

Using linked administrative, clinical and primary data to explore the impact of and factors associated with non-adherence to in-hospital medication changes in 30-days post hospital discharge

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Introduction

Identifying strategies to prevent hospital readmissions remains elusive since the reasons for returning to hospital can include a number of interlinked patient, health provider and system level factors. The impact of patient medications are of significant interest since a large proportion of re-admissions are related to adverse drug events.

Objectives and Approach

The objective was to determine which factors are associated with non-adherence to in-hospital medications and the impact of non-adherence on re-hospitalization, emergency department visits and death in the 30-days post discharge for patients admitted at two tertiary care academic hospitals in Montreal, Quebec between October 2014 and May 2016. Non-adherence to in-hospital changes was measured by comparing patient discharge prescriptions (patient chart) to medications filled in community 30-days post-discharge (dispensing data) and included i) community medications stopped in-hospital and filled post-discharge, ii) community medications modified in-hospital but not filled at the modified daily-dose, and iii) new medications not filled post-discharge.

Results

Among 2,895 included patients, mean age was 70 (SD 15) and 58% were males. A median of 4 in-hospital medication changes were made (IQR:3-6) and 54% of patients were non-adherent to at least one change. Multivariable Poisson models suggested that the most important factor associated with the number of new medications not filled post discharge was out of pocket cost; for each additional \$10 increase in costs there was a 20% increase in the number of new medications not filled. Multivariable time-varying Cox models suggested that in

patients who filled medications post-discharge, selective non-adherence to new and discontinued medications reduced the risk adverse health outcomes in 30-days, while not filling any medications post discharge more than doubled the risk of an adverse event in 30-days.

Conclusion/Implications

Not only did the majority of patients not follow all medication changes that were made during hospitalization, the extent to which this occurred significantly impacted the risk of hospital re-admissions and ED visits. Policy and patient level interventions should be developed specifically targeting barriers for adherence to medication changes.

