

Medication Complexity in Elderly Home Care Patients

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Abstract

Medication errors, interactions and side effects are primary causes of emergency room visits and subsequent hospitalization, institutionalization and death in the elderly. Currently the Beers' criteria are the most commonly used tool to identify high risk medication regimens for elders. Issues surrounding elders' medication use in the community and complexity of medication regimens in hospitals, adherence and potential for medication errors have been studied, but few studies have examined the inherent complexity of the medication regimen and how this relates to adverse outcomes. According to systems theory, there are patient factors, support system factors, and medication complexity factors which interact with process or interventions that are provided by home care staff in order to improve outcomes. Little is known about how medication complexity interrelates with these variables. Therefore, the purpose of this study is to examine medication complexity (as defined by the intersection of polypharmacy, class of medication, complex medication regimens) to determine how medication complexity relates to outcomes of self management of medications, emergent care, and hospitalization. This study is a secondary data analysis combining OASIS data and medication data using the innovative methodology of knowledge discovery in databases (KDD). A limited data set of all open admissions in 2004 from 15 home health care agencies is being analyzed using logistic regression with generalized estimating equations and data mining techniques. There are 16,948 OASIS assessments representing 4,242 episodes of care for 2,806 patients. This includes 536,819 intervention records and 65,000+ medication records. During this study, which is in process, a classification schema for grouping medications and determining the variables of medication complexity are under development. Results of this study can further our understanding of patients at risk for difficulty with medication management and help identify interventions to improve medication self management to avoid emergent care and hospitalization. The findings from this study and the methodology used to prepare and transform the data for predictive modeling will be useful in examining predictive potential for medication complexity in other settings and in the design of databases which ultimately will improve patient care.