# Handbook for a Pilot Study to Reduce Potential Hospitalizations Due to Preventable Drug-Drug Interactions

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**Rationale:** Hospital reports on medication incidents suggest 37-51% of reported adverse drug events, including drug-drug interactions (DDIs), may have been prevented with appropriate interventions. The Institute of Clinical Evaluative Sciences conducted population-based studies examining the association between specific DDIs and hospitalizations.

**Description of Concept:** This study intends to compile a list of evidence-based DDIs with association to an increased risk of hospitalizations and develop a treatment algorithm handbook to facilitate pharmacists or clinicians in ambulatory care in identifying and offering recommendations to prescribers to prevent these DDIs.

**Steps Taken:** A comprehensive literature search was conducted and articles were selected based on relevant DDIs that were associated with an increased risk of hospitalization. Evidence-based treatment algorithms were created to suggest alternative therapeutic options for three common community infections – Group A □-hemolytic Streptococcus pharyngitis, outpatient community-acquired pneumonia, and uncomplicated lower urinary tract infections.

**Evaluation:** Evidence-based DDIs identified in this study involved either a macrolide or trimethoprim-sulfamethoxazole. In all cases, the evidence supported an alternative to either antibiotic for selected community infections. Older persons were underrepresented in trials evaluating antibiotic therapy for community infections. Selecting an appropriate antibiotic required using data derived primarily from children and adults. A treatment algorithm handbook was created for clinicians in ambulatory care.

**Importance to Practice:** The list of evidence-based DDIs with association to an increased risk of hospitalizations identified in this study was made available to all pharmacists via the Ontario College of Pharmacists quarterly publication, Pharmacy Connection, in Spring 2013. Pharmacists/clinicians have the option of using the treatment algorithm handbook developed in this project to help resolve and prevent these DDIs.