Chapter XI

Healthcare Information: From Administrative to Practice Databases

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ABSTRACT

This chapter defines and discusses healthcare data and various healthcare databases as resources for knowledge discovery that can support effectiveness research, quality improvement, and resource allocation. Privacy and confidentiality of health records are addressed along with the dimensions and complexity of information retrieval from healthcare databases and patient health records. The Veterans’ Health Administration (VHA) data and databases are specifically addressed. Issues and methods of data preparation for a data mining exploration of a VHA Spinal Cord Injury (SCI) clinical database are presented from a nursing perspective. The potential of using healthcare databases for research is noted.
INTRODUCTION

The healthcare industry faces contradictory pressures of lowering cost and increasing quality of service, both of which require efficient decision-making. These business challenges of healthcare delivery require greater operational efficiencies and the tools necessary to provide real-time access to information. Healthcare facilities have at their disposal vast amounts of data from administrative and clinical databases. Capabilities for data storage have created databases of immense size that can be tapped to generate knowledge. However, the challenge is to extract relevant information from this data and act upon it in a timely manner (Desouza, 2002). Efficient decision-making is a by-product of thorough analysis of available data on a given problem. This chapter discusses the kinds of healthcare databases currently available, including claims, administrative and practice databases. Their potential for use in database research, designed to determine effectiveness of care, improve the quality of care delivered, and improve resource allocation, is presented. The Veterans’ Health Administration (VHA) data is specifically addressed, and the issues and methods related to data preparation for a data mining exploration of a VHA Spinal Cord Injury (SCI) clinical database are presented from a nursing perspective.

BACKGROUND

With the movement of healthcare reimbursement from fee-for-service toward capitation models, healthcare information systems need to be able to detect developing cost, quality and access problems. Payers demand better documentation of care and outcomes. A subtle yet critical issue facing the healthcare industry is the documentation of professional practice and the ability to provide such information across the continuum of care (Orsolits, Davis & Gross, 1988). With the current healthcare system’s emphasis on a business model, the application of the four diagnostic information categories identified by Drucker (1999) is appropriate. He identifies foundation information as the basic standard measurements within the industry; productivity information as the measurement of knowledge-based and service work; competence information, which looks at the core competencies of the industry; and resource allocation information, which addresses how both capital and people are allocated throughout the enterprise. These four kinds of information are seen as telling about the current state of the business and directing business tactics, and can all be related directly to healthcare information.

Healthcare providers are confronted daily with constantly changing information needs to manage care. Hersh (1999) indicates that in two of every three patient encounters, the average clinician has unmet information needs, even
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