

Effect of Misalignment between Hospital and Provincial Formularies on Medication Discrepancies at Discharge: PPITS (Proton Pump Inhibitor Therapeutic Substitution) Study

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ABSTRACT

Background: Medication discrepancies may occur on admission, transfer, or discharge from hospital. Therapeutic interchange within a drug class is a common practice in hospitals, and orders for specific proton pump inhibitors (PPIs) are often substituted with the hospital's formulary PPI through therapeutic interchange protocols. Rabeprazole is the PPI on the formulary of the British Columbia PharmaCare program. However, different PPIs may appear on the formularies of the province's hospitals. This misalignment and use of therapeutic interchange may lead to increased rates of medication discrepancies at the time of discharge.

Objective: To evaluate the effect of formulary misalignment for PPIs between St Paul's Hospital in Vancouver and the British Columbia PharmaCare program and use of therapeutic interchange on the occurrence of medication discrepancies at discharge.

Methods: A cohort chart review was performed to compare discharge discrepancy rates for PPI orders between 2 periods: June 2006 to June 2008, when the same PPI appeared on the hospital and provincial formularies, and July 2008 to July 2010, when the designated PPIs differed between the hospital and provincial formularies. Data for the first study period were used to establish the baseline discharge discrepancy rate, and data for the later period represented the discharge discrepancy rate in the presence of misalignment between the hospital and PharmaCare formularies.

Results: The discharge discrepancy rate for PPIs was 27.3% (24/88) when the 2 formularies were aligned and 49.1% (81/165) when the formularies were misaligned. This represents an absolute increase of 21.8 percentage points in the risk of discharge discrepancies (95% confidence interval 9.8–33.9 percentage points; $p < 0.001$) when the hospital and provincial formularies were misaligned and the hospital's therapeutic interchange protocol was used.

Conclusions: Misalignment between the PPIs specified in the hospital and provincial formularies, combined with use of therapeutic interchange, was associated with a significant increase in medication discrepancies at discharge.

Alignment with CSHP 2015 Goals

This initiative aligns with CSHP Goals and Objectives as follows:

Goal 1, Objective 1.1: Medication Reconciliation for Inpatients

The PPITS study demonstrates that hospital pharmacy formulary substitutions complicate medication reconciliation on discharge and actually increases the medication discrepancy error rate on discharge. This is the only study published that illustrates that hospital formulary substitution policies have a detrimental effect on discharge medication errors.

Goal 4, Objective 4.1: Program for Improvement in Medication Safety

The PPITS study is the first ever published study that critically and objectively evaluates the impact of hospital formulary substitution policies on medication discharge errors. This study is the only to clearly demonstrate the potential for unsafe medication use and practices with hospital formulary substitutions. The PPITS study raises the point that hospital pharmacy policies and practices can contribute significantly to medication errors on discharge. The study demonstrated a significant 22% increase in discharge medication errors with hospital formulary substitution policies! This project contributes to patient and medication safety by forcing us to re-evaluate our current practices and how broad hospital pharmacy policies may be directly contributing towards medication errors.