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## The Role of Technology in the Medication-Use Process

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### • OBJECTIVES

1. Describe factors that will influence the adoption of technology in healthcare.
2. Describe the challenges and rewards related to implementing a computerized prescriber order entry system (CPOE).
3. Recognize the benefits and limitations of barcode-assisted medication administration (BCMA) technology as it relates to overall efforts to reduce medication errors, including errors using these systems.
4. Define the benefits and limitations of automated dispensing cabinets (ADCs) in healthcare and their application to the medication-use process.
5. Describe the benefits and limitations of smart infusion pump technology.
6. Recognize the value of and a methodology for assessing an organization's readiness for implementing technology.

### • KEY WORDS

Automated dispensing cabinet  
Barcode-assisted medication administration technology  
Computer prescriber order entry  
Failure mode and effects analysis  
High-alert medications  
Medication error  
Smart infusion pump delivery systems

### INTRODUCTION

Due to the numerous steps required in the care of patients, the healthcare industry is inherently error prone and fraught with opportunities for mistakes to occur. This concept was confirmed in the oft-quoted 1999 Institute of Medicine (IOM) report, *To Err Is Human: Building a Safer Health System*, where the authors extrapolated that between 44,000

of practitioner interactions with “bad systems” (Kohn, Corrigan, & Donaldson, 1999). The authors emphatically state that the healthcare industry must place safety as the number 1 national priority and work diligently toward this goal. One explicit recommendation emanating from the first of a series of IOM reports on healthcare is to improve the safe design of systems as is presently being employed in the aerospace and nuclear industries, which are also high-