish the diagnosis of malrotation?” is superior to “All of the following diagnostic studies could be appropriately used to establish the diagnosis of malrotation except.” There are several reasons for avoiding “except” questions. First, it is more difficult to write options for which there are no exceptions. Second, the use of this type of delimiter places an extra cognitive burden on the examinee that is basically irrelevant to the testing point. Third, there is evidence that these types of items tend to overestimate the examinee’s ability and knowledge.

Item Shells

An ITEM SHELL is a “hollow” item containing a structure that is useful for writing sets of similar items. Haladyna and Shindoll (1989) suggest that beginning item writers use an item shell. The format for this shell is presented in the following table and an example is:

What is an example of _____?

- A. example
- B. plausible non-example
- C. plausible non-example
- D. plausible non-example

Two ways to develop item shells:

1. Follow the example above and identify the fact, concept, principle, or procedure being tested and the type of behavior that is desired (recalling, defining, predicting, evaluating, or problem solving).

Defining: What are the main symptoms of _____?

Predicting: What is the most common (cause or symptom) of a (patient problem)? *This tests anticipating consequences or cause-and-effect relationships.*

Evaluating: Patient illness is diagnosed. Which treatment is likely to be most effective? OR Why is treatment XX most effective?

Applying: Information is presented about a patient problem. How should the patient be treated/managed/etc? *This item requires the test taker to identify the diagnosis and to identify the correct treatment (management, education) based on the information given.*

2. Change already existing items into shells using the following steps:
 - a. Identify the stem
 - b. Underline the key words or phrases that indicate the content of the item
 - c. Identify variations for each key word or phrase (i.e., age of person, disease, treatment, complications, type of accident, vital signs)
 - d. Select one (or more) of the variations
 - e. Write the stem with the variation
 - f. Write the correct answer
 - g. Write plausible distractors

For each of the following, identify the key words or phrases that represent the content of the item in the stem. Select a variation for the key word(s) and write a new stem using the variation as well as the new correct answer. (You can add distractors later!)

1. Which of the following conditions would restrict a high school student from participating in wrestling?
 - a. Asthma
 - b. Absence of one testicle
 - c. Facial herpes simplex
 - d. Controlled epileptic seizures

New Stem:

2. Which of the following treatments is most effective in the treatment of localized impetigo?
 - a. Topical Bacitracin
 - b. Oral Penicillin VK
 - c. Oral Amoxicillin/clavulanic acid (Augmentin®)
 - d. Topical Mupirocin (Bactroban®)

New Stem:

3. What is the most appropriate recommendation for a 12-year old girl who has irritable bowel syndrome?
 - a. Adhere to a low-residue diet
 - b. Begin a trial of an antispasmodic drug
 - c. Empty the bowel daily
 - d. Apply cold compresses to the abdomen

New Stem:

(Source: Haladyna, T. M. (1994). Developing and Validating Multiple-Choice Test Items. Hillsdale, N.J.: Lawrence Erlbaum, Inc.)

Examples of Item Shells - Adapted from Haladyna & Shindoll (1989).

EXAMINEE TASK	CLINICAL STEM	LEAD-IN QUESTION
Make correct diagnosis	Information about disease or injury	What is the correct diagnosis for this patient?
Evaluate situation and anticipate consequences	Combination of information about situation	What is the most common (cause, complication, symptom, consequence) of this (procedure, drug therapy, problem)?
Select most effective treatment	Information about disease or injury and suggested diagnosis	Which of the following treatments is appropriate?
Evaluate potential causes and select correct one	Describe symptoms of patient disease or problem	What is the most likely cause of the (disease or problem)?
Evaluate alternative treatments and select step to be implemented	Diagnosis, history, and information about patient management	What is the appropriate drug therapy at the time of treatment? What is the next step in the management of this patient?

Identify symptoms or characteristics of a disease or injury	Information about a specific disease or condition	What set of symptoms can be expected?
Determine information needed to make correct diagnosis	Medical history given for particular problem	What additional information is necessary for a proper diagnosis?
Determine unwanted event or complication likely for given problem and/or treatment	Disease or problem and treatment described	What is the most likely complication of this (procedure, treatment, drug therapy)?

Generic Item Shells Classified by Cognitive Operation

(Source: Haladyna, T. M. (1994). Developing and Validating Multiple-Choice Test Items. Hillsdale, N.J.: Lawrence Erlbaum, Inc.)

Defining – Concepts

Which is characteristic of _____?
 Which is an example of _____?
 Which distinguishes _____?

Defining – Principles

Which is the reason for _____?
 Which is the cause of _____?
 Which is the relationship between _____ and _____?
 Which is an example of the principle of _____?

Predicting – Principles

What would happen if _____?
 What is the consequence of _____?
 What is the cause of _____?

Evaluating – Facts and Concepts

Which is the most or least important, significant, effective _____?
 Which is the most like, least like _____?
 What is the difference between _____ and _____?

Evaluating – Principles

Which of the following principles best applies to _____?

Evaluating – Procedures

Which of the following procedures best applies to the problem of _____?

Applying – Concepts, Principles, Procedures

What is the best way to _____?
 How should one _____?

Multiple-Choice Options

One-best-option multiple-choice items are composed of a single correct answer and three *plausible but incorrect* options. The incorrect options are called distractors or alternative answers to the single correct responses. In many ways, the options are the most difficult to write and are most often fraught with pitfalls capable of invalidating an item or unfairly cueing the test-wise examinee. A number of suggestions follow, adapted from Haladyna (1989).

1. Make each of the incorrect options (distractors) plausible, but definitely incorrect (or obviously less correct) than the correct option. Having two correct answers may invalidate an item.
2. Include only distractors that at least some examinees would choose in lieu of the correct response. Presenting options that no one will choose makes the item too easy to discriminate among examinees.
3. Although distractors should be attractive and plausible to the less knowledgeable, do not make them “tricky.”
4. Avoid using “none of the above” or “all of the above” as options because both present problems. For example, examinees only need to know two of the three options are true to know that “all of the above” must be the answer. Similarly, if an examinee can eliminate only one of the three options, then “all of the above” cannot be correct. Neither of these requires the examinee to know about all of the options presented. Also, “none of the above” requires the examinee to consider all possible answers to an item and not just the few presented in the options.
5. Avoid placing cues in a distractor such as the words “always” or “never.” There may be exceptions to such qualifiers. Having words in the correct option that closely parallel the wording of the stem is another way of providing clues.
6. Use relational qualifiers to avoid situations for which technically correct exceptions can be found. For example, the option “Children with this diagnosis die before the age of two” could be technically true for many different diagnoses while “The *majority of* children with this diagnosis die before the age of two” is an option that is either correct or incorrect.
7. Avoid qualifiers such as “usually,” “often,” “rarely,” “seldom,” or “commonly” which do not have a generally agreed upon definition. Instead, use specific qualifiers such as “in the majority of cases” or “in less than 20% of the cases.”
8. Avoid variation in the length, grammatical structure, or level of specificity of your options. Test wise individuals know that the longest or most specific option is most often the correct one. Item writers usually spend more effort on the correct options than the incorrect ones and this level of effort often is apparent to an experienced test taker.
9. Make sure that each option is grammatically and logically consistent with the lead-in question. For example, if the lead-in question uses a plural verb, make sure that all of the options have plural nouns.

10. Make sure that your options represent the same category (e.g., diagnostic tests, treatments) or “class” as the correct answer. For example, an option set such as the following either contains a cue to the correct answer or an unnecessary source of confusion for the examinee.
- (a) Vitamin A
 - (b) Vitamin B-1
 - (c) Vitamin C
 - (d) Calcium
11. Order the options to facilitate the examinee finding the correct one if she/he knows it. For example,
- (a) Vitamin A
 - (b) Vitamin B-1
 - (c) Vitamin C
 - (d) Vitamin E
- Rather than:**
- (a) Vitamin E
 - (b) Vitamin A
 - (c) Vitamin C
 - (d) Vitamin B-1
12. If numerical values (e.g., laboratory results) are employed as options, list them from either high to low or low to high.
13. Options should not overlap (e.g., less than 25%, 20% to 40%, etc.). They should also not be too specific (e.g., “exactly 24%”) nor too general.
14. Using technical phrases, familiar but incorrect responses, or true statements that do not answer the question may increase the appeal of distractors to less knowledgeable examinees. This can improve the validity of the examination if more knowledgeable examinees are not similarly “distracted.”
15. Use as many plausible distractors (up to three) as possible, although it is often difficult to construct more than two good ones.

DOCUMENTATION OF CORRECT RESPONSES

In order to appropriately validate the correct answer, we are asking that all item writers provide a primary reference source for all correct answers as well as distractors. The following are considered primary references: acceptable medical, pediatric medical, and nursing/nurse practitioner textbooks; nationally recognized pediatric nursing, medical and nurse practitioner journals. Please cite only journals that are currently a part of the National Library of Medicine holdings.

EDITING ITEMS

Once all three constituents of your items have been constructed it is time to very systematically edit each of them. A good test item, though brief, is one of the most difficult writing tasks any professional is ever asked to undertake. Almost no one, even the most experienced of test constructors, can simply sit down and write a final item capable of the complex type of assessment that we at the Pediatric Nursing Certification Board are mandated to perform. Therefore we strongly suggest that you take the time to follow the following guidelines for editing each of your items. *Systematic editing is not an adjunct to item writing; it is an integral part of the process itself.*

- Step #1: **Review your explicit, written statement of the testing point and rationale for the item to assure that what you have written does indeed assess what you started out to write.** If it does not, either rewrite the item to better reflect this point or rewrite the testing point reflected by your item.
- Step #2: **If you have not run a spell and grammar check, do so at this point.** Then review the entire item for clarity, grammar, mechanics (e.g., abbreviations, capitalization) and style (e.g., the use of active verbs, adherence to the clinical stem-question-options format).
- Step #3: **Make sure that that there is indeed one and only one correct answer to your question, and that it is the one you have keyed.**
- Step #4: **Make sure that the answer is documented in the reference and that the highlighted passage is indeed relevant to the final version of your item.**
- Step #5: **Provide at least two knowledgeable colleagues with your explicit statement of the testing point and its rationale and the highlighted clinical reference supporting the item. Ask them to review the item’s relevance.** It is a good idea to ask your reviewers to mark unclear issues, look for exceptions to your correct option, and make suggestions for improvement.
- Step #6: **Have two or more students or entry-level practitioners actually answer the edited question.** If feasible, have them orally report the thought processes they use to arrive at the answer. Encourage anyone who missed the item to challenge the correct answer or explain why he/she selected an incorrect option.
- Step #7: **Fill out the following checklist by simply circling the indicated options. Correct any deficiencies indicated by a “no” response.**

Yes	No	Is the item written in a clear, concise format, at the reading level of the proposed candidate?
Yes	No	Does the item begin with a clinical stem?
Yes	No	Does the stem contain all relevant information (e.g., patient characteristics, symptoms, examination results)?
Yes	No	Is the stem focused?
Yes	No	Does the stem contain <u>only</u> necessary wording (i.e., no “window dressing”)?
Yes	No	Is there any indication of bias (i.e., gender, sexual, cultural, ethnic, religious or class)
Yes	No	Does a lead-in question or incomplete statement follow the clinical stem?
Yes	No	Does the lead-in question or incomplete statement avoid words such as “except,” “none of the above”, “all of the above”?
Yes	No	Does the lead-in question end with a question mark?
Yes	No	Does one and only one incontrovertibly correct option follow the lead-in question?
Yes	No	Are there two or three incorrect options?

Yes	No	Do the options avoid cues? Examples include: Words such as “always,” “never,” “usually,” “seldom,” commonly”—Grammatical or structure differences among the different options
Yes	No	Do all of the distractors possess a degree of plausibility (at least to an uninformed examinee)?
Yes	No	If numerical values are employed, are the options ordered numerically and are they mutually exclusive?
Yes	No	Do the options represent the same category or classification?
Yes	No	Did you consciously or unconsciously try to make the item “tricky?”
Yes	No	Does the item test clinical practice behavior rather than rote knowledge?
Yes	No	If the nurse was not able to correctly perform the behavior targeted by the item would it result in an unacceptable patient outcome?
Yes	No	Did you carefully proof read the item?

References for Item Writer Manual

Case, S.M., & Swanson, D.B. (1998). *Constructing written test questions for the basic and clinical sciences (2nd Edition)*. Philadelphia: National Board of Medical Examiners.

Haladyna, T.M. (1994). *Developing and validating multiple-choice test items*. Hillsdale, NJ: Lawrence Erlbaum Associates.

Haladyna, T.M., & Shindoll, R.R. (1989). Items shells: A method for writing effective multiple-choice test items. *Evaluation & the Health Professions*, *12*, 97-104.

LaDuca, A. (1994). Validation of professional licensure examinations: Professions theory, test design, and construct validity. *Evaluation & the Health Professions*, *17*, 178-197.

Thorndike, R.L. (1967). The analysis and selection of test items. In S. Messick & D. Jackson (Eds.), *Problems in human assessment*. New York: McGraw-Hill.

Item Writer Referencing Information

All **certification exam items** should be referenced in major medical or nursing textbooks. Items should be referenced to appropriate advanced practice references for the CPNP exam. Item writers for the CPNP exam should avoid using generalist texts as references. Items should reflect “evidenced based” practice. While journal articles are often good sources for test items for self-assessment exams and other “take-home” tests, item writers should attempt to use textbooks as primary references for items to be used on national certification exams.

For **SAE item writing**, in order to validate the correct answer, item writers are asked to provide a primary and additional (secondary) reference source for all correct answers as well as distractors. **The primary reference is to be an acceptable pediatric medical nurse practitioner journal** which is commonly available to the pediatric nurse practitioner. Major medical or nursing textbooks may be used as a secondary reference. Please avoid the use of subspecialty journals as references. Instead use recognized and available texts as references for subspecialty items.

Primary references should be no more than 3-5 years old. Please identify at least two references for each item: a primary reference and an additional (secondary) reference.

A list of frequently used textbooks for Acute Care Exam and acceptable pediatric medical nurse practitioner journals for SAE item writing (Primary Care and Pharmacology) can be found on the following pages.

CPNP Acute Care Exam Reference List

The PNCB recommends that in reviewing for the examination, you use a pediatric textbook you are familiar with and one(s) that focus(es) on the subject areas covered by the content outline. Our acute care item writers and committee members have found the most current edition of the following references useful for their review. A few of the many pediatric specialty based texts that also may provide reference to the content outline are included below. The PNCB, does not endorse nor have any proprietary relationship with any of the below mentioned textbooks or handbooks.

- Barkin and Rosen - *Emergency Pediatrics: A Guide to Ambulatory Pediatrics*
- Behrman, Kliegman & Jenson - *Nelson Textbook of Pediatrics*
- Center for Disease Control: *2006 Redbook*
- Curley and Moloney-Harmon - *Critical Care Nursing of Infants and Children*
- Gilbert and Barnes - *Clinical Use of Pediatric Diagnostic Tests*
- Johns Hopkins Hospital: *Harriett Lane Handbook*
- Logan - *Principles and Practices for the Acute Care Nurse Practitioner*
- Moloney-Harmon and Czerwinski - *Nursing Care of the Pediatric Trauma Patient*
- Perkin, Swift and Newton - *Pediatric Hospital Medicine*
- Richardson - *Practice Guidelines for Pediatric Nurse Practitioners*
- Rogers and Helfaer - *Handbook of Pediatric Intensive Care*
- Slonim, A.D. and Pollack, M. - *Pediatric Critical Care Medicine*

Subspecialty texts include:

- Fleisher, Ludwig, Henretig, Silverman, Ruddy. *Textbook of Pediatric Emergency Medicine*
- Long - *Principles and Practice of Pediatric Infectious Disease*
- Park - *Pediatric Cardiology for Practitioners, 4th Edition*
- Silles - *Practical Algorithms in Pediatric Hematology and Oncology*
- Styne - *Pediatric Endocrinology*
- Wales and Wit - *Pediatric Endocrinology and Growth*

ITEM SUBMISSION TO PNCB

Guidelines

When you are completely satisfied with your items, prepare them according to the reference and item submission formats provided by the PNCB in this manual and return your items on a Microsoft Word document sent as an E-mail attachment to chaut@pncb.org. This format should be used to write and record the items and items responses as well as the primary reference and critiques and secondary references as needed.

FORMAT FOR ITEM REFERENCES

One Author, Journal Article

Thiessen PN. Recurrent abdominal pain. *Pediatr Rev.* 2002;23(2):39-46.

Two Authors, Journal Article

Linsk R, Cooke J. Diagnosis and management of acute otitis media in Michigan. *Clin Pediatr.* 2004;43:159-169.

More than Six Authors, Journal Article

Downs SH, Marks GB, Sporik R, et al. Continued increase in the prevalence of asthma and atopy. *Arch Dis Child.* 2001;84:20-23.

Group as an Author, Journal Article

American Academy of Pediatrics. Subcommittee on Management of Sinusitis and Committee on Quality Improvement. Clinical practice guidelines: Management of sinusitis. *Pediatrics.* 2001;108:798-808.

Author(s) of Book

Swischuck LE. *Imaging of the Newborn, Infant and Very Young Child.* 4th ed. Philadelphia, Pa: Lippincott Williams & Wilkins; 2003.

Group Author of Book

Committee on Infectious Diseases. Varicella-zoster infections. In: Pickering LK, Baker CJ, Overturf GD, Prober CG, eds. *Red Book*, 26th ed. Elk Grove Village, IL: American Academy of Pediatrics; 2003:672-686.

Author(s) of Chapter in an Edited Book

Dunn AM, Brady MA. Sexual abuse. In: Burns CE, Dunn AM, Brady MA, Barber Starr N, Blosser CG, eds. *Pediatric Primary Care.* 3rd ed. St. Louis, Mo: Saunders; 2004:417-422.

World Wide Web

Centers for Disease Control. Lead: Guidelines and recommendations. Available at: <http://www.cdc.gov/lead/guidelines.htm>. Accessed July 24, 2005.

Luo F, Leckman JF, Katsovich L., et al. Prospective longitudinal study of children with tic disorders and/or obsessive-compulsive disorder: Relationship of symptom exacerbation and newly acquired streptococcal infection. *Pediatrics* [serial online]. 2004;113:e578-e585 Available at <http://pediatrics.aappublications.org>. Accessed July 24, 2005.

Kim DE. Varicocele. [eMedicine Web site]. July 20, 2004. Available at: www.emedicine.com/med/topic2757.htm. Accessed July 19, 2005.

CPNP Exam Item Submission

Format Example

Each exam item should be submitted in the following format and returned as a Microsoft Word document to the PNCB as an E-mail attachment to: chaut@pncb.org

AUTHOR: (writer's name)

TOPIC: (from outline)

Focus of Item (Objective)

STEM and LEAD-IN QUESTION: (Sequence number with period, followed by question.)

1.

OPTIONS: (Includes labels A., B., C. and D. followed by choices.)

A.

B.

C.

D.

CORRECT ANSWER: (Answer: followed by letter of choice.)

Answer: B

REFERENCE:

PNP Exam Item Submission

This is how each item submission would look as completed.

Completed Format Sample

Jane Doe

Physiology/Pathophysiology: EENT

A 4-month-old comes in for a routine examination. The mother reports excessive tearing (epiphora) in baby's left eye that appears larger than the right and on fundoscopic examination shows cupping of the optic nerve. What is the most likely diagnosis?

- A. Cataract
- B. Retinoblastoma
- C. Chorioretinitis
- D. Glaucoma

Answer: C

REFERENCE:

Burns CE, Dunn AM, Brady MA, Barber Starr N, Blosser CG, eds. *Pediatric Primary Care. A Handbook for Nurse Practitioners*. 3rd ed. St. Louis: Saunders; 2004.

CPNP Self-Assessment Exercise (SAE) Item Submission

Format Example

Each SAE item should be submitted in the following format and returned as a Microsoft Word document to the PNCB as an E-mail attachment to: chaut@pncb.org

WRITER'S NAME (Author)

BEHAVIORAL: TOBACCO USE (Topic)

STEM AND LEAD-IN QUESTION (Sequence number with period, followed by question.)

1. Of the following, the most effective means of deterring adolescents from beginning to smoke cigarettes has been shown to be:

OPTIONS: (Includes labels A., B., C. and D. followed by choices. Multiple choice questions only, 3-4 options.)

- A. emphasizing the negative social consequences of smoking
- B. reviewing the long-term hazards of smoking
- C. stressing the potential for addiction to nicotine
- D. discussing the falseness of cigarette advertising

CORRECT ANSWER: (Answer: followed by letter of correct option.)

Answer: A

CRITIQUE: (fill in your critique in this area addressing both the correct and incorrect options.)

The risk of starting to smoke climbs steadily between age 12-16 years and then declines. The early adolescent years are a critical time to educate children in a manner suited to their developmental status.

Stressing the long-term health hazards of tobacco use (e.g., cancer, emphysema, and nicotine addiction) may be effective among young children but is less beneficial among adolescents who are usually aware of the risks. Of far greater benefit is a reminder of the adverse social consequences that may result from bad breath and finger stains caused by smoking.

It is difficult to convince adolescents of the duplicity of cigarette advertisements that tout a glamorous lifestyle. It is more useful to refer them to peer-modeling programs featuring an actor or sport's star that does not smoke. Enlisting the aid of parents in providing a nonsmoking environment may be helpful; however, the admonitions of parents rarely dissuade adolescents.

PRIMARY REFERENCE:

Gold AO, Fisburn PT. Relationships between high school students smoking and cigarette advertisements. *J Pediatr Health Care*. 2003;110(4):488-491.

SECONDARY REFERENCE:

O'Leary GL, Kerry DD. Understanding tobacco use amongst adolescents. *Pediatr Clin North Am*. 2001;34(5):363-379.

Self-Assessment Exercise Item

This is how each item submission would look as completed.

Completed Format Sample

Jane Doe

BEHAVIORAL: TOBACCO USE

1. Of the following, the most effective means of deterring adolescents from beginning to smoke cigarettes has been shown to be:

- A. emphasizing the negative social consequences of smoking
- B. reviewing the long-term hazards of smoking
- C. stressing the potential for addiction to nicotine
- D. discussing the falseness of cigarette advertising

Answer: A

The risk of starting to smoke climbs steadily between age 12-16 years and then declines. The early adolescent years are a critical time to educate children in a manner suited to their developmental status.

Stressing the long-term health hazards of tobacco use (e.g., cancer, emphysema, and nicotine addiction) may be effective among young children but is less beneficial among adolescents who are usually aware of the risks. Of far greater benefit is a reminder of the adverse social consequences that may result from bad breath and finger stains caused by smoking.

It is difficult to convince adolescents of the duplicity of cigarette advertisements that tout a glamorous lifestyle. It is more useful to refer them to peer-modeling programs featuring an actor or sport's star that does not smoke. Enlisting the aid of parents in providing a nonsmoking environment may be helpful; however, the admonitions of parents rarely dissuade adolescents.

PRIMARY REFERENCE:

Gold AO, Fisburn PT. Relationships between high school students smoking and cigarette advertisements. *J Pediatr Health Care*. 2003;110(4):488-491.

SECONDARY REFERENCE:

O'Leary GL, Kerry DD. Understanding tobacco use amongst adolescents. *Pediatr Clin North Am*. 2001;34(5):363-379.

**CPNP Acute Care Exam Content Outline
National Certification Exam - Test Specifications**

Definition – The CPNP-AC role is designed to meet the specialized physiologic and psychological needs of children with complex acute, critical and chronic health conditions. CPNP-ACs respond to rapidly changing clinical conditions, including the recognition and management of emerging crises, organ dysfunction and failure. In accordance with this practice focus CPNP-ACs role activities encompass a wide range of NP practice strategies including contributing to the management of childrens’ health and illness states, the client-nurse relationship, the teaching-coaching function, the professional role, managing and negotiating healthcare delivery systems, monitoring and ensuring the quality of health care practice, providing family-centered care, and demonstrating cultural competency. The short-term goal of care is stabilization of the child, minimizing complications, and providing physical and psychological care measures. The long-term goal of care is to restore maximal health potential through implementation of NP strategies to reduce health risks. The continuum of care spans geographic settings including emergency departments, sub-specialty clinics, the home, hospitals and intensive care units.

Content Area	Total % (X2=N)	N Scored (n=180)
1. Clinical Role: Assessing and Diagnosing	49 %	88
A. Health History		
B. Physical Examination		
C. Screening and Diagnostic Tools		
D. Integrating Assessment Results Leading to Diagnoses		
2. Clinical Role: Planning, Implementing, and Evaluating	43 %	78
A. Therapeutic Interventions		
B. Educating		
C. Evaluating		
D. Collaborating		
E. Consulting and Referring		
3. Professional Practice Role	8 %	14
A. Research		
B. Education		
C. Leadership		
Total	100 %	180

Integrated concepts (used to categorize items)

- Age-dimension:
 - o Neonates (0-30days)
 - o Infants (1 - 12 months)
 - o Toddlers (13 - 24 months)
 - o Preschoolers (25 - 59 months)
 - o School Age (5 - 11 years)
 - o Adolescent (12 - 19 years)
 - o Young Adult (20 - 21 years)

- Acuity level: acute, chronic, critical
- Body systems (guidelines, for those categorized):
 - o Respiratory
 - o Infectious disease
 - o Gastrointestinal
 - o Cardiovascular
 - o Neurology
 - o Hematology
 - o Renal
 - o Musculoskeletal
 - o Immunology
 - o Metabolic
 - o Endocrine
 - o Oncology
 - o Otolaryngology
 - o Trauma
 - o Mental health
 - o Dermatology
 - o Ophthalmology
- Evidence based practice
- Ethical and legal principles
- Safety (e.g., poisoning, restraints)
- Diversity (e.g., cultural, ethnicity, gender issues)
- Alternative therapies

CPNP Acute Care Content Outline

1. Clinical Role: Assessing and Diagnosing

A. Health History

1. Identify and analyze factors that affect the child's growth and development such as:
 - a. Genetic background
 - b. Prenatal factors
 - c. Temperament
 - d. Family, cultural, religious, and spiritual influences
 - e. Parenting Style
 - f. Environmental milieu (e.g. home, day care, school, neighborhood, community)
 - g. Health status (e.g., demands of disease and injuries)
 - h. Significant life events (e.g., trauma, loss, violence)
 - i. Technology dependence (e.g., feeding tubes, artificial airways, indwelling catheters)
2. Analyze the family system to identify factors that influence the health of the child by assessing:
 - a. Family occupation/education/developmental level (e.g., illiteracy)
 - b. Family dynamics and management style
 - c. Family values and beliefs
 - d. Family issues and stresses
 - e. Family resources (e.g., financial, insurance)
 - f. Family violence
 - g. Management of and coping with acute and chronic illnesses
3. Assess the child's health risks in the context of an acute or chronic illness or injury related to:
 - a. genetic/family history
 - b. immunization status
 - c. risk-taking behavior
 - d. environmental factors
 - e. demands of disease and injury (e.g., adherence to treatment protocol, disease co-morbidity, burdens of care)
4. Assess child's and family's knowledge and behavior regarding these leading health indicators in the context of an acute or chronic illness or injury related to:
 - a. physical activity
 - b. eating disorders, nutrition
 - c. tobacco use
 - d. substance abuse
 - e. responsible sexual behavior
 - f. mental health
 - g. injury/violence
 - h. environmental quality
 - i. immunizations
 - j. access to health care
5. Assess child's and family's knowledge and behavior regarding the pathophysiology of disease and injury
6. Obtain and document a relevant health history for children

B. Physical Examination

1. Perform and record a complete and accurate physical assessment

C. Screening and Diagnostic Tools

1. Assess the child's developmental status based on the developmental theories
2. Perform age-appropriate screening for developmental and behavioral concerns
3. Order and interpret age and situation appropriate screening labs and other diagnostic tests

D. Integrating Assessment Results Leading To Diagnoses

1. Recognize individual variations including genetic, ethnic, physiologic, and anatomic differences
2. Assess emergent and life threatening situations
3. Assess organ system dysfunction
 - a. Cardiovascular
 - b. Dermatology (including burns)
 - c. Endocrine
 - d. Gastrointestinal
 - e. Genitourinary/Renal
 - f. Hematologic
 - g. Immunology
 - h. Infectious Disease
 - i. Mental health/behavior
 - j. Metabolic
 - k. Musculoskeletal
 - l. Neurologic
 - m. Oncology
 - n. Ophthalmology
 - o. Otolaryngology
 - p. Respiratory
 - q. Trauma
4. Assess for child abuse and neglect
5. Assess the effect of acute and chronic illnesses on:
 - a. Growth and development
 - b. Nutritional status
 - c. Pain
 - d. Child and family coping
 - e. Sleep and rest patterns
 - f. Activity/mobility
 - g. Sexual/reproductive issues
 - h. Skin integrity
6. Differentiate between normal and abnormal development
7. Identify etiology, natural history, developmental considerations, pathogenesis, and clinical manifestations of specific disease and injury processes in children
8. Identify nutritional needs
9. Identify pain management needs
10. Compile differential diagnosis
11. Identify diagnoses

2. Clinical Role: Planning, Implementing, and Evaluating

A. Therapeutic Interventions

1. Provide interventions to modify behavior associated with health risks
2. Provide initial resuscitation and stabilization in emergent and life threatening situations
3. Manage health alterations related to:
 - a. Cardiovascular
 - b. Dermatology (including burns)
 - c. Endocrine
 - d. Gastrointestinal
 - e. Genitourinary/Renal
 - f. Hematologic

- g. Immunology
 - h. Infectious Disease
 - i. Mental health/behavior
 - j. Metabolic
 - k. Musculoskeletal
 - l. Neurologic
 - m. Oncology
 - n. Ophthalmology
 - o. Otolaryngology
 - p. Respiratory
 - q. Trauma
4. Assist the parent/child in coping with demands of the disease or injury, and in facilitating the child's developmental potential
 5. Perform and/or interpret age and situation appropriate screening labs and other therapeutic procedures
 6. Prescribe and/or maintain medication regimens recognizing the pharmacodynamic and pharmacokinetic processes
 7. Prescribe and/or maintain other therapies related to the effects of the acute and chronic condition on:
 - a. Growth and development
 - b. Nutritional status
 - c. Pain
 - d. Child and family coping
 - e. Sleep and rest
 - f. Sexual/reproductive status
 - g. Skin integrity
 - h. Activity/mobility
 8. Prescribe therapies to minimize complications (e.g., co-morbidity, iatrogenic) associated with acute and chronic conditions
 9. Prescribe therapies to ensure patient safety
 10. Prescribe and apply technologic devices that monitor and sustain physiologic functioning
 11. Collaborate in implementing appropriate palliative and end of life care issues
- B. Educating**
1. Educate the child and family concerning the following:
 - a. Demands of disease or injury
 - b. Effective parenting
 - c. Treatment modalities
 - d. Impact of the disease on the child's development
 - e. Responsibility for self care
 2. Provide anticipatory guidance and health promotion in the context of acute or chronic illness or injury
- C. Evaluating**
1. Evaluate the child's and family's response to interventions
 2. Revise the plan of care based on the evaluation
- D. Collaborating**
1. Collaborate in a developmentally-appropriate manner with the child and the family in treatment planning and decision making
 2. Incorporate health objectives into individual educational plans (IEPs) for children with special needs
 3. Incorporate child and family centered evidence based practice (research) into treatment modalities
 4. Collaborate with other members of the health care team
- E. Consulting and Referring**
1. Refer children to appropriate community agencies and for family support and specialty care as needed
 2. Activate child protection services and other resources on behalf of children at risk

3. Plan for the transition to various home or health care settings
4. Consult or refer to other members of the health team

3. Professional Practice Role – The AC PNP demonstrates leadership ...

A. Research

1. Participate in quality improvement/quality management activities
2. Participate in designing and conducting research
3. Disseminate research findings

B. Education

1. Provide **informal** education to other health care professionals to promote improved child health care
2. Prepare and provide **formal** education to other health care professionals to promote improved child health care
3. Participate as a mentor or preceptor of students and colleagues

C. Leadership

1. **Interpret the nurse practitioner role in pediatric health care to other health care providers and the public**
2. Maintain current knowledge regarding state and federal programs for child and family health care
3. Evaluate the impact of public issues that effect the delivery of health care services for children and families
4. Participate in team/committee meetings
5. Facilitate or lead team/committee meetings
6. Participate in the peer review process with colleagues
7. Participate in ethical decision making
8. Maintain confidentiality
9. Develop standards, pathways and protocols

Acute Care Self-Assessment Exercise Curriculum

A Acute Care Self-Assessment Exercise (SAE) will be designed for the CPNP-AC in 2007. The Acute Care PNP SAE will include, but not be limited to the following topics:

- Laboratory Interpretation
- Imaging/Radiology
- Organ replacement
- Cardiology – Interpreting cardiac murmurs, reading EKG’s, monitoring, surgery anomalies, and intervention procedures
- Pain Management/Conscious Sedation
- End of Life / Palliative Pediatric Issues/Management
- IV pharmacology
Fluid therapy – including TPN
Antibiotic therapy
Continuous IV drips
- Pediatric Oncology
Chemotherapy
Radiation Treatment
- Credentialing/Inpatient Pediatric Care
Hospital privileging
Quality Assurance/Improvement
Writing orders/Documentation
Consultation/Collaboration
- Pediatric Trauma
Burns
Injuries (intentional and unintentional)
- Respiratory Management
Airway management
Oxygen therapy
Ventilator therapy
Interpreting

A 7-year curriculum will be designed highlighting topics listed above to a particular year.