A Literature Review: Interventions for Appropriate Prescribing of Proton Pump Inhibitors

For Consultation

October 16, 2006

Prepared by the Canadian Optimal Medication Prescribing and Utilization Service (COMPUS) Directorate of the Canadian Agency for Drugs and Technologies in Health
Consultation
The Canadian Agency for Drugs and Technologies in Health (CADTH), through its Canadian Optimal Medication Prescribing and Utilization Service (COMPUS) program, invites you to provide feedback on our literature review of interventions for the optimal prescribing and use of proton pump inhibitors (PPIs).

The consultation document includes a brief description of the purpose, objective, methodology, results, and bibliographic references to the peer-reviewed studies which were included in the literature review.

If your peer-reviewed study on a behavioural change intervention for the prescribing and use of PPIs is not included in our reference list, or if you know of a study that we may have missed, please send it to: compusfeedback@cadth.ca. Your input must be submitted by October 27, 2006.

This literature review, together with your input, will assist COMPUS in the selection of interventions and tools for promoting the optimal prescribing and use of PPIs.

Introduction
CADTH, through the COMPUS program, has initiated a literature review of available peer-reviewed studies on interventions that have been used to encourage the optimal prescribing and use of PPIs. This review will assist COMPUS in the selection of interventions for the promotion of optimal drug therapy for PPIs.

Several interventions have been used to encourage appropriate prescribing of PPIs and for minimizing drug costs. Some of these interventions target physician prescribing behaviour, while others are directed toward patients.

For the purpose of this report, interventions have been classified into five major categories: professional interventions, disease management interventions, interventions for disseminating dyspepsia guidelines, regulatory interventions and patient interventions.

<table>
<thead>
<tr>
<th>Professional interventions</th>
<th>Professional interventions are aimed at improving professional practice and the delivery of effective health services. Such interventions include professional educational interventions, audit and feedback, and reminders.</th>
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<tr>
<td>Disease management interventions</td>
<td>Disease management interventions are generally designed to improve the process of health care delivery and patients’ outcomes.</td>
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<tr>
<td>Interventions for disseminating dyspepsia guidelines</td>
<td>Disseminating guidelines involves strategies for distributing the guidelines to physicians to encourage their uptake and usage.</td>
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<td>Regulatory interventions</td>
<td>Drug plans have undertaken a variety of strategies in attempting to manage drug utilization and to curb rising prescription costs. Formulary-based interventions (prior authorization and reference pricing) and drug utilization interventions are all tested and used by drug plans in North America.</td>
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Patient interventions
Patient interventions include patient education and patient reminders.

Objective
The goal was to review all published studies on interventions that focused on enhancing appropriate prescribing and use of proton pump inhibitors (PPIs).

Methodology
A comprehensive review of literature was taken using multiple electronic bibliographic databases. This review was supplemented by an extensive gray literature search to find documentation focusing on interventions that targeted PPI prescribing and use. The selection of included studies was not limited by study design.

Literature search strategy
MEDLINE®, EMBASE®, BIOSIS®, Cochrane Library (Issue 2, 2006), and HEED (Health Economics Database) were searched to find literature focusing on PPI prescribing and use. The search was not restricted by language, date, or literature type. Given that the term "intervention" has multiple meanings in clinical literature, the search relied on key words and phrases associated with known intervention types, such as academic detailing. Some controlled vocabulary terms were used but, in general, these were too broad to be useful.

An extensive gray literature search was conducted. This search included but was not limited to: CRD (Centre for Reviews and Dissemination) Databases, National Prescribing Service (Australia), DERP (Drug Effectiveness Review Project), AHRQ (Agency for Healthcare Research and Quality), Centre for Clinical Effectiveness (Monash University), as well as national and international gastroenterological and pharmacy associations. A general internet search was used to identify local initiatives not found in databases and HTA (health technology assessment) web sites.

Inclusion criteria:
- studies addressing interventions used to target appropriate prescribing and use of PPIs (or anti-ulcer drugs), which focused on:
  - reducing over-prescribing of PPIs, or switching PPIs to H2RA, or to another preferred PPI
  - properly managing PUD, GERD, or dyspepsia
  - reducing therapeutic costs
  - increasing patient compliance with drug therapy.
- studies addressing guideline (PUD, GERD or dyspepsia) implementation strategies.

Exclusion criteria:
- narrative reviews, editorials or commentaries
- studies only presenting observational data or trends in current practice
- surveys.

Results
Twenty-three studies were identified that focused on: professional interventions (five studies); disease management interventions (three studies); dissemination strategies for dyspepsia guidelines (three studies); regulatory interventions (six studies); and patient interventions (three studies). The majority of the studies were non-randomized control studies with poor quality study design. Synthesis of the evidence was limited by study design, and the wide variation in population, setting, interventions and outcomes. In general, studies included in this review suggest that multifaceted interventions may have a positive impact in controlling the prescribing of PPIs and their expenditure, especially when passive interventions such as educational materials (guidelines) were reinforced by active interventions such as outreach visits (academic detailing). Formulary-based interventions and DUR-based interventions were shown to be effective in controlling PPI expenditure. However, the effect on patients’ health outcomes was not addressed. Only one study showed that targeting patients with educational interventions may reduce long-term use of PPIs.

**Conclusion**
The studies in the review suggest that combining an educational, multifaceted intervention involving both professionals and patients with a regulatory intervention may encourage the appropriate prescribing and use of proton pump inhibitors. However, the decision on the selection of interventions should be tailored to address specific needs of the target audience.
The following is a bibliographic listing of relevant published peer-reviewed references gathered from the literature review methodology as stated in this document.

**Interventions for Appropriate Prescribing of PPIs:**

**Bibliography**

**October 2, 2006**


