Chapter 2
Billing and Review Perspectives in Healthcare

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ABSTRACT

The relatively recent and more pervasive retention of electronic healthcare data has provided new opportunities for the advancement of analytics and business intelligence tools within healthcare. The tasks comprising the delivery process for healthcare provide numerous points for data capture, and associated analyses to improve efficiencies and quality of care. In general, healthcare data is extracted from transaction-based systems designed for billing, scheduling, and workflow. However, data characterizing medical events can be further leveraged to assist in the diagnosis and treatment of patients. In fact, healthcare information technology (HIT) to improve patient diagnosis and treatment is remarkably neglected. This chapter outlines the process flow for healthcare delivery, describes the data extracted during this process flow, details the enablers and inhibitors of HIT and accompanying analytics, presents concerns about data integrity and quality, and provides some methods for data cleansing and staging.

INTRODUCTION

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from transaction-based systems designed for billing, scheduling, and workflow. However, data characterizing medical events can be further leveraged to assist in the diagnosis and treatment of patients. In fact, healthcare information technology (HIT) to improve patient diagnosis and treatment is remarkably neglected. This chapter outlines the process flow for healthcare delivery, describes the data extracted during this process flow, details the enablers and inhibitors of HIT and accompanying analytics, presents concerns about data integrity and quality, and provides some methods for data cleansing and staging.

HEALTHCARE PROCESS OVERVIEW

Revenue Cycle Management

The healthcare delivery process is structured according to a “revenue cycle” and related management systems. The revenue cycle entails all facets of a patient's account, from its inception to payment. It integrates every aspect of a healthcare provider’s clinical and financial operations. Specifically, healthcare revenue cycle management is the financial process used by providers to administer functions associated with patient care, from scheduling and account creation to billing and final payment. Figure 1 shows the primary process steps in the healthcare “revenue cycle”.

Stakeholders

The process of healthcare delivery consists of numerous stakeholders. The behavior of each stakeholder impacts other stakeholders, and the efficiency and outcomes of the revenue cycle. Roughly, there are four major groups of stakeholders in the healthcare delivery process. They are policy makers, patients, providers/facilities and payers. Each of these stakeholders is described below.

Policy Makers

Policy makers establish the framework for the provision of healthcare. Essentially, the environment under which the other stakeholders operate is determined by policy maker actions. For example, the coding practices for characterizing medical events, in terms of code sets and data transmission protocols, are established by policy makers such as the Centers for Medicaid and Medicare Services (CMS). CMS also incents healthcare providers to appropriately use and maintain electronic health records (EHR). An important function of policy makers is the collection of aggregate data from patients, providers, and payors to develop population-level metrics. These
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