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## CHAPTER 2

# ePrescribing

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### CHAPTER OUTLINE

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Other Integration  
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### KEY DEFINITIONS

**ASC X12N**—Accredited Standards Committee X12; creates standards for the cross industry electronic transmission of business information. ASC X12N standards are used for insurance eligibility and prior authorization communication.

**ePrescribing**—commonly defined as “ambulatory computerized provider order entry” or ambulatory CPOE. There are many variations on this definition based on the needs of the definer. According to Department of Health and Human Services Centers for Medicare & Medicaid Services (CMS), the definition of ePrescribing is “The transmission, using electronic media, of prescription or prescription-related information, between a prescriber, dispenser, PBM, or health plan, either directly or through an intermediary, including an e-prescribing network.” This definition does not specify who does the data entry or how the data is handled when received by the organizations. It only specifies that the information is sent electronically. It is generally assumed that in order to fully realize the advantages of electronic prescribing, the data should be entered by the prescribing practitioner and the electronic data should not be manually transcribed into the receiving systems. Few current ePrescribing installations currently realize this goal.

**ePrescription**—according to CMS, a prescription is not an ePrescription unless it is transmitted electronically in a standard format. Printed paper prescriptions and electronic faxes are not considered to be ePrescriptions by CMS rule.

**Dispenser**—term that the Department of Health and Human Services Centers for Medicare & Medicaid Services uses to specify the pharmacy and pharmacist. It is assumed that this includes in addition to the dispensing of prescription medications that the appropriate verifications and patient education is provided by the dispenser.

**NCPDP**—National Council for Prescription Drug Programs; an organization that creates and promotes standards for the transfer of data to and from the pharmacy services sector of the healthcare industry. NCPDP is an ANSI-accredited standards development organization that has over 1450 members representing all areas of pharmacy services.<sup>1</sup> NCPDP

has developed standards for provider identification and telecommunication standards for pharmacy claims. It has also developed SCRIPT, which consists of multiple standards supporting prescription communication and processing.

**PDP**—Medicare Prescription Drug Plan (PDP) is the prescription drug plan that was created with the Medicare Prescription Drug, Improvement and Modernization Act of 2003.

**Prescriber**—the health practitioner who has the legal authority for ordering ambulatory medications.

**RXNORM**—a clinical drug nomenclature standard produced by the National Library of Medicine. It provides standard names for clinical drugs, strengths and dosage forms. It also provides links between the standard semantic clinical description and the branded representation.

**Switch**—a company that provides a communication network to support claims adjudication, eligibility checking and electronic prescribing for pharmacies.

## Introduction

While there have been many physician-specific articles and books written about ePrescribing, there has been comparatively little pharmacy-specific literature published on this topic. This is because most of the emphasis has been placed on the prescriber, and there is very little pharmacy experience with ePrescribing. The purpose of this chapter is to introduce common ePrescribing terminology, discuss the current state of electronic prescribing (ePrescribing) systems, the impact of ePrescribing on clinical workflows, future directions of electronic prescribing, and the role of the informatics pharmacist in ePrescribing implementation and development. This chapter will provide a pharmacist-centered view of ePrescribing.

The majority of healthcare is delivered in the ambulatory care setting and is increasing. In 2000, Americans made 823 million office visits, 100 million more than 1995.<sup>2</sup> Medication prescribing is the most common therapeutic intervention in ambu-

latory practice settings. Studies have found 75% of the visits to general practitioners or internists resulted in the continuation or initiation of a medication.<sup>3</sup> Prescription volumes are large and increasing. More than 3 billion prescriptions are written annually in the United States and are estimated to increase to 4 billion in 2007.<sup>4</sup> Prescription meds are used by more than two thirds of U.S. citizens annually.<sup>5</sup> The increasing volumes of prescriptions and the increased costs of prescription drugs has increased the attention to controlling these costs. In addition, prescription drug errors and the management of prescription drug therapy are also costly. Studies estimate that indecipherable or unclear prescriptions result in more than 150 million calls from pharmacists to physicians for clarification.<sup>6</sup> Others estimate the number of prescription-related telephone calls annually at 900 million. Practices report almost 30% of prescriptions required pharmacy callbacks.<sup>7,8</sup> Requesting and receiving approval for refills alone, estimated at nearly 500 million per year, adds to the telephone and fax burdens.<sup>9</sup> These interventions by pharmacists often direct prescribers to less costly therapies and prevent medication errors. It is believed that ePrescribing systems will significantly impact prescribers to select less costly therapy and prevent errors before a prescription is sent to the pharmacy. One study estimates the possible savings from ePrescribing of \$27 billion per year in the U.S.<sup>10</sup>

ePrescribing has received a lot of attention in the U.S. over the last several years. The Medicare Prescription Drug, Improvement and Modernization Act of 2003 (MMA) initiated government attention to the current problems with ambulatory prescribing.<sup>11</sup> As part of its direction, the MMA specifically includes the development of ePrescribing standards

The Joint Commission with its identification of National Patient Safety goal #8, “Accurately and completely reconcile