

SUR833 MS4 Review Question List:

1. A 70-year-old woman who weighs 55 kg (121.3 lb) is admitted to the intensive care unit with *Escherichia coli* urosepsis. On admission her blood urea nitrogen(BUN) is 25 mg/dL, and her serum creatinine is 1.4 mg/dL. She is treated with gentamicin 120 mg every 12 hours. A trough gentamicin level taken before the third dose is 1.8 µg/mL, and the dosage of gentamicin is not changed. By the eighth day, her BUN and serum creatinine increase to 78 mg/dL and 4.3 mg/dL, respectively, and her urine output decreases. The gentamicin is stopped. Her serum creatinine peaks on the 12th hospital day and then declines to 2.3 mg/dL by the end of the third week. Which one of the following dosing/drug regimens is most likely to have reduced the risk of renal toxicity in this patient?
2. A 67-year-old man with a history of chronic obstructive pulmonary disease, hypertension, and chronic renal failure is admitted to the intensive care unit with community-acquired pneumonia. His treatment includes broad-spectrum antibiotics, corticosteroids, and inhaled R2 stimulants. Due to a severe ileus and gastric intolerance, total parenteral nutrition is commenced. The patient's temperature normalizes after the third day in the intensive care unit, and his oxygenation improves. However, on the ninth hospital day he develops a fever with an increase in the peripheral leukocyte count. Antibiotics are stopped and blood, urine, and sputum cultures are performed. *Candida krusei* is isolated from a single blood culture, and 60,000 CFU/mL of *C. krusei* is isolated from the urine. Which of the following is the most appropriate next step in the management of this patient?
3. A 37-year-old man who has a right subclavian venous catheter for total parenteral nutrition spikes a fever to 38.8°C (101.9°F). The catheter site is red with some tenderness. The catheter is removed and the tip is cultured. Peripheral blood cultures are obtained. The patient is started on nafcillin. The tip grows more than 15 colonies of *Staphylococcus aureus* at 24 hours. Blood cultures are positive for methicillin-sensitive *S aureus* at 48 hours. At this time, the patient is afebrile. What is the most appropriate next step in treatment?
4. Which of the following is most characteristic of inverse-ratio mechanical ventilation?
5. Which of the following statements is most characteristic of stress ulcerations in the intensive care unit?
6. A 30-year-old man sustains severe blunt trauma to the torso after a high-speed motorcycle accident. Once he is in the intensive care unit, his course is complicated by respiratory failure, coagulopathy, liver failure, and acute oliguric renal failure requiring dialysis. Serum lab results are as follows:

Sodium: 134 mEq/L
Potassium: 4.6 mEq/L
Chloride: 109 mEq/L
HCO₃: 19 mEq/L
Magnesium: 2.4 mEq/L
Phosphate: 4 mEq/L
Calcium: 12 mEq/L

Four weeks after admission, he has recovered from renal failure. He then develops recurrent episodes of bradycardia complicated by asystole requiring cardiopulmonary resuscitation. Which of the following should be included in the definitive treatment of his bradycardia and asystole?

7. Which of the following is most characteristic of alcohol withdrawal syndrome in a patient with multiple injuries?
8. In critically ill septic trauma patients, which of the following is most characteristic of transfusions of packed red blood cells?
9. What is the strongest independent risk factor for stress-related mucosal damage and gastrointestinal bleeding in critically ill patients?
10. A 72-year-old man with rest pain is scheduled for a femorotibial bypass. He has a long history of stable angina, with risk factors for diabetes mellitus, heavy smoking, hypertension, and hypercholesterolemia. Coronary catheterization demonstrates stenoses in three vessels and a left ventricular ejection fraction of 45%. What is the next best step in management of this patient?
11. Which of the following statements about the use of pulmonary artery catheters in high-risk surgical patients is most characteristic?
12. Which of the following is the most effective practice for reducing central venous catheter-related bacteremia?
13. Which of the following is a typical infecting organism in tertiary peritonitis?
14. What does low-dose intravenous vasopressin administered at 2/4 units/hour cause during septic shock?
15. A 55-year-old woman who has been receiving total parenteral nutrition for three months is admitted to the intensive care unit after takedown of her enterocutaneous fistula. Total parenteral nutrition is restarted on the second day after surgery. On postoperative

day three, her morning serum glucose is 250 mg/dL. Which of the following best describes the patient?

16. A 20-year-old man has a subdural hematoma after a motor vehicle crash. The hematoma is evacuated during the first 24 hours after injury. He remains intubated and comatose with a Glasgow coma scale score of 8. Four days postoperatively he has an increased oxygen requirement. His chest x-ray and CT scan are show. Which of the following is true of this patient?
17. What is the most likely etiology of hypokalemia refractory to potassium supplementation after hemiglossectomy in a 65-year-old man?
18. A 68-year-old man with a history of ischemic heart disease, prior coronary artery bypass graft surgery, and two prior myocardial infarctions is scheduled to undergo elective colectomy for colon cancer. Echocardiogram confirms decreased ejection fraction of 40% and no significant valvular disease. Stress thallium scan confirms a fixed perfusion defect inferiorly and no evidence of reversible ischemia. Maximal preoperative medical therapy to reduce cardiac morbidity and mortality in this high-risk patient should include which of the following?
19. Which of the following has been shown to reduce mortality in acute respiratory distress syndrome?
20. What is the most accurate test for the diagnosis of adrenal insufficiency in critically ill patients?
21. A 47-year-old woman develops oliguria 12 hours after colectomy for colon cancer. Central venous pressure monitoring is not available. What is the diagnostic test that most accurately distinguishes prerenal from renal etiology of oliguria in the postoperative period?
22. Three days after emergency laparotomy for perforated diverticulitis with fecal peritonitis, a 66-year-old woman has a platelet count of 28,000/mm³. There is no apparent bleeding. Which of the following transfusions should be included in treatment?
23. A 35-year-old farmer rolls his tractor and is trapped underneath for four hours. He has bilateral femur fractures to both legs. Pertinent data collected 24 hours after admission include: What is the first step in preventing renal failure in this patient?
24. A 30-year-old man sustains a serious brain injury during a motorcycle crash. An emergency splenorrhaphy is performed once the patient reaches the hospital. His

medical history is significant for deep venous thrombosis due to antithrombin deficiency. What is the preferred postoperative prophylaxis?

25. Which of the following statements best describes central venous catheters?
26. A 60-year-old woman has a central venous catheter inserted via the right subclavian vein using the Seldinger technique. Fifteen minutes later she develops tachycardia and hypotension. Breath sounds are present bilaterally and there is jugulovenous distention. There are no audible murmurs. The intravenous fluids that had been running well will no longer infuse through the catheter. What is the most likely diagnosis?
27. A patient is receiving dopamine through a 20-gauge intravenous catheter placed in her right hand. On examination, some extravasation of fluid into the surrounding soft tissue is noted and the catheter is removed. The picture shown is of the patient's hand four hours later. Which of the following is the most appropriate treatment?
28. Which of the following is most characteristic of nephrotoxicity from contrast agents?
29. Which of the following best describes recombinant factor VIIa?
30. A 67-year-old man comes to the emergency department because of shortness of breath. His medical history is significant for coronary artery disease, hypertension, and diabetes. His current medications include metoprolol, digoxin, and NPH insulin. He has no allergies to medications. His temperature is 36.7°C (98.2°F), blood pressure is 112/70 mm Hg, pulse is 75/min, and respirations are 30/min. On examination, he is anxious appearing. He has jugular venous distension. His cardiac rhythm is regular and a soft ejection murmur can be heard over the cardiac base. There are audible rales half way up both lung fields. He has 2+ pitting edema of the lower extremities bilaterally. A chest radiograph shows perihilar air space disease. The most appropriate pharmacologic intervention at this time is administration of which of the following, intravenously?
31. Two days after a right total hip replacement, a 75-year-old woman develops acute-onset shortness of breath and right-sided pleuritic chest pain. She denies any sputum production or cough. Her temperature is 36.6°C (97.9°F), blood pressure is 140/75 mm Hg, pulse is 135/min, respirations are 30/min, and oxygen saturation is 92% on 6 L by nasal canula. Electrocardiogram reveals sinus tachycardia at 133/min without S-T changes. A stat portable chest x-ray is clear without evidence of active disease. What is the most appropriate next step in management?
32. An 87-year-old man with diabetes mellitus and emphysema is admitted to the hospital because of shortness of breath. He admits to failing to fill his prescription for albuterol

inhalers, which he uses regularly. The patient is afebrile with normal vital signs. Physical examination is remarkable for diffuse wheezes. A fingerstick glucose is 192 mg/dL. Treatment with aerosolized albuterol, flunisolide, and prednisone is initiated. On the second day of hospitalization, the patient is breathing better with no shortness of breath. His fingerstick glucose has been in the 400-460 mg/dL range. The patient is most likely experiencing hyperglycemia secondary to which of the following?

33. A 48-year-old woman with coronary disease, hypertension, and hyperlipidemia is brought to the emergency department because of chest pain and shortness of breath. A recent coronary catheterization showed significant proximal stenosis of the right coronary artery. She takes aspirin, labetalol, and simvastatin. Her temperature is 37.1°C (98.8°F), blood pressure is 98/62 mm Hg, pulse is 60/min, and respirations are 25/min. Her cardiac rhythm is regular, and her lungs are clear to auscultation bilaterally. Her jugular venous pressure is elevated and her extremities are cold. An echocardiogram shows akinesis of the right ventricle. The most appropriate immediate management is to administer which of the following?
34. A 30-year-old woman comes to the clinic. She says "it feels as though her heart is leaping out of her chest and she is having difficulty catching her breath." She has had similar episodes in the past that usually resolve by breath holding; however, this was not effective in "breaking this attack." She is generally healthy and does not take any medications. There are no carotid bruits present. Her blood pressure is 125/82 mm Hg and pulse is 212/min. An electrocardiogram shows supraventricular tachycardia. She remains electrocardiographically monitored. Which of the following is the most appropriate immediate management step?
35. A 30-year-old man comes to the emergency department complaining of a 24-hour history of sharp retrosternal pain that is most painful when he breathes deeply. He has no chronic medical conditions but just recovered from an upper respiratory tract infection about a week ago. His temperature is 38.3°C (101.0°F), blood pressure is 132/60 mm Hg, pulse is 75/min, respirations are 18/min, and oxygen saturation is 98% on room air. There are some scattered crackles in the left base; the rest of the physical examination is normal. A chest x-ray shows no abnormalities. An electrocardiogram shows widespread ST elevation, no Q waves, and PR-segment depression in V5-6. What is the most appropriate next step in management?
36. An 80-year-old nursing home resident with end-stage Alzheimer disease is transferred to the emergency department because he is refusing to eat or drink and has been vomiting for the last 36 hours. There is a 2-day history of absent bowel movements. It is unclear if the patient has recently passed flatus. His mental state is such that his answers are not reliable. Upon questioning, he states that his stomach hurts. He had an inguinal hernia repair 15 years ago, but has no other conditions besides Alzheimer disease. He takes medications only for Alzheimer. Occasionally, he is given

acetaminophen for a headache or joint pain. His temperature and vital signs are normal. His abdomen is grossly distended and there are high-pitched hyperactive bowel sounds. The entire abdomen is tympanic to percussion. There is tenderness diffusely with guarding in the left lower quadrant. Rectal examination shows an empty rectal vault without masses or tenderness. Complete blood count reveals a mild leukocytosis. BUN and creatinine are mildly elevated, consistent with prerenal azotemia. An obstructive series shows a dilated sigmoid colon that is displaced and crossing the midline. There is no free air or dilated loops of small bowel. What is the most appropriate next step in management?

37. A 75-year-old woman comes to the emergency department with complaints of rectal bleeding. Over the past few days, she has developed crampy abdominal pain, nausea, and then a few hours prior to arrival had dark red blood mixed with stool. She denies hematemesis or coffee ground emesis. She has coronary artery disease, diabetes mellitus, and atrial fibrillation, for which she takes insulin, digoxin, and enteric-coated aspirin. Her blood pressure is 98/70 mm Hg, pulse 120/min, and respirations are 24/min. Cardiac examination reveals tachycardia and an irregularly irregular rhythm. Her abdomen is diffusely tender and moderately distended. Bowel sounds are decreased. Rectal examination shows dark red blood mixed with stool. Laboratory studies show:

BUN: 55 mg/dL
Creatinine: 1.0 mg/dL
Hematocrit: 30%
Platelets: 250,000/mm³
Lactate: 2.8 mEq/L

38. A CT scan of the abdomen shows thickening, mild dilation, and hyperemia of small bowel loops in the mid jejunum. Moderate aortic calcification is present. The solid organs appear normal. After stabilizing the patient and sending blood for type and cross-match, what is the most appropriate next step in management? A 75-year-old man is admitted to the hospital for chest pain. On the day of admission, he is having nausea intermittently and then vomiting just prior to the onset of his chest pain, which he describes as substernal and sharp. There is no significant dyspnea or change in the pain with inspiration. A chest x-ray on admission shows some minimal basilar atelectasis. A myocardial infarction is ruled out with serial cardiac enzymes and electrocardiograms. On the second day of hospitalization, he develops a low-grade fever of 37.8°C (100.0°F). His vital signs are: blood pressure 140/94 mm Hg, pulse 96/min, and respirations 20/min. Cardiac examination is normal, the lungs have decreased breath sounds at left base with dullness to percussion, and the extremities have no edema. A chest x-ray shows a moderate sized left pleural effusion. A thoracentesis and laboratory studies show:

Pleural fluid: Thick yellow
Pleural LDH: 75 U/L
Serum LDH: 100 U/L
Pleural total protein: 4 g/dL
Serum total protein: 6 g/dL
Pleural amylase: 2000 U/L
Serum amylase: 50 U/L
Pleural WBCs: 20/HPF
Pleural RBCs: 50/HPF
Sodium: 139 mEq/L
Potassium: 4.0 mEq/L
BUN: 24 mg/dL
Creatinine: 1.0 mg/dL

What is the most appropriate next step in management?

39. A 35-year-old man is admitted to the hospital for left inguinal hernia repair. On admission he is asymptomatic and has a normal chest x-ray, electrocardiogram, complete blood count, and electrolytes. Postoperatively, he is given subcutaneous heparin at 7500 units bid for prophylaxis of deep vein thrombosis, and 1 g of cefazolin to prevent infection with skin flora. On postoperative day three, he is fully ambulatory and eating regular meals. Laboratory studies show a platelet count of 65,000/mm³, down from 180,000/mm³ on admission. His hematocrit is unchanged at 44%. He has no complaints and there is no evidence of bleeding on physical examination. He has no family history of any blood disorders. What is the most appropriate next step in management?
40. A 52-year-old man comes to the clinic complaining of crushing substernal chest pain and shortness of breath. During the interview, the patient suddenly becomes unresponsive. The electrocardiographic findings are shown. He has no pulse. Once his airway is stabilized, chest compressions are started. A nurse begins ventilating the patient with an ambu-bag and face mask. What is the most appropriate next step in management?
41. A 25-year-old man comes into the clinic complaining of substernal chest pressure radiating to his jaw and left arm, associated with shortness of breath and diaphoresis, without relief for the past 35 minutes. He uses a beta-agonist inhaler for asthma infrequently and denies any history of hypertension. There is no family history of coronary artery disease. He admits to occasional cocaine and marijuana use and reports using both "recently". His blood pressure is 175/100 mm Hg, pulse is 100/min, and respirations are 18/min. A chest x-ray is normal and initial laboratory studies show a leukocyte count of 8000/mm³, a hematocrit of 40%, and a platelet count of 280,000/mm³. Serum electrolytes are within normal limits. Cardiac enzymes are currently pending. An electrocardiogram shows an ST-segment elevation of 2 mm in leads V2 to V4. The most appropriate next step is to administer which of the following?

42. A 50-year-old man is admitted to the coronary care unit because of an acute inferior myocardial infarction. Two hours after admission, his blood pressure is 87/56 mm Hg and pulse is 43/min with sinus rhythm. Which of the following is the most appropriate initial therapy?
43. A 45-year-old man is brought to the emergency department following a motor vehicle accident. He was an unrestrained passenger in a head-on collision. He has no known medical history or allergies to medications. He has a chest contusion without rib fractures. His blood pressure is 94/53 mm Hg, pulse is 117/min, and respirations are 25/min. An electrocardiogram shows sinus rhythm with pulsus alternans and a right bundle branch block. A transthoracic echocardiogram shows a pericardial effusion with tamponade physiology. On physical examination you expect to find which of the following?
44. Two days after a right total hip replacement, a 75-year-old woman develops acute-onset shortness of breath and right-sided pleuritic chest pain. She denies any sputum production or cough. Her temperature is 36.6oC (97.9oF), blood pressure is 140/75 mm Hg, pulse is 135/min, respirations are 30/min, and oxygen saturation is 92% on 6 L by nasal canula. Electrocardiogram reveals sinus tachycardia at 133/min without S-T changes. What will a chest x-ray most likely show?
45. A 35-year-old man is brought to the emergency department complaining of "sharp" and "stabbing" chest pain that radiates from his sternum to between his shoulder blades. He describes one episode of fainting following the onset of this pain. He has Marfan syndrome with a known dilation of the aortic root, and hypertension. He is on no medications and denies any allergies to medications. His blood pressure is 170/85 mm Hg in his right arm, 100/65 mm Hg in his left arm, and his pulse is 98/min. Physical examination shows a regular cardiac rhythm with a I/IV diastolic murmur at the lower left sternal border. His breath sounds are clear bilaterally. An echocardiogram shows a dissection of the thoracic aorta with the dissection flap involving the left subclavian artery. The most appropriate immediate intervention is to administer which of the following?
46. A 25-year-old woman comes to the urgent care clinic for the evaluation of a rapid heart beat. She describes two prior episodes of this heart rhythm. She has no prior medical history, and is on no medications. She denies any allergies to any medications. Her temperature is 37.3oC (99.2oF), blood pressure is 115/69 mm Hg, pulse is 130/min, and respirations are 26/min. Her cardiac rhythm is regular and her breath sounds are clear to auscultation bilaterally. An electrocardiogram shows a paroxysmal, supraventricular tachycardia (PSVT). What is the most appropriate management at this time?

47. A 48-year-old man is admitted to the hospital with altered mental status. The patient carries a diagnosis of multiple myeloma and has been undergoing therapy at the local hospital. The patient is otherwise healthy and was diagnosed three months ago with his disease. His family reports that they found him in the kitchen confused and wandering around with a spoon in his hand. On examination, the patient is disheveled but in no acute distress. His blood pressure is 138/92 mm Hg, pulse is 102/min, and respirations are 19/min. He is afebrile. Physical examination is remarkable for brisk deep tendon reflexes bilaterally. The diagnosis of hypercalcemia is made. It is determined that the patient will require long-term management of this problem. However, he now requires acute therapy. The most appropriate next step in management is which of the following?
48. A 27-year-old woman comes to the emergency department complaining of left calf pain for two days with swelling and redness. Her temperature is 38.6°C (101.6°F), blood pressure is 148/91 mm Hg, and pulse is 95/min. The left calf is swollen and tender. Homans sign is positive. The rest of her physical examination is normal. Doppler of the lower extremity shows a deep venous thrombosis above the knee. Therapy is begun with intravenous heparin and she is admitted to the hospital. Three days later her laboratory studies show a protein S deficiency. The most appropriate management at this time is which of the following?
49. A 73-year-old man with diabetes mellitus and recurrent episodes of dizziness over the past few months is brought to the clinic after a syncopal episode. He said that he left lightheaded and nauseated before he fainted; however, he denies any chest pain or shortness of breath. This episode is similar to his previous episodes of dizziness except he "fainted" this time. His only medication is metformin. There is no evidence of myocardial infarction at this point. While the patient is still in the emergency room he complains of another episode of dizziness. A rhythm strip shows absent QRS complexes every fourth beat. The PR interval is consistent from beat to beat. P waves are present at regular intervals. The episode resolves spontaneously. What is the most appropriate next step in management?
50. A 75-year-old man with metastatic prostate carcinoma comes to the clinic complaining of generalized weakness and fatigue for the past few weeks. His temperature is 37.1°C (98.9°F), blood pressure is 105/65 mm Hg, and pulse is 92/min. He appears pale and cachectic and has scattered petechiae on his lower extremities. Examination of the chest and abdomen is normal. Stool guaiac is strongly positive. The rest of his physical examination, including a neurologic examination, is normal. Lab studies show:

Leukocyte count: 3000/mm³

Hemoglobin: 7.3 g/dL
Hematocrit: 22%
Platelet count: 20,000/mm³
Prothrombin time: 12.6 sec
INR: 1.1
Partial thromboplastin time: 29.5 sec
Fibrinogen: 350 mg/dL

Two units of blood are ordered to be transfused. What is the most appropriate next step in management?

51. A 64-year-old man with alcoholism and depression is in the hospital, currently being treated for a right leg deep venous thrombosis. His current medications include intravenous unfractionated heparin, a multivitamin, and thiamine. He has a 60 pack/year history of tobacco use, and currently smokes a pack per day. His temperature is 37.5°C (99.5°F), blood pressure is 122/70 mm Hg, pulse is 75/min, and respirations are 19/min. His cardiac rhythm is regular, and his breath sounds are clear bilaterally. His laboratory data shows that his platelet count has been gradually diminishing from an admission value of 240 x 10⁶/μL to 100 x 10⁶/μL today. What is the most appropriate next step in management?

52. A 60-year-old man with hypertension and diabetes presents to the clinic complaining of generalized numbness and weakness. His regular medications include atenolol, metformin, and triamterene, which was recently added for better blood pressure control. His blood pressure is 110/65 mm Hg and pulse is 65/min. Auscultation of the chest reveals scattered crackles. An electrocardiogram shows flattened P wave with prolonged QRS complex. Lab studies show:

Sodium: 138 mEq/L
Potassium: 6.5 mEq/L
BUN: 16 mg/dL
Creatinine: 1.0 mg/dL

What is the most appropriate next step in management?

53. A 65-year-old man is brought to the clinic with chest pain and shortness of breath. His medical history is significant for a 100 pack-year history of tobacco use, adenocarcinoma of the lung with known metastases to the liver, and hypertension. His current medications include verapamil. His temperature is 37.1°C (98.9°F), blood pressure is 92/63 mm Hg, pulse is 110/min, and respirations are 26/min. Physical examination shows jugular venous pressure elevation and pulsus paradoxus. His cardiac rhythm is regular with muffled sounds and his lungs are clear to auscultation bilaterally. Based on the available information, which of the following is expected from an electrocardiogram?

54. A 70-year-old man with a history of tobacco abuse, hypertension, prior stroke, and laryngeal cancer is brought to the emergency department after being found unresponsive at his home. It is estimated by family members that he lost consciousness approximately one hour earlier. He underwent a total laryngectomy ten years prior with no subsequent evidence of recurrent cancer. His current medications include ramipril and a daily aspirin. On physical examination, the patient is nonresponsive to voice or painful stimuli and his respirations are shallow. Vital signs are: temperature 37.9°C (98.9°F), blood pressure is 200/100 mm Hg, pulse is 93/min, and respirations are 13/min, and an O₂ saturation level of 87%. There are no apparent signs of trauma secondary to a fall. The pupils are small, but equal and reactive. The patient's tracheostoma is widely patent; breath sounds are distant, but present bilaterally without crackles. An arterial blood gas reveals pH 7.25, PaO₂ 59, and PaCO₂ 45. Which of the following is the most appropriate next step in management?
55. A 17-month-old girl is brought to the emergency room by her parents because she has been crying and refuses to walk since she fell last night. The parents report that she recently began to walk and has been unsteady on her feet. Examination reveals an irritable child with restricted movement of her left lower extremity. A radiographic examination reveals a displaced spiral mid shaft fracture of the femur. An orthopedic surgeon was called for stabilization of the fracture. In addition to stabilization of the fracture, what should be ordered?
56. A patient at the hospital has a fever of 38.6°C (101.5°F). This patient is a 71-year-old man who is postoperative day 6 from a right hemicolectomy for a colon cancer. Upon questioning, the patient says he feels well other than a small amount of pain at his incision site. He has been tolerating his regular diet for 24 hours without any nausea or vomiting. He has passed flatus, but has not had a bowel movement. He has been ambulatory since postoperative day 3. He denies any cough, chest pain, shortness of breath, or dysuria. His Foley catheter has been removed for three days now. Physical examination reveals clear lungs with good inspiratory effort and no crackles, normal heart sounds, and nondistended and soft abdomen. There is erythema and increased tenderness around the distal half of the incision site. A small amount of purulent drainage is seen near the erythematous portion of the wound. He has no calf tenderness or lower extremity swelling. What is the most appropriate next step in management of this patient's fever?
57. A 25-year-old man is seen in the emergency department after a motorcycle accident that resulted in significant head and maxillofacial trauma. Following initial evaluation and stabilization, he is admitted to the intensive care unit and administered Lactated Ringer's solution running at 125 mL per hour. During the first 60 hours of his stay, his urine output gradually declines to 25 mL per hour and his serum sodium drops from

139 to 125 mEq per liter. His vital signs remain stable. Urine osmolarity is found to be 548 mOsm per liter. Which of the following is the next best intervention?

58. A 40-year-old woman is in the intensive care unit immediately following removal of a right adrenal pheochromocytoma. Her blood pressure is 82/42 mm Hg. What is the most appropriate treatment of the patient's hypotension?
59. A 50-year-old man is brought to the emergency department after sustaining a gunshot wound to the left flank. A splenic injury with ongoing bleeding is suspected. The patient discloses that he is on coumarin and his INR is 3.0. What should be used to correct the coagulopathy en route to the operating room?
60. On postoperative day 3, after undergoing an exploratory laparotomy, distal pancreatectomy, splenectomy, and fixation of a left femur fracture after a motor vehicle accident, a 45-year-old man is lethargic, confused, and vomiting. His blood pressure is 95/42 mm Hg, serum glucose is 45 mg/dL, serum sodium is 125 mEq/L, serum potassium is 5.5 mEq/L, and hemoglobin is 11.2 mg/dL. Which of the following is the most likely cause of his condition?
61. A 45-year-old man presents to the clinic with severe abdominal pain. He felt epigastric pain last night after he ate and drank heavily. The pain built to full intensity within 30 minutes. It is constant and very severe, radiating to the back, and accompanied by nausea and vomiting. He vomited two cupfuls of greenish material, but later retched without bringing up much. He has taken no medications. While asking him questions, he keeps changing positions and is now lying on his side with his knees drawn up. His temperature is 37.3°C (99.2°F). His skin is pale. Where is the most likely cause of his condition located?
62. A 60-year-old man with coronary disease, hypertension, and hyperlipidemia presents to the clinic complaining of chest pain. He describes the pain as searing, and radiating from his anterior chest to between his shoulder blades. He takes verapamil, furosemide, and niacin. His temperature is 37°C (98.6°F), blood pressure in his right arm is 183/100 mm Hg and 108/55 mm Hg in his left arm. His pulse is 100/min and respirations are 25/min. His cardiac rhythm is regular and his lungs are clear to auscultation bilaterally. An electrocardiogram shows sinus tachycardia. What is the best study to order to establish a diagnosis?
63. A 55-year-old man with hypertension and generalized anxiety disorder is brought to the emergency department after his wife found him lethargic and confused with an empty bottle of alprazolam. She tells you that he has been depressed for the past few weeks. He has been taking metoprolol for hypertension and alprazolam for anxiety for one year. Vital signs are: temperature 37.7°C (99.8°F), blood pressure 110/65 mm Hg,

pulse 60/min, respirations 16/min, and oxygen saturation 98% on room air. He appears lethargic and confused and has diminished reflexes. You insert a nasogastric tube and administer activated charcoal. The most appropriate next step in management is which of the following?

64. A 55-year-old woman with diabetes, depression, and metastatic breast cancer is brought to the emergency department with chest pain and shortness of breath. She is status post left radical mastectomy followed by chemotherapy and radiation therapy. She takes NPH insulin, sertraline, and multivitamins. Her temperature is 37.5°C (99.5°F), blood pressure is 90/55 mm Hg, pulse is 110/min, and respirations are 25/min. On examination, she has an elevated jugular venous pressure and a prominent pulsus paradoxus. Her cardiac rhythm is regular and heart sounds are muffled. Her lungs are clear to auscultation bilaterally. What is the most appropriate next diagnostic step to order?
65. A 26-year-old man is admitted to the hospital with a comminuted left femur fracture after a motorcycle accident. He had some abdominal pain on presentation; however, a CT scan was totally unremarkable. In the middle of the night, the patient complains of sudden onset of tachypnea. On physical examination, he has alteration in his level of consciousness. His temperature is 37.1°C (98.9°F), blood pressure is 102/70 mm Hg, pulse is 115/min, and respirations are 30/min. Pulse oximetry reading is 88%. His lungs are clear to auscultation and his heart is tachycardic with no murmurs, rubs, or gallops. Skin examination shows numerous petechial hemorrhages on the upper body. The fracture of the left femur also appears to be improperly immobilized. An electrocardiogram is normal. Laboratory studies show a hematocrit of 32%, platelet count of 100,000/mm³, and PaO₂ is 60 mm Hg. After being placed on supplemental oxygen, his pulse oximeter now reads 95%. A chest x-ray is normal. What is the most appropriate initial step in management?