

Chapter 7.9

Improving the Quality of Healthcare Research Data Sets

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ABSTRACT

The goal of many healthcare research projects and evidence based medicine programs within healthcare organizations is to support clinical care team members by mining evidence from patient outcomes to support future treatment recommendations. In these research studies, the data is often extracted from secondary sources such as patient health records, benefits systems, and other nonresearch data sources. Good data is important to facilitate a good research study and to support clinical decisions using the results. Often multiple applicable healthcare data sources are available for a research study, some of which may be internal to the organization, while others may be external, such as state or national databases. This chapter attempts to develop an understanding of how the quality of data for healthcare research data sets can be established and improved when using secondary data sources, such as clinical or benefits databases, which were created without primary intentions for research use.

INTRODUCTION

Asserting data quality is a critical component of any information systems based research project (Brodie, 1980). In healthcare organizations, research is often conducted using secondary data sources such as databases set up for patient medical records, insurance billing and benefits administration. As in other domains, data quality problems are increasing in such organizational databases (Wang, Strong and Firth, 1995; Storey and Miller, 1995). Prior studies have reported that between 50-80% of records in many such databases may be inaccurate, incomplete or ambiguous (Redman, 1998). The ramifications of using poor quality data in a research study can be quite costly –incorrect results that are flawed and unusable. Information systems built upon data sets of poor data quality with missing information and processes that allow information to bypass key managers can lead to catastrophic failures (Fisher and Kingma, 2001). To build validity in research results, data quality must be established, particularly when using secondary

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