



Item Development Guidelines

for the

Care Manager Certification Examination



Vita R. Greco
Director, Psychometric Services
Professional Testing Corporation



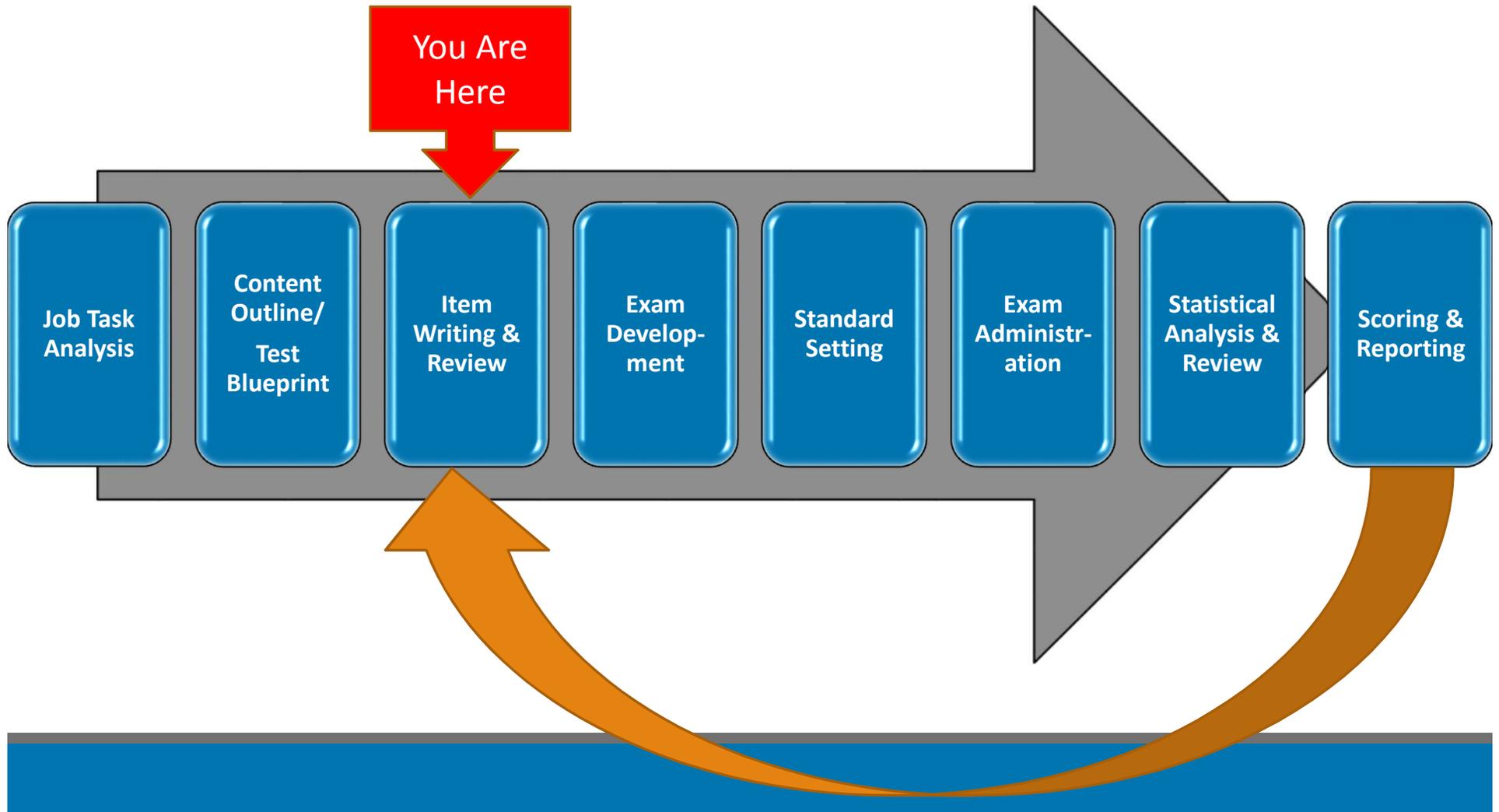
Overview

- Goal of item writing
- Exam Development Process
- Eligibility requirements
- Where to begin
- Item structure
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- Examples
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Goal of Item Writing

- Produce quality multiple choice items to effectively discriminate between candidates who should be awarded the credential and candidates who should not.
- Create effective items that:
 - are fair for candidates just meeting the eligibility requirements
 - target only the knowledge as described in the content outline
 - adhere to the item writing guidelines to reduce the likelihood of unqualified candidates guessing the correct answer

Exam Development Process



Eligibility Requirements



*Or International Equivalents

** Full-time employment is defined as a minimum of 35 hours per week. Part-time employment can be used. Refer to the conversion table on page 5.

Where To Begin

- Review the content outline & any assignments sent by NACCM
 - All items must test the knowledge as delineated in the content outline
- Decide on content to write about
 - Is this relevant to practice?
 - Does this address current, best practice?
 - Why should the candidate know this?
 - How will knowing this make job performance more effective?
 - Is this based on generalized or specialized knowledge?
 - Is this topic appropriate for the candidate population?



Generating Ideas

- Work experience – Real life problems or situations encountered
 - Situations in which lack of minimal competence may result in undesirable outcomes
 - Relevance to professional practice and addresses current, best practice
- Functions, roles, abilities, and concepts essential to a just qualified candidate
- References/Reading materials
 - Focus on the application of those concepts to real life situations/scenarios instead of items targeting memorization
- Common misconceptions/common errors
- Topics that are not controversial and not likely to change in the near future

Item Structure

- Four-option multiple choice items
 - Stem (premise/question)
 - Answer Choices or Alternatives (all possible answer options)
 - Key (correct answer)
 - Distractors (incorrect answer options)

Unacceptable	Acceptable
<ul style="list-style-type: none"> • Fill-in-the blank • True/False • Open-ended/Essay • Rank order • Matching • All of the above/None of the above 	<ul style="list-style-type: none"> • Four-option multiple choice items only • Situations/Scenarios**  <p>**acceptable provided that they present the question in a 4-option multiple choice format</p>

The Anatomy of a Multiple Choice Item

In which U.S. city is the Willis Tower located? } **Stem**

Key { 1. Chicago*

2. Newark

3. San Francisco

4. New York City

Distractors {

} **Answer Choices/Alternatives**

Direct Question vs. Incomplete Statement

Direct Question	Incomplete Statement
<p>Which of the following was invented by Thomas Edison?</p> <ol style="list-style-type: none">1. Airplane2. Television3. Light bulb*4. Electric train <p>Since answer choices are typically phrases, all answer choices <u>MUST</u> begin with a capital letter and <u>DO NOT</u> end with a period.</p>	<p>Thomas Edison invented the</p> <ol style="list-style-type: none">1. airplane.2. television.3. light bulb.*4. electric train. <p>Since the answer completes a sentence, all answer choices <u>MUST</u> begin with a lowercase letter and end with a period.</p>

Stem

- Presents the complete premise of the item
 - The central idea and most of the phrasing should be in the stem
 - Candidates should be able to determine what the item is addressing without reading through the options
- Is clear and concise with a single focus based on important learning objectives and not trivial information
 - Brevity of stem minimizes reading time
- Poses a problem to which the correct answer is not likely to change over time
- Is stated positively and in the 3rd person
- States the information simply to support the goal of testing information, not teaching information
- Uses “should” instead of “would”

Stem Presented Clearly

Poor	Better
<p>An elevated white blood cell count is</p> <ol style="list-style-type: none">1. a sign of infection.*2. dangerous.3. normal.4. any count over 20,000.	<p>An elevated white blood cell count is most often symptomatic of</p> <ol style="list-style-type: none">1. infection.*2. diabetes.3. high blood pressure.4. respiratory insufficiency.

Stem Presented Simply

Poor	Better
<p>Mr. Watson is a 73-year-old widower who has suffered from headaches for several years. His wife died four years ago, as the result of a stroke. They had two children, both now grown and living in other parts of the country. Mr. Watson believes that his headaches may be due to high blood pressure, but tests to date have not confirmed his suspicions. In an effort to establish the cause of Mr. Watson's headaches, what is the first procedure that should be initiated?</p>	<p>What should be the first procedure to diagnose the probable cause of chronic headaches in an otherwise healthy 73-year-old man?</p>

Test But Do Not Teach Information

Poor	Better
<p>The sun is the star at the center of the solar system and is by far the most important source of energy for life on Earth. Approximately 75% of the sun's mass consists of which of the following?</p> <ol style="list-style-type: none">1. Carbon2. Oxygen3. Helium4. Hydrogen*	<p>Approximately 75% of the sun's mass consists of which of the following?</p> <ol style="list-style-type: none">1. Carbon2. Oxygen3. Helium4. Hydrogen*



Stem Stated Positively

Poor	Better
<p>Which of the following is <u>NOT</u> a city in California?</p> <ol style="list-style-type: none">1. Boise*2. Sacramento3. Los Angeles4. San Francisco	<p>In what state is the city of Boise located?</p> <ol style="list-style-type: none">1. Idaho*2. Iowa3. New Jersey4. California

Stem Presented With Enough Information

Poor	Better
<p>A skyscraper is a building that is higher than</p> <ol style="list-style-type: none">1. 107 feet.2. 492 feet.*3. 758 feet.4. 963 feet.	<p>Which of the following is the minimum height for a building to be considered a skyscraper?</p> <ol style="list-style-type: none">1. 107 feet2. 492 feet*3. 758 feet4. 963 feet

Focus on Learning Objectives

Poor	Better
<p>The acronym NRA stands for</p> <ol style="list-style-type: none">1. National Recovery Act.*2. National Rifle Association.3. Northeast Regional Accreditation.4. Nebraska Recreational Administration.	<p>What legislation was passed by Congress during the Great Depression and later was found to be unconstitutional?</p> <ol style="list-style-type: none">1. National Recovery Act*2. Work Projects Administration3. Civilian Conservation Corps4. Public Works Administration





Setting Up the Answer Choices

- Must follow grammatically from the stem
- Should be uniform/homogeneous in structure, content, and level of detail
- Should avoid the use of absolute terms such as: *always, never, all, none*
- Do not include All of the above/None of the above
- Do not include more than 1 choice that is correct (such as a&b but not c).
- Do not begin all answer choices with the same word or phrase which should appear in the stem instead
- Must be mutually exclusive of each other

Include Repeated Words In The Stem

Poor	Better
<p>Ice forms on water when</p> <ol style="list-style-type: none">1. the temperature falls below 0°F (-17.8°C) at sea level.2. the temperature falls below 12°F (-11.1°C) at sea level.3. the temperature falls below 24°F (-4.5°C) at sea level.4. the temperature falls below 36°F (2.2°C) at sea level.	<p>At sea level, ice forms on water when the temperature falls below</p> <ol style="list-style-type: none">1. 0°F (-17.8°C).2. 12°F (-11.1°C).3. 24°F (-4.5°C).4. 36°F (2.2°C).

Homogeneity of Answer Choices

Poor	Better
<p>Idaho is known for</p> <ol style="list-style-type: none">1. being the location of the tallest mountains in the United States.2. becoming the 41st state in the United States.3. being the largest producer and distributor of potatoes.*4. having the nickname of “the big apple.”	<p>Idaho is most widely known for its production and distribution of</p> <ol style="list-style-type: none">1. corn.2. wheat.3. potatoes.*4. tomatoes.

Mutually Exclusive Distractors

Poor	Better
<p>The recommended dosage of acetaminophen taken orally for adults and adolescents weighing 50 kg and over is 1,000 mg every</p> <ol style="list-style-type: none">1. 2 to 4 hours.2. 4 to 6 hours.*3. 6 to 8 hours.4. 8 to 10 hours.	<p>The recommended dosage of acetaminophen taken orally for adults and adolescents weighing 50 kg and over is 1,000 mg every</p> <ol style="list-style-type: none">1. 1 to 3 hours.2. 4 to 6 hours.*3. 7 to 9 hours.4. 10 to 12 hours.



Key

- Must be the one and only one correct or best answer
- Is unquestionably correct
 - References
 - Other subject matter experts
- Must not stand out from the page (i.e., not longer or more technical)
- Does not use a word that appears in the stem unless the word also appears in the distractors
- Is documented in a current, acceptable resource



Distractors

- Are absolutely incorrect but plausible to help discriminate between candidates who have an understanding of the knowledge from those who do not
- Are written at the same level of detail as the key (i.e., is not vague while the key is precise/detailed)
- Are not humorous as these distractors are easily ruled out

Effects of Poor Distractors

- Odds of guessing the correct answer depend on the construction of the item and the plausibility of the distractors

# of Implausible Distractors	Probability of Guessing Correctly
0	25%
1	33%
2	50%
3	100%

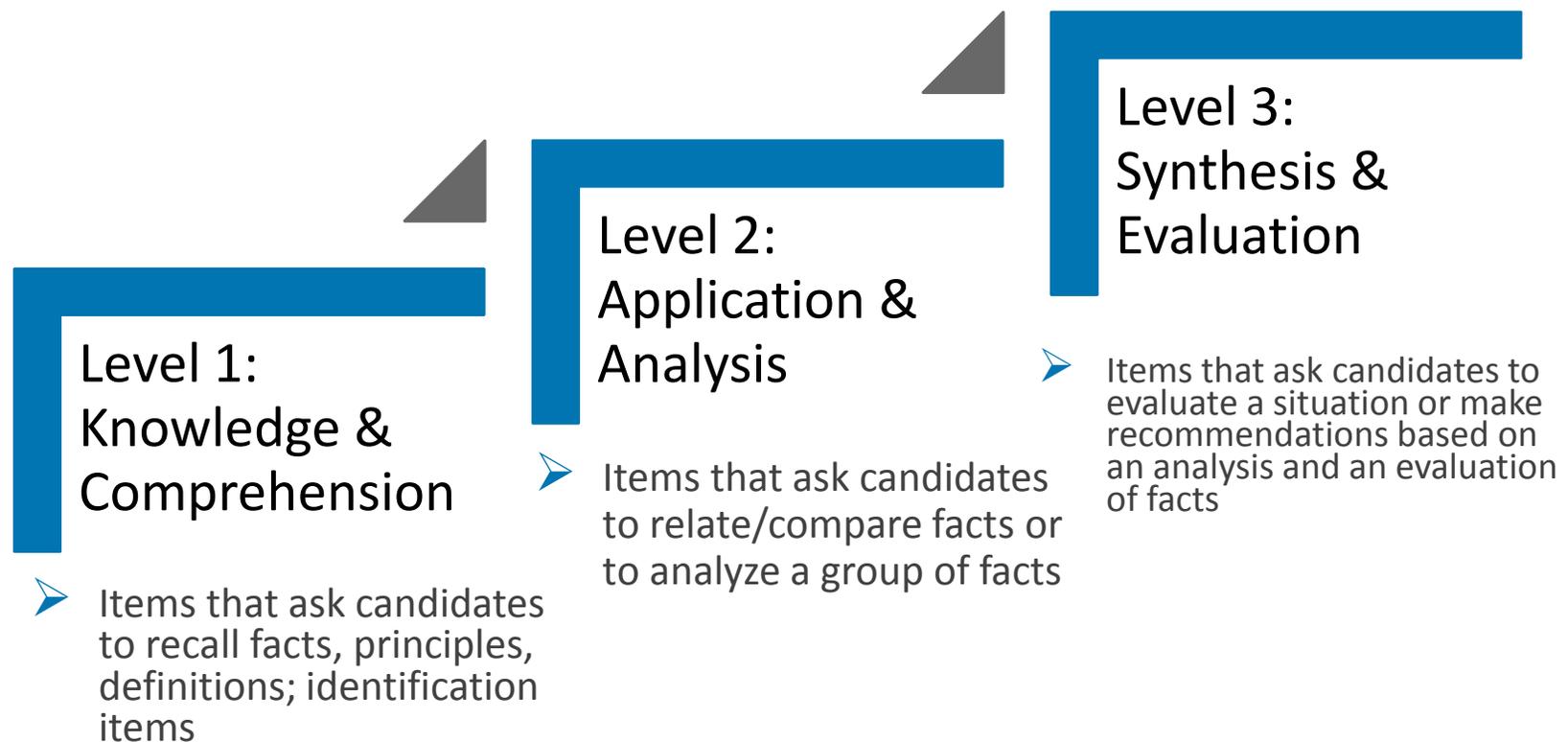


- If unqualified candidates have a high probability of guessing correctly, the validity and reliability of the exam can be affected, which can result in less value being placed on the certification.

Examples of Poor Distractors

Poor	Poor
<p>In which of the following US cities was President John F. Kennedy assassinated?</p> <ol style="list-style-type: none">1. Dallas*2. Indiana3. Kentucky4. Frankfurt	<p>Serious communicable diseases that can affect children in daycare facilities are</p> <ol style="list-style-type: none">1. allergy to gluten and peanuts.2. type 1 diabetes.3. hepatitis and meningitis.*4. rheumatism and arthritis.

Writing Higher Cognitive Level Items



Situational/Scenario Items

- Short vignettes presenting information that can be used to answer several items.
- All items must be independent of each other
 - The answer to one item must not depend on another
- Information from one item should not provide a clue/cue to another



Avoiding Bias

- Items should not have any characteristics that would result in differential performance for candidates of the same ability but from different ethnic, gender, cultural, socioeconomic, or religious groups.
 - Does the item contain content or language unfamiliar to some candidates?
 - Will members of one candidate group get the item correct or incorrect for the wrong reason?
 - Are there clues included in the item that would facilitate performance of one group over another?

Avoiding Stereotyping

- Items should be free of material that may be interpreted as offensive, demeaning, or emotionally charged.
 - For example, use police officer instead of policeman; do not imply inferiority of a specific group (age, gender, ethnicity, disability, etc.)
 - Avoid writing items with stereotypical occupations (i.e., referring to the doctor as he or the nurse as she) or stereotypical situations
 - Unless it is imperative to the question, do not write questions referring to someone's age, gender, ethnicity, etc.
 - Would this item “turn-off” or offend a candidate resulting in lower performance?

Next Steps

- NACCM to send follow-up email after the webinar with helpful resources and more details including content areas to focus on, how to submit items, and deadline dates
- Earn contact hours for writing test questions!
 - 3 questions = 1 contact hour
 - 5 questions = 2 contact hours
- If you are interested in writing items, or have any questions, please notify Julie Wagner jwagner@naccm.net

Q&A

