
CHAPTER 9

A New Frontier

Impact of the Electronic Medical Record and Computerized Provider Order Entry on Pharmacy Services

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KEY DEFINITIONS

Clinical Decision Support (CDS)—providing clinicians or patients with clinical knowledge and patient-related information, intelligently filtered or presented at appropriate times, to enhance patient care. Clinical knowledge of interest could range from simple facts and relationships to best practices for managing patients with specific disease states, new medical knowledge from clinical research, and other types of information.

Clinical Informatics—the scientific study of the effective analysis, use, and dissemination of information in patient care, clinical research, and medical education.

Clinical Pharmacy Technician—a highly skilled pharmacy technician or “pharmacist assistant” with advanced training and/or pharmacy technician certification completed.

Computerized Provider Order Entry (CPOE)—the portion of a clinical information system that enables a patient’s care provider to enter an order for a medication, clinical laboratory, radiology test, or procedure directly into the computer. The system then transmits the order to the appropriate department, or individuals, so that it can be carried out.

Electronic Health Record (EHR)—a longitudinal electronic medical record (EMR) of patient health information generated by one or more encounters in any care delivery setting. It contains episodes of care across multiple care delivery organizations (CDOs) within a community, region, or state.

Electronic Medical Record (EMR)—a computerized legal clinical record created in a CDO, such as a hospital or physician’s office. It is an application environment composed of the clinical data repository (CDR), clinical decision support (CDS), controlled medical vocabulary (CMV), computerized provider order entry (CPOE), pharmacy, clinical documentation, and other ancillary applications.

Electronic Prescribing, or e-Prescribing—refers to the use of computing devices to enter, modify, review, and output or communicate drug prescriptions and medication

regimens for patients. e-Prescribing is one component of CPOE systems.

Informaticist—someone who applies information technology to a specific discipline (e.g., pharmacy informaticist).

Medication Error—any preventable event that may cause or lead to inappropriate medication use or patient harm while the medication is in the control of the health care professional, patient, or consumer.

Medication-Use System—a complex system involving multiple individuals, processes and technology to manage the ordering, verifying, procurement, preparing, distribution, monitoring, and education of medication therapy.

Personal Health Records (PHR)—an Internet-based set of tools that allows people to access and coordinate their lifelong health information and make appropriate parts of it available to those who need it.

Pharmaceutical Care—the responsible provision of drug therapy for the purpose of achieving outcomes that improve a patient's quality of life.

Technology—anything that is used to replace routine or repetitive tasks previously performed by people, or which extends the capability of people.

Introduction

The Institute of Medicine (IOM) has indicated that access to comprehensive health information through the implementation of electronic health records (EHRs) is critical to ensuring the delivery of high-quality, cost-effective, and safe care to patients.¹ Recommendations to implement computerized provider order entry (CPOE) have also been made by both the IOM² and the Leapfrog Group³ to reduce medication errors. Because of these recommendations, health care systems are implementing these solutions, other related technologies, and automation tools at an accelerated pace. These technological advancements are reshaping patient care and medication use processes, thus impacting the roles and responsibilities within various patient care provider groups,

including pharmacy services. It is critical for pharmacy leaders to adapt to these technologically-induced changes by re-evaluating, redefining, and expanding current pharmacy staff roles to ensure optimal system implementation and support, effective medication management, and improved patient outcomes. This chapter will outline the new frontier of EHR and CPOE implementations, the impact they are likely to have on pharmacy services, and present justification and potential opportunities that will exist in the future for the pharmacy profession. The focus of this content will be relevant on inpatient pharmacy practices, however, impact on pharmacy practice within the primary care ambulatory setting will also be addressed.

Summary of EHR and CPOE

The concepts and benefits of an EHR and CPOE have been outlined in numerous publications over the past decade and details regarding these technologies will be outlined in a separate chapter. However, to summarize these concepts and provide clarification, it should be noted that ongoing confusion exists over the difference between EHRs and electronic medical records (EMRs). EMRs are what currently exist in most practices that have adopted them as their legal medical record, but EHRs are the ultimate goal for care delivery organizations (CDOs). EMRs are created, maintained, and owned within CDOs, such as hospitals and physician offices. An application environment composed of the clinical data repository (CDR), clinical decision support (CDS) tools, controlled medical vocabulary (CMV), CPOE, and clinical documentation applications. The patient's electronic record is supported across inpatient and outpatient environments and is used by healthcare practitioners to document, monitor, and manage care delivery within CDOs. The data in the EMR is the legal record of what happened to the patient during encoun-