Use of Coded and Administrative Data to Identify Mental Health Conditions: Impediments and Implications in a Chronic Pain Study

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Abstract

We evaluated the accuracy of diagnostic codes for schizophrenia in identifying actual cases in the historical charts of 801 primary care patients. The rate of schizophrenia by diagnostic code was 14%, whereas the estimated rate based on independent clinical chart review by a trained psychiatrist, using DSM-IV criteria, was 1.8%. The findings suggest that coded data alone should not be used to determine which patients have schizophrenia for research studies.

Introduction

The Department of Veterans Affairs began using the current electronic medical record- the Veterans Health Information Systems and Technology Architecture (VISTA)- in 1994, providing investigators the opportunity to use coded data derived from the record for clinical studies has developed an electronic medical record from which data is accessed via. For research purposes International Classification of Disease, Ninth Revision, Clinical Modification (ICD-9-CM) codes and associated administrative databases are derived from VISTA and used to estimate prevalence of disease and determine sampling frames. The use of coded data is generally thought to be an efficient way to screen thousands of episodes of hospital care. Nonetheless inaccuracies in the databases have been documented. This study informs where errors may occur when using coded data.

Methods

The VALOR database, developed by the Center for Health Equity Research and Promotion (CHERP) staff to capture clinical data local to the Philadelphia Veterans Administration Medical Center (PVAMC), contains 192,457 patients with associated inpatient and outpatient information. For research purposes VALOR uses data feeds of information from Computerized Patient Record System (CPRS) containing scheduled clinic activities, actual visit activity including diagnoses, procedures, and hospitalizations from the Outpatient Care (OPC), and the Patient Treatment File (PTF). It should be noted that inpatient diagnoses and procedures are assigned by professional codes while the majority of outpatient diagnoses (66%) are assigned by the provider who treated the patient. The coded data in VALOR was used to determine the cases of schizophrenia in a study involving pain management.

Results

Using data derived from codes assigned to 801 patients prescribed opioids in primary care clinics at the PVAMC we initially found that 14.5% of our patient population was coded with schizophrenia – more than 14 times the general population rate of this mental illness (1%). Chart review revealed that the most conservative diagnostic criteria would correct this finding to 1.8%. Additionally, patients with 3 or fewer coded (ICD-9-CM) entries for schizophrenia did not truly have the condition as reflected by their treatment notes and clinical progress. Fifty eight percent (n=18) of the non-schizophrenic patients with 3 or more coding incidents for a diagnosis of schizophrenia were found to have comorbid diagnoses of cocaine abuse/dependence. The most common diagnoses found for patients inaccurately coded with schizophrenia were Depressive Disorder, PTSD, Bipolar Disorder, and Schizoaffective Disorder.

Discussion

This study revealed the need to refine methods of identifying patients with a mental health condition using coded data. The absolute nature of a binary method of diagnostic labeling from charted data does not adequately account for the evolution of a clinical diagnosis in mental healthcare over a longitudinal course. Thus, conclusions from the data are easily confounded by incidental, erroneously conclusive point-in-time clinical observations. These findings reveal that when designing automated, IT-based approaches to the identification of subjects for clinical research and the extraction of data from chosen subjects using electronic medical records, mental health diagnoses and their relationship to the disease processes being studied must be uniquely considered on a disease-by-disease basis.