

1. A 22 year old man has had an acute, painful, red right eye with blurring of vision for one day. He had a similar episode one year ago and has had episodic back pain and stiffness relieved by exercise and diclofenac for four years.

What is the SINGLE most likely cause of his red eye?

- A Chorioretinitis
- B Conjunctivitis
- C Episcleritis
- D Iritis
- E Keratitis

2. A 40 year old divorced man with bipolar affective disorder attends hospital following an overdose of 30 tricyclic antidepressant tablets. His new partner has left him and he has stopped taking his medicine and begun drinking heavily. He appears depressed, feels hopeless and is ambivalent about being alive. He is now fit for discharge from the medical ward and acknowledges the benefits of previous treatment.

What is the SINGLE most appropriate next management?

- A Admission to the psychiatry ward
- B Arrange psychiatric outpatient follow-up
- C Discharge to the care of the general practitioner
- D Referral to local alcohol treatment team
- E Referral to clinical psychologist

3. A healthy baby boy is born at term to a woman who was unwell with confirmed acute hepatitis B during pregnancy. The mother is very concerned that she may have infected the baby with hepatitis B.

What SINGLE preventative intervention should be given to the baby?

- A Full course of hepatitis B vaccine
- B Hepatitis B immunoglobulin alone
- C Hepatitis B vaccine and hepatitis B immunoglobulin
- D Hepatitis B vaccine as single dose
- E None until hepatitis B status confirmed

4. A previously well 15 year old girl had an acute onset of fever, sweating, bruising and petechiae. A blood count showed:

Haemoglobin 63 g/L

White cell count $1.1 \times 10^9/L$

Neutrophils $0.1 \times 10^9/L$

Platelets $14 \times 10^9/L$.

No abnormal white cells were seen on the blood film. She was transfused and given intravenous antibiotics and her condition improved. Three weeks later her blood count has returned to a similar picture.

What is the SINGLE most likely underlying diagnosis?

A Acute lymphoblastic leukaemia

B Acute myeloid leukaemia

C Aplastic anaemia

D Chronic myeloid leukaemia

E Pernicious anaemia

5. A 25 year old woman has a blood pressure of 160/90 mmHg at week 10 of her first pregnancy. She had recurrent urinary infections in childhood. Her urinalysis shows protein but no blood. Her blood tests show:

Haemoglobin 109 g/L

Serum urea 7.5 mmol/L

Serum creatinine 125 $\mu\text{mol/L}$.

What is the SINGLE most likely cause of her hypertension?

A Chronic glomerulonephritis

B Chronic pyelonephritis

C Essential hypertension

D Pre-eclampsia

E Renal artery stenosis

6. An 83 year old woman admitted with a chest infection becomes confused with impaired attention and poor concentration. She is restless and frightened. She is verbally abusive and has perceptual abnormalities. There is no significant previous psychiatric history.

What is the SINGLE most likely diagnosis?

A Delirium

B Drug induced psychosis

C Lewy body dementia

D Multi-infarct dementia

E Psychotic depression

7. A town has a population of 500,000. In a five year period there are 1250 cases of bladder cancer diagnosed at the only hospital. During the same period the occupational health department diagnosed a further 500 cases.

What is the annual incidence per million of bladder cancer in this population?

A 2100

B 1750

C 1400

D 700

E 350

8. A 28 year old woman who has had a previous pulmonary embolism in pregnancy wishes to discuss contraception. She has menorrhagia but is otherwise well.

What is the SINGLE most suitable contraceptive method for this patient?

A Combined oral contraceptive pill

B Copper intrauterine contraceptive device

C Levonorgestrel intra-uterine system

D Progestogen implant

E Progestogen-only pill

9. An eight year old girl has had left earache for two days. The earache subsided about two hours ago with the onset of a purulent discharge which relieved the pain. Her temperature is 39.2o C.

What is the SINGLE most appropriate antibiotic?

A Amoxicillin

B Ciprofloxacin

C Clindamycin

D Erythromycin

E Flucloxacillin

10. A 38 year old man has disturbing thoughts about his house being infected by germs. He is anxious about safety and checks the locks of his doors repeatedly before going to bed.

For the last eight weeks he has been washing his hands every time he touches the lock, 20-30 times a day.

What is the SINGLE most appropriate management?

A Antidepressant

B Antipsychotic

C Anxiolytic

D Cognitive behaviour therapy

E Psychodynamic psychotherapy

11. A two year old boy fell off his tricycle, hurting his arm. He got up and started to cry but before there was any sound he went pale, unconscious and rigid. He recovered after 1-2 minutes but remained pale. After an hour he was back to normal. His mother says she was afraid he was going to die and that he had a similar episode three months previously after he fell down some steps.

What SINGLE investigation is indicated?

A Computed tomography scan of the head

B Electroencephalogram

C Full blood count

D None

E Skeletal survey

12. At laparoscopic surgery for gallstones, a trocar is inserted through the midline of the anterior abdominal wall just below the umbilicus.

Which SINGLE structure(s) would be pierced?

A Conjoint tendon

B External and internal oblique muscles

C External oblique aponeurosis and internal oblique muscle

D Linea alba

E Rectus abdominus muscle

13. A 65 year old man had closure of colostomy performed five days ago. He is not systemically unwell. There is a tender, localised fluctuant swelling 4 cm in diameter in the wound.

What is the SINGLE most appropriate management?

A Abdominal support

- B Antibiotics
- C Laparotomy and re-suture wound
- D Local exploration of wound
- E Observation

14. A 32 year old woman has had a febrile illness and swelling of the small joints of her hands, feet, wrists and knees for two days. She has a maculopapular rash and a few palpable, small cervical lymph nodes. She was previously well. There is no history of relevant travel outside the UK. She has two young children.

What is the SINGLE most likely diagnosis?

- A Psoriasis
- B Reactive arthritis
- C Rheumatoid arthritis
- D Sarcoidosis
- E Systemic lupus erythematosus

15. A 16 year old girl has had an enlarging mass in the right side of her neck for the last six weeks. She has had no other symptoms. She has a 2 x 2 cm enlarged lymph node in the anterior triangle of the neck with several smaller associated lymph nodes palpable.

Oropharyngeal examination shows tonsillar membranes.

What is the SINGLE most likely diagnosis?

- A Infectious mononucleosis
- B Leukaemia
- C Lymphoma
- D Sarcoidosis
- E Tuberculosis

16. A 19 year old man has been brought by his mother for assessment. She says he has always been aloof and distant. He has no friends, preferring solitary activities. He likes to collect model cars and now has 2,000. He appears to be indifferent to either praise or criticism by his mother.

What is the SINGLE most likely diagnosis?

- A Autistic spectrum disorder
- B Bipolar affective disorder

- C Borderline personality disorder
- D Dissocial personality disorder
- E Obsessive compulsive disorder

17. A 60 year old man has had increasing pain in both buttocks, thighs and calves on walking for three months. He has also recently developed impotence. Femoral and distal pulses are absent in both limbs.

What is the SINGLE most likely site of arterial obstruction?

- A Aorto iliac
- B External iliac
- C Femoropopliteal
- D Internal iliac
- E Tibial

18. A 72 year old woman has been taking loop diuretics for left ventricular failure. She now has palpitations and muscle weakness.

What is the SINGLE most likely serum electrolyte pattern to be found?

- A Sodium 130 mmol/L, potassium 2.5 mmol/L
- B Sodium 130 mmol/L, potassium 5.0 mmol/L
- C Sodium 140 mmol/L, potassium 4.5 mmol/L
- D Sodium 150 mmol/L, potassium 2.5 mmol/L
- E Sodium 150 mmol/L, potassium 3.5 mmol/L

19. A 78 year old man has collapsed. He has had a severe headache for 12 hours and had an upper respiratory tract infection three days ago. He has a temperature of 39.2o C, a pulse of 122 beats/minute, a blood pressure of 84/60 mmHg and a respiratory rate of 34 breaths/minute but his chest is clear. He has a Glasgow Coma Scale score of 10 and some neck stiffness. He has been started on high-flow oxygen.

What is the SINGLE most appropriate immediate management?

- A Intravenous antibiotic; computed tomography brain scan
- B Intravenous antibiotic; lumbar puncture
- C Intravenous fluids; computed tomography brain scan
- D Intravenous fluids; intravenous antibiotic
- E Intravenous fluids; lumbar puncture

20. A 16 year old boy was brought to hospital in a comatose state having taken methadone belonging to his sister. He was given naloxone and rapidly became alert. Some hours later, he gradually becomes semi-conscious again.

What is the SINGLE most likely reason for this patient becoming semi-conscious again in hospital?

- A Methadone hepatotoxicity has caused acute liver failure
- B Methadone is eliminated from the body more slowly than naloxone
- C Naloxone is a partial agonist at the central nervous system opioid receptor
- D The patient has misused another substance that has caused an intracranial bleed
- E The patient has misused another substance that is absorbed more slowly than methadone

21. A 27 year old woman who takes the combined oral contraceptive pill has had painless vaginal spotting and discharge for three days. Her last menstrual period, which lasted four days, finished 10 days ago. Her last cervical smear two years ago was normal. Abdominal and vaginal examinations are normal apart from a mild ectropion with contact bleeding.

What is the SINGLE most appropriate initial investigation?

- A Cervical smear
- B Colposcopy
- C Endocervical swab
- D Endometrial biopsy
- E Pelvic ultrasound scan

22. A 72 year old man being investigated for anaemia is booked for a colonoscopy in 24 hours.

What is the SINGLE most appropriate management the night before the procedure?

- A Bisacodyl tablets
- B Glycerine suppository
- C Lactulose syrup
- D Magnesium citrate (orally)
- E Senna tablets

23. A 19 year old woman has had progressive bilateral iliac fossa pain and dyspareunia for three days. She has an offensive vaginal discharge and feels unwell and feverish. Her temperature is 39°C. An initial antimicrobial regimen is commenced.

What SINGLE set of organisms are the most appropriate for the antimicrobial regimen to cover?

- A Neisseria gonorrhoeae and Candida albicans
- B Neisseria gonorrhoeae and Candida albicans and Gardnerella vaginalis
- C Neisseria gonorrhoeae and Chlamydia trachomatis
- D Neisseria gonorrhoeae and Chlamydia trachomatis and Candida albicans
- E Neisseria gonorrhoeae and Chlamydia trachomatis and Gardnerella vaginalis

24. A 48 year old man with renal cancer had radiotherapy for metastatic spinal cord compression at the 11th thoracic vertebra four weeks ago. He has retained sensation but is unable to stand. He has pain in a band around his lower trunk controlled by regular oral morphine. He is distressed by increasingly frequent episodes of painful muscle spasms in his right leg.

What is the SINGLE most appropriate management of his symptoms?

- A Amitriptyline
- B Baclofen
- C Fentanyl patch
- D Gabapentin
- E Increase morphine dose

25. An 18 year old woman thinks she is overweight and has a mildly depressed mood. For the last 18 months she has reduced her food intake and has been exercising for two hours each day. She has amenorrhoea. Her body mass index is 15.5 kg/m² and her blood pressure is 90/60 mmHg.

What is the SINGLE most appropriate management?

- A Prescribe antidepressants
- B Refer for psychodynamic therapy
- C Refer to acute medical services
- D Refer to dietician
- E Refer to eating disorder service

26. A four year old girl has had a temperature of 38.5o C for two days and has not wanted to eat her food. Yesterday she developed a sore throat and small, painful ulcers inside her

mouth. Today she has small blisters on the palms of her hands and soles of her feet which are painful but not itchy.

What is the SINGLE most likely underlying cause?

- A Coxsackie virus
- B Herpes simplex virus
- C Staphylococcus aureus
- D Streptococcus pneumoniae
- E Varicella zoster virus

27. A 32 year old woman has had three episodes of slurred speech and two episodes of transient weakness of both legs in the past five years. Each episode has resolved within three months.

What is the SINGLE most likely diagnosis?

- A Meningioma
- B Migraine
- C Multiple sclerosis
- D Stroke
- E Transient ischaemic attack

28. An eight year old girl is complying with her asthma treatment of low-dose inhaled corticosteroid prophylaxis and short-acting bronchodilators as required. Her inhaler technique is good. She now has a frequent night cough and mild exercise-induced wheeze.

What would be the SINGLE most appropriate change in her treatment?

- A Add leukotriene antagonist
- B Add oral theophylline
- C Add regular long-acting bronchodilator
- D Increase dose of inhaled corticosteroid
- E Short course of oral corticosteroid

29. A 38 year old man with longstanding alcohol dependence has vertigo and a tremor every morning.

What is the SINGLE most likely diagnosis?

- A Anxiety
- B Benign positional vertigo

- C Cerebellar degeneration
- D Optic neuritis
- E Temporal lobe epilepsy

30. An 84 year old woman with Alzheimer's dementia has recently become incontinent and more confused than usual.

What is the SINGLE most likely diagnosis?

- A Detrusor overactivity
- B Neuropathic bladder
- C Nocturnal enuresis
- D Urinary tract infection
- E Uterine prolapse

31. A 24-year-old female comes for review. She was diagnosed with asthma two years ago and is currently using a salbutamol inhaler 100mcg prn combined with beclometasone dipropionate inhaler 200mcg bd. Despite this her asthma is not well controlled. On examination her chest is clear and she has a good inhaler technique. What is the most appropriate next step in management?

- A Increase beclometasone dipropionate to 400mcg bd
- B Switch steroid to fluticasone propionate
- C Trial of leukotriene receptor antagonist
- D Add salmeterol
- E Add tiotropium

32. A 19-year-old female starts Microgynon 30 (combined oral contraceptive pill) on day 8 of her cycle. How long will it take before it can be relied upon as a method of contraception?

- A Immediately
- B 2 days
- C 5 days
- D 7 days
- E Until first day of next period

33. A 69-year-old man is started on tamsulosin for benign prostatic hyperplasia. Which one of the following best describes the side-effects he may experience?

- A Urgency + insomnia
- B Dizziness + postural hypotension
- C Urinary retention + nausea
- D Urgency + erectile dysfunction

E Erectile dysfunction + reduced libido

34. A 37-year-old woman presents for review. She is 26 weeks pregnant and has had no problems with her pregnancy to date. Blood pressure is 144/92 mmHg, a rise from her booking reading of 110/80 mmHg. Urine dipstick reveals the following:

Protein	negative
Leucocytes	negative
Blood	negative

What is the most appropriate description of her condition?

- A Moderate pre-eclampsia
- B Mild pre-eclampsia
- C Gestational hypertension
- D Normal physiological change in blood pressure
- E Pre-existing hypertension

35. Whilst examining a patient the following is found on fundoscopy:



What is this finding most suggestive of?

- A Central retinal artery occlusion
- B Normal fundus
- C Papilloedema
- D Untreated glaucoma
- E Optic atrophy

36. A 55-year-old business man presents with a 15 day history of watery, non-bloody diarrhoea associated with anorexia and abdominal bloating. His symptoms started 4 days after returning from a trip to Pakistan. On examination he is afebrile with dry mucous membranes but normal skin turgor. What is the most likely causative organism?

- A *Salmonella*
- B *Giardia lamblia*
- C *Shigella*
- D *Escherichia coli*
- E Norovirus

37. A 64-year-old man presents with a eight-month history of generalised weakness. On examination he has fasciculation and weakness in both arms with absent reflexes. Examination of the lower limbs reveal increased tone and exaggerated reflexes. Sensation was normal and there were no cerebellar signs. What is the most likely diagnosis?

- A Lead poisoning
- B Motor neuron disease
- C Vitamin B12 deficiency
- D Syringomyelia
- E Multiple sclerosis

38. At what age would the average child acquire the ability to walk unsupported?

- A 6-7 months
- B 8-9 months
- C 10-11 months
- D 13-15 months
- E 2 years

39. A new test to screen for pulmonary embolism (PE) is used in 100 patients who present to the Emergency Department. The test is positive in 30 of the 40 patients who are proven to have a PE. Of the remaining 60 patients, only 5 have a positive test. What is the sensitivity of the new test?

- A 8.33%
- B 30%
- C 40%
- D 66.66%
- E 75%

40. A 54-year-old farm worker presents for review. She has recently been diagnosed with osteoarthritis of the hand but has no other past medical history of note. Despite regular paracetamol she is still experiencing considerable pain, especially around the base of both thumbs. What is the most suitable next management step?

- A Add oral diclofenac + lansoprazole

- B Switch paracetamol for co-codamol 8/500
- C Add topical ibuprofen
- D Add oral ibuprofen
- E Add oral glucosamine

41. A 29-year-old man is brought to the physician for removal of a cast from his left leg. He sustained a fracture of the left lower extremity 6 weeks ago and was immobilized in a cast that extended from just below the knee to the foot. At the time of injury, there was severe pain but normal strength in the extremity. When the cast is removed today, physical examination shows a pronounced left footdrop with paresthesia and sensory loss over the dorsum of the left foot and lateral leg. Injury to which of the following nerves is the most likely cause of this patient's condition?

- (A) Common fibular (peroneal)
- (B) Femoral
- (C) Obturator
- (D) Sciatic
- (E) Tibial

42. A 7-month-old infant is brought to the physician's office because of poor weight gain despite large food intake. He has had two episodes of pneumonia and has frequent bulky stools. He coughs frequently. X-rays of the lungs show increased markings and hyperinflation. Trypsin is absent in a fresh stool sample, and the fat content is increased. Which of the following is the most likely cause of this infant's disorder?

- (A) Autoimmune disorder
- (B) Defective ion transport at epithelial surfaces
- (C) Disaccharidase deficiency
- (D) Inability to synthesize apolipoprotein B
- (E) Villous atrophy of the jejunum

43. A 45-year-old man has abnormal circadian variation in body temperature, disruption of the sleep-wake cycle, and an impaired nocturnal surge of secretion of melatonin. An MRI of the brain is most likely to show a lesion involving which of the following nuclei?

- (A) Accessory optic
- (B) Lateral preoptic
- (C) Pretectal
- (D) Suprachiasmatic
- (E) Supraoptic

44. A 4-year-old girl has the sudden onset of abdominal pain and vomiting. She has a mass in the right lower quadrant and hyperactive bowel sounds. A segment of resected bowel is shown in the photograph. Which of the following is the most likely diagnosis?

- (A) Appendicitis
- (B) Intussusception
- (C) Meckel diverticulum
- (D) Necrotizing enterocolitis
- (E) Strangulated hernia

45. A 75-year-old woman has increasing shortness of breath on exertion. Findings on physical examination are unremarkable. X-rays of the chest show no abnormalities of the heart or lungs. Pertinent laboratory findings include:

Hematocrit 28%

Hemoglobin 9 g/dL

Mean corpuscular volume 70 μm^3

Which of the following is the most likely basis for these findings?

- (A) Acquired hemolytic anemia
- (B) Chronic blood loss
- (C) Folic acid deficiency
- (D) β -Thalassemia minor
- (E) Pernicious anemia

46. A 64-year-old man comes to the physician because of swelling in his feet for the past 2 years. He says that his skin is dry and itchy and his feet "feel heavy." One of his legs is shown. Which of the following is the most likely cause of his condition?

- (A) Arteriolar constriction and arteriolar hypertension
- (B) Arteriolar dilation and venous hypertension
- (C) Venous constriction and arteriolar constriction
- (D) Venous hypertension and incompetent valves
- (E) Venous hypertension and venous constriction

47. An otherwise healthy 3-week-old boy is brought to the physician's office because of jaundice and dark urine for the past 2 weeks. He has hepatomegaly, and his stools are loose, claycolored, and acholic. Serum conjugated bilirubin concentration is increased. Which of the following is the most likely cause of the hyperbilirubinemia?

- (A) Defect in cholesterol synthesis
- (B) Deficiency of glucuronosyltransferase
- (C) Hemolysis
- (D) Inflammation of the terminal ileum
- (E) Obstruction of the biliary system

48. A 30-year-old woman comes to the emergency department because she thinks she has had a heart attack. One hour ago, she had the sudden onset of chest pain, faintness,

pounding heart, flushed skin, and nausea that lasted 20 minutes. She now feels better. She has limited her activity because she has had two similar episodes over the past 2 weeks. Medical evaluation is normal. Which of the following is the most appropriate nonpharmacologic therapy?

- (A) Assertiveness training
- (B) Cognitive behavioral therapy
- (C) Dynamic psychotherapy
- (D) Psychoanalysis
- (E) Psychodrama

49. A 48-year-old man has hepatic cancer that is unresponsive to standard therapy. He enrolls in a clinical study of a novel chemotherapeutic agent that, as a side effect, blocks kinesin, a component of the cellular microtubular transport system. One week later, he develops skeletal muscle weakness. An alteration in which of the following components of the neuromuscular junction is the most likely cause of the muscle weakness?

- (A) A decrease in the number of postsynaptic neurotransmitter receptors
- (B) A decrease in the number of presynaptic neurotransmitter vesicles
- (C) A decrease in the presynaptic neuron calcium permeability
- (D) Impaired α -motoneuron action potential conduction
- (E) Impaired skeletal muscle action potential conduction

50. A 68-year-old man has had low back pain over the past 2 months. Laboratory studies show an normochromic, normocytic anemia and azotemia. Serum and urine calcium concentrations are abnormally increased, and urinalysis shows excessive protein (4+) and proteinaceous casts. Bone marrow examination is most likely to show uncontrolled proliferation of which of the following cells?

- (A) Basophils
- (B) Lymphocytes
- (C) Macrophages
- (D) Plasma cells
- (E) Reticulocytes

51. A 66-year-old man has become increasingly short-tempered with his wife. He has diarrhea, weight loss, and weakness in the proximal muscles. He has atrial fibrillation and tachycardia. Which of the following is the most likely diagnosis?

- (A) Congestive heart failure
- (B) Cushing syndrome
- (C) Hyperthyroidism
- (D) Mitral valve prolapse
- (E) Pheochromocytoma

52. A 23-year-old woman has a progressive increase in her serum β -human chorionic gonadotropin (β -hCG) concentrations during an 8-week period. A hydatidiform mole is removed, but the β -hCG concentration continues to increase. Which of the following is the most likely diagnosis?

- (A) Adrenal adenoma
- (B) Choriocarcinoma
- (C) Ectopic pregnancy
- (D) Pituitary insufficiency
- (E) A second noninvasive mole

53. A 74-year-old man with urinary frequency and urgency has benign prostatic hyperplasia. He refuses operative intervention but agrees to a trial of finasteride therapy. During the trial, synthesis of which of the following substances is most likely to be inhibited?

- (A) Androstenedione
- (B) Dihydrotestosterone
- (C) Estradiol
- (D) Estrone
- (E) Testosterone

54. A 63-year-old woman is brought to the physician because of blurred vision in the right eye for 1 day. She also has had a right-sided headache for the past week and fever with fatigue for the past 2 weeks. Physical examination shows a vessel along the right temple that is nodular and tender. Histologic examination of the vessel shows multinucleated histiocytes infiltrating the wall of a medium-sized artery. Which of the following is the most appropriate next step in management?

- (A) Administration of a β -adrenergic blocking agent
- (B) Administration of a corticosteroid
- (C) Administration of sulfone
- (D) Cranial angiography
- (E) Surgical removal of the involved vessel

55. A 55-year-old man is brought to the emergency department because of a 4-hour history of temperatures to 39.4°C (103°F). He has completed four courses of chemotherapy for lung cancer. Physical examination shows no other abnormalities. Combination intravenous antibiotic therapy is started, but the patient does not significantly improve. A chest x-ray shows a new pulmonary infiltrate. Bronchoalveolar lavage and a lung biopsy specimen confirm a diagnosis of aspergillosis. A regimen of amphotericin B is started. This patient is most likely to develop which of the following adverse effects?

- (A) Dermal necrosis
- (B) Liver toxicity
- (C) Renal impairment
- (D) Retinal damage

(E) Vestibular toxicity

56. A previously healthy 3-month-old boy is brought to the physician because of a runny nose and dry cough for 2 days. Physical examination shows tachypnea, a nasal discharge, and wheezing. An x-ray of the chest shows hyperexpansion but no infiltrates. The causal virus was most likely transmitted by which of the following routes?

- (A) Blood transfusion
- (B) Ingestion of contaminated formula
- (C) Inoculation onto mucous membranes
- (D) Insect bite
- (E) Transplacental transfer

57. A 40-year-old woman comes to the physician because of pain in the region of her left jaw, left-sided earache, and headache for 3 days. The patient has not had any trauma to her face or jaw but says she often grinds her teeth. She is concerned because she is a singer, and it is painful when she opens her mouth wide to sing. There is also a clicking sound when she opens her mouth. Physical examination shows the left side of the jaw deviating slightly to the left on elevation. The area around the left mandibular condyle is painful on palpation. Mandibular depression is difficult to perform because of pain. This movement also elicits an audible clicking sound. There is tightness indicative of a muscle spasm along the left mandibular ramus. Palpation shows no other area of tightness. Spasms of which of the following muscles are most likely associated with this condition?

- (A) Buccinator
- (B) Masseter
- (C) Mylohyoid
- (D) Posterior belly of the digastric
- (E) Superior pharyngeal constrictor

58. A 30-year-old man comes to the clinic because of a painful ulcer on his penis for the past week. He has had multiple sexual partners, including commercial sex workers. Physical examination shows lymphadenopathy in the inguinal region and a 1-cm tender ulcer with no induration located on the frenulum. A culture of the ulcer grows colonies on supplemented chocolate agar. A Gram stain of the colonies shows gram-negative coccobacilli. Which of the following is the most likely causal organism?

- (A) *Haemophilus ducreyi*
- (B) Herpes simplex virus
- (C) *Neisseria gonorrhoeae*
- (D) *Treponema pallidum*
- (E) *Trichomonas vaginalis*

59. A 74-year-old man has had confusion for 2 weeks. He has smoked two packs of cigarettes daily for 50 years. An x-ray of the chest shows a 5-cm mass in the lung. Laboratory studies of serum show:

Na ⁺	110 mEq/L
Cl ⁻	72 mEq/L
K ⁺	4.5 mEq/L
HCO ₃ ⁻	30 mEq/L
Glucose	200 mg/dL
Creatinine	1.4 mg/dL

Which of the following is the most likely cause of these findings?

- (A) Adenocarcinoma of the lung
- (B) Craniopharyngioma
- (C) Medullary carcinoma of the thyroid gland
- (D) Renal cell carcinoma
- (E) Small cell carcinoma of the lung

60. A 52-year-old man comes to the emergency department because he has had vomiting, nausea, and abdominal pain for the past 12 hours. He says he attempted suicide 3 days ago by "taking everything in the medicine cabinet." He was stuporous for approximately 12 hours after the overdose but felt better the following day. At this time, he has jaundice and pain in the right upper quadrant. Which of the following drugs is most likely to have caused the pain, vomiting, and jaundice?

- (A) Acetaminophen
- (B) Aspirin
- (C) Cimetidine
- (D) Diphenhydramine
- (E) Triazolam

61. A previously healthy 48-year-old man comes to the physician because of fever and cough for 2 days. He attended a convention 10 days ago, and two of his friends who stayed in the same hotel have similar symptoms. His temperature is 38.3°C (101°F), pulse is 76/min, respirations are 20/min, and blood pressure is 130/70 mm Hg. Crackles are heard over the right lung base. A chest x-ray shows a patchy infiltrate in the right lower lobe. A Gram stain of sputum shows segmented neutrophils and small gram-negative rods that Which of the following is the most likely causal organism?

- (A) *Campylobacter jejuni*
- (B) *Eikenella corrodens*
- (C) *Legionella pneumophila*
- (D) *Proteus mirabilis*
- (E) *Pseudomonas aeruginosa*

62. A 12-year-old girl is admitted to the hospital because of marked shortness of breath, an erythematous rash, and painful, swollen hip and knee joints. She is agitated. A chest x-ray shows an enlarged heart and changes consistent with pulmonary edema. Intractable

congestive heart failure develops, and she dies on the second hospital day. This child most likely had a recent history of which of the following?

- (A) Cyanosis with chest pain
- (B) Jaundice
- (C) Meningitis
- (D) Pharyngitis
- (E) Skin infection

63. A 29-year-old woman comes to the physician for a consultation 1 month after her 7-year-old daughter was killed in a motor vehicle collision. The patient is upset and restless and wrings her hands frequently. She cannot sleep at night, has lost her appetite, and cries easily and frequently. She is preoccupied with thoughts of her daughter and sometimes thinks she momentarily sees her daughter sitting in the living room. She says she wishes that she had been hit by the car, too. She denies any thoughts of killing herself. Which of the following is the best explanation for these findings?

- (A) Dysthymic disorder
- (B) Major depressive disorder
- (C) Normal grief reaction
- (D) Obsessive-compulsive disorder
- (E) Schizoaffective disorder

64. A 2-year-old girl is brought to the emergency department because of pain in her right forearm after a fall 1 hour ago. She has a history of fractures of the left femur and right tibia. Physical examination shows blue sclerae. There is tenderness to palpation over the distal right radius. A mutation in which of the following genes is the most likely cause of the recurrent fractures in this patient?

- (A) Calcitonin
- (B) Collagen, type I
- (C) 1 α -Hydroxylase
- (D) Parathyroid hormone
- (E) Vitamin D receptor

65. A 12-year-old girl with sickle cell disease has pain in her right arm. An x-ray of the right upper extremity shows bony lesions consistent with osteomyelitis. Which of the following is the most likely causal organism?

- (A) *Clostridium septicum*
- (B) *Enterococcus faecalis*
- (C) *Listeria monocytogenes*
- (D) *Proteus mirabilis*
- (E) *Pseudomonas aeruginosa*
- (F) *Salmonella enteritidis*
- (G) *Serratia marcescens*

66. A previously healthy 30-year-old African American woman has had fatigue, arthralgia, and a nodular rash over the trunk and upper extremities for 3 weeks. There are twelve 0.3- to 0.8-cm, pale, indurated nodular plaques over the chest, back, and upper extremities. The liver is palpable 2 cm below the right costal margin with a percussion span of 14 cm, and the spleen tip is palpable 3 cm below the left costal margin. There is no pain or limitation of motion of the joints. The rest of the examination shows normal findings. An x-ray of the chest shows bilateral hilar lymphadenopathy. A biopsy specimen of the skin lesions is most likely to show which of the following?

- (A) Dermal infiltration with monocytes and Reed-Sternberg cells
- (B) Fat-laden histiocytes
- (C) Noncaseating granulomas
- (D) Paravascular homogeneous eosinophilic infiltrate
- (E) Vasculitis with giant cells

67. A 32-year-old man who is a jackhammer operator comes to the physician because of pain and swelling of his right arm for 3 days. The symptoms are moderately exacerbated by exertion. Examination of the right upper extremity shows erythema and moderate edema. Capillary refill time is less than 3 seconds. Which of the following is the most likely diagnosis?

- (A) Axillary-subclavian venous thrombosis
- (B) Deep venous valvular insufficiency
- (C) Superficial thrombophlebitis of the basilic vein
- (D) Superior vena cava syndrome
- (E) Thoracic outlet syndrome

68. A 52-year-old woman has had dyspnea and hemoptysis for 1 month. She has a history of rheumatic fever as a child and has had a cardiac murmur since early adulthood. Her temperature is 36.7°C (98°F), pulse is 130/min and irregularly irregular, respirations are 20/min, and blood pressure is 98/60 mm Hg. Jugular venous pressure is not increased. Bilateral crackles are heard at the lung bases. There is an opening snap followed by a low pitched diastolic murmur at the third left intercostal space. An x-ray of the chest shows left atrial enlargement, a straight left cardiac border, and pulmonary venous engorgement.

Which of the following is the most likely explanation for these findings?

- (A) Aortic valve insufficiency
- (B) Aortic valve stenosis
- (C) Mitral valve insufficiency
- (D) Mitral valve stenosis
- (E) Tricuspid valve insufficiency

69. A 47-year-old man comes to the physician 12 hours after the sudden onset of a severe occipital headache and stiff neck. He has not had any other symptoms and has no

history of severe headache. He has hypertension and gastroesophageal reflux disease. Current medications include hydrochlorothiazide and ranitidine. He is oriented to person, place, and time. His temperature is 36.7°C (98.1°F), pulse is 100/min, and blood pressure is 160/90 mm Hg. Range of motion of the neck is decreased due to pain. Neurologic examination shows no focal findings. Which of the following is the most likely diagnosis?

- (A) Cluster headache
- (B) Meningitis
- (C) Migraine
- (D) Subarachnoid hemorrhage
- (E) Tension-type headache

70. A previously healthy 20-year-old college student comes to the emergency department because she has been unable to urinate for 8 hours. She has a 2-day history of fever, fatigue, severe burning with urination, and pain in the genital area. She is sexually active and uses a diaphragm for contraception. She takes no medications. She appears uncomfortable. Her temperature is 38.7°C (101.7°F), pulse is 110/min, and blood pressure is 110/70 mm Hg. Abdominal examination shows a large, cystic, midline pelvic mass. The groin nodes are enlarged and tender. Pelvic examination shows erythematous external genitalia with extensive ulceration. The lesions extend into the vagina. Internal examination is not possible due to patient discomfort. Which of the following is the most appropriate initial step in management?

- (A) Measurement of serum urea nitrogen concentration
- (B) Vaginal cultures
- (C) Intravenous pyelography
- (D) Renal ultrasonography
- (E) Placement of a Foley catheter

71. A 47-year-old man is brought to the emergency department 2 hours after the sudden onset of shortness of breath, severe chest pain, and sweating. He has no history of similar symptoms. He has hypertension treated with hydrochlorothiazide. He has smoked one pack of cigarettes daily for 30 years. His pulse is 110/min, respirations are 24/min, and blood pressure is 110/50 mm Hg. A grade 3/6, diastolic blowing murmur is heard over the left sternal border and radiates to the right sternal border. Femoral pulses are decreased bilaterally. An ECG shows left ventricular hypertrophy. Which of the following is the most likely diagnosis?

- (A) Acute myocardial infarction
- (B) Aortic dissection
- (C) Esophageal rupture
- (D) Mitral valve prolapse
- (E) Pulmonary embolism

72. A 10-year-old boy with chronic sinusitis is brought to the emergency department following a 3-minute generalized tonic-clonic seizure. He has a 3-day history of increasingly severe headaches and a 2-day history of vomiting and temperatures to 38.7°C (101.7°F). His

temperature is 39.5°C (103.1°F), pulse is 80/min, respirations are 16/min, and blood pressure is 135/90 mm Hg. He is slightly lethargic but answers questions appropriately. Examination shows papilledema. No other abnormalities are noted. Which of the following is the most appropriate initial step in management?

- (A) Measurement of serum ammonia concentration
- (B) X-rays of the sinuses
- (C) EEG
- (D) CT scan of the head
- (E) Lumbar puncture

73. A 19-year-old college student comes to the physician because of vaginal irritation and pain with urination for 5 days. Two weeks ago, she had streptococcal pharyngitis treated with amoxicillin. She has been sexually active with two partners over the past year; she uses condoms for contraception. Her last menstrual period was 1 week ago. Her temperature is 37.2°C (99°F), and blood pressure is 90/60 mm Hg. Pelvic examination shows erythema of the vulva and vagina and a thick white vaginal discharge. The pH of the discharge is 4. Which of the following is the most likely cause of these findings?

- (A) Bacterial vaginosis
- (B) Candidiasis
- (C) *Chlamydia trachomatis* infection
- (D) *Escherichia coli* infection
- (E) *Neisseria gonorrhoeae* infection
- (F) Trichomoniasis

74. An 18-year-old man is brought to the emergency department by friends after he passed out and became unarousable. He has no history of medical problems. There is alcohol on his breath and no evidence of trauma. His pulse is 70/min, respirations are 6/min, and blood pressure is 110/60 mm Hg. The lungs are clear to auscultation. There is a normal S1 and S2. A grade 2/6, systolic ejection murmur is heard. The liver edge and spleen tip are not palpable. Test of the stool for occult blood is negative. Neurologic examination is difficult to assess. Reflexes are 1+ bilaterally. All extremities respond to painful stimuli. His blood alcohol concentration is 200 mg/dL; toxicology screening is also positive for benzodiazepines in the blood and cocaine metabolites in the urine. The patient does not respond to infusion with naloxone, glucose, or vitamin B1 (thiamine). Abuse of which of the following substances is the most likely cause of these findings?

- (A) Alcohol only
- (B) Alcohol and benzodiazepines
- (C) Alcohol and cocaine
- (D) Alcohol and PCP (phencyclidine)
- (E) Alcohol and salicylates

75. A 4-year-old boy with a displaced supracondylar fracture of the humerus without neurovascular complication is placed in skeletal traction. Six hours later, he has severe

pain in the forearm and increased pain on passive extension of the wrist and fingers. Which of the following is the most appropriate next step in management?

- (A) Increased weight on the traction apparatus
- (B) Administration of analgesic medication
- (C) Exploration of the fracture and fasciotomy of the flexor compartment of the forearm
- (D) Closed reduction with the patient under anesthesia
- (E) Open reduction and internal fixation of the fracture

76. During abdominal closure after a right hemicolectomy for colon cancer, a medical student accidentally receives a solid needlestick. The patient's status for hepatitis B, hepatitis C, and HIV is unknown. The student has received hepatitis B vaccine and tetanus toxoid within the past 10 years. Examination of the student's hand shows a single bleeding puncture wound of the right index finger. Which of the following is the most appropriate pharmacotherapy?

- (A) Administration of tetanus immune globulin
- (B) Intravenous immune globulin therapy
- (C) Pegylated interferon alfa and ribavirin therapy
- (D) Reverse transcriptase inhibitor therapy
- (E) No pharmacotherapy is indicated at this time

77. A previously healthy 17-year-old girl is brought to the physician for evaluation because of loss of appetite, sleeplessness, and extreme irritability for 3 weeks. After missing many practices, she quit the softball team that she previously enjoyed. She often feels tired and has difficulty sitting still and concentrating on schoolwork. Her menses occur at regular intervals. She is 168 cm (5 ft 6 in) tall and weighs 50 kg (110 lb); BMI is 18 kg/m². Her pulse is 74/min, respirations are 16/min, and blood pressure is 110/70 mm Hg. Which of the following is the most likely diagnosis?

- (A) Adjustment disorder with mixed disturbance of emotions and conduct
- (B) Anorexia nervosa
- (C) Attention-deficit/hyperactivity disorder
- (D) Dysthymic disorder
- (E) Major depressive disorder

78. A previously healthy 17-year-old boy comes to the physician because of moderate upper abdominal pain for 24 hours. He appears jaundiced. His temperature is 37.9°C (100.2°F), pulse is 90/min, respirations are 14/min, and blood pressure is 110/60 mm Hg. Abdominal examination shows right upper quadrant tenderness. The spleen tip is palpated 3 cm below the left costal margin. Laboratory studies show:

Hematocrit	32%
Leukocyte count	9800/mm ³
Mean corpuscular volume	78 μm ³

Serum bilirubin, total 4.1 mg/dL
Direct 3.6 mg/dL

A blood smear shows spherocytes. Ultrasonography of the abdomen shows gallstones and splenomegaly. Which of the following is the most likely underlying mechanism of these laboratory findings?

- (A) Activation of factor XII
- (B) Cytoskeletal protein deficiency
- (C) Defective iron absorption
- (D) Presence of an IgM antibody
- (E) Pyruvate kinase deficiency

79. A 3-year-old child is brought to the emergency department by his teenage sister because he refuses to walk. The sister reports that she has been babysitting for 3 days while her parents are away on a trip and that the boy has been fussy for the past 2 days. Physical examination is normal except for painful swelling of the left lower leg. In addition to radiography of the leg, you should obtain which of the following?

- (A) Abdominal ultrasonography
- (B) CT scan of the abdomen
- (C) CT scan of the head
- (D) Skeletal survey
- (E) Serum lead concentration

80. An 81-year-old white woman is in the hospital following a hip replacement operation 2 days ago because of an intertrochanteric fracture of the left femur following a fall. Her condition had been stable since the operation, but today the nurses note that the patient is confused and short of breath. Vital signs are temperature 37.0°C (98.6°F), pulse 110/min, respirations 32/min, and blood pressure 150/104 mm Hg. Pulse oximetry on 2 L/min of oxygen by nasal cannula shows an oxygen saturation of 79%. Scattered crackles are heard in both lung fields. ECG shows sinus tachycardia with right bundle branch block. Chest x-ray shows bilateral basilar infiltrates. X-ray of the left hip shows intact repair. Leukocyte count is 15,600/mm³ and hematocrit is 29%. You note that she has an advance directive at the front of her medical chart that requests "Do Not Resuscitate" orders. She has been receiving oral oxycodone with acetaminophen for pain, docusate sodium for constipation, lisinopril for mild hypertension, and aspirin for thrombosis. She has no other medical problems. Which of the following is the most appropriate step at this time?

- (A) Order diagnostic tests and begin therapy
- (B) Order diagnostic tests but give no therapy
- (C) Order no diagnostic tests and give no therapy
- (D) Provide analgesia and comfort measures only
- (E) Speak with family members before proceeding with any action

81. A 22-year-old woman is brought to the emergency department by her parents because of muscular weakness, muscle twitches, and palpitations. She is extremely thin and

somewhat cachectic. Her parents report that she has a history of self-induced vomiting and overuse of laxatives and thiazide diuretics. Routine blood studies are obtained. Which of the following findings is most likely to explain these signs and symptoms?

- (A) Decreased hematocrit and hemoglobin concentration
- (B) Decreased serum glucose concentration
- (C) Decreased serum potassium concentration
- (D) Increased serum calcium concentration
- (E) Increased serum sodium concentration

82. You are asked to evaluate a 78-year-old German American woman who is admitted to the hospital for replacement of her left knee joint due to degenerative joint disease. She is a retired seamstress. She has type 2 diabetes mellitus, a long history of hypertension, and chronic renal failure presumed secondary to diabetes mellitus and hypertension.

Reversible causes of renal failure have been excluded. She underwent a tonsillectomy at age 9 years and a laparoscopic cholecystectomy at age 68 years. Serum creatinine concentration on admission was 6.0 mg/dL. Her current therapy includes a low-sodium, low-protein American Diabetes Association (ADA) diet, enalapril, and acetaminophen. She and her husband live on a farm 90 miles from the nearest dialysis facility. In considering longterm treatment options for this patient, which of the following is the most appropriate factor to consider?

- (A) Her eligibility to receive Medicare
- (B) Her history of an abdominal operation
- (C) Her history of arthritis
- (D) Her suitability for home dialysis
- (E) Her willingness to move to the city

83. A 42-year-old white man is brought to the emergency department by his same sex partner because of confusion, diplopia, and mild weakness of his right arm. The patient is somewhat agitated and shows confusion for recent events. Temperature is 38.3°C (101.0°F). There is decreased pupillary response on the left with paresis of lateral gaze on the right. Peripheral leukocyte count is increased. Which of the following is the most appropriate next step in evaluation of this patient's neurologic signs and symptoms?

- (A) Bilateral carotid arteriography
- (B) CT scan of the head
- (C) EEG
- (D) Lumbar puncture for examination of cerebrospinal fluid
- (E) Serum HIV antibody test

84. A 28-year-old woman who is known to be HIV-positive comes to the emergency department because of a 1-week history of increasing headaches, right-sided weakness, and disorientation. A generalized, tonic-clonic seizure occurs shortly after admission. Following the seizure, vital signs are normal. There is no nuchal rigidity. Funduscopy examination

shows papilledema. There is also right hemiparesis and aphasia. Which of the following is the most likely diagnosis?

- (A) Meningioma
- (B) Meningococcal meningitis
- (C) Neurosyphilis
- (D) Toxoplasmosis
- (E) Tuberculous meningitis

85. A 35-year-old white man with spina bifida is admitted to the hospital for a urologic procedure. He has been functionally independent in activities of daily living and is employed doing inventory control in a local sporting goods store. He has maintained continence through periodic self-catheterization. The patient is paraplegic, has recurrent calcium oxalate kidney stones, and recent onset of incontinence secondary to detrusor and bladder neck dysfunction. Vital signs are normal. Physical examination shows a well-developed, well-nourished man in no acute distress. Aside from paraplegia, lower extremity muscle atrophy, and lower abdominal surgical scars, the physical examination discloses no abnormalities. He had an episode of anaphylaxis secondary to latex allergy during a previous operation for functional expansion of his bladder through a bowel anastomosis. Which of the following is most important to consider in the care of this patient?

- (A) Administration of injectable medications with disposable syringes
- (B) Preparation of food by outside contractors
- (C) Type of cleaning agents used to sterilize bed linens
- (D) Use of rubber urethral catheters
- (E) Use of topical moisturizing agents for skin care

86. A 68-year-old man is in the hospital because he requires mechanical ventilation for an exacerbation of chronic obstructive pulmonary disease. On the second day after admission he developed a pneumothorax on the right side that required tube thoracostomy. An air leak is noted for the next 24 hours, which now has stopped. However, the patient has become restless and combative. Breath sounds are diminished in the right side of the chest and the patient now has tachycardia. Blood pressure is 130/80 mm Hg. After ordering a STAT portable x-ray of the chest, which of the following is the most appropriate step?

- (A) Add 4 cm of positive end-expiratory pressure
- (B) Administer β -blocking medications
- (C) Administer alprazolam
- (D) Remove the patient from the ventilator and ventilate him with a bag-valve mask
- (E) Reposition the chest tube

87. A 16-year-old high school student, whose prenatal course you have managed, gave birth to a 3256-g (7-lb 3-oz) baby girl during the night with the assistance of your associate. On morning rounds you note that the delivery records report that she had mildly elevated blood pressure during labor and sustained an estimated third-stage blood loss of 500 mL.

Today blood pressure is 132/84 mm Hg, she is afebrile, and deep tendon reflexes are normal. The uterine fundus is firm and at the level of the umbilicus, and her perineum is slightly edematous. Hematocrit is 33%. She is cuddling her infant and normal bonding seems to be occurring. Which of the following is the most important next step in management?

- (A) Begin oral ferrous sulfate
- (B) Begin oral methyldopa
- (C) Institute fundal massage
- (D) Order daily sitz baths
- (E) Provide education for well-baby care

88. Three weeks ago a 45-year-old man was admitted to the hospital because of frostbite of both feet. He was treated by rapid rewarming and protective care of the feet. All the toes on the right foot have turned black. He has become slightly febrile and progressively more confused over the past few days. Examination discloses cellulitis in the midfoot. Which of the following is the most appropriate treatment?

- (A) Amputation
- (B) Application of topical collagenase
- (C) Debridement of necrotic skin over the toes
- (D) Hyperbaric oxygen
- (E) Whirlpool therapy

89. A 50-year-old man comes to the emergency department because of a 2-hour history of vomiting "coffee-ground" material. He has lost 4.5 kg (10 lb) in the past 6 months. Dark blood is obtained on passing a nasogastric tube. Which of the following is the most important factor in determining this patient's long-term prognosis?

- (A) Amount and rate of blood loss
- (B) Cause of the bleeding
- (C) History of previous gastrointestinal bleeding
- (D) Initial hematocrit measurement
- (E) Initial response to a bolus of saline

90. A previously healthy 15-year-old boy is brought to the emergency department in August 1 hour after the onset of headache, dizziness, nausea, and one episode of vomiting. His symptoms began during the first hour of full-contact football practice in full uniform. He reported feeling weak and faint but did not lose consciousness. He vomited once after drinking water. On arrival, he is diaphoretic. He is not oriented to person, place, or time. His temperature is 39.5°C(103.1°F), pulse is 120/min, respirations are 40/min, and blood pressure is 90/65 mm Hg. Examination, including neurologic examination, shows no other abnormalities. Which of the following is the most appropriate next step in management?

- (A) Obtain a CT scan of the head
- (B) Administer sodium chloride tablets

- (C) Administer intravenous fluids
- (D) Immerse the patient in an ice water bath
- (E) Obtain a lumbar puncture

91. A 54-year-old woman with a 10-year history of progressive systemic sclerosis (scleroderma) undergoes an emergency laparotomy for a perforated appendix with peritonitis. During the immediate postoperative period, she has a blood pressure of 180/110 mm Hg. Over the next 3 days, her serum creatinine concentration increases, and her urinary output decreases to 250 mL/day. On postoperative day 4, she has mild shortness of breath. Her peripheral oxygen saturation on room air is 89%. Serum studies show a potassium concentration of 6.2 mEq/L, a urea nitrogen concentration of 34 mg/dL, and a creatinine concentration of 3.9 mg/dL. Which of the following is the most appropriate next step in management?

- (A) Intravenous administration of ACE inhibitors
- (B) Intravenous administration of morphine
- (C) Fluid bolus with 2 L of lactated Ringer solution
- (D) Hemodialysis

92. A 37-year-old man with type 1 diabetes mellitus is admitted to the hospital because of inadequate control of his glucose concentrations for the past 2 months. Despite his poor control, he demands that he be discharged. He reports that he has had a 3-month history of fatigue, irritability, and feelings of hopelessness. He says that he has been noncompliant with his diabetic regimen, adding, "Sometimes I forget." He has been avoiding his family and friends because he is not in the mood to see them but admits that he is lonely. He did not get out of bed for 2 days, which prompted his wife to call an ambulance and have him admitted to the hospital. Prior to admission to the hospital, his only medication was insulin, although he often missed doses. He does not drink alcohol. He is 168 cm (5 ft 6 in) tall and weighs 100 kg (220 lb); BMI is 36 kg/m². His temperature is 37°C (98.6°F), pulse is 68/min, respirations are 18/min, and blood pressure is 150/85 mm Hg. Physical examination shows no abnormalities. On mental status examination, he is tired and has a restricted affect. There is no evidence of suicidal ideation. Cognition is intact. His fasting serum glucose concentration is 120 mg/dL. Which of the following is the most appropriate next step in management?

- (A) Adhere to the patient's wishes and discuss home-care options
- (B) Adhere to the patient's wishes on the condition that he agree to home nursing care
- (C) Schedule neuropsychological testing
- (D) Seek a court order to appoint a legal guardian
- (E) Involuntarily hold the patient in the hospital

93. A 95-year-old woman in a nursing home has had advanced vascular dementia, severe dysphagia, and a 9-kg (20-lb) weight loss over the past 2 months. Her four children are divided regarding the decision to provide artificial feeding through a gastrostomy tube. There is no living will. The oldest son approaches the physician after a family meeting and

says, "You should simply decide what is best for her and tell the other that's what we should do." Assuming the physician proceeds in this manner, which of the following best describes the physician's action?

- (A) Paternalism
- (B) Preserving fairness in use of resources
- (C) Protecting patient autonomy
- (D) Rationing care
- (E) Truth-telling

94. A 25-year-old man comes to the physician because of progressive weakness and an increasingly protuberant abdomen during the past 3 years. Physical examination shows splenomegaly. His hematocrit is 28%, and platelet count is 20,000/mm³. A biopsy specimen of bone marrow shows accumulation of lipid-laden macrophages. Glucocerebroside has accumulated in the patient's reticuloendothelial cells (macrophage system). Inheritance of mutant alleles most likely caused impairment of which of the following enzyme activities in this patient?

- (A) Ceramidase
- (B) α -Galactosidase
- (C) β -Glucosidase
- (D) Hexosaminidase
- (E) α -L-Iduronidase
- (F) Sphingomyelinase

95. A 21-year-old man has weight loss and severe intermittent bloody diarrhea. A barium enema and colonoscopy show multiple ulcers and inflammatory changes extending from the rectum to the mid-transverse colon. Biopsy specimen taken from multiple sites show acute and chronic inflammation restricted to the mucosa. Which of the following is the most likely diagnosis?

- (A) AIDS-associated gastroenteritis
- (B) Amebiasis
- (C) Crohn disease
- (D) *Clostridium difficile*-associated colitis
- (E) *Escherichia coli*-associated colitis
- (F) Ischemic colitis
- (G) *Salmonella* gastroenteritis
- (H) Ulcerative colitis

96. A 6-week-old male infant is brought to the emergency department because of a swollen abdomen. He is refusing to eat and has not had a bowel movement for 3 days. His mother says that he had constipation since birth and was kept in the hospital an extra day after birth because of delayed passage of stool. Physical examination shows abdominal distention. An x-ray of the abdomen shows distended loops of proximal bowel with an abrupt

narrowing to a small caliber of the distal 15-cm segment of colon. Which of the following pathologic findings is most likely in a biopsy specimen of the distal rectum in this patient?

- (A) Absent myenteric ganglion cells
- (B) Abundant inspissated mucus
- (C) Hypertrophy of the muscle wall
- (D) Nodular lymphoid hyperplasia
- (E) Transmural coagulative necrosis

97. A 25-year-old man is started on clozapine for schizophrenia, paranoid type. He had been unsuccessfully treated for the past 2 months with haloperidol. The patient should be monitored for which of the following adverse effects?

- (A) Decreased erythrocyte count
- (B) Decreased leukocyte count
- (C) Decreased platelet count
- (D) Increased eosinophil count
- (E) Increased hemolysis

98. A 32-year-old man is brought to the emergency department because of multiple nonlethal stabwounds. He is incarcerated and serving a life sentence for murder and armed robbery. After his condition is stabilized, he insists that it is his "right" to remain in the hospital until he is fully "cured." He threatens to harm the attending physician if she endorses his return to prison. Which of the following is the most likely diagnosis?

- (A) Adjustment disorder with mixed features
- (B) Antisocial personality disorder
- (C) Bipolar disorder, manic
- (D) Borderline personality disorder
- (E) Narcissistic personality disorder
- (F) Paranoid personality disorder
- (G) Post-traumatic stress disorder
- (H) Schizophrenia, paranoid type

99. After infection with measles virus, a 6-year-old boy produces antibodies to all eight viral proteins. The next year he is again exposed to measles virus. Antibodies to which of the following viral proteins are most likely to be protective?

- (A) Hemagglutinin
- (B) Matrix
- (C) Nonstructural
- (D) Nucleocapsid
- (E) Polymerase

100. A 52-year-old man with recently diagnosed type 2 diabetes mellitus comes to the physician for a follow-up examination. Physical examination shows no abnormalities.

Laboratory studies show an increased hemoglobin A1c despite patient compliance with diet and exercise recommendations. Treatment with a sulfonylurea is started. Which of the following is most likely to occur in this patient?

- (A) Decreased entry of glucose into the muscle cells
- (B) Decreased production of glucose from the liver
- (C) Decreased secretion of insulin from the pancreas
- (D) Decreased speed of carbohydrate absorption from the intestines
- (E) Increased entry of glucose into the muscle cells
- (F) Increased production of glucose from the liver
- (G) Increased secretion of insulin from the pancreas
- (H) Increased speed of carbohydrate absorption from the intestines

101. A 20-year-old man comes to the physician's office for a scheduled health maintenance examination. His father died of a myocardial infarction at age 55 years. Physical examination shows a tendon xanthoma on the elbow. His serum total cholesterol concentration is 360 mg/dL. A mutation is most likely to be found in which of the following genes?

- (A) apoA2
- (B) apoC2
- (C) apoE-ε4
- (D) LDL receptor
- (E) VLDL receptor

102. Fill in the anatomical term for the given definition

The _____ are the turbinal bones of the nose that make the nasal passage winding.

103. Fill in the anatomical term for the given definition

_____ are finger-like projections that cover the interior surface of the small intestine wall.

104. Fill in the anatomical term for the given definition

_____ conveys non-oxygenated blood from the right ventricle to the lungs and carries back oxygenated blood from the lungs to the left atrium.

105. Fill in the anatomical term for the given definition

The _____ is a smaller airway that branches from a bronchus or from larger bronchioles.

106. Fill in the anatomical term for the given definition

The _____ are stretched membranous flaps in the larynx

107. What is the medical equivalent of the given common English term

body _____ corpus

108. What is the medical equivalent of the given common English term

working tissue of the organ _____ parenchyma

109. What is the medical equivalent of the given common English term

upper jaw _____ maxilla

110. What is the medical equivalent of the given common English term

limbs _____ extremities

111. Supply the missing word which match their definitions, choosing from the given ones

Major renal calyx	Cardia	Chromosome	Minor renal calyx	Synarthroses
Pancreas	Gene	Isthmus faucium	Sigmoid colon	Diarthroses

_____ is part of the colon in the pelvis that opens into the rectum.

112. Supply the missing word which match their definitions, choosing from the given ones

Major renal calyx	Cardia	Chromosome	Minor renal calyx	Synarthroses
Pancreas	Gene	Isthmus faucium	Sigmoid colon	Diarthroses

The _____ is a long, thin gland that lies crosswise just behind the stomach.

113. Supply the missing word which match their definitions, choosing from the given ones

Major renal calyx	Cardia	Chromosome	Minor renal calyx	Synarthroses
Pancreas	Gene	Isthmus faucium	Sigmoid colon	Diarthroses

_____ is a region of DNA that contains the information required to control the structure of individual peptide chains.

114. Supply the missing word which match their definitions, choosing from the given ones

Major renal calyx	Cardia	Chromosome	Minor renal calyx	Synarthroses
Pancreas	Gene	Isthmus faucium	Sigmoid colon	Diarthroses

_____ is one of the several cup-shaped divisions of the major renal calices.

115. Supply the missing word which match their definitions, choosing from the given ones

Major renal calyx	Cardia	Chromosome	Minor renal calyx	Synarthroses
Pancreas	Gene	Isthmus faucium	Sigmoid colon	Diarthroses

_____ is the narrow opening which connects the oral cavity with the pharynx.

116. Supply the missing word which match their definitions, choosing from the given ones

Major renal calyx	Cardia	Chromosome	Minor renal calyx	Synarthroses
Pancreas	Gene	Isthmus faucium	Sigmoid colon	Diarthroses

_____ are types of joints that allow very little or no movement

117. Supply the missing word which match their definitions, choosing from the given ones

Major renal calyx	Cardia	Chromosome	Minor renal calyx	Synarthroses
Pancreas	Gene	Isthmus faucium	Sigmoid colon	Diarthroses

_____ are synovial joints that allow various kinds of movement.

118. Supply the missing words which match their definitions, choosing from the given ones

Major renal calyx	Cardia	Chromosome	Minor renal calyx	Synarthroses
Pancreas	Gene	Isthmus faucium	Sigmoid colon	Diarthroses

_____ is a ring of muscles that connects the esophagus with the stomach.

119. Supply the missing words which match their definitions, choosing from the given ones

Major renal calyx	Cardia	Chromosome	Minor renal calyx	Synarthroses
Pancreas	Gene	Isthmus faucium	Sigmoid colon	Diarthroses

_____ is a thread-like structure in the nucleus of a cell, in which genes are located.

120. Supply the missing words which match their definitions, choosing from the given ones

Major renal calyx	Cardia	Chromosome	Minor renal calyx	Synarthroses
Pancreas	Gene	Isthmus faucium	Sigmoid colon	Diarthroses

_____ is one of the two or three cup-shaped subdivisions of the renal pelvis.

121. Fill in the sentence with the missing adjective denoting anatomical location (e.g. superior, inferior, anterior, posterior, medial, lateral, internal, external, proximal, distal, central, peripheral, visceral, parietal).

The arms are _____ to the body.

122. Fill in the sentence with the missing adjective denoting anatomical location (e.g. superior, inferior, anterior, posterior, medial, lateral, internal, external, proximal, distal, central, peripheral, visceral, parietal).

The forearm is _____ to the cubital joint.

123. Fill in the sentence with the missing adjective denoting anatomical location (e.g. superior, inferior, anterior, posterior, medial, lateral, internal, external, proximal, distal, central, peripheral, visceral, parietal).

The humerus is _____ to the ulna and radius.

124. Fill in the sentence with the missing adjective denoting anatomical location (e.g. superior, inferior, anterior, posterior, medial, lateral, internal, external, proximal, distal, central, peripheral, visceral, parietal).

The phalanges are _____ to the wrist.

125. Fill in the sentence with the missing adjective denoting anatomical location (e.g. superior, inferior, anterior, posterior, medial, lateral, internal, external, proximal, distal, central, peripheral, visceral, parietal).

The neurocranium is _____ to the viscerocranium.

126. Fill in the sentence with the missing adjective denoting anatomical location (e.g. superior, inferior, anterior, posterior, medial, lateral, internal, external, proximal, distal, central, peripheral, visceral, parietal).

The tibia and fibula are _____ to the femur.

127. Fill in the sentence with the missing adjective denoting anatomical location (e.g. superior, inferior, anterior, posterior, medial, lateral, internal, external, proximal, distal, central, peripheral, visceral, parietal).

The hip bones are _____ to the sacral bone.

128. Fill in the sentence with the missing adjective denoting anatomical location (e.g. superior, inferior, anterior, posterior, medial, lateral, internal, external, proximal, distal, central, peripheral, visceral, parietal).

The sternum is _____ to the clavicle.

129. Fill in the sentence with the missing adjective denoting anatomical location (e.g. superior, inferior, anterior, posterior, medial, lateral, internal, external, proximal, distal, central, peripheral, visceral, parietal).

The scapula is _____ to the vertebral column.

130. Fill in the sentence with the missing adjective denoting anatomical location (e.g. superior, inferior, anterior, posterior, medial, lateral, internal, external, proximal, distal, central, peripheral, visceral, parietal).

The periosteum is _____ to the compact bone.

131. Choose the shape that describes the part of the body

snail-like	tube-shaped	wedge-shaped	pear-shaped	pouch-shaped
------------	-------------	--------------	-------------	--------------

The liver is a _____ organ.

132. Choose the shape that describes the part of the body

snail-like	tube-shaped	wedge-shaped	pear-shaped	pouch-shaped
------------	-------------	--------------	-------------	--------------

The uterus is a _____ organ.

133. Choose the shape that describes the part of the body

The cochlea is a _____ structure.

134. Choose the shape that describes the part of the body

The cecum is a _____ organ.

135. Choose the shape that describes the part of the body

The rectum is a _____ organ

136. Match the term with respective explanation

Fistula is _____

- a) recurrent at intervals.
- b) degenerative disease of the spine

- c) erosion of tissues because of spreading abscess within the anus
- d) a disorder in which the marrow produces far more blood cells than usual
- e) a malignant tumor of the lymph glands.

137. Match the term with respective explanation

Spondylosis is _____

- a) recurrent at intervals.
- b) degenerative disease of the spine
- c) erosion of tissues because of spreading abscess within the anus
- d) a disorder in which the marrow produces far more blood cells than usual
- e) a malignant tumor of the lymph glands.

138. Match the term with respective explanation

Lymphoma is _____

- a) recurrent at intervals.
- b) degenerative disease of the spine
- c) erosion of tissues because of spreading abscess within the anus
- d) a disorder in which the marrow produces far more blood cells than usual
- e) a malignant tumor of the lymph glands.

139. Match the term with respective explanation

Intermittant means _____

- a) recurrent at intervals.
- b) degenerative disease of the spine

- c) erosion of tissues because of spreading abscess within the anus
- d) a disorder in which the marrow produces far more blood cells than usual
- e) a malignant tumor of the lymph glands.

140. Match the term with respective explanation

Polycythemia is __

- a) recurrent at intervals.
- b) degenerative disease of the spine
- c) erosion of tissues because of spreading abscess within the anus
- d) a disorder in which the marrow produces far more blood cells than usual
- e) a malignant tumor of the lymph glands.

141 - 150. Complete the table with the corresponding nouns or adjectives.

NOUNS	ADJECTIVES
141.	glossal
142.	responsible
143. trochlea	
144. spine	
145.	Facial

NOUNS	ADJECTIVES
146.	sacral
147. coccyx	
148. pharynx	
149.	abdominal
150. epithelium	

151-160. Fill in the gaps with respective disorders

Ileus	Aneurysms	Cystitis	Myocarditis	Anxiety
Acromegaly	Multiple myeloma	Influenza	Acute kidney failure	Phobia

151. _____ is a overproduction of the growth hormone in adults.
152. _____ is inflammation of the bladder.
153. _____ is an illness in which the kidney suddenly stop functioning.
154. _____ is a serious disorder in which the intestines become paralyzed.
155. _____ is a disorder in which the plasma cell undergoes a malignant change and begins to multiply excessively.
156. _____ are permanent swellings of arteries due to weaknesses in their walls.
157. _____ inflammation of the heart muscle.
158. _____ is an infectious respiratory disorder in which there are general body pains and a very high temperature.
159. _____ is an irrational fear of a specific object or situation
160. _____ is a persistent reaction to a previous stress which prevents the affected person from leading a normal life.

161 - 165. Fill in the anatomical terms for the given definitions

161. The _____ protects the visceral organs.
162. The _____ produces synovial fluid.
163. _____ conveys non-oxygenated blood from the right ventricle to the lungs and carries back oxygenated blood from the lungs to the left atrium.
164. The _____ is a double layer of a thin membranous covering that surrounds each lung lobe.
165. The _____ are stretched membranous flaps in the larynx.

166-175. Match the medical equivalents with the given common English term

166. cavity _____ uterus
167. access _____ emesis
168. womb _____ cholecyst
169. cup _____ hematuria
170. bowels _____ ventricle
171. vomiting _____ cyst
172. gallbladder _____ hypertrophy
173. blood in urine _____ calix
174. bladder _____ intestine
175. enlargement _____ accession

176-185. Supply the missing words which match their definitions, choosing from the given ones:

Sinuses	Dyspepsia	Follicle	Salpingectomy	Peritonitis
Pharynx	Eclampsia	Alveolus	Gastritis	Pericarditis

176. An _____ is a balloon-like cavity at the tip of a bronchiole.
177. _____ is inflammation of the peritoneum.
178. _____ is the ovum together with its surrounding cells, at any stage of development.
179. _____ is inflammation of the mucous membrane of the stomach.

180. _____ is a surgical removal of an oviduct, also called tubectomy.
181. _____ is an acute disorder peculiar to pregnant and puerperal women associated with hypertension, edema and/or proteinuria.
182. The _____ are air-filled cavities in the cranial bones.
183. _____ is inflammation of the membrane that surrounds the heart.
184. _____ is a collection of symptoms which usually occur during or after eating or drinking.
185. The _____ is a musculomembranous tube with a complex function situated behind the nasal cavity, mouth and larynx.

186-195. Fill in the gaps with respective disorders

Bronchus	Poliomyelitis	Aneurysms	Spondylosis	Urinary bladder
Genes	Multiple myeloma	Promoters	Kidneys	Ribosomes

186. _____ is a tube that branches from the trachea.
187. _____ are found in the 5' flanking region of genes.
188. _____ are situated on specific loci on chromosomes.
189. _____ is an infectious disease which causes paralysis.
190. _____ is a disorder in which the plasma cell undergoes a malignant change and begins to multiply excessively.
191. _____ are located on each side of the spin.

192. _____ are found floating in the cytoplasm.
193. _____ is located anteriorly to the reproductive organs.
194. _____ are permanent swellings of arteries due to weaknesses in their walls.
195. _____ is a degenerative disease of the spine.

196-200. Match the terms with respective explanation

196. **Glomeruli** are ___ a) the pressure exerted by a prolapsed disk on the roots of the sciatic nerve.
197. **Ovary** is ___ b) a pain somewhere in the vertebral column.
198. **Sciatica means** ___ c) closely packed blood vessels in the kidney
199. **Backache is** ___ d) the sexual gland in which the ovi are produced
200. **The base uracil is found** ___ e) in RNA