Sample NCCPA Questions & Critiques

The sample NCCPA items and item critiques are provided to help PAs better understand how exam questions are developed and should be answered for NCCPA's initial and recertifying exams. Each question correlates with both a task area and an organ system from the NCCPA content blueprint.

Question

A 46-year-old woman wanders into the clinic, rambling incoherently. When questioned, she has some difficulty remembering what she was asked. She exhibits some perceptual disturbances and is not oriented to time. Which of the following is the most likely diagnosis?

(A) Bipolar disorder
(B) Delirium
(C) Dementia
(D) Paranoid personality disorder
(E) Schizophrenia

Task Area: **History Taking & Performing Physical Examinations [16% of the blueprint]**
Organ System: **Psychiatry [6% of the blueprint]**

Critique

This question tests the examinee's ability to discriminate between characteristics of behavioral disorders. The correct answer is Option (B), delirium. This patient exhibits the classic signs of this disorder, which include an acute confusional state or an inability to concentrate or maintain attention. Orientation problems and a marked decrease in short-term memory and recall are also indications of delirium.

Option (A), bipolar disorder, is incorrect because the patient does not exhibit characteristics of this disorder such as mania, major depressive disorder, or other mood shifts. Option (C), dementia, is a plausible option, but it is incorrect because the patient is young and dementia is typically characterized as a chronic disease primarily of the elderly. Also, the patient has some features of dementia but does not have the common features such as agitation or withdrawal, hallucinations, or a loss of inhibitions. Option (D), paranoid personality disorder, is incorrect because the patient does not exhibit the signs of this disorder which may include defensive, suspicious, secretive, or oversensitive behavior. Although the patient has some symptoms of Option (E), schizophrenia, she does not have core psychotic features such as delusions, hallucinations, disorders of language, or inappropriate affect. Therefore, Option (E) is incorrect.

Question

Six days ago, a 2-year-old boy had a temperature of 40.0°C (104.0°F). No specific cause was found. His fever has persisted and he now has injected conjunctivae, strawberry tongue, dry fissured lips, erythema and desquamation of his hands and feet, and bilateral cervical adenopathy. Which of the following is the most likely complication of this condition?

(A) Chorea
(B) Congestive heart failure
(C) Coronary artery aneurysm
(D) Mesenteric arteritis
(E) Valvular heart disease

Task Area: **Formulating Most Likely Diagnosis [18%]**
Organ System: **Infectious Diseases [3%]**

Critique

This question requires the examinee to first identify the disorder, Kawasaki's syndrome, and then determine the most likely complication associated with this disorder. The correct answer is Option (C), coronary artery aneurysm. Classic features of Kawasaki's syndrome include fever, age less than five years, conjunctivitis, mucous membrane abnormalities, peripheral extremity abnormalities, polymorphous rash, and cervical lymphadenopathy. Coronary artery aneurysm is a major complication of Kawasaki's syndrome, occurring in about 25% of untreated patients.

Option (A), chorea, is incorrect because the patient does not present with dyskinesia, a characteristic of chorea. Option (B), congestive heart failure, is incorrect. While many infectious agents may progress to myocarditis and heart failure, coronary artery aneurysm is a specific sequela of Kawasaki's syndrome. Option (D), mesenteric arteritis, is also incorrect because arteritis from Kawasaki's syndrome favors the coronary circulation. The final Option (E), valvular heart disease, is incorrect because this patient does not have characteristics of this disease, which include past evidence of infection with group A β-hemolytic streptococcus resulting in rheumatic heart disease.

Question

A 31-year-old African American woman has had worsening malaise, dyspnea, and low-grade fever for the past four weeks. She was recently treated for iritis. On physical examination, red nodules over the anterior lower legs and mild hepatomegaly are noted. Chest x-ray study shows bilateral hilar adenopathy. Which of the following is the most likely diagnosis?

(A) Lymphoma
(B) Mesothelioma
(C) Sarcoidosis
(D) Tuberculosis
(E) Wegener's granulomatosis

Task Area: **Formulating Most Likely Diagnosis [18%]**
Organ System: **Pulmonary [12%]**

Critique

This question tests the examinee's knowledge of common signs and symptoms of diseases. The correct answer is Option (C), sarcoidosis. The age, gender, and race of the patient in addition to the insidious onset of symptoms and x-ray study findings are all indications of this disease.

Option (A), lymphoma, is a plausible option, because lymphoma and sarcoidosis share similar symptoms such as insidious onset, fever, malaise, dyspnea, visceral involvement, and a widened mediastinum. However, the history of iritis and presence of erythema nodosum in a young African American woman are more of an indication of sarcoidosis than lymphoma. Option (B), mesothelioma, is incorrect because the mean age of onset of this disease is approximately 60 years. Mesothelioma is also commonly found among workers exposed to asbestos. Option (D), tuberculosis, is incorrect because this patient does not have the classic characteristics of this disease, which include weight loss, night sweats, chronic productive cough, or apical lesions shown on chest x-ray study. Option (E), Wegener's granulomatosis, is incorrect. This patient in not in her 40s or 50s, she did not have a prolonged onset of symptoms, and there are no upper and lower respiratory tract symptoms including necrotizing granulomatous lesions, glomerulonephritis, and vasculitis. Also, the finding on x-ray study of hilar adenopathy is not consistent with an x-ray study of a patient with Wegener's granulomatosis.

Question

For the past three weeks, a 47-year-old man has had the feeling of heaviness in his chest while pushing his lawn mower. He says he has never been treated before and is having no symptoms now. He smoked one pack of cigarettes daily for 20 years but quit smoking seven years ago. Findings on physical examination are normal. Electrocardiogram shows no abnormalities. Which of the following is the most appropriate initial diagnostic study?

(A) Coronary arteriography
(B) Echocardiography
(C) Exercise stress test
(D) 24-Hour Holter monitoring
(E) Myocardial perfusion scan

Task Area: **Using Laboratory and Diagnostic Studies [14%]**
Organ System: **Cardiovascular [16%]**

Critique

This item tests the examinee's ability to identify the most appropriate initial diagnostic study in a patient with possible coronary artery disease. Option (C), exercise stress test, is the most appropriate initial step in the work-up of a patient with recent chest pain because the test is noninvasive, inexpensive, convenient, and sensitive in this type of patient.

The most definitive diagnostic test for a patient with coronary artery disease is Option (A), coronary arteriography, but this test is not the most appropriate initial test in an asymptomatic patient with no abnormal findings on electrocardiogram. Option (B), echocardiography, is a valuable tool for examining valvular structures, cardiac size, ejection fraction as well as other anatomic features. However, echocardiography is not routinely indicated for investigating ischemia resulting from coronary artery disease and is therefore incorrect. Option (D) is also incorrect. Twenty-four-hour Holter monitoring is used primarily for investigating disturbances of rate and rhythm, and it is able to detect ST-segment depression. However, it is less effective than exercise stress testing in confirming a diagnosis of coronary artery disease in the initial work-up of a patient. This patient's electrocardiogram shows no abnormalities, and therefore, Option (E), myocardial perfusion scan, is incorrect. This option would only be correct if the results of the resting electrocardiogram were abnormal, making it difficult to interpret an exercise stress test.

Question

A 32-year-old woman has had a rash on her legs for the past three weeks. There are no known infectious contacts. One month ago, she had a bladder infection and was treated with trimethoprim-sulfamethoxazole. Physical examination shows a diffuse rash on the shins, the left medial ankle, and the right medial calf. The rash is tender, diffuse, and recurs in the same areas. A few of the lesions have the appearance of bruising. Which of the following is the most likely diagnosis?

(A) Erythema multiforme
(B) Erythema nodosum
(C) Lichen planus
(D) Lichen simplex
(E) Nummular eczema

Task Area: **History Taking & Physical Examination [16%]**
Organ System: **Dermatologic [5%]**

Critique

This question tests the examinee's ability to diagnose a rash based on the patient's history and the description of the rash. The examinee must first consider that the rash could be an allergic reaction to the sulfa antibiotic. The correct answer is Option (B), erythema nodosum, because this type of rash may be antibiotic-related, occurs on the lower extremities below the knees, and has the appearance of bruising. All of these symptoms are present in this patient.

Options (A), erythema multiforme, and (C), lichen planus, can also result from an allergic reaction to a sulfa antibiotic, but the presentation of this patient's rash is not consistent with either of these options. Options (D), lichen simplex, and (E), nummular eczema, are chronic conditions that result in scaling. Therefore, given the timeframe and the presentation of this patient's rash, these two options are incorrect.

Question

A 33-year-old woman at 35 weeks' gestation has constant pelvic pain. She says that she had a small amount of dark red vaginal bleeding after sexual intercourse. Her blood pressure is 80/50 mmHg, and she has tachycardia. The uterus is firm and tender to palpation. Which of the following is the most likely diagnosis?

(A) Abruptio placentae
(B) Cervical laceration
(C) Placenta previa
(D) Preterm labor
(E) Vasa previa

Task Area: **History Taking & Performing Physical Examinations [16%]**
Organ System: **Reproductive [8%]**

Critique

This question tests the examinee's ability to determine an emergent situation by recognizing tachycardia and significant hypotension as abnormal in a patient at this stage of pregnancy. Option (A), abruptio placentae, is the correct answer, because in addition to the tachycardia and severe hypotension, this patient has also had a small amount of dark red vaginal bleeding.

Option (C), placenta previa, is plausible but incorrect. This patient's vaginal bleeding is not significant nor is it bright red, which are indications of this condition. Option (B), cervical laceration, is incorrect because this patient is in the antepartum stage of pregnancy, and cervical laceration typically results from passage of the fetus through the birth canal. Option (D), preterm labor, is incorrect because there is no history of this patient having any uterine contractions, an obvious sign of preterm labor. Option (E), vasa previa, is incorrect. This is a condition whereby the umbilical vessels overlay the internal cervical os and may be a cause of third-trimester bleeding. However, this patient does not have copious vaginal bleeding of bright red blood.

Question

A 41-year-old woman has a nine-month history of nausea, constipation, dyspepsia, general fatigue, arthralgias, and increasing memory loss. She has no history of illness other than her present complaints, and her menses have been regular. Physical examination is unremarkable. Laboratory findings include:

Serum calcium level	13.0 mg/dL
Serum phosphorus level	0.3 mg/dL
Serum albumin level	4.9 g/dL
Serum chloride level	111 mEq/L
Serum creatinine level	1.0 mg/dL
Blood urea nitrogen level	17 mg/dL

Which of the following is the most likely diagnosis?

(A) Cushing's syndrome
(B) Hyperparathyroidism
(C) Hypopituitarism
(D) Malabsorption
(E) Multiple myeloma

Task Area: **Formulating Most Likely Diagnosis [18%]**
Organ System: **Endocrine [6%]**

Critique

This question tests the examinee's ability to review a detailed vignette, including laboratory values, to establish the cause of the patient's condition. Option (B), hyperparathyroidism, is the correct answer. This patient has the classic signs of this condition, which include gastrointestinal, musculoskeletal, and neurologic abnormalities. Additionally, the laboratory values clearly show hypercalcemia and hypophosphatemia, both of which indicate hyperparathyroidism.

Option (A), Cushing's syndrome, is incorrect because this patient does not have the typical symptoms of Cushing's syndrome, which include oligomenorrhea or amenorrhea and a host of changes to the body habitus. Option (C), hypopituitarism, is incorrect as well because this patient does not have severe metabolic, growth, and menstrual abnormalities as a result of a decrease in pituitary hormone levels. Option (D), malabsorption, is the most incorrect option because there is no indication in this patient's history of weight loss, other illness, or abnormal menses. In addition, the laboratory values do not support a diagnosis of malabsorption. Option (E), multiple myeloma, is incorrect because this patient does not have the presentation consistent with this disease, which includes median age 65 years, anemia, bone pain, proteinuria, and renal failure. Although this patient does have hypercalcemia, which is another indication of multiple myeloma, none of the other presenting symptoms support this diagnosis.

Question

A 40-year-old man is being evaluated because he feels weak and tired and complains of sexual dysfunction. His blood pressure is 100/60 mmHg. Physical examination shows decreased facial, axillary, and pubic hair. Laboratory studies show decreased serum levels of luteinizing and follicle-stimulating hormones, thyroxine, and testosterone; serum thyroid-stimulating hormone level is normal. Which of the following is the most likely diagnosis?

(A) Diabetes insipidus
(B) Diabetes mellitus
(C) Hyperprolactinemia
(D) Hypopituitarism
(E) Hypothyroidism

Task Area: **Formulating Most Likely Diagnosis [18%]**
Organ System: **Endocrine [6%]**

Critique

This question tests the ability of the examinee to recognize the signs and symptoms and common laboratory findings of an endocrine disorder. The correct answer is Option (D), hypopituitarism, based on the common symptoms of gonadotropin deficiency, weakness, fatigue, and decreased sexual function. The decreased levels of luteinizing and follicle-stimulating hormones indicate hypogonadism. These laboratory findings, in addition to the decreased levels of testosterone, indicate hypopituitarism.

Option (A), diabetes insipidus, is incorrect because the patient does not have urinary symptoms or signs of dehydration, and the laboratory findings are not consistent with this condition. Option (B), diabetes mellitus, is incorrect because diabetes mellitus is a metabolic disorder, specifically affecting carbohydrate metabolism. It is a disease characterized by persistent hyperglycemia. There is no mention of serum glucose findings in the history or laboratory studies of this patient. Hyperprolactinemia, Option (C), is incorrect because there is no evidence of increased serum prolactin levels or galactorrhea in the history of this patient. Option (E), hypothyroidism, is also incorrect. Weakness and fatigue are symptoms of hypothyroidism, but the normal thyroid-stimulating hormone level rules out a thyroid disorder in this patient.

Question

An 18-month-old boy is brought to the emergency department because he has had fever and cough for the past three days. While in the waiting room, he has a generalized tonic-clonic seizure that lasts five minutes. He has no history of a seizure disorder. Physical examination shows a postictal child with a bright red tympanic membrane and green discharge from the nose. Temperature is 40.6°C (105.0°F). Which of the following is the most appropriate initial diagnostic study?

(A) CT scan
(B) Electroencephalography
(C) Lumbar puncture
(D) MRI scan
(E) Myelography

Task Area: **Using Laboratory & Diagnostic Studies [14%]**
Organ System: **Infectious Diseases [3%]**

Critique

This question tests the ability of the examinee to recognize the signs and symptoms of febrile seizures and to determine the best course of action in the evaluation of the condition. The correct answer is Option (C), lumbar puncture. Febrile seizures are common in patients with meningitis. For this reason, lumbar puncture is the most appropriate initial diagnostic study to either confirm or rule out this diagnosis.

Option (A), CT scan, is a plausible option, but it is not the best answer because CT scans are not necessary in the evaluation of a child with an initial febrile seizure**.** Options (B) and (D), electroencephalography and MRI scan, are incorrect because they are not necessary in the routine evaluation of a child with an initial febrile seizure. Finally, Option (E), myelography, is incorrect because it is not considered part of the routine evaluation of a child with fever. It is an older test that is used to evaluate signs and/or symptoms of compression of the spinal nerve roots or spinal cord by herniated disk, degenerative spur, traumatic injury, neoplasm, or other mass.

Question

A 22-year-old woman is brought to the emergency department for evaluation three hours after falling backward out of a chair and striking her head on a carpeted floor. She has tenderness over the back of her head but does not report loss of consciousness. Physical examination, including neurologic and musculoskeletal evaluation, shows no abnormalities except a 2-cm area of swelling and minimal abrasion overlying the left occiput. Which of the following is the most appropriate next step in management?

(A) Anteroposterior and lateral skull x-ray studies
(B) CT scan
(C) Discharge and observation by family or friends
(D) Hospital admission for observation
(E) MRI scan

Task Area: **Clinical Intervention [14%]**
Organ System: **Neurology [6%]**

Critique

This question tests the examinee's ability to recognize a minor closed head injury as well as their knowledge regarding appropriate management. The correct answer is Option (C), discharge and observation by family or friends. Patients with minor head injuries can be discharged with observation instructions in the care of a reliable adult.

Option (A), anteroposterior and lateral skull x-ray studies, is incorrect. X-ray studies of the skull are not indicated unless the patient is younger than 1 year of age, or has lost consciousness for three minutes or longer, or has one of the following findings on history, physical examination, or neurologic examination: preexistent shunt, skull penetration, scalp hematoma and/or depression, raccoon eyes, otorrhea and/or rhinorrhea, hemotympanum, Battle's sign, altered mental status, or focal neurologic deficit.

Option (B), CT scan, is incorrect because this patient does not meet the criteria for CT scan. These criteria include: instability following multiple traumas, unreliable history or examination because of possible alcohol abuse or drug ingestion, loss of consciousness for longer than five minutes, repeated vomiting or vomiting for more than eight hours after injury, posttraumatic seizures, progressive headache, physical signs of basilar skull fracture, or amnesia.

Option (D), hospital admission for observation, is incorrect because this patient does not meet the criteria for hospitalization. These criteria include: coma, underlying pathology such as coagulopathy and/or hydrocephalus, unreliable history or examination because of possible alcohol abuse or drug ingestion, documented loss of consciousness for longer than five minutes, severe and persistent headache, protracted vomiting, suspected child abuse, unreliable caregiver, altered mental status or seizures, and focal neurologic deficit.

The final Option (E), MRI scan, is also incorrect because this patient does not meet the criteria for MRI scan. These criteria are similar to the criteria for CT scan. In addition, an MRI scan is not practical in emergency situations because the magnetic field of the scan precludes the use of monitors and life-support equipment needed by unstable patients.

Question

A previously healthy 15-month-old boy becomes anxious and begins crying and drooling copiously. A few minutes earlier he had been calmly playing with his toys. Temperature is 36.7°C (98.1°F), pulse rate is 84/min, and respirations are 18/min. On physical examination, the posterior pharynx is mildly injected but otherwise clear. The lungs are clear to auscultation and percussion. Findings on chest x-ray study are normal. Within an hour he is calmer, but he continues to drool heavily. Which of the following is the most appropriate next step?

(A) Administration of syrup of ipecac
(B) Barium swallow x-ray study
(C) Chest physical therapy
(D) Esophagogastroduodenoscopy
(E) Insertion of a nasogastric tube

Task Area: **Clinical Intervention [14%]**
Organ System: **Gastrointestinal [10%]**

Critique

This question tests the examinee's ability to recognize foreign body ingestions as well as their knowledge surrounding the appropriate management and evaluation. The correct answer is Option (D), esophagogastroduodenoscopy, which is the appropriate step to confirm a diagnosis and provide therapeutic treatment.

Option (A), administration of syrup of ipecac, is incorrect and may be dangerous. It is not recommended that health care providers or parents attempt to dislodge a foreign body from a spontaneously breathing patient by administering syrup of ipecac. Option (B), barium swallow x-ray study is incorrect because the barium may obscure the view of the foreign body. This intervention is also contraindicated if esophageal perforation cannot be ruled out as a possible diagnosis. Option (C), chest physical therapy, is incorrect and not recommended as an intervention because it will most likely be ineffective or could potentially lead to aspiration of the foreign body. The final Option (E), insertion of a nasogastric tube, is also incorrect because this intervention does not have any diagnostic or therapeutic value in patients who ingest foreign bodies.