Change Impact of Transitioning from ICD-9-CM to ICD-10-CM on Morbidity Statistics

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Abstract

Morbidity and mortality data influence public health programs, policies, and resource allocations. The problem that this research addressed was the potential for error in calculating and reporting morbidity statistics due to the transition from the International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) to ICD-10-CM in 2014. Within the framework of descriptive epidemiology, research questions addressed the effect of ICD code changes on disease prevalence and ranking order. This was a retrospective, quantitative analysis for 17 chronic diseases abstracted from a 2010 hospital discharge dataset, which included 3,178,071 individual diagnoses counts. Post-hoc study questions addressed changes in diagnosis specificity. Comparability ratios and *z*-tests were used to assess changes in case counts, prevalence differences were measured with a two-tailed paired *t*-test, and a Kappa statistic tested ranking order. The Wilcoxon rank-sum test measured changes in code descriptions, and chi-square analysis measured code translation changes. Results showed no change in disease prevalence or ranking order, demonstrating the ICD conversion had no effect on the descriptive epidemiology for the 17 chronic diseases in this study. There was, however, a significant change in specificity of coding, demonstrating an imperative for performing additional proactive research analyses at the individual code description level. Additional research to establish new ICD disease data definitions and algorithms for data abstraction is needed. The information from this study can guide the efforts of those involved in running public health programs, enacting policies, and allocating resources to improve their efficiency and widen their scope to promote public health.

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