Human Error vs Computer Error: Effect of Computerized Prescription Entry on Medication Safety

Learning Assessment Questions:

1. The medication use process, by definition, is inclusive of a series of ______ key elements that form the framework by which medications are processed within the health care system and utilized by patients.
   A. 5
   B. 6
   C. 10***
   D. 12

   **Answer:** C

   The medication use process, by definition, is inclusive of a series of 10 key elements, as defined by the Institute for Safe Medical Practices (ISMP). These elements include (1) patient information; (2) drug information; (3) communication of drug information; (4) drug labeling, packaging, and nomenclature; (5) drug storage, stock, standardization, and distribution; (6) drug device acquisition, use, and monitoring; (7) environmental factors; (8) staff competency and education; (9) patient education; and (10) quality processes and risk management.

2. The Institute of Medicine (IOM) estimates that medication errors harm at least 1.5 million people each year and result in more than________ deaths annually.
   A. 7000***
   B. 10,000
   C. 15,000
   D. 100,000

   **Answer:** A

   In 2000, the IOM estimated that medication errors harm at least 1.5 million people each year and result in over 7000 deaths annually.
3. Some experts believe that adverse drug event (ADE) rates will increase in the coming years as the result of several factors. Which of the following may contribute to such an increase in ADE rates:
   A. The development of new medications
   B. The discovery of new uses for existing medications
   C. An increase in the use of medicines for disease prevention
   D. All of the above***
   **Answer: D**

   Evidence suggests that up to one-quarter of all harmful ADEs are preventable. Still, many experts believe that ADE rates will continue to increase as the result of several factors, including the development of new medications, the discovery of new uses for existing medications, and an increase in the use of medicines for disease prevention.

4. Which of the following is an example of a medication error stemming from the prescribing step of the medication use process:
   A. Missed dose
   B. Introduction of contaminants
   C. Mistyping an order
   D. Illegible prescription***
   **Answer: D**

   Medication errors may occur at any of several points in the medication use process. Examples of errors in the prescribing steps include the following: errors in writing a prescription, such as illegible handwriting or the use of inappropriate abbreviations, or errors in medication choice, such as choosing an inappropriate or ineffective drug, calculating an incorrect dosage, or ordering an inappropriate route of administration.

5. Errors can take many forms in the pharmacy, but can be simplified into the following 2 main categories from a causation viewpoint: ___________ and __________ errors.
   A. Patient; prescriber
   B. Logical; illogical
   C. Mechanical; judgmental***
   D. Dangerous; benign
   **Answer: C**
Errors in the pharmacy can be classified as mechanical errors or judgmental errors. A mechanical error is an error in the preparation and/or processing of a prescription, including dispensing an incorrect medication, dosage form, or dose. A judgmental error is an error or omission involving patient counseling, drug therapy management, patient screening, or monitoring.

6. ____________ are designed to house medical information that can be shared among all providers involved in an individual patient’s care.

A. Electronic medical records
B. Electronic health records***
C. e-Prescriptions
D. Palm pilloes
Answer: B

An electronic health record comprises medical information that can be shared among all providers involved in an individual patient’s care. In contrast, an electronic medical record is essentially a digital version of a paper chart that contains a patient’s medical history within a single medical practice or health system.

7. Per data from the U.S. Department of Health and Human Services, Office of the National Coordinator for Health Information Technology, more than ______% of community pharmacies in the U.S. have been actively engaged in e-Prescribing since 2012.

A. 15
B. 25
C. 75
D. 90***
Answer: D

The number of pharmacies equipped to engage in e-Prescribing has increased in recent years, and the U.S. Department of Health and Human Services estimates that more than 90% of community pharmacies in the U.S. have been actively engaged in e-Prescribing since 2012.
8. In one study, a total of 10 types of e-Prescription errors were identified in the community pharmacy setting during 45 hours of observation. The 4 most common types of errors included all of the following, EXCEPT:
A. Wrong pharmacy***
B. Wrong drug quantity
C. Wrong duration of therapy
D. Wrong dosage formulation
Answer: A

A study of e-Prescription errors in the community pharmacy setting reported the 4 most common types of errors, which included wrong drug quantity (40%), wrong duration of therapy (21%); wrong dosing directions (19%); and wrong dosage formulation (11%).

9. Drug classes most commonly implicated with e-Prescription errors were reported in a study by Odukoya et al. Drug classes identified included all of the following, EXCEPT:
A. Anti-infective agents
B. Respiratory agents
C. Psychotropic agents
D. NSAIDs***
Answer: D

The drug classes most commonly associated with e-Prescription errors were reported in a community–pharmacy-based study and included anti-infective agents, cardiovascular agents, respiratory agents (particularly inhalers), gastrointestinal agents, hormones and hormone modifiers, psychotropic agents, neurological agents, ophthalmic agents, and topical agents.

10. The most common factor cited by pharmacists as contributing to the occurrence of medication errors in a survey study was which one of the following:
A. Too many telephone calls***
B. Inappropriate staffing
C. Receipt of e-Prescriptions
D. Illegible prescriptions
Answer: A
In a community–pharmacy-based study, pharmacists cited many factors that contribute to medication errors, including distractions, high prescription volume, insufficient staffing, look-alike/soundalike drug names, inadequate opportunity to counsel, illegible prescriptions, and fatigue. The most commonly cited example was too many telephone calls, which was noted by 62% of pharmacists surveyed.