

Health Systems Science Sample Items

1. An 83-year-old man who is hospitalized following transtibial amputation for treatment of infected diabetic foot ulcers develops pneumonia and sepsis. The patient is homeless; he has never been married and has no children. His only living relatives are his sister, who has severe dementia and resides in a local nursing care facility; his niece, who visits him regularly; and his brother, from whom he is estranged and who does not want any involvement in his care. The patient's health worsens until he is no longer able to make medical decisions. It is most appropriate for which of the following people to make end-of-life care decisions on behalf of this patient?
 - (A) A court-appointed guardian
 - (B) The medical team
 - (C) The patient's brother and sister
 - (D) The patient's niece

2. A family physician in a town located more than 20 miles from the nearest hospital chooses to discontinue traveling to hospitals where his patients are admitted to perform the duties of attending physician. The physician is transitioning to a hospital care system. Which of the following patient safety issues is most important to address?
 - (A) Communicating adequately with the hospitalists during care transitions
 - (B) Contracting between the hospital and the physician to cover payment models
 - (C) Patient abandonment
 - (D) Patients' insistence that the family physician provide inpatient services

3. A 40-year-old man with type 2 diabetes mellitus asks his physician what the likelihood is for development of peripheral neuropathy if the patient continues to smoke. Which of the following is the most appropriate study design to determine this prognosis?
 - (A) Case series
 - (B) Cohort study
 - (C) Cross-sectional study
 - (D) Randomized controlled trial
 - (E) Systematic review

4. Prior to discharge from the hospital, patients admitted for exacerbations of chronic obstructive pulmonary disease receive smoking cessation counseling. On discharge, the pharmacist educates and provides patients with written materials regarding the use of their medications. Staff are required to ask patients if they have their medications before leaving. Patients also receive a phone call within 72 hours of discharge and a follow-up appointment within one week. Which of the following interventions will have the greatest impact on readmission rates?
 - (A) Education regarding medication use
 - (B) Follow-up appointment within one week
 - (C) Follow-up phone call within 72 hours
 - (D) Providing medications on discharge
 - (E) Smoking cessation counseling

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5. A senior medical student is working on a quality improvement project with her advisor. The medical student treated a patient with diabetes mellitus who required foot amputation due to advanced infection. The patient had documented neuropathy and was evaluated as an outpatient four times in one year; no foot examinations were documented during these visits. The student theorized that providing a reminder to conduct foot examinations through the electronic health record (EHR) would increase the number of documented foot examinations. She conducted a structured chart review of patients with diabetes mellitus in the internal medicine resident continuity clinic as a baseline. She worked with the EHR technical team to enable pop-up reminders regarding the need for annual foot examinations in patients with diabetes mellitus evaluated in the clinic. According to the Plan-Do-Study-Act paradigm, which of the following is the most appropriate subsequent action?
- (A) Follow the patients with diabetes mellitus for one year to ensure that a significant number of charts are reviewed
 - (B) For the next 50 patients with diabetes mellitus, measure the proportion that have documented foot examinations performed
 - (C) Organize a lecture about appropriate diabetic foot care for residents in addition to the reminders
 - (D) Present the results of the initial chart review to hospital leadership
 - (E) Repeat the chart review every six months until no further improvement is noted

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Answer Form for Health Systems Science Sample Questions

(Questions 1–5)

1. _____
2. _____
3. _____
4. _____
5. _____

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Answer Key for Health Systems Science Sample Questions

(Questions 1–5)

1. D
2. A
3. B
4. D
5. B