



ITEM-WRITING WORKSHOP

FEBRUARY 24, 2020



Paving the way for future PAs

AGENDA

NCCPA Item-Writing Guidelines

Practice Following the Guidelines

Group Review of Items



BACKGROUND: NCCPA EXAM DEVELOPMENT

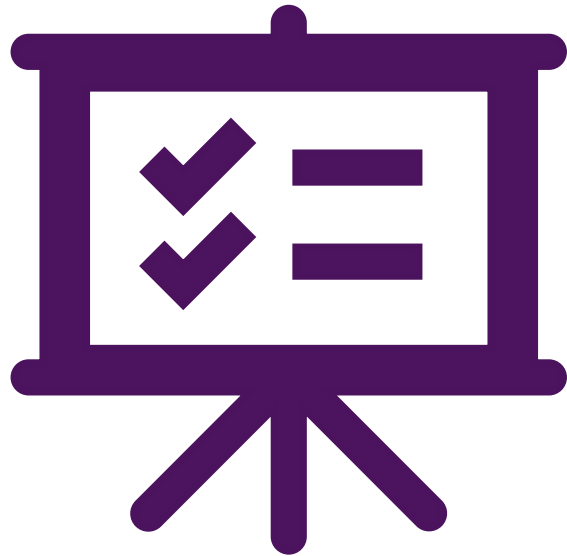


BACKGROUND: NCCPA EXAM DEVELOPMENT

Current NCCPA Examinations

- *Physician Assistant National Certifying Examination (PANCE)*
- *Physician Assistant National Recertifying Examination (PANRE)*
- *Certificate of Added Qualifications (CAQ) Examinations*
 - Cardiovascular and Thoracic Surgery
 - Emergency Medicine
 - Hospital Medicine
 - Nephrology
 - Orthopaedic Surgery
 - Pediatrics
 - Psychiatry

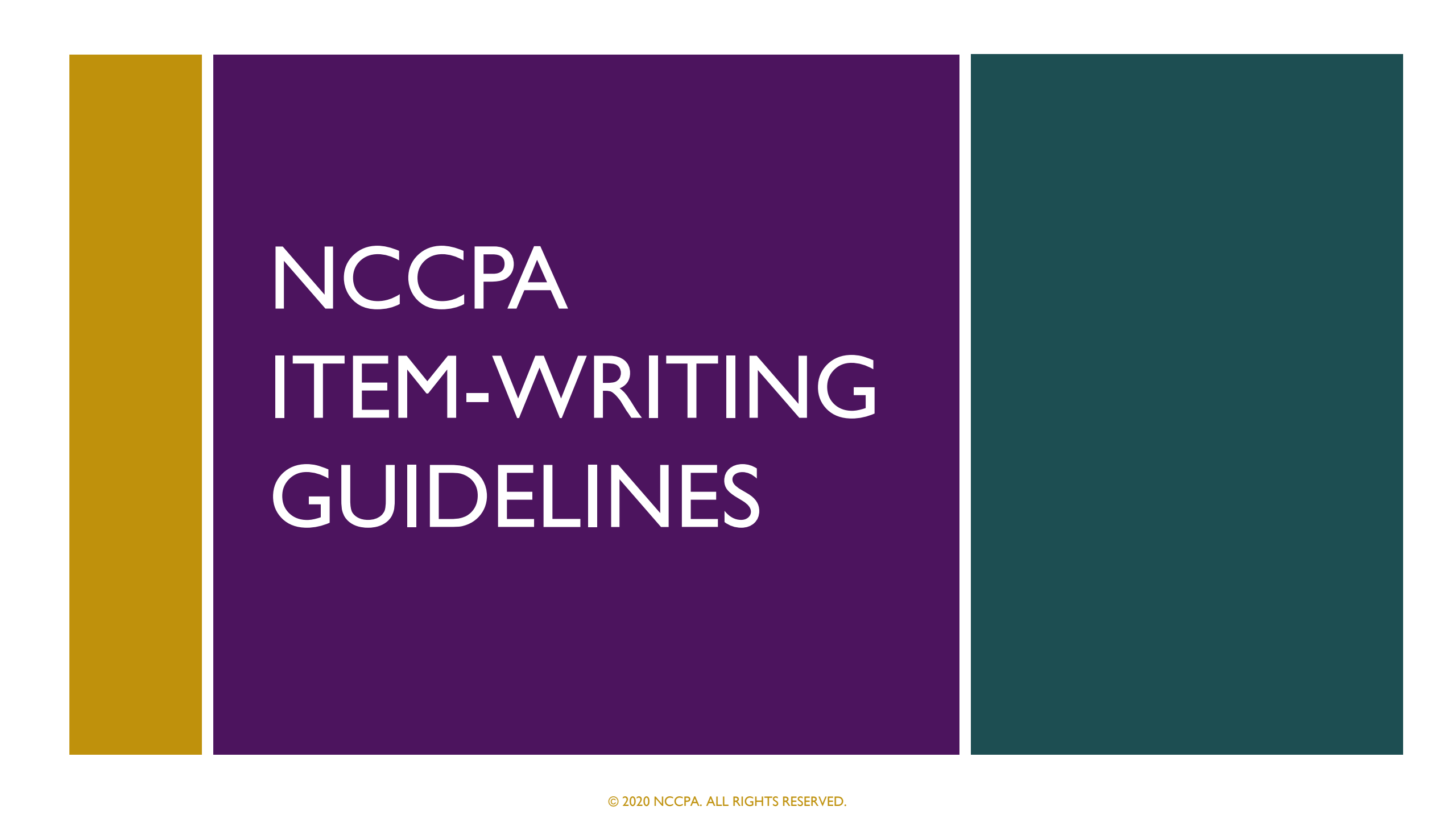
BACKGROUND: NCCPA EXAM DEVELOPMENT



- All NCCPA examination text is prepared to the standards of a published medical textbook or journal
- In addition to our NCCPA style and exam-specific style lists, we adhere to the *American Medical Association Manual of Style*
- Currently, all NCCPA examinations are composed only of multiple-choice, one-best-answer items

BEFORE WE BEGIN...

- Today, we're sharing item-writing methods and style that are currently used to develop items for NCCPA examinations.
- Methods and style that work for you and your program may differ.

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NCCPA ITEM-WRITING GUIDELINES



PARTS OF A MULTIPLE-CHOICE ITEM



PARTS OF A MULTIPLE-CHOICE ITEM

- **STEM = Clinical Vignette + Lead-in Question**

CLINICAL VIGNETTE:

A 55-year-old man comes to the emergency department because he has had severe shortness of breath and palpitations for the past hour. He says he has had two episodes of similar symptoms during the past month. Medical history includes acute myocardial infarction one year ago. Temperature is 37.1°C (98.8°F), pulse rate is 112/min and irregularly irregular, respirations are 20/min, and blood pressure is 128/78 mmHg. On physical examination, auscultation of the chest shows crackles in the lower lung fields. Edema of the ankles is noted. Electrocardiography shows atrial fibrillation. Transthoracic echocardiography shows ejection fraction of 25%. Chest x-ray study shows pleural effusion.

LEAD-IN QUESTION:

In this patient, therapy with which of the following drugs is most appropriate for management of atrial fibrillation?

PARTS OF A MULTIPLE-CHOICE ITEM

■ **OPTIONS = Correct Answer (Key) + Distractors**

CORRECT ANSWER (KEY):

(A) Amiodarone

DISTRACTORS:

(B) Flecainide

(C) Isosorbide dinitrate

(D) Procainamide

(E) Quinidine



CREATING THE CLINICAL VIGNETTE



CREATING THE CLINICAL VIGNETTE



- Standard components
 - Patient age and gender
 - Site of care (office, hospital, emergency department, etc.)
 - Presenting symptoms
 - Duration of symptoms
 - Pertinent personal and/or family history
 - Vital signs
 - Findings on physical examination
 - Findings on imaging, laboratory, and other studies
- A vignette may include only some of these components, depending on the question being asked

CREATING THE CLINICAL VIGNETTE

- **Focus on a single, clearly defined topic**
 - Plan a specific scenario involving a patient with a clear medical presentation
 - Include details that are relevant to the topic and presentation
 - Avoid topics not considered appropriate for the examination

CREATING THE CLINICAL VIGNETTE

- **Develop a realistic clinical picture**
 - Include usual information a practitioner would expect to see in a patient with particular symptoms
 - If vital signs typically would be recorded in a particular clinical setting and omitting them might be confusing to examinees, the vital signs should be specified in the vignette
 - “within normal limits” can be specified if appropriate

CREATING THE CLINICAL VIGNETTE

What
not to
include:

- **Extraneous details such as a patient’s current job, behavior, or family medical history**
 - *If these do not relate to the item in a meaningful way, they should not be included in the vignette*
- **Irrelevant information that may mislead the examinee (often called “window dressing” or “red herrings”)**
 - *The vignette should not contain information to trick examinees*

CREATING THE CLINICAL VIGNETTE

What
not to
include:

- **Teaching statements**
 - *Test questions should assess examinees' knowledge — not supply educational information*
- **Abbreviations, acronyms, and jargon**
 - *Text should be clear and understandable*
 - *A “level playing field” for examinees should be established by avoiding terminology that may not be well known or understood by all*



CREATING THE LEAD-IN QUESTION



CREATING THE LEAD-IN QUESTION

Create a clearly worded question that is focused on one specific point

Include superlatives such as *most* or *best* to lead to only one correct answer

- Phrases such as “most likely” and “best represents” make correct answers defensible if challenged by examinees

Include the phrase “of the following” to clearly and specifically relate the lead-in question to the options

- Remove the possibility of other correct answers

CREATING THE LEAD-IN QUESTION

Avoid absolutes such as
never and *always*

- Items that include absolutes are difficult to defend if challenged by examinees

Avoid indefinite words such as
frequently and *often*

- Indefinite terms will be interpreted differently by various examinees
- Indefinite terms in a lead-in question lead to difficulty defending and supporting the correct answer if challenged by examinees

CREATING THE LEAD-IN QUESTION

Avoid negative
and true/false
phrasing

- Do not ask questions such as
 - *Which of the following is NOT the cause of this patient's symptoms?*
 - *Which of the following is LEAST likely to occur?*
 - *Which of the following statements about _____ is true?*

Try the “Cover
the options” test

- With a ***focused*** and well-written lead-in question, examinees are able to have the correct answer in mind before reading the options
- With an ***unfocused*** lead-in, examinees will not have an idea of what is listed in the options

CREATING THE LEAD-IN QUESTION

Cover the Options Test:

Do you have an idea of the correct answer based on this stem?

A 46-year-old man of Asian descent who has chronic hepatitis B that was diagnosed 15 years ago comes to the office to discuss therapeutic options for his condition. He is otherwise healthy and feels well. On laboratory studies, serum alanine aminotransferase level is 47 U/L. Result of hepatitis B e antigen test is negative, and viral load is 56,000 copies/mL. Which of the following is the most appropriate information to give this patient regarding available therapies for his condition?

CREATING THE LEAD-IN QUESTION

Cover the Options Test: *Did you expect these options?*

A 46-year-old man of Asian descent who has chronic hepatitis B that was diagnosed 15 years ago comes to the office to discuss therapeutic options for his condition. He is otherwise healthy and feels well. On laboratory studies, serum alanine aminotransferase level is 47 U/L. Result of hepatitis B e antigen test is negative, and viral load is 56,000 copies/mL. Which of the following is the most appropriate information to give this patient regarding available therapies for his condition?

- (A) Effective contraception is essential while taking pegylated interferon
- * (B) Stopping nucleotide analogues suddenly may result in a flare of acute hepatitis
- (C) Medical treatment is not considered beneficial based on laboratory findings
- (D) Monthly laboratory studies are necessary to monitor treatment while on nucleoside analogues
- (E) Medical therapy decreases liver inflammation but does not reduce the risk of cirrhosis

CREATING THE LEAD-IN QUESTION

Cover the Options Test FAIL: *HOW TO FIX*

✓ **Instead of the original lead-in question:**

Which of the following is the most appropriate information to give this patient regarding available therapies for his condition?

Revise the stem/lead-in question to focus on a point from the key:

Nucleotide analogue therapy is planned, and the patient is counseled regarding potential adverse effects. Which of the following is most likely to occur if the patient suddenly discontinues this therapy?

✓ **This revision to make the lead-in question more focused changes the key from this:**

(B) Stopping nucleotide analogues suddenly may result in a flare of acute hepatitis

To this: (B) Acute flare of his condition



Can you spot a
well-constructed
item stem?

IS THIS A WELL-CONSTRUCTED ITEM STEM?

A 44-year-old woman comes to the urgent care clinic because she has had difficulty swallowing for the past 12 hours. She has other neuromuscular symptoms. Which of the following is the most appropriate initial diagnostic study?

IS THIS A WELL-CONSTRUCTED ITEM STEM?

A 20-year-old woman is recovering in the hospital two days after she sustained multiple traumatic injuries during a motor vehicle collision. The patient has been intubated and is arousable with stimulation. Fluids are being administered intravenously. Medical history includes no chronic disease conditions. Body mass index is 33 kg/m². Temperature is 36.4°C (97.6°F). Physical examination shows mild abdominal distention and faint bowel sounds. Laboratory findings include serum albumin level of 2.5 g/dL, hematocrit of 29.9%, and hemoglobin level of 10 g/dL. Which of the following statements is most accurate about this patient's nutritional status?

IS THIS A WELL-CONSTRUCTED ITEM STEM?

A 63-year-old man comes to the emergency department because he has tightness in his chest, racing heartbeat, shortness of breath, and light-headedness. Pulse rate is 170/min, and systolic blood pressure is 75 mmHg. Cardiac monitoring shows wide-complex tachycardia. Which of the following is the most appropriate initial management of this patient's condition?

IS THIS A WELL-CONSTRUCTED ITEM STEM?

A 21-year-old woman is brought to the emergency department because she has had confusion for the past two days. Medical history includes schizoaffective disorder with psychotic features, seizure disorder, and polysubstance abuse. Current medications include quetiapine, carbamazepine, lithium carbonate, haloperidol, and valproic acid. Temperature is 37.6°C (99.6°F), pulse rate is 104/min, respirations are 18/min, and blood pressure is 98/64 mmHg. Physical examination shows bilateral pitting edema of the ankles. Which of the following medications in this patient's regimen is the most likely cause of her current condition?



CREATING THE OPTIONS



CREATING THE OPTIONS

- **Compose the correct answer (key)**
- **Formulate three or four other options (distractors)**
 - Reasonable/plausible but *not possibly correct*
 - Typical errors or misconceptions
 - Must be real (not “make-believe”)

CREATING THE OPTIONS

All options should be

- homogeneous (e.g., all laboratory studies, all diseases, all procedures, all medications)
- grammatically parallel and follow the lead-in question
- similar in length and complexity
- mutually exclusive (not overlapping)

All of the above and None of the above are not acceptable options for multiple-choice, one-correct-answer items in NCCPA examinations.

CREATING THE OPTIONS

Instead of making the correct answer stand out as different:

... Which of the following is the most likely diagnosis?

- (A) Appendicitis
- (B) Cholangitis
- (C) Gastroenteritis
- (D) Pancreatitis
- (E)* Small-bowel obstruction

Create an option set where all distractors are considered:

...Which of the following is the most likely diagnosis?

- (A) Appendicitis
- (B) Gastroenteritis
- (C) Liver abscess
- (D)* Small-bowel obstruction
- (E) Urinary tract infection

IS THIS A WELL-CONSTRUCTED OPTION SET?

- (A) Alprazolam
- (B)* Cognitive behavior therapy
- (C) Dextroamphetamine
- (D) Methylphenidate
- (E) Sertraline

IS THIS A WELL-CONSTRUCTED OPTION SET?

- (A) Angiography and immediate consultation with a vascular surgeon
- (B) Closed reduction of the elbow and immediate consultation with a vascular surgeon
- (C)* Closed reduction of the elbow and monitoring of neurovascular status
- (D) Immediate CT scan followed by closed reduction of the elbow
- (E) Referral to an orthopedic surgeon for immediate open exploration and reduction

IS THIS A WELL-CONSTRUCTED OPTION SET?

- (A) Deep peritoneal lavage
- (B)* Emergent pericardiocentesis
- (C) Immediate blood transfusion
- (D) Immediate portable x-ray study
- (E) Transesophageal echocardiography

IS THIS A WELL-CONSTRUCTED OPTION SET?

- (A) Bifid pulse
- (B)* Bisferiens pulse
- (C) Dicrotic pulse
- (D) Parvus and tardus
- (E) Pulsus alternans



APPLICATION OF KNOWLEDGE VERSUS RECALL



APPLICATION OF KNOWLEDGE VERSUS RECALL

Items with clinical vignettes test examinees' application of their medical and clinical knowledge. Most items in an examination should test **application of knowledge**.

However...

When an item is needed to test only whether an examinee knows an isolated fact, a **recall** item is appropriate.

APPLICATION OF KNOWLEDGE VERSUS RECALL



Application of knowledge items

- Include detailed clinical vignettes
- Assess examinees' knowledge as well as their ability to apply that knowledge to a realistic patient/clinical situation
- Good for testing diagnosis and management

APPLICATION OF KNOWLEDGE VERSUS RECALL



Recall items

- Are generally short and do not include clinical vignettes
- Assess examinees' ability to remember an isolated fact
- Good for testing anatomy and basic science

APPLICATION OF KNOWLEDGE VERSUS RECALL

EXAMPLE: Recall

Which of the following types of cardiomyopathy is most frequently associated with sudden death in athletes?

- (A) Dilated
- (B) Fibrotic
- (C) Hypertrophic*
- (D) Infiltrative
- (E) Restrictive

- ✓ *Is incidence in a population important information to test?*
- ✓ *How does that isolated fact assess whether the examinee knows how to treat a patient with this condition?*

APPLICATION OF KNOWLEDGE VERSUS RECALL

EXAMPLE: Application of knowledge

An 18-year-old man comes to the office for physical examination before entering college and joining the school's football team. Family history includes sudden death in a first-degree relative. The patient is healthy and has no history of chronic medical conditions. Temperature is 37.0°C (98.6°F), pulse rate is 65/min, respirations are 12/min, and blood pressure is 110/65 mmHg. Physical examination shows no abnormalities. Echocardiography shows hypertrophic cardiomyopathy. Which of the following lifestyle recommendations is most appropriate for this patient?

- (A) Antibiotic prophylaxis before dental procedures
- (B) Avoidance of strenuous activity and competitive sports*
- (C) Initiation of a high-protein, low-calorie diet
- (D) Initiation of a low-sodium, low-carbohydrate diet
- (E) Restriction of fluid intake

✓ *This item assesses the examinee's ability to advise a patient with hypertrophic cardiomyopathy.*



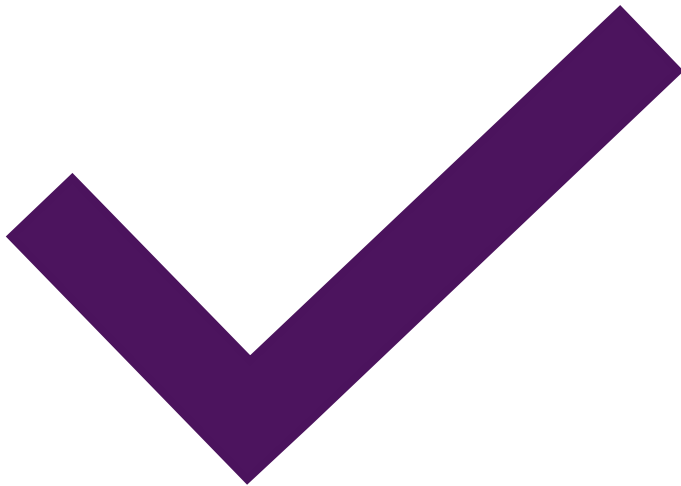
CLONING ITEMS



CLONING ITEMS

Items with good vignettes can be **CLONED** by using the same or a modified version of the vignette with a different lead-in question and option set.

CLONING ITEMS



PROS:

- Quickly and easily create multiple items
- Address various facets of a clinical scenario (diagnosis, studies, treatment, risk factors, patient advice, etc.)

CONS:

- Cloned items become enemies
- Cloned items are most useful for examinations with multiple test forms or for building an item bank
- **Cloned items are NOT useful for creation of one test form**



IDENTIFYING ENEMIES



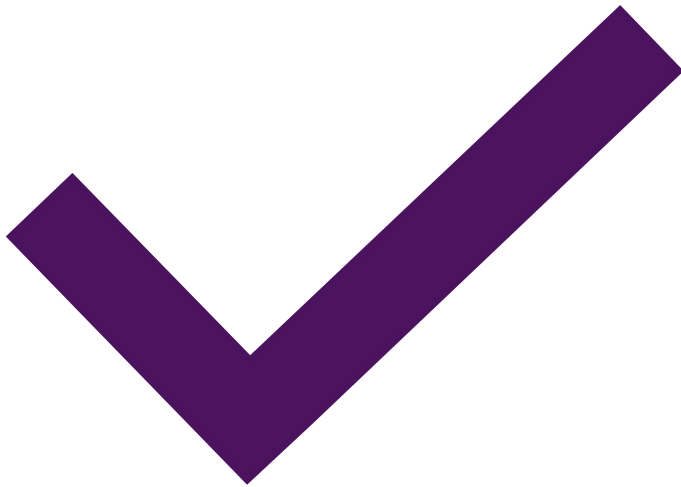
IDENTIFYING ENEMIES



What are enemies?

Enemies are questions that cannot appear on the same test form.

IDENTIFYING ENEMIES



- Two or more items with the same vignette (result of cloning)
- Two items with similar vignettes and the answer to one item is stated in the other
- Items that are so similar that examinees who know the answer to one item also know the answer to the other(s)



TEST-WISE CLUES AND HOW TO AVOID THEM



TEST-WISE CLUES

Common item-writing errors: clues to the correct answer



Test-wise examinees — might not know or understand the content:
use clues contained in items to figure out or guess the correct answer

ARE YOU TEST-WISE?

Find the Clue:

A 42-year-old man has pain, swelling, and paresthesia in his right forearm and hand one week after application of a long arm cast to the right upper extremity as treatment of a fracture of the proximal ulna. The symptoms began shortly after the cast was applied and have been worsening. On removal of the cast, the forearm flexor surface is atrophic and flexion deformity of the wrist and fingers is noted. Which of the following is the most likely diagnosis?

- (A) Boutonnière deformity
- (B) Carpal tunnel syndrome
- (C) De Quervain tenosynovitis
- (D) Dupuytren contracture
- (E) Volkmann contracture

Clue: Paired Options

A 42-year-old man has pain, swelling, and paresthesia in his right forearm and hand one week after application of a long arm cast to the right upper extremity as treatment of a fracture of the proximal ulna. The symptoms began shortly after the cast was applied and have been worsening. On removal of the cast, the forearm flexor surface is atrophic and flexion deformity of the wrist and fingers is noted. Which of the following is the most likely diagnosis?

- (A) Boutonnière deformity
- (B) Carpal tunnel syndrome
- (C) De Quervain tenosynovitis
- (D) Dupuytren contracture
- (E)* Volkmann contracture

- ✓ *In this example, pairing of options D and E alerts test-wise examinees that one of these must be the correct answer and gives them a 50/50 chance of guessing correctly.*
- ✓ *When test-wise examinees see a pair of options in an item, they can ignore the vignette and the lead-in question and concentrate only on the options.*

HOW TO FIX

Paired Options

To fix this clue, either replace option D with a unique distractor OR replace a different distractor to create a second pair.

HINT: *Creating two pairs in an option set removes the clue!*

REPLACE PART OF PAIR:

- (A) Boutonnière deformity
- (B) Carpal tunnel syndrome
- (C) De Quervain tenosynovitis
- (D) ~~Dupuytren contracture~~
Ulnar nerve entrapment
- (E) Volkmann contracture

OR

CREATE SECOND PAIR:

- (A) Boutonnière deformity
- (B) Carpal tunnel syndrome
- (C) ~~De Quervain tenosynovitis~~
Cubital tunnel syndrome
- (D) Dupuytren contracture
- (E) Volkmann contracture

ARE YOU TEST-WISE?

Find the Clue:

A 53-year-old man with chronic pancreatitis has had abdominal pain, anorexia, and diarrhea associated with his condition for the past three days. Initiation of therapy with which of the following classes of medications is most likely to be effective in preventing ongoing complications of pancreatitis in this patient?

- (A) Nonsteroidal anti-inflammatory drugs
- (B) Opioid antagonists
- (C) Pancreatic enzyme replacements
- (D) Short-acting opiate analgesics
- (E) Thiazolidinediones

Clue: Stem Clue/Repeated Words

A 53-year-old man with chronic **pancreatitis** has had abdominal pain, anorexia, and diarrhea associated with his condition for the past three days. Initiation of therapy with which of the following classes of medications is most likely to be effective in preventing ongoing complications of **pancreatitis** in this patient?

- (A) Nonsteroidal anti-inflammatory drugs
- (B) Opioid antagonists
- (C)* **Pancreatic** enzyme replacements
- (D) Short-acting opiate analgesics
- (E) Thiazolidinediones

- ✓ *Repetition of “pancreatitis” in the stem and “pancreatic” in option C clues that option as the correct answer.*
- ✓ *When test-wise examinees notice that a word appearing in the stem also appears in one of the options, they assume that option is the correct answer.*
- ✓ *Examinees get credit for a correct answer only by their ability to match repeated words!*

HOW TO FIX

Stem Clue/Repeated Words

For this example, the best method of eliminating the clue is to revise the key to remove the repeated word.

A 53-year-old man with chronic pancreatitis has had abdominal pain, anorexia, and diarrhea associated with his condition for the past three days. Initiation of therapy with which of the following classes of medications is most likely to be effective in preventing ongoing complications of pancreatitis in this patient?

- (A) Nonsteroidal anti-inflammatory drugs
- (B) Opioid antagonists
- (C) ~~Pancreatic enzyme replacements~~ Digestive enzyme supplements
- (D) Short-acting opiate analgesics
- (E) Thiazolidinediones

ARE YOU TEST-WISE?

Find the Clue:

A 73-year-old man is brought to the urgent care clinic 90 minutes after he suddenly became confused and incoherent. Medical history includes hypertension, type 1 diabetes mellitus, and hypercholesterolemia. Pulse rate is 88/min, respirations are 18/min, and blood pressure is 165/95 mmHg. Physical examination shows no abnormalities. Electrocardiography shows sinus rhythm with normal ST segments and T waves. Which of the following is the most appropriate next step?

- (A) CT angiography
- (B) Immediate measurement of blood glucose level by finger stick and administration of dextrose if blood glucose level is low
- (C) Intravenous administration of fluids
- (D) Referral of the patient to a cardiologist
- (E) Transfer of the patient to the hospital

Clue: Longest, Most Detailed Option

A 73-year-old man is brought to the urgent care clinic 90 minutes after he suddenly became confused and incoherent. Medical history includes hypertension, type 1 diabetes mellitus, and hypercholesterolemia. Pulse rate is 88/min, respirations are 18/min, and blood pressure is 165/95 mmHg. Physical examination shows no abnormalities. Electrocardiography shows sinus rhythm with normal ST segments and T waves. Which of the following is the most appropriate next step?

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- (E) Transfer of the patient to the hospital

- ✓ *Option B stands out as the correct answer because it is the longest, most detailed option and the only option that includes a second and/or follow-up step.*
- ✓ *This clue is a common error because item writers often expend more effort on the key than on the distractors.*
- ✓ *Test-wise examinees can choose the key without reading the item!*

HOW TO FIX

Longest, Most Detailed Option

For this type of clue, the best fix is to revise the key to eliminate the second/follow-up step and some details to make it parallel to the distractors.

A 73-year-old man is brought to the urgent care clinic 90 minutes after he suddenly became confused and incoherent. Medical history includes hypertension, type 1 diabetes mellitus, and hypercholesterolemia. Pulse rate is 88/min, respirations are 18/min, and blood pressure is 165/95 mmHg. Physical examination shows no abnormalities. Electrocardiography shows sinus rhythm with normal ST segments and T waves. Which of the following is the most appropriate next step?

- (A) CT angiography
- (B) Measurement of blood glucose level by finger stick
~~Immediate measurement of blood glucose level by finger stick and administration of dextrose if blood glucose level is low~~
- (C) Intravenous administration of fluids
- (D) Referral of the patient to a cardiologist
- (E) Transfer of the patient to the hospital

ARE YOU TEST-WISE?

Find the Clue:

A 57-year-old man who works in a coal mine comes to the office because he has had several episodes of urinary frequency and urgency during the past six months. During the most recent episode, he also noticed blood in his urine. The patient is obese, eats mainly fast food, and gets little exercise. He smokes two packs of cigarettes daily and drinks three bottles of beer every evening. This patient's condition was most likely predisposed by which of the following behaviors?

- (A) Consumption of a high-fat diet
- (B) Cigarette smoking
- (C) Alpha-1 antitrypsin deficiency
- (D) Asbestos exposure
- (E) Silicosis

Clue: Content/Grammar Agreement

A 57-year-old man who works in a coal mine comes to the office because he has had several episodes of urinary frequency and urgency during the past six months. During the most recent episode, he also noticed blood in his urine. The patient is obese, eats mainly fast food, and does not exercise. He smokes two packs of cigarettes daily and drinks three bottles of beer every evening. This patient's condition was most likely predisposed by which of the following behaviors?

- (A) Consumption of a high-fat diet
- (B)* Cigarette smoking
- (C) Alpha-1 antitrypsin deficiency
- (D) Asbestos exposure
- (E) Silicosis

- ✓ *In this example, options C, D, and E do not follow the lead-in question as behaviors, giving examinees a 50/50 chance of guessing between options A and B.*
- ✓ *Options that do not follow the lead-in question — either in content or grammar — are easily ruled as incorrect by test-wise examinees.*

HOW TO FIX

Content/Grammar Agreement

For this example, the clue can be eliminated by rephrasing all of the options as behaviors/actions.

A 57-year-old man who works in a coal mine comes to the office because he has had several episodes of urinary frequency and urgency during the past six months. During the most recent episode, he also noticed blood in his urine. The patient is obese, eats mainly fast food, and gets little exercise. He smokes two packs of cigarettes daily and drinks three bottles of beer every evening. This patient's condition was most likely predisposed by which of the following behaviors?

- (A) ~~Consumption of a high-fat diet~~ Consuming a high-fat diet
- (B) ~~Cigarette smoking~~ Smoking cigarettes
- (C) ~~Alpha-1 antitrypsin deficiency~~ Leading a sedentary lifestyle
- (D) ~~Asbestos exposure~~ Working in a coal mine
- (E) ~~Silicosis~~ Drinking alcoholic beverages

ARE YOU TEST-WISE?

Find the Clue:

A 15-year-old boy is brought to the office because he has pain in his left hip that has been worsening over the past four months. The patient says the pain is most intense at night, when he is lying in bed. He has no history of trauma or change in his usual activities. On physical examination, palpation of the left hip shows a soft mass. X-ray studies of the left hip show sclerosis of the femur with calcifications in a sunburst pattern. Which of the following is the most likely diagnosis?

- (A) Ewing sarcoma
- (B) Osteochondroma
- (C) Osteomyelitis
- (D) Osteosarcoma
- (E) Paget disease of bone

Clue: Convergence

A 15-year-old boy is brought to the office because he has pain in his left hip that has been worsening over the past four months. The patient says the pain is most intense at night, when he is lying in bed. He has no history of trauma or change in his usual activities. On physical examination, palpation of the left hip shows a soft mass. X-ray studies of the left hip show sclerosis of the femur with calcifications in a sunburst pattern. Which of the following is the most likely diagnosis?

- (A) Ewing sarcoma
- (B) Osteochondroma
- (C) Osteomyelitis
- (D)* Osteosarcoma
- (E) Paget disease of bone

- ✓ *In this example, "sarcoma" appears two times in the options and "Osteo" appears three times. The key is clued as the only option that contains both of these terms.*
- ✓ *Test-wise examinees can ignore the stem and guess the correct answer only on the basis of terms repeated in the options.*

HOW TO FIX

Convergence

This clue can be eliminated by revising the options in various ways:

1: *All options include the most common repeated term:*

- (A) Osteoma
- (B) Osteochondroma
- (C) Osteomyelitis
- * (D) Osteosarcoma
- (E) Osteoblastoma

2: *Convergence leads to an option other than the key:*

- (A) Enchondroma
- (B) Osteochondroma
- (C) Osteomyelitis
- * (D) Osteosarcoma
- (E) Paget disease of bone

3: *No terms are repeated:*

- (A) Giant cell tumor
- (B) Multiple myeloma
- (C) Aneurysmal bone cyst
- * (D) Osteosarcoma
- (E) Paget disease of bone

ARE YOU TEST-WISE?

Find the Clue:

A 72-year-old woman comes to the emergency department because she has had rash on her face associated with pain, tearing, and decreased vision in her left eye for the past two days. She says she had a flulike illness one week ago and still feels tired. Physical examination shows clusters of papules and clear vesicles on an erythematous base on the left side of the forehead, left upper eyelid, and nose. Based on these findings, which of the following cranial nerves is most likely involved?

- (A) II
- (B) III
- (C) V
- (D) VII
- (E) VIII

Clue: Numeric Options

A 72-year-old woman comes to the emergency department because she has had rash on her face associated with pain, tearing, and decreased vision in her left eye for the past two days. She says she had a flulike illness one week ago and still feels tired. Physical examination shows clusters of papules and clear vesicles on an erythematous base on the left side of the forehead, left upper eyelid, and nose. Based on these findings, which of the following cranial nerves is most likely involved?

- (A) II
- (B) III
- (C)* V
- (D) VII
- (E) VIII

- ✓ *In this example, larger numeric intervals before and after the key clue option C as the correct answer.*
- ✓ *Also, for items with numeric options, test-wise examinees know that the value in the middle position (option C in a set of five options) is usually the correct answer.*

HOW TO FIX

Numeric Options

To fix this clue, revise the options so the intervals are equal and the key is not in the middle position.

A 72-year-old woman comes to the emergency department because she has had rash on her face associated with pain, tearing, and decreased vision in her left eye for the past two days. She says she had a flulike illness one week ago and still feels tired. Physical examination shows clusters of papules and clear vesicles on an erythematous base on the left side of the forehead, left upper eyelid, and nose. Based on these findings, which of the following cranial nerves is most likely involved?

- (A) II II
- (B) III III
- (C) IV IV
- (D) V V*
- (E) VI VI

ARE YOU TEST-WISE?

Find the Clue:

A 20-year-old woman with recently diagnosed tinea versicolor comes to the office for initiation of treatment. She asks how quickly her skin pigmentation will return to normal. Which of the following is the most appropriate response to this patient?

- (A) The pigment changes will not resolve
- (B) The pigment changes will wax and wane
- (C) The pigmentation may take months to return to normal
- (D) The pigmentation will darken
- (E) The pigmentation will return to normal immediately

Clue: Absolute Terms

A 20-year-old woman with recently diagnosed tinea versicolor comes to the office for initiation of treatment. She asks how quickly her skin pigmentation will return to normal. Which of the following is the most appropriate response to this patient?

- (A) The pigment changes **will not** resolve
- (B) The pigment changes **will wax** and wane
- (C)* The pigmentation may take months to return to normal
- (D) The pigmentation **will** darken
- (E) The pigmentation **will** return to normal immediately

- ✓ *In this example, the key is clued as the only option that does not include an absolute term.*
- ✓ *Options that include absolute terms are easily ruled out as incorrect by test-wise examinees, increasing their chances of guessing correctly.*
- ✓ *In medicine, as in life, there are few absolutes.*

HOW TO FIX

Absolute Terms

For this type of clue, the fix is easy — rephrase the absolutes with terms that are appropriate for patient education.

A 20-year-old woman with recently diagnosed tinea versicolor comes to the office for initiation of treatment. She asks how quickly her skin pigmentation will return to normal. Which of the following is the most appropriate response to this patient?

- (A) The pigment changes ~~will not~~ **may not** resolve
- (B) The pigment changes ~~will~~ **are likely to** wax and wane
- (C)* The pigmentation may take months to return to normal
- (D) The pigmentation ~~will~~ **is likely to** darken
- (E) The pigmentation ~~will~~ **may** return to normal immediately



ITEM CONTENT



ITEM CONTENT



- Focus items on well-known information and facts
- Include content and/or skills that are specific to the PA profession/curriculum
- Choose appropriate topics for the target examinees
- Include current standards of care
- Follow item-writing guidelines
- Support content with published sources

ITEM CONTENT

1

Avoid trivia, minutiae, and rare content

2

Don't make items specialized for a subset of examinees

3

Exclude insensitive or biased content

4

Don't base content of items on opinion, unproven trends, or unapproved/off-label uses

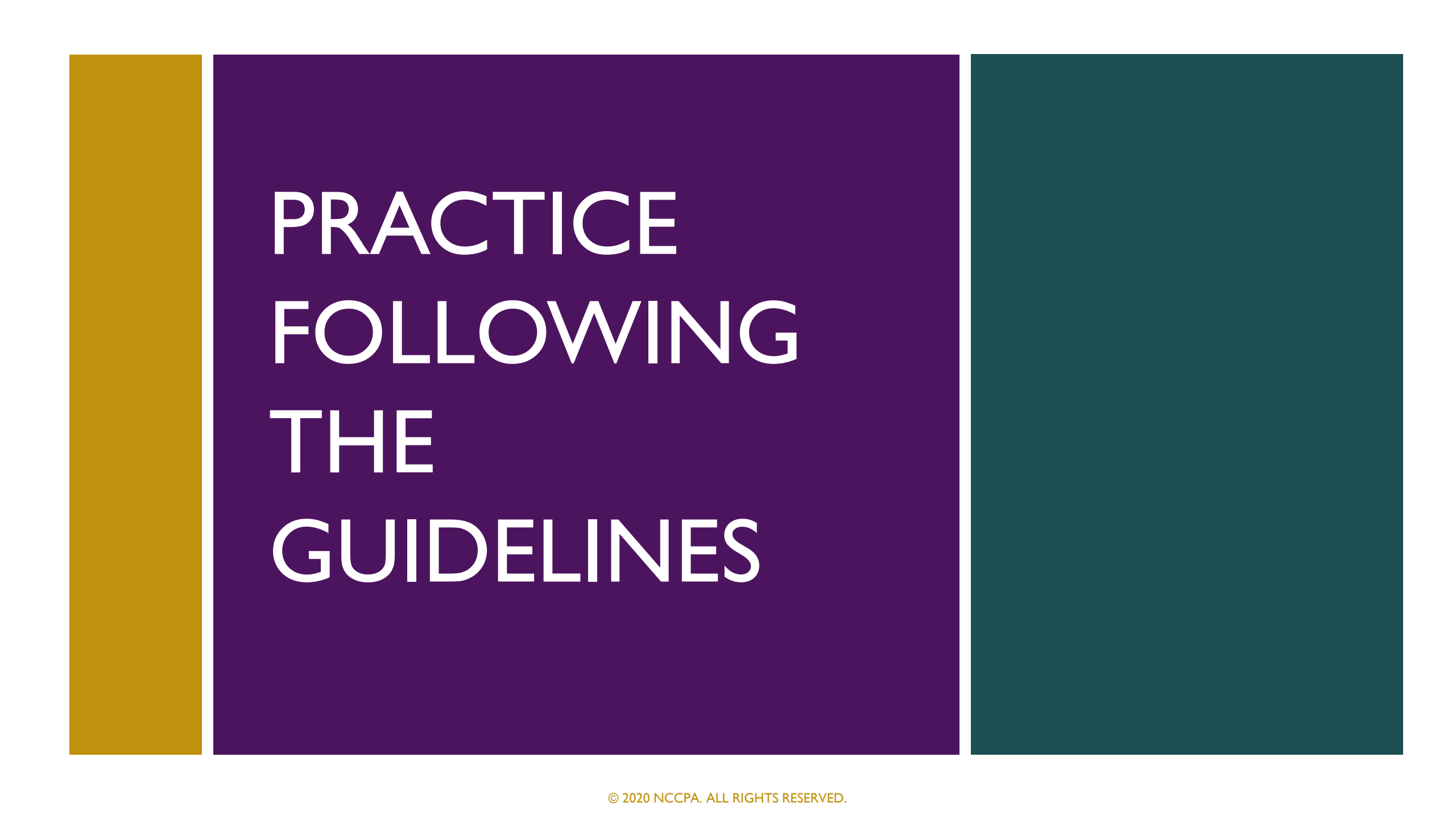
5

Eliminate reference to obsolete procedures, discontinued or unavailable drugs, etc.

ITEM CONTENT



- Do not use items copied from other sources:
 - give advantage to examinees who have had access to those sources
 - create a possible copyright infringement
 - represent plagiarism
 - jeopardize the integrity of an examination
- Images must also be unique, not used in other sources, and not copyrighted



PRACTICE FOLLOWING THE GUIDELINES

GETTING STARTED: CONTENT

DO

- Focus on well-known information and facts
- Include specific content and/or skills
- Choose appropriate topics for the target examinees
- Include current standards of care
- Follow item-writing guidelines
- Support content with published sources

DON'T

- Focus on trivia, minutiae, or rare content
- Choose a topic that is specialized for a subset of examinees
- Include insensitive or biased content
- Base content on opinion, unproven trends, or unapproved/off-label use
- Include obsolete procedures, drugs, etc.

GETTING STARTED: FORMAT

DO

- Create a clear clinical vignette
- Write a focused and specific lead-in question
- Choose a clearly correct answer
- Compose distractors that are plausible but not possibly correct
- Make options parallel and homogeneous
- Avoid test-wise clues

DON'T

- Write ambiguous or unfocused lead-in questions
- Include tricks or irrelevant details
- Create options that overlap
- Write “make-believe” options

GROUP REVIEW OF ITEMS

ITEM REVIEW GUIDELINES

For each item, ensure that each criterion is met:

- ✓ The key is clearly correct
- ✓ The distractors are plausible but not possibly (or partially) correct
- ✓ The content is important, relevant, and fair for the target examinees
- ✓ The content represents current standards of care

All reviewers' input is important – speak up if you don't agree with the item or with changes to the item

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