Evaluation Framework for COMPUS Intervention Tools on Proton Pump Inhibitors

Supporting Informed Decisions

À l'appui des décisions éclairées
Evaluation Framework for COMPUS Intervention Tools on Proton Pump Inhibitors

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EXECUTIVE SUMMARY

The Canadian Optimal Medication Prescribing and Utilization Service (COMPUS) is producing a collection of intervention tools to disseminate its key messages on proton pump inhibitors (PPIs). The following tools are being developed in collaboration with experts in continuing professional development:

- Printed educational materials (newsletter, prescribing aid, alternate prescription pad, self-audit tool);
- Physician and pharmacist educational presentations (didactic and interactive);
- Patient education materials (alternative prescription pad as above); and
- Academic detailing materials (newsletter, training or “upskilling” document).

These evidence-based intervention tools on PPIs will be available for use to educational providers across the country, such as academic detailing services, continuing education programs, or health professional associations.

This document sets out options for qualitative and quantitative evaluation that could be undertaken by educational providers, their sponsors, or COMPUS to evaluate the effectiveness of these tools and interventions. As part of the framework, selected qualitative survey tools were developed that can be used or adapted as part of evaluation of the educational interventions.

Methods

To assist in development of the evaluation framework, a number of activities were undertaken:

- A sample of educational providers were surveyed to collect input on current practices in continuing education and evaluation, challenges or barriers to effective evaluation, and evaluation needs
- Lessons and evidence from existing literature on evaluation of continuing education and educational outreach to health professionals were elicited
- Draft PPIs intervention tools such as physician and patient materials and slides for presentations at continuing education sessions were assessed using several different methods.

Two focus groups have also been conducted in British Columbia with physicians to collect physician feedback on the COMPUS printed educational materials on PPIs. This has informed development of the survey tools. In turn, the draft surveys were pre-tested with a convenience sample of physicians.

Survey tools for qualitative evaluation

The following survey tools were developed as part of the evaluation framework:

**For printed educational materials**
- Physician/pharmacist survey
- Survey for organizations disseminating materials

**For physician and pharmacist didactic presentations**
- Post-session physician and pharmacist surveys
- Post-session presenter surveys
For physician interactive presentation *
- Post-session presenter survey

For pharmacist interactive presentation
- Participant questions for case discussion
- Post-session presenter survey

For academic detailing
- Post-visit physician survey
- Survey for detailers

Recommended quantitative evaluation methods

This report presents two broad strategies for impact evaluation: first, a “policy level” evaluation involving before/after studies of educational interventions including a non-random control group, and second, an “academic level” evaluation involving cluster randomized trials and “designed delays” as a more rigorous approach.

This framework focuses on quantitative approaches using drug claims databases, since these have potential for broad application to test impacts of prescribing interventions. The key messages identified by COMPUS and stakeholders for the PPI interventions are conducive to this type of analysis.

The choice of either a “policy level” (i.e., more practical to implement) or “academic level” (i.e., more rigorous) approach to impact evaluation depends on balancing practical considerations such as timeliness with the desire for more reliability of results. The right choice of method will depend on the program and intervention being considered. Large sudden impacts can be measured at a “policy level,” whereas subtle gradual impacts are likely to require an “academic level” of design and analysis.

This report

Part I of this report presents an overview of qualitative and quantitative evaluation strategies.

In Part II, strategies for pre-intervention planning and evaluation are reviewed. These are grouped into an “environmental scan” phase, which involves considering stakeholders and existing messages being communicated to health professionals and patients, and a “formative evaluation” phase, when dissemination channels and tools are reviewed.

In Part III, post-intervention evaluation options are reviewed with respect to printed educational materials, continuing education meetings for physicians or pharmacists, and academic detailing.

A discussion of how this evaluation framework is generalizable to other drug classes is presented in Part IV.

* A commitment-to-change contract with follow-up survey and a pre-post test for physicians are also being developed and can be added to the evaluation framework in the future.
Appendices

I. References and suggested reading.
II. Draft survey tools for qualitative evaluation of selected PPI educational interventions, as described above.
III. A British Columbia Case Study discussing how the evaluation framework might be applied in British Columbia.
IV. A summary of what was heard from physicians in two focus groups in British Columbia about the printed educational materials and the moderator’s guide of questions that was used for facilitating the focus groups.
V. A summary of consultation with educational providers and individuals with expertise in using administrative databases for impact evaluation of educational interventions, carried out to inform the development of the evaluation framework.
OVERVIEW OF EVALUATION METHODS

COMPUS has developed evidence-based key messages to promote optimal prescribing and use of proton pump inhibitors (PPIs) and is producing a collection of intervention tools to disseminate these messages. The intervention tools are being developed in collaboration with experts in continuing professional development and include printed educational materials, physician and pharmacist educational presentations, patient education materials, and resources for academic detailing.

This report sets out options for qualitative and quantitative evaluation that could be undertaken by educational providers, their sponsors, or COMPUS to evaluate the effectiveness of these tools and interventions. Section I presents an overview of qualitative and quantitative evaluation strategies as a basis for the evaluation options discussed throughout the report.

When asked, “What is the most important evaluation question?” a Deputy Minister of Health once said, “What worked elsewhere and why?” The first half of the question can be answered by “quantitative” impact evaluations. The second half requires “qualitative” evaluations.

Applying that question to the effectiveness of COMPUS’s PPI materials on the prescribing and utilization of medicines in Canada, the two parts of the question are translated as follows:

**Quantitative:** Which materials had greater impacts and in which contexts and jurisdictions?

**Qualitative:** What were the differences between materials, contexts, and jurisdictions and the processes of their use that might explain their differences in impact?

The terms “qualitative” and “quantitative” are not exact when applied to types of studies. In common usage, qualitative studies are those that examine many types of observations and variables from a small number of subjects. For example, a focus group or a video recording of an academic detailing session provides information on body language, physical handling of materials, and intonation of a few participants. Such studies are best for generating hypotheses but more challenging to summarize without bias.

In contrast, quantitative studies examine a small number of variables from a large population of subjects. For example, counting the frequency of PPI claims in a drug database involves one or two simple questions that are easy to summarize with relatively little bias. But such a study does not generate hypotheses nearly as well as observations of face-to-face interactions.

Of course, quantitative methods are sometimes used to analyze transcripts of focus groups (e.g., counting the times a certain phrase is used), and population surveys often include qualitative open-ended questions with subjective answers that are hard to summarize quantitatively. Therefore, there is no sharp line between qualitative and quantitative studies. For example, a survey of 500 physicians with a few open-ended questions could be classified as either type. In this framework, such surveys are classified as qualitative. Qualitative studies are usually started before quantitative studies because of the need to generate hypotheses early.
A. Qualitative evaluation overview

Choosing methods for qualitative evaluation involves prioritizing what program managers most want to learn as well as considering program resources, the time commitments required of participants in evaluation, and the program capacity for carrying out evaluations. Methods vary in what can be learned from participants as well as the cost and complexity to complete the evaluation.

The following represents a brief summary of evaluation methods discussed later in this evaluation framework as they may be applied to the planning and implementation of various forms of educational interventions.

I. Surveys

Surveys are commonly used following an educational meeting or academic detailing visit as a low-cost and easily completed method of gathering information about participant attitudes, satisfaction, or expected behavioural change. Other purposes involve periodic needs assessment or questions aimed at providing feedback on program effectiveness.

**Advantages:** Surveys are popular because they are an inexpensive way to collect feedback from a large number of participants. Response rates can be increased in some cases by telephone follow-up or decreased by taxing respondents with too many questions. Likert scales can make surveys easier for both the participant and analyst and improve response rates. Open-ended questions may serve to gather more thoughtful responses but are more difficult to tabulate and analyze.

**Disadvantages:** Authors of surveys often overlook the most important issues that would emerge in a face-to-face interview or focus group. A classic example is a patient- or physician-satisfaction survey that shows that more than 90% are “satisfied,” yet conversations with the respondents reveal many of them have suggestions for major improvements.

II. Interviews

Interviews can range from quick, semi-structured conversations with a so-called “convenience sample” (a possibly unrepresentative but easy-to-reach selection) of health professionals who are very familiar with a particular educational program to pre-tested, structured interviews with a statistically representative sample drawn from lists of program participants or all physicians or pharmacists within a given area.

**Advantages:** As compared to a written survey, semi-structured interviews offer an opportunity to explore a topic such as assessment of educational materials in a more open-ended way.

**Disadvantages:** While a “convenience sample” of interviews can be cheap, conducting interviews with a representative sample of patients, physicians, or pharmacists is costly for participants and programs.

III. Focus groups

Focus groups of five to 15 persons represent an excellent way to generate unexpected insights and hypotheses while exploring people’s attitudes and behavioural reactions. There is also potential for exploring issues of changes in attitudes or expected behaviour change from educational meetings. A moderator's guide of questions is developed to serve as a basis for a semi-structured discussion. A
survey firm can be enlisted to assist with recruitment if capacity within an educational program is limited. Typically, two to four focus groups with similar types of participants are needed to bring out a range of opinion.

**Advantages:** The strength of focus groups is to explore attitudes and different points of view. Participants may express opinions more freely among their peers than to an interviewer. For example, a physician might express support for “evidence-based medicine” in an interview or survey but may admit in a focus group to skepticism because “I deal with individuals, not populations.”

**Disadvantages:** Getting busy health professionals to come to a focus group requires financial incentives. Even so, the type of health professional or patient who has the time and inclination to participate in a focus group is likely to be unrepresentative of the general population in unknown ways.

**IV. Educator diaries or logs**

Educator diaries may be a useful way to draw on a presenter or detailer’s observations during a workshop or academic detailing visit to give a picture of participant attitudes, audience response, or an educator’s ability to communicate particular messages. For example, one academic detailer interviewed for this report spoke about keeping a log to report the messages delivered at each physician visit, time spent in travel or in a physician’s office, and other observations.

**Advantages:** A log can be an aid to the educator, helping to highlight when, for example, a particular educational message is not being communicated. This can also serve to assist impact evaluation at a later date, since only messages that are regularly communicated can be expected to have an impact on physician behaviour.

**Disadvantages:** Logs and diaries tend to capture personal perspectives that can be distorted by the educator’s high or low self-image.

**V. Commitment to change contracts and follow-up surveys**

Commitment-to-change contracts are an approach sometimes used in conjunction with continuing education workshops for physicians or pharmacists. Participants are asked to specify practice changes they would take following an educational session or even sign a “contract” to this effect. After an interval such as three months, a carbon copy of the commitment is sent to session participants, who are at the same time surveyed to ask them which practice changes they have implemented in the intervening time.

As a variation, a full list of commitments identified by all participants can be sent to all session participants, whether they committed to these particular practice changes themselves or not. They are similarly surveyed about which of the practice changes they have personally implemented.

**Advantages:** This form of evaluation is also an intervention itself, as the evaluation is part of a quality improvement feedback cycle.

**Disadvantages:** Greater buy-in and trust is needed for individual feedback because the responses are not anonymous. Also, more organization is needed for follow-up.
VI. **Pre-post tests**

Continuing education sessions for physicians or pharmacists may use pre- and post-tests to evaluate changes to understanding or attitudes or even expected changes in practice. They can either be paper-based tests or tests using audience response systems, which can tabulate and show participant responses throughout the workshop. The use of these tests in some cases is useful for gaining appropriate credits for participation.

**Advantages:** This form of evaluation is also an intervention itself, as the evaluation is part of a very short quality improvement feedback cycle – the duration of the session.

**Disadvantages:** Buy-in and trust is needed for individual feedback because the responses are often not anonymous. The culture of testing may restrict the kinds of questions that are considered acceptable to ask.

**General challenges/barriers**

- For continuing education programs, one challenge cited is that the top priority is to deliver educational services to enable physicians to acquire CME credits; ensuring that their educational needs are met and effective evaluation is carried out are lower priorities.
- Response rate and time commitment of participants is a concern expressed by educational program managers. Busy health professionals have limited time to dedicate toward education or evaluation, and asking for too much feedback may decrease response rates or affect relationship building.
- A related challenge is ensuring the quality of responses from educational program participants.
- This can be related to lack of time on the part of health professionals or to the difficulty and margin of error related to self-assessment in the case of self-reported impacts such as commitment-to-change evaluations.
- Programs have limited time and resources to dedicate to evaluation, so higher cost approaches such as focus groups or commitment to change are more difficult to implement.

Qualitative methods can contribute to needs assessment and to evaluation of the design, delivery, and outcomes of programs’ – in this case, programs delivering educational interventions for physicians, pharmacists, or patients. These types of evaluation intersect with assessments of the credibility of programs or materials; the impacts on health professionals’ behaviour, attitudes and self-efficacy; as well as the knowledge and satisfaction of participants and the relevance and interest of topics.

**Conclusion**

Commonly used qualitative methods for assessment of educational interventions with health professionals are needs-assessment surveys, post-session surveys, and pre-post tests. Educational program managers gather useful information with these approaches, although some report that their evaluations do not tell them all that they would like to know about design, delivery, or outcomes of programs. There may be greater potential to make use of focus groups or commitment-to-change evaluations, although shortage of time and resources for more extensive evaluation is a significant constraint.
B. Quantitative evaluation: Strategies for impact evaluation using administrative databases

This summary aims to present two broad options for impact evaluation: first, a “policy level” evaluation that may be more practical to implement and, second, an “academic level” evaluation that would be more rigorous. This framework focuses on approaches using administrative claims databases, since these have potential for broad application to the measurement of impacts of prescribing interventions.

Measures of impact for PPI messages

Both the policy and academic levels of evaluation will use similar measures of impact of key messages on prescribing and drug utilization:

**Key Message 1:** Standard doses of PPIs may be used interchangeably because there are no clinically important differences among the various PPIs in the treatment of most acid-related GI conditions.²
- **Measure:** An increase in starting new patients on Pariet® or generic omeprazole versus the other brands of PPIs. Although this message applies only to initial therapy, an increase in frequency of switching from costly PPIs to Pariet, generic omeprazole, or histamine-2 receptor antagonists (H2RAs) may also be measurable.

**Key Message 2:** High or double-dose PPI therapy is generally no better than standard-dose therapy in the management of erosive esophagitis and non-steroidal anti-inflammatory drug (NSAID)-induced ulcers.²
- **Measure:** A decrease in new patients starting on double doses of PPIs plus an increase in frequency of patients showing a reduction in daily dosage of PPIs.

**Key Message 3:** PPIs are ineffective in the treatment of asthma, chronic cough, and laryngeal symptoms that may be associated with gastroesophageal reflux disease (GERD).²
- **Measure:** In theory, there should be a reduction in frequency of diagnosis of laryngitis associated with initiation of PPI therapy.

Those conducting an academic evaluation would be concerned that measuring the impact of Key Message 3 with prescription drug utilization data may be difficult. This would require linking drug claims data to data on physician diagnoses, and these diagnoses may not be sufficiently sensitive or specific to evaluate the impact of this key message. However, the potential for evaluating the impact of this message with administrative data could be explored within particular jurisdictions. Alternatively, surveying physicians might be required to explore the influence of this message.

Measures that might be used in evaluating possible impacts on health outcomes include:
- hospitalization rates for gastrointestinal hemorrhage
- hospitalization rates for major peptic ulcer disease complications
- rates of office visits for peptic ulcer disease, GERD, or gastritis.³
I. **Policy level evaluation of impacts**

In many cases, a basic type of natural experiment presents itself where an educational intervention is implemented in one jurisdiction but not another (such as a health region). This provides the opportunity to compare the impact of an intervention in a targeted area with a non-random control group (the area not receiving the intervention) by analyzing relevant measures of impact before and after the intervention. For example, some Canadian academic detailing programs have used variations of this approach to evaluate the impact of interventions involving academic detailing.4

a) **Data requirement**

This type of before/after evaluation requires access to relevant prescription drug claims before and after an educational intervention in each of the two jurisdictions chosen for comparison (for example, data for one year before and six months following dissemination of education materials or academic detailing visits). Patient-level claims data or aggregate data may be used. If large impacts on prescribing are observed in the drug data, the impact evaluations can be extended to comparisons of hospitalization rates and medical services.

**Advantages:** This approach to evaluation is relatively simple. As long as the two comparison regions are within the same province, then the same databases can be used and data access is also relatively simple. “Policy level” evaluations often use aggregate data rather than individual patient-level claims data, which may reduce concerns about data privacy protection and therefore speed access to data. Interprovincial comparisons, however, are often fraught with data access delays.

**Disadvantages:** A “policy level” approach to evaluation is prone to confounding factors that distort the evaluation findings. For example, different demographics from one region to another or different intensities of pharmaceutical marketing could influence prescribing patterns before or after the intervention takes place. Any change to public drug plan coverage for PPIs during the period of evaluation could also confound the data analysis.

II. **Academic level evaluation of impacts**

An approach offering more rigour as well as challenges is a cluster randomized trial. A relatively pragmatic approach is to implement the trial with a designed delay, where the participants in the control arm of the trial receive the educational intervention after a delay of three weeks to six months.5,6 Whereas the “policy level” of before/after analysis took place in the context of a sort of natural experiment, an intervention taking the form of a cluster randomized trial requires more up-front design.

a) **Randomized designed delays**

The simplest designed delay is to divide physician practice addresses by postal code into two equal groups, such as odd and even postal codes (e.g., as determined by the fourth or sixth character of the postal code; odd and even digits are probably allocated randomly relative to demographic characteristics). Alternatively addresses can be randomized properly using a spreadsheet (RAND function).

A tidier but more laborious process is to pair the addresses as follows. A sample of physicians is defined, such as the physicians targeted by a particular educational program (e.g., across a health region or province). “Clusters” of physicians will be defined, such as at the level of practices or groups of practices. These clusters are then paired with similar
clusters and, through a randomized process, one cluster in each pair is designated as part of the early intervention or designed delay group.

The designed delay group of physicians receives the intervention after a delay of approximately three weeks to six months. A shorter delay may be more practical to implement for some types of programs (e.g., academic detailing), although longer delays are preferable for more powerful statistical analysis of the trial. The fact that all participating physicians have the opportunity to receive the educational intervention – whether early or delayed – may make this approach more acceptable than a randomized trial where the control group does not eventually receive the same intervention.

How would this randomized delay take place in practice? It is probably easiest to implement in the case of the dissemination of printed materials, where some physicians or pharmacists could be mailed the materials on one date and others at a later date. This approach has been used by the Therapeutics Initiative in British Columbia since 1994 for the dissemination and testing of their newsletter, the Therapeutics Letter.7 Similarly, for educational meetings, some physicians or pharmacists could be invited to participate on particular date, whereas others could be invited to a meeting at a later date. Designed delays have also been piloted by some Canadian academic detailing programs.4

b) Measuring behaviour change

The “adjusted relative risk” of starting a particular prescription or dose can be calculated as an appropriate measure to compare prescribing outcomes in the early intervention and delayed control groups. For example, the “risk” could be the probability of prescribing generic omeprazole given that any PPI was prescribed. (This probability has also been named a “prescribing preference”). The “relative risk” is the ratio of that probability after the intervention to the probability before. The “adjusted relative risk” is the ratio in the Early group divided by the ratio in the Delayed group. (Thus, the “adjusted relative risk” is a ratio of probability ratios. Another name could be “adjusted preference ratio.”)6

c) Data requirements

If the impacts on prescribing are large, then the numerator of the probability may be sufficient (e.g., the number of prescriptions of generic omeprazole). Then analysis is possible using aggregate data (just as at the policy level of analysis). However, if the impact is more subtle, the “signal” may be lost in the “noise” (e.g., the monthly variation in total prescribing of PPIs might mask a subtle shift to generic omeprazole, unless the numerator is divided by the denominator – total monthly prescribing of PPIs). However, a more rigorous academic level of analysis requires access to patient-level prescription drug utilization data, rather than aggregated data.

General challenges/barriers in impact evaluation using administrative databases

Data access: For more rigorous evaluation using patient-level drug utilization data, data access processes tend to be more involved and time-consuming. For academic evaluations involving individual data, ethics review bodies such as university ethics committees for studies related to human subjects must be informed of measures to ensure confidentiality, anonymity, and security of data.
An alternative approach is to randomize by physicians’ postal codes, as described above. Data could be requested at an aggregate level of patients, according to their physicians’ postal codes. While this would sacrifice a degree of precision in analysis, it might help address privacy concerns and speed up data access.

**Sample size:** One challenge in conducting impact analysis is achieving a sample size sufficient to generate statistically significant results. For example, this is a problem encountered in British Columbia in evaluating the *Therapeutics Letter* and in evaluating academic detailing. A mailing of printed educational materials offers an opportunity for a larger sample, whereas other educational activities such as continuing education or academic detailing may have a larger challenge addressing this issue. Various remedies to small sample size could be explored.

In the case of evaluating the *Therapeutics Letter*, this problem was resolved by evaluating across several interventions.\(^7\) It was possible to aggregate across many (though not all) of these interventions, since a measure used for analysis was the proportion of patients who used therapies recommended in the newsletters. This method may not be applicable to all interventions, and also does not provide firm evidence of the effectiveness of any one intervention. However, it is one option to be considered for addressing sample size issues.

**Logistics:** Delaying an intervention for some of the potential participants when using a randomized “designed delay” may introduce logistical challenges of rolling out an educational intervention.

Detailers in at least one academic detailing program, for example, found that delaying the intervention for some physicians translated into more travel time, since it necessitated visiting many geographical areas twice to deliver the same message to different practices in a given area. To address this issue, this program is developing an evaluation design with fewer, larger clusters of physicians so that detailers will hopefully only need to travel to any given local area once per educational topic.

**Time and resources:** Impact evaluation using administrative databases requires more time and resources than many forms of evaluation. Significant time and additional resources are required for evaluation design, implementing interventions in a randomized way, and carrying out more specialized data analysis. This is likely best addressed at a provincial or inter-provincial level, where health ministries and agencies such as the Canadian Institute for Health Information could facilitate faster and more user-friendly access to data at the education program level.

**Conclusion**

The choice of either a “policy level” or “academic level” approach to impact evaluation depends on balancing practical considerations such as timeliness with the desire for more reliability of results. The above options have been framed as two approaches, while in fact there are additional variations of these options available and opportunities to experiment in practice to find what works in a given context. The right choice of method will depend on the program and intervention being considered.

While many challenges exist for any program wanting to undertake rigorous impact evaluation, some adjustments in methods may help address issues such as data access, sample size, or logistics. On a broader scale, it is clear that opportunities also exist at a provincial and inter-provincial level for developing systems to make impact evaluation an easier process for program managers.
Notably, data access processes that allow for faster access to data by researchers and programs within or across provinces are needed.

**PRE-INTERVENTION CONSIDERATIONS**

This section presents pre-intervention strategies for planning and evaluation in two phases. An “environmental scan” phase involves considering stakeholders and existing messages that are being communicated to health professionals and patients. A “formative evaluation” phase involves choosing dissemination channels and tools based on context and pre-testing of materials.

Evaluation strategies have been grouped into categories of low, moderate, or high cost to assist users of the evaluation framework to choose feasible approaches. These classifications represent only an approximate guide and are relative to other approaches within each list of evaluation options. For example, “moderate cost” focus groups to consult about a draft package of materials (in step 7) might cost more than a “high cost” approach to key-informant interviews (in step 1).

**A. Environmental scan: Local context and capacity**

1. **Who should look at these materials?** Key informant interviews to assess the capacity of local organizations to use the PPI materials and their appropriateness as sources of guidance to PPI physicians, patients, and other decision makers.

A range of organizations in each province may provide education or guidelines and have a stake in a major educational initiative on a major class of drugs such as proton pump inhibitors. Key informants from stakeholders such as provincial drug plans or guideline committees, continuing medical education programs, government or university-based research projects, and health professional associations could be consulted to determine how COMPUS’s messages and interventions fit into existing or planned guidelines or educational initiatives.

**I. Coordinating multiple channels of dissemination:**

For widely used drug classes or common health conditions, it is conceivable that different government, professional, or research organizations may be launching educational or policy programs at similar times. It makes sense for key providers of education or guideline dissemination to coordinate their efforts to promote efficient use of resources, clear communication, and shared learning and present complementary rather than possibly contradictory or confusing messages.

As an example, if provincial coverage changes, such as introduction of a maximum allowable cost policy, are under consideration in a given province, this is a key area where educational efforts need to take coordination into account.

Efforts to coordinate should at the same time be balanced with the need to move forward with education in a timely way.

Key informant interviews could be undertaken in a number of ways, including the following options.
Options:

a) Low cost: Consult the director of the provincial drug program for a decision.
b) Moderate cost: Staff of several education programs are interviewed by telephone.
c) Higher cost: Face-to-face discussion is needed to decide who disseminates the PPI materials.

It is recommended that efforts be made to consult with key relevant stakeholders at some level. Timelines, resources, and the number of local stakeholders will likely dictate which approach is most appropriate.

2. Are COMPUS’s messages consistent with current local messages from these and related organizations? Expert review comparing COMPUS’s PPI messages with existing guidelines, patient handouts, and drug program policies. What modifications might be needed to achieve consistency?

Preliminary assessment of the PPI materials’ consistency with these other local materials can be done by non-clinicians, but a quick review by a clinical pharmacologist may be needed to detect subtle inconsistencies.

Consistency of messages is important for providing physicians or pharmacists with clear, evidence-based guidance for clinical decision-making.

On another level, engaging with stakeholders and working toward consensus is important in developing buy-in from the organizations that would disseminate COMPUS materials or adapt them for local dissemination. For example, academic detailing programs in different provinces are expected to adapt the COMPUS-sponsored newsletter on PPIs to varying degrees while preserving some or all of the key messages set out in the original newsletter.

The following scenarios/options portray efforts to move toward consistency of messages using the example of a local guideline committee.

Options:

a. Low cost: A member of the local guideline committee compares COMPUS’s materials with local guideline for GERD and tells the committee of any discrepancies.
b. Moderate cost: The local guideline committee discusses whether inconsistencies must be resolved.
c. Higher cost: The committee decides to review COMPUS’s detailed report to assess the evidence for its finding if it is inconsistent with the local guideline.

3. What are anticipated opposing messages that could undermine COMPUS’s messages? Review by local gastroenterologists, patient organizations, and anticipated critics. Stakeholders assess the local need for additional packaging.

An awareness of messages that contradict key evidence-based messages is important for understanding how physicians may interpret the intervention within an existing frame of reference.
For example, one of COMPUS’s key messages on optimal prescribing practices states that there are “no clinically important differences among equivalently dosed PPIs in the treatment of most acid-related GI conditions.” However, in focus groups with physicians and pharmacists held to explore “practice gaps” in the use of PPIs, participants reported receiving information from pharmaceutical representatives suggesting that not all PPI medications are equally efficacious. This type of information is important to consider in designing or selecting intervention materials in order to respond appropriately to the existing messages that physicians and pharmacists are receiving.

Several channels exist for gathering information on current messages regarding accepted prescribing of PPIs, including the following options.

**Options:**

a. Low cost: Ask the provincial drug plan’s staff member most responsible for the local PPI policy what sort of opinions are being voiced about PPIs at present.
b. Moderate cost: Conduct a telephone interview with one or two local gastroenterologists and representatives of relevant patient organizations.
c. Higher cost: Develop an addendum to refute anticipated opinions and criticism.

### B. Formative evaluation: Choice of dissemination channels, methods, and tools

4. **What are the likely reactions of physicians to the main messages? Watch physicians respond to the materials and their main messages.**

It is recommended to have physicians (and perhaps pharmacists) review and provide feedback on draft materials to test the content and the format of the materials.

Physicians interpret new information within the context of their existing practices, beliefs, and understanding of the evidence. For example, physicians make prescribing decisions based on a range of information sources, such as peer or specialist opinion, experience in practice, educational sessions, industry detailers, or journal articles.

It is important to hear if physicians find key messages credible and whether they expect the evidence presented to them to confirm or change their current practices. Does a message contradict their experience? Would they make use of the prescribing aid or patient handout, or likely lose it among a heap of paper in their office or workplace?

The following options can be considered for gathering feedback from physicians.

**Options:**

a. Low cost: Hold interviews with a convenience sample of physicians in active practice.
b. Moderate cost: Conduct focus groups with physicians.
c. Higher cost: Hold interviews with a representative sample of physicians.

While a more reliable picture of physician views would be provided by focus groups or representative interviews, review by a convenience sample of physicians in close contact with the
educational program is often surprisingly informative. Frequently it is better to have a few unrepresentative assessments immediately than to wait longer for more representative assessments.

5. How much should be spent on dissemination, given the anticipated health or financial benefits from the desired changes in prescribing and drug utilization? Conduct a rough a priori cost-effectiveness assessment (i.e., sometimes called “ex ante” evaluation by health economists, meaning “before data collection”), based on existing systematic reviews of dissemination literature, to guide spending on dissemination of PPI materials.

From a public-policy perspective, one would always like to know the expected costs and benefits of any proposed educational intervention. The goal is not to prioritize cost savings over quality of care, but to help in making best use of resources that are available to benefit patient health.

In the context of health, costs are more easily estimated than benefits. For example, costs can be estimated based on previous interventions of a similar kind. Benefits are more difficult to estimate, whether they take the form of cost savings or improvements in patient health.

Once key messages and target behavioural changes have been identified, it may be possible to estimate the degree of behaviour change based on factors such as:
- success of similar types of interventions in influencing health professional behaviour, based on systematic reviews of guideline dissemination strategies
- existing policies such as maximum allowable cost in a given province
- evidence of a gap between existing and evidence-based practice.

In the case of PPIs, key messages focus largely on over-prescribing of PPIs, so the “benefit” of adherence to evidence-based prescribing could be estimated based on expected cost savings of prescribing change within a given province based on factors such as those cited above.

In cases where key outcomes of better prescribing are quality of life, these benefits may be more difficult to quantify (in monetary or non-monetary terms).

Options:

a. Low cost: Consult the director of the provincial drug program for a decision.
b. Moderate cost: Staff of education programs are interviewed about their costs.
c. Higher cost: Have a face-to-face discussion to decide on a budget for dissemination.

6. What will be included in the local packaging of the materials? Peer review or stakeholder advisory committee to review covering letters, speaker notes for academic detailers, prescribing feedback “portraits,” related topics presented at the same time, web-posted recordings of seminars, drug policies supported by the materials, etc.

COMPUS is producing a number of education materials on PPIs for physicians, pharmacists, and patients. At a provincial or local level, decisions need to be made about which materials and interventions are used and how these are combined with existing interventions. This returns to territory covered in the environmental scan, where stakeholders were consulted about existing messages and educational activities.
Examples:

- In provinces with academic detailing services, these programs are expected to adapt the COMPUS PPI newsletter, based on local needs. Other COMPUS materials may be used in their current form, such as the alternate prescription pad and prescribing aid.
- In provinces with individualized prescribing feedback programs or projects, a program developer may wish to develop material to complement the COMPUS materials or to adapt the materials in consultation with COMPUS.
- One or more provinces may be considering adopting a maximum allowable cost or other policy to reflect current evidence on PPI prescribing. A drug plan considering this option would likely plan to develop communications materials to communicate and consult with physicians and pharmacists, and these might be packaged and disseminated with COMPUS’s evidence-based materials.

The following options reflect possible scenarios for local packaging of COMPUS materials prior to dissemination.

Options:

a. Low cost: A covering letter.

b. Moderate cost: Local data on PPI utilization.


7. How do educators, physicians, pharmacists, and patients respond to the draft package? More interviews and focus groups plus pre-testing dissemination with brief surveys tailored to the mode of dissemination.

If a multi-faceted intervention is being developed or complementary materials are added to COMPUS materials for an intervention – such as individualized prescribing feedback or even the introduction of a drug plan policy – more review by physicians, pharmacists, and possibly patients is recommended. Development of a complex intervention may take the form of an iterative process where revised materials should be reviewed by physicians or pharmacists to ensure effectiveness.10

As in step 4, different options are available for consulting with physicians, pharmacists, or patients, depending on resource and time constraints and the degree of consultation that is needed.

Options:

a. Low cost: More interviews with a convenience sample of physicians or pharmacists in active practice.

b. Moderate cost: More focus groups with physicians or pharmacists.

c. Higher cost: More interviews with a representative sample of physicians or pharmacists.
POST-INTERVENTION: EVALUATION OPTIONS AND RECOMMENDATIONS FOR PPI INTERVENTIONS

This section presents post-intervention evaluation strategies for printed educational materials, presentations to physicians and pharmacists, and academic detailing.

Evaluation options have been grouped into categories of low, moderate, and high cost to assist in assessing the feasibility of each approach. As in the previous section of this report, these classifications represent only an approximate guide and are relative to other approaches within each list of evaluation options. For example, a “low cost” mail-back postcard to evaluate a mailed survey might cost more than a “moderate cost” commitment-to-change contract to evaluate a didactic session.

A. Printed materials

COMPUS is collaborating with experts in continuing professional development to produce a series of printed materials reflecting evidence-based prescribing of PPIs, including a newsletter, prescribing aid, alternative prescription pad, and a self-audit tool. This section contemplates which methods could be considered for evaluation of materials if they were disseminated by mail.

I. Low-cost surveys: Short fax-back survey of three to seven questions for physicians or pharmacists. Pre-paid postcard for feedback from patients.

A short fax-back or mail-in survey could be sent to physicians or pharmacists to collect opinions on the credibility, usability, and perceived impact of materials on prescribing or other clinical decisions. The questionnaire should ideally use a mix of open- and closed-format questions to elicit responses that are easily compared but provide a degree of explanation to be informative. A short survey is preferred to encourage a higher response rate.

Pre-paid postcard for feedback from patients is simple to produce but much harder to get a reasonable response rate from, given the quantity of junk mail sent to households. To produce a list of names and addresses of patients who use certain medications is regarded by some as an insurmountable obstacle on the grounds of drug data privacy. However, a solution that has been demonstrated to work is to “camouflage” the list of drug users with a random sample of non-users. If the postcards can be handed out by physicians to their patients, a much higher response rate can be expected. Only a small sample of physicians’ offices would need to be asked (or paid) to hand out these postcards and educational materials to patients receiving PPI prescriptions. However it would take a very dedicated physician to remember to give the materials to the patient.

II. Low-moderate cost: Interviews with a convenience sample of physicians or pharmacists.

To gain a greater depth of feedback, an option is to interview a convenience sample of users of the printed educational materials. For example, an ongoing education program is likely to have a number of familiar contacts such as physicians who could be approached for such purposes. Survey questions used would be similar to the brief fax-back survey, but follow-up questions could be used for clearer explanations. For example, if an alternative prescribing pad has been rarely used, what are the reasons for this? A convenience sample may not give a representative picture of a cross-
section of physicians, but it could give enough qualitative clues to the effectiveness or improvement of this intervention. Costs could be expected to remain low if a small convenience sample is used, since this minimizes costs for recruitment, participation incentives, interviews, and analysis.

III. High cost: Measure the quantitative impact on drug claims. Mail printed materials to half the physicians first, then to the other half after a three-month to six-month delay. Analyze aggregate trends in claims data.

Distribution of printed educational materials to a large group of physicians presents an ideal case for quantitative evaluation of the impacts on prescribing, although behavioural change may be less significant than in the case of other multi-faceted interventions such as academic detailing or audit and feedback.\textsuperscript{11,12}

Either a “policy level” or “academic level” evaluation could be undertaken, as described in the quantitative methods overview discussed previously. A randomized designed delay approach could be used by mailing educational materials to half the physicians first and to the other half after a delay of three to six months.\textsuperscript{7} In cases where hospitalization and physician visit diagnoses data are also available, linked to patient drug utilization data, health outcomes could be included in analysis.

Factors contributing to the cost of this type of evaluation include the time and human resources required for ethics reviews, data access processes, and study design and analysis. However, the actual implementation of randomized dissemination of printed materials adds little to the cost, since this involves delaying only a portion of the mailing of materials.

IV. High cost: Focus groups with physicians or pharmacists to discuss the usability and impact of the materials.

Focus groups could be used to explore how physicians or pharmacists have used materials and to assess possible impacts on practice. Surveys or telephone interviews may be more practical, since not all physicians or pharmacists recruited to a focus group would necessarily have a lot of experience with materials received by mail. If focus groups are used, typical costs include recruitment, participant incentives, rental of facilities, analysis, and reporting.

V. High cost: Representative interviews by telephone with physicians or pharmacists to discuss the printed materials.

Representative interviews with physicians or pharmacists may be worthwhile in the case of interventions using a collection of educational materials. This approach would provide a clear picture of how materials had been used and why. Interviews with a representative sample of physicians or pharmacists would involve additional costs as compared to using a smaller, convenience sample, due to added costs for recruitment, participant incentives, interviews, and analysis.

B. Didactic or interactive sessions

Educational sessions are being developed for both physicians and pharmacists in a didactic and interactive format. It is envisioned that these sessions will be made available as PowerPoint
presentations with supporting materials to enable local presenters in different provinces to deliver presentations to local audiences. This section briefly reviews some options for evaluating the sessions.

I. **Low-cost surveys:** Short end-of-sessions survey of three to 10 questions for physicians or pharmacists. Longer survey for presenters.

   This type of written survey of up to 10 questions can be filled out by participants at the end of continuing education sessions. These surveys are easily administered, although not all participants take the time to respond and answers may be rushed. A combination of open and closed-ended questions is recommended. To be most useful, questions should extend beyond satisfaction to expected change on practice, self-efficacy in evidence-based practice, and credibility of messages. These surveys are also used for basic needs assessment, such as helping to identify upcoming topics that would be of interest.

II. **Low cost:** Physicians or pharmacists complete a pre-post test of knowledge, “self-efficacy” (confidence in knowledge), or attitudes (e.g., using an “audience response system”).

   A pre-post test of knowledge, self-efficacy, or attitudes could be effective for evaluating the impact of a session and reinforcing session messages as well. This could take the form of a multiple-choice questionnaire or include some open-ended questions. Self-reflective questions on current and future practice at the beginning and end of a session could encourage behavioural change or provide information about the impact of the session.

III. **Low-moderate cost:** Interviews or surveys with presenters.

   Since COMPUS PPI presentations may be delivered by several different presenters across the country, it would be useful to draw on the expertise and experience of these presenters from their delivery of the sessions. Presenters’ perceptions could provide useful information about participant response and whether the materials served the needs of presenters in their different settings. This might include comfort level with the way evidence is presented in the COMPUS PowerPoint slides or the usefulness of other supporting documents, such as the scientific review, provided by COMPUS. Presenters could respond through written surveys or could be interviewed in person or by telephone.

IV. **Moderate cost:** Educators record their observations and interpretations in educator diaries over many sessions.

   Where a presenter is delivering a similar presentation in several different settings, use of an educator diary or log may be appropriate. In the diary, the presenter would record observations about the receptiveness of participants to messages or about their success or difficulty in delivering particular messages. The information collected would be similar to the surveys or interview of presenters, described above.

V. **Moderate cost:** Participants in an interactive presentation submit a commitment-to-change contract at the end of their sessions and are asked to complete a follow-up self-reflective survey three months later.

   Commitment-to-change statements are used both to evaluate and extend the educational process of continuing education sessions. Physicians or pharmacists who attended the session are asked
afterward about changes they expect to make in their practice. A follow-up questionnaire weeks or months afterward is used to query the physicians or pharmacists about actual changes they have made to practice. Studies have found that physicians who have made a commitment to change are more likely to make changes in practice or, in other words, these commitments have some reliability in predicting actual changes in behaviour.\textsuperscript{13,14}

VI. \textbf{High cost: Focus group discussions with a sample of participants immediately after several sessions.}\n
Focus groups with participants following educational sessions could offer a richer source of feedback on many of the issues that would be explored in post-session participant surveys. Physicians or pharmacists enrolling for a workshop or conference might be given the opportunity and an incentive to sign up for a focus group at the same time to make recruitment easier.

VII. \textbf{High cost: Analyze quantitative impact on drug claims. Record the physician identification numbers and dates of sessions. Compare trends in drug claims data of early participants versus later participants. Use multivariate analysis to reduce participant selection bias when “designed delays” or natural delays are not used.}\n
A “policy level” analysis of the impact of a continuing education program using a before/after comparison and non-random control group might be used, but the “signal” of an effect would be weak if only a small proportion of physicians within a given geographical area participated.

Various options could be considered for implementing an “academic level” analysis with randomized cluster trial and designed delays. One option is that clusters might be defined by CME areas, where physicians served by a particular program would be grouped together for purposes of randomization into early intervention and delayed control groups.

C. \textbf{Academic detailing}\n
Academic detailing programs in Canada have been very proactive in undertaking different forms of qualitative and quantitative evaluation to understand physician needs, effect quality improvement in materials and service delivery, and determine outcomes from academic detailing or multifaceted educational interventions.\textsuperscript{15} A key challenge has been balancing the desire for better evaluation and program development with the day-to-day demands of delivering these services.

What follows is a menu of options for evaluation of academic detailing services and accompanying materials.

I. \textbf{Low-cost surveys: Long survey for detailers. Short end-of-presentation survey of three to 10 questions for physicians.}\n
Short post-session surveys are used by some academic detailing programs to assess satisfaction with the content and delivery of the visit and the likelihood of behavioural change. As an alternative some programs use periodic surveys for similar purposes and for needs assessment such as identification of useful future topics.

The benefits of this form of evaluation are that it is relatively easy for the physicians to fill out and to assess, and it provides some useful information about the effectiveness of the program. At the
same time, ratings scale responses may not provide an adequate amount of explanation to contribute significantly to quality improvement or to explain motivations behind expected impacts on behaviour. Including a mix of open-ended questions may help provide additional useful information without over-taxing the time of the physician.

II. **Low-moderate cost: Interviews or surveys with a detailers.**

A survey of detailers on the acceptability and usefulness of academic detailing materials is an approach recommended in CADTH’s *Academic Detailing Templates.* Detailers are also well positioned to provide feedback on physician responses to messages and how well the physician/patient materials have served them as educators. For programs using the COMPUS PPI materials or messages, feedback from detailers could be collected either through interviews or a written survey and could be analyzed across programs.

III. **Moderate cost: Educators record their observations and interpretations in detailer diaries over many sessions.**

For detailers, keeping a log of observations from academic detailing visits may be an effective way to record and track physician responses or the detailer’s ability to communicate particular messages during a visit. For example, one detailer has mentioned that use of a log can highlight when a particular message is not being communicated. The detailer logs could be analyzed to help assess the usefulness of materials and the effectiveness of messages.

IV. **High cost: Hold focus group meetings in group practices to discuss quality improvement and impact of detailing.**

Focus groups may be a worthwhile way for academic detailing programs to collect information about the attitudes, self-efficacy, and impact of visits and materials on prescribing practices. If focus groups were used, it may be more practical to hold them on a more periodic basis and review the effectiveness of multiple interventions. For smaller programs in particular, it may be difficult to recruit participants. Focus groups would need to be run by an independent third party to ensure openness of discussion.

V. **High cost: Representative interviews by telephone with participants to discuss the presentations.**

Similar to focus groups, representative interviews of about 15 minutes in length would allow for a more in-depth discussion of barriers to behaviour change, feedback on program effectiveness, or acceptability of messages. A drawback is the time and resources required for recruitment, interviews, and reporting.

VI. **High cost: Analyze quantitative impact on drug claims. Record the physicians’ identification numbers and dates of sessions. Compare trends in drug claims data of early participants versus later participants. Use multivariate analysis to reduce participant selection bias when “designed delays” or natural delays are not used.**

Randomized designed delays have been piloted as a methodology for impact evaluation by a number of Canadian academic detailing programs, as have other similar randomized designs for evaluation. While efforts have met with some success in carrying out trials on this model,
challenges have included data access, achieving adequate sample size, logistical difficulties, as well as resource constraints.

Alternatives to some of the challenges could be explored, including the following:

- Randomizing physicians by postal codes and requesting data at an aggregate level of patients, according to their physicians’ postal codes. This may help address privacy concerns and speed up data access.
- Evaluate impacts across several interventions by a given program to increase sample size for analysis, similar to the model used to analyze the *Therapeutics Letter* in British Columbia.
- Plan designed delays with randomization by fewer, larger clusters of physicians to minimize extra travel required of detailers.

As discussed in the overview of quantitative approaches earlier in this report, educational interventions on the key messages identified by COMPUS and stakeholders present an opportunity for impact evaluation using administrative databases. Academic detailing programs could assess their previous experience in using designed delays or similar methods and discuss how methods might be adapted to allow for rigorous evaluation while addressing previous challenges.

**POST “POST-INTERVENTION”: FEEDING RESULTS OF EVALUATIONS INTO THE NEXT WAVE OF MATERIALS ON OTHER DRUG CLASSES**

**Purpose**: The purpose of an evaluation in an ongoing program is normally to produce improvements in the quality of future processes and outputs. Therefore, this Evaluation Framework was designed to be generalizable from PPIs to other drug classes. The process of using information from evaluations is not always straightforward. Accordingly, this section of the Framework outlines options for collecting information from the PPI evaluations and feeding them into COMPUS’s future processes and outputs.

**Context**: The feedback process can be viewed as part of a quality improvement cycle. Such a cycle is often called a “PDSA cycle,” referring to the four sequential steps, “Plan-Do-Study-Act.” The following applies the PDSA-concept to COMPUS’s development of PPI materials:

- **P**: The “Planning” phase primarily involved systematic review of evidence concerning PPIs.
- **D**: The “Doing” phase involved (a) extracting three actionable messages concerning appropriate changes in prescribing and utilization and will involve (b) the forthcoming dissemination of messages in the provinces and territories as well as within federal agencies.
- **S**: The “Studying” phase involves (a) a plan of options for evaluating the materials before and after they are disseminated (the present Framework) and (b) the forthcoming execution of some of those options by COMPUS and its clients, the users of materials.
- **A**: The “Acting” phase is a process of applying the lessons of the PPI evaluations to the next cycle. (The difference between the actions of “Acting” and “Doing” is that “Acting” is what an organization does to or with itself whereas “Doing” is what it does to things, other people, or organizations.)

The scope of this Evaluation Framework is mainly limited to the “Study” component of the PDSA cycle.
**Characteristics of future drug classes:** If the next drug class to be tackled by COMPUS was very similar to the case of PPIs (e.g., drugs with rapid effects that are widely used for symptomatic relief, such as NSAIDs), the surveys probably could be modified by merely tweaking a few questions, and almost identical dissemination channels would be expected to be used. Many steps in the Environmental Scan and Pre-intervention Evaluation phases of the Framework might be skipped the second time around because the answers for the PPI materials would apply to NSAID materials.

However, if the next drug class is potentially a life-saving drug for complex patients with no symptomatic relief, larger changes might be needed in the surveys. The more differences there are between PPIs and the next drug class, the more important it is to repeat with due diligence the Environmental Scan and Pre-intervention steps, because the answers may be very different. For example, if COMPUS’s next topic is an aspect of therapy for diabetes, a major difference is that diabetes patients often have cardiovascular co-morbidities and other care complexities. Different channels of dissemination may be needed for the materials to be effective.

**Planning and early doing phases:** The formative evaluation of the PPI materials themselves during the planning and early doing phases was beyond the scope of this Framework. (Formative evaluation in the Pre-intervention Phase of this Framework is restricted to the development of packaging and parallel educational materials.)

**Studying phase:** As COMPUS obtains feedback from the various evaluations of PPI materials, it is recommended that an evaluation-of-the-evaluation be done with one open-form question:

*Do you think this approach to evaluation will be useful for COMPUS’s next drug class?*

**Acting phase:** It is likely that COMPUS will be able to take some actions as a result of information from the evaluations of PPI materials. For example, it is normal for the first wave of any program to take a more ad hoc approach to formative evaluation. Therefore, it is likely that COMPUS will benefit from reflecting on how a formative evaluation of messaging can be incorporated earlier in the processes of evidence review and design of materials. For example, after a preliminary look at the evidence concerning the next drug class, focus groups with physicians could be conducted to help narrow the scope of evidence review, lighten the burden on COMPUS reviewers, and speed the materials into production sooner.
APPENDIX I: SUGGESTED READING

**Qualitative evaluation:**


**Quantitative evaluation:**


**Systematic reviews:**

APPENDIX II: QUALITATIVE SURVEYS

A. Overview:

These surveys represent recommended options for evaluation of the PPI interventions, although the best methods will depend on local needs and resources.

The following survey tools have been developed as part of the evaluation framework (included below):

a. Printed educational materials
   - Questions for physicians and pharmacists to evaluate the printed educational materials
   - Questions for organizations that have disseminated the materials

b. Physician didactic session
   - Questions for physicians to evaluate the physician didactic sessions
   - Questions for presenters at physician didactic sessions

c. Pharmacist didactic presentation
   - Questions for pharmacists to evaluate the pharmacist didactic sessions
   - Questions for presenters at pharmacist didactic sessions

d. Physician interactive presentation
   - Questions for presenters at physician interactive sessions

Also, other contractors are developing:
   - Commitment to change contract/follow-up survey
   - Pre-post test for physicians

e. Pharmacist interactive presentation
   - Questions for pharmacists to evaluate case-study or interactive sessions
   - Questions for presenters at pharmacist interactive sessions

f. Academic detailing surveys
   - Questions to evaluate the physician’s experience with the academic detailing
   - Questions for detailer’s after they have visited a physician

Each survey is presented in two parts. First, each survey includes a set of three to seven key questions, which can be used as a brief, ready-to-use survey (Short Survey). Second, additional questions are provided – a question bank – for developing a customized or longer survey, if desired (Long Survey).

In addition to the above survey tools, it is also recommended that COMPUS develop a brief web site user survey to collect information from new users who are visiting their web site to download the PPI intervention tools. This would allow COMPUS to learn what types of users are accessing the intervention tools and to ask users about their potential applications of the materials.
Survey 1: Questions for physicians and pharmacists to evaluate the printed educational materials (What was the quality of materials?)

These questions can be used to evaluate written educational materials used in education for physicians or pharmacists, such as academic detailing, larger-group interactive sessions, or dissemination by mail. The key questions can be used as a short survey, or a longer survey (10 to 15 minutes) can be developed from the long survey, to test the written educational materials (such as the newsletter, prescribing aid, alternate prescription pad, and physician self-audit tool).

Survey 2: Questions for organizations that have disseminated the materials (How useful were the printed educational materials?)

These questions are intended for organizations that have disseminated the printed educational materials, such as health professional associations, health authorities, or ministries of health. The purpose of surveying these organizations is to learn how the materials have been disseminated, how their use may be evaluated, what feedback has been received, and whether these organizations may be interested in similarly using educational materials on additional topics.

Survey 3: Questions for physicians to evaluate the physician didactic sessions (Promoting optimal drug therapy for physicians: How did we do?)

These questions can be applied to evaluate didactic sessions for physicians and are designed for very brief evaluations of the experience of attending physicians. This “End of Session” or “Exit Survey” would consist of four questions (shorter survey) or up to 10 questions for the attendees to rate their experience of the session. These questions would likely be administered at the end of a didactic session, before the attendees leave the session. Alternatively, the questionnaire could be taken home with the attendees with instructions (and an envelope) to fill it out and mail it back to the evaluation team.

Survey 4: Questions for presenters at physician didactic sessions (How did the session go from the presenter’s perspective?)

These questions are for the presenters of the didactic sessions, designed to briefly capture the success of the presentation from the perspective of the presenters and to capture, in a timely fashion, any suggestions for improvement.

Survey 5: Questions for pharmacists to evaluate the pharmacist didactic sessions (Promoting optimal drug therapy to pharmacists: How did we do?)

These questions can be applied to evaluate didactic sessions for pharmacists and are formulated for very brief evaluations of the experience of attending pharmacists. This short “End of Session” or “Exit Survey” would consist of four questions (short survey) or up to 10 questions for the attendees to rate their experience of the session. These questions would likely be administered at the end of a didactic session, before the attendees leave the session. Alternatively, the questionnaire could be taken home with the attendees with instructions (and an envelope) to fill it out and mail it back to the evaluation team.
Survey 6: Questions for presenters at pharmacist didactic sessions (How did the session go from the presenter’s perspective?)

These questions are for the presenters of the didactic sessions, designed to briefly capture the success of the presentation from the perspective of the presenters and to capture, in a timely fashion, any suggestions for improvement.

Survey 7: Questions for presenters at physician interactive sessions (How did the session go from the presenter’s perspective?)

These questions are for the presenters of the didactic sessions, designed to briefly capture the success of the presentation from the perspective of the presenters and to capture, in a timely fashion, any suggestions for improvement.

Survey 8: Questions for pharmacists to evaluate case-study or interactive sessions (Promoting optimal drug therapy: How did we do?)

These questions can be applied to evaluate the case-study or interactive sessions for pharmacists. This “End of Session” or “Exit Survey” would consist of three questions (short survey) or up to 10 questions for the attendees to rate their experience of the interactive session.

Survey 9: Questions for presenters at pharmacist interactive sessions (How did the session go from the presenter’s perspective?)

These questions are for the presenters of the interactive sessions, designed to briefly capture the success of the presentation from the perspective of the presenters and to capture, in a timely fashion, any suggestions for improvement.

Survey 10: Questions to evaluate the physician’s experience with the academic detailing (How did the detailing go?)

The goal of these questions is to achieve some systematic feedback on the physicians’ perceptions of the detailing’s effectiveness, the quality of the interaction, and the barriers to behaviour change. These questions can be used to evaluate the entire Academic Detailing experience from the perspective of the physicians. Other evaluation questions relating to the educational materials used and the other educational sessions are separate.

Survey 11: Questions for detailers after they have visited a physician (How did the session go from the detailer’s perspective?)

These questions are for academic detailers, designed to briefly capture the success of the detailing visit from the perspective of the detailer and to capture, in a timely fashion, any suggestions for improvement.
Short Survey #1: Questions for physicians and pharmacists to evaluate the printed educational materials

1. Do you feel these materials are useful for your day-to-day practice?
   
   Yes [ ] No [ ]

   Please explain:

   

2. What aspects of the written educational material did you find most useful?

   

3. Can you state a single thing that you might change about your practice because of what you learned in these written materials?

   


Long Survey #1: Questions for physicians and pharmacists to evaluate the printed educational materials

Credibility

1. What is the most important message, to you, contained in this material? (Please state in your own words.)

2. How adequately does the main message in the material achieve credibility? (Check one.)

   | very adequately | 1 | 2 | 3 | 4 | 5 | very inadequately |

3. Are there parts of the message that do not concur with your beliefs?
   
   [ ] Yes  [ ] No

   Which parts don’t concur and why?

4. Of the messages presented, what do you need to have more confidence in? (Check all that apply.)

   [ ] More references to peer-reviewed studies
   [ ] More evidence that this message is supported by specialists or disease groups
   [ ] More evidence that this message is supported by local experts
   [ ] More explanation of how this message could apply to my practice
   [ ] Other

5. Do you agree with this statement: “I would have no trouble acting on this message.”

   | totally agree | 1 | 2 | 3 | 4 | 5 | totally disagree |

Usability

1. Of the (number of) documents used, rate them from (1) the most helpful to (4) the least helpful.

(a) Newsletter

<table>
<thead>
<tr>
<th>most helpful</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>least helpful</th>
</tr>
</thead>
</table>

(b) Prescribing aid

<table>
<thead>
<tr>
<th>most helpful</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>least helpful</th>
</tr>
</thead>
</table>

(c) Alternate prescription pad

<table>
<thead>
<tr>
<th>most helpful</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>least helpful</th>
</tr>
</thead>
</table>

(d) Physician self-audit

<table>
<thead>
<tr>
<th>most helpful</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>least helpful</th>
</tr>
</thead>
</table>

2. Consider the one you rated #1, most helpful: Why is it most helpful and how do you think you will use this information?

3. Consider the one you rated #4, least helpful: Why isn’t it very helpful and what needs to be done to improve the usability of this information for you?

Impact

1. This information (asked for each piece of written information being evaluated) will change the way I currently practice. (Check one.)

<table>
<thead>
<tr>
<th>strongly agree</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>strongly disagree</th>
</tr>
</thead>
</table>
Please explain:

2. For the next patient coming to see me with GERD or other gastro-intestinal issues that may require a PPI, I would use the information (Check one):

- [ ] All of the time
- [ ] Most of the time
- [ ] Half the time
- [ ] Seldom
- [ ] Never
Short Survey 2: Questions for organizations that have disseminated the materials

1. Which COMPUS PPI materials did your organization disseminate? (Check all that apply.)
   - Newsletter
   - Prescribing aid
   - Alternate prescription pad
   - Physician self-audit

2. To how many and to whom did you send or distribute this material?

3. How did you distribute the materials?

4. What feedback did you collect on the impact of the materials?

5. Can you comment on the general responses to the material in terms of how useful it was and whether the recipients would incorporate this material in their practice?

6. Would your organization consider disseminating similar printed educational materials produced by COMPUS on FUTURE topics related to optimal prescribing?
   - Yes
   - No

7. What topics would you be MOST interested in seeing next?
Long Survey #2: Questions for organizations that have disseminated the materials

Dissemination

1. Were other materials packaged with COMPUS educational materials on PPIs for dissemination? Please specify types of materials (e.g., cover letter, prescribing portrait):

2. Please identify which types of health professionals were provided with printed educational materials and estimate how many in each category were provided with materials.

<table>
<thead>
<tr>
<th>Types of health professional provided with materials:</th>
<th>Number of health professionals provided with materials:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physicians</td>
<td></td>
</tr>
<tr>
<td>Pharmacists</td>
<td></td>
</tr>
<tr>
<td>Other(s):</td>
<td></td>
</tr>
</tbody>
</table>

3. Was a specific geographical region targeted for dissemination of the printed educational materials?

☐ Yes ☐ No

Please identify:

Feedback from physicians or pharmacists

1. Does your organization have a systematic way of collecting feedback from physicians or pharmacists who have received the printed educational materials?

☐ Yes ☐ No

Please describe:

2. What kind of response did you receive from the users of the material (i.e., what aspects of the educational materials were deemed to be most useful)?


3. What, if any, are the anticipated changes to practice that have been identified by users of the material?


4. What other topics have been identified by users as areas in which they would like to receive further information on optimal prescribing?


Short Survey #3: Questions for physicians to evaluate the physician didactic sessions

1. For its applicability to your practice, what has been the most important and relevant message for you?

2. Which of the key messages did you find the most discomfort with (if any), and why?

3. What is the most noteworthy aspect of your practice that you would change after having attended this session?

4. What could the presenter have done to improve the effectiveness or impact of the session?
Long Survey #3: Questions for physicians to evaluate the physician didactic sessions

1. Please rate your comfort level with the learning objectives summarized in the three key messages; and if you have any comments on the key message, please feel free to add them in the space provided.

All PPIs are equally efficacious as initial therapy (the major difference is cost).

| very comfortable | 1 | 2 | 3 | 4 | 5 | very uncomfortable |

Comments?

More may not always be better (double-dose PPIs may not be necessary).

| very comfortable | 1 | 2 | 3 | 4 | 5 | very uncomfortable |

Comments?

PPIs are not efficacious in the treatment of asthma, chronic cough, and laryngeal symptoms that may be associated with GERD.

| very comfortable | 1 | 2 | 3 | 4 | 5 | very uncomfortable |

Comments?

2. On average, how often do you see patients who are on PPIs (this could include patients who were prescribed a PPI by you or someone else)? (Select one.)

- [ ] Frequently (at least once a day)
- [ ] Sometimes (up to several times a week)
- [ ] Rarely (up to several times a month)
- [ ] Extremely rarely (I see this only a few times a year)
- [ ] Never
3. For those patients that are on PPIs, over what time period do the majority of your patients take a PPI? (Select one.)

- Very short term, such as for only one script (30 days)
- Short term, such as from one to four months
- Medium term, such as more than four months but less than a year
- Long term, such as for more than a year
- Very long term, such as for several years or more
- I don’t know (can’t even guess)

4. How often are those patients in your practice taking PPIs reassessed to determine the appropriateness of their dose or their continued need for the PPI? (Select one.)

- Always (every visit)
- Sometimes (every few months)
- Rarely (at least once per year)
- Extremely rarely or never (almost never)
- I don’t know (can’t even guess)

5. Would you be comfortable speaking to patients about the key issues raised in the session? (Select one.)

<table>
<thead>
<tr>
<th>very comfortable</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>very uncomfortable</th>
</tr>
</thead>
</table>

Please briefly comment on your comfort level:

6. (a) How important is it that you advise patients of the comparative costs of the various PPIs?

<table>
<thead>
<tr>
<th>very important</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>not important at all</th>
</tr>
</thead>
</table>

(b) How important is it that you to recommend lower-cost agents (such as H2 antagonists or antacids)?

<table>
<thead>
<tr>
<th>very important</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>not important at all</th>
</tr>
</thead>
</table>

(c) Can you briefly comment on the level of importance you indicated in parts (a) and (b) of this question?
7. How likely would you consider reassessing and/or changing the patient's medication to lower cost agents? (Check one.)

☐ Very likely
☐ Somewhat likely
☐ Neutral
☐ Somewhat unlikely
☐ Very unlikely

8. If you checked “somewhat” or “very likely” to the above question, when do you think you would take these actions? (check the most appropriate)

☐ Right away
☐ Within two months
☐ Within six months
☐ Within a year

9. Do you have any suggestions on how we could improve this presentation? Please be as specific as possible.


10. Please describe any significant obstacles to your applying each of the following key messages in your practice.

   All PPIs are equally efficacious as initial therapy (the major difference is cost).


   More may not always be better (double-dose PPIs may not be necessary).
PPIs are not efficacious in the treatment of asthma, chronic cough, and laryngeal symptoms that may be associated with GERD.
Short Survey #4: Questions for presenters at physician didactic sessions

Date and length of presentation: ______________________________

Description of the audience: ________________________________

Numbers in attendance: ________________________________

Format of session:  
- Didactic session  
- Interactive session (case study)  
- Other?  

Key questions:

1. What aspect of this session – time management, content, or delivery – needs to be improved in order to have more impact next time?

2. Overall, what single aspect of this session needs to be removed so that the session has more impact on the attendees (is better understood, better accepted, or likely to be better acted upon)?

3. What single thing needs to be added to this session so that it has more impact (is better understood, better accepted, or better acted upon) on the attendees?
### Long Survey #4: Questions for presenters at physician didactic sessions

Date and length of presentation: __________________

Description of the audience: __________________

Numbers in attendance: __________________

Format of session:  
- [ ] Didactic session  
- [ ] Interactive session (case study)  
- [ ] Other?  

<table>
<thead>
<tr>
<th>Length of session</th>
<th>Didactic session</th>
<th>Length of session</th>
<th>Interactive session (case study)</th>
<th>Length of session</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Key Questions:**

1. **What was your impression of the overall energy and enthusiasm for the subject (as evidenced by the level of questions and discussion)?**
   - [ ] Positive
   - [ ] Neutral
   - [ ] Uninspired
   - [ ] Unable to assess

2. **In terms of satisfaction, what was the response of the attendees concerning their:**
   - **(a) Interest in the material:**
     - very important 1 2 3 4 5 not important at all unable to assess
   - **(b) Support for the key messages:**
     - very important 1 2 3 4 5 not important at all unable to assess
   - **(c) Satisfaction with the material:**
     - very important 1 2 3 4 5 not important at all unable to assess
   - **(d) Satisfaction with your answers to their questions:**
     - very important 1 2 3 4 5 not important at all unable to assess

3. **The amount of evidence used to support the key messages in the PPI presentation was:**
   - [ ] Overwhelming
   - [ ] More than necessary
   - [ ] Just right
   - [ ] Insufficient
   - [ ] Unable to assess
4. The session was:

- [ ] Too long
- [ ] Just right
- [ ] Not long enough

5. Indicate the overall level of appropriateness of the quality of the evidence provided with the presentation on PPIs:

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>not appropriate at all</th>
</tr>
</thead>
<tbody>
<tr>
<td>very appropriate</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

6. What additional materials or detailings, if any, would have been helpful to you in preparation or delivery of this session?
Short Survey #5: Questions for pharmacists to evaluate the pharmacist didactic sessions

1. For its applicability to your practice, what has been the most important and relevant message for you?

2. Which of the key messages did you find the most discomfort with, if any, and why?

3. What is the most noteworthy aspect of your practice that you would change after having attended this session?

4. What could the presenter have done to improve the effectiveness or impact of the session?
Long Survey #5: Questions for pharmacists to evaluate the pharmacist didactic sessions

1. Please rate your comfort level with the learning objectives summarized in the three key messages; and if you have any comments on the key message, please feel free to add them in the space provided.

All PPIs are equally efficacious as initial therapy (the major difference is cost).

| very comfortable | 1 | 2 | 3 | 4 | 5 | very uncomfortable |

Comments?

More may not always be better (double dose PPIs may not be necessary).

| very comfortable | 1 | 2 | 3 | 4 | 5 | very uncomfortable |

Comments?

PPIs are not efficacious in the treatment of asthma, chronic cough, and laryngeal symptoms that may be associated with GERD.

| very comfortable | 1 | 2 | 3 | 4 | 5 | very uncomfortable |

Comments?
For those patients that are on PPIs, over what time period do the majority of your clients take a PPI? (Select one.)

- [ ] Very short term, such as for only one script (30 days)
- [ ] Short term, such as from one to four months
- [ ] Medium term, such as more than four months but less than a year
- [ ] Long term, such as for more than a year
- [ ] Very long term, such as for several years or more
- [ ] I don’t know (can’t even guess)

How often are those patients who are coming for PPI refills reassessed by their physician to determine the appropriateness of their dose or their continued need for the PPI? (Select one.)

- [ ] Always (every visit)
- [ ] Sometimes (every few months)
- [ ] Rarely (at least once per year)
- [ ] Extremely rarely or never (almost never)
- [ ] I don’t know (can’t even guess)

Would you be comfortable speaking to patients about the key issues raised in the session? (Select one.)

<table>
<thead>
<tr>
<th>very comfortable</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>very uncomfortable</th>
</tr>
</thead>
</table>

Please briefly comment on your comfort level:


2. How important is it that you advise patients of the comparative costs of the various PPIs?

<table>
<thead>
<tr>
<th>very important</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>not important at all</th>
</tr>
</thead>
</table>

3. How important is it that you advise patients about non-PPI or lower-cost agents (such as H2 antagonists or antacids)?

<table>
<thead>
<tr>
<th>very important</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>not important at all</th>
</tr>
</thead>
</table>
Can you briefly comment on the level of importance you gave to the two above questions?

4. Would you be comfortable speaking to physicians about the key issues raised in the session? (Select one.)

| very comfortable | 1 | 2 | 3 | 4 | 5 | very uncomfortable |

Please briefly comment on your comfort level:

5. How likely would you consider asking the physician to reassess or change the patient’s medication to lower cost agents? (Select one.)

- [ ] Very likely
- [ ] Somewhat likely
- [ ] Neutral
- [ ] Somewhat unlikely
- [ ] Very unlikely

6. If you checked “somewhat” or “very likely” to the above question, when do you think you would take these actions? (Check the most appropriate.)

- [ ] Right away
- [ ] Within two months
- [ ] Within six months
- [ ] Within a year
7. **Do you have any suggestions on how we could improve this presentation?**

Please be as specific as possible.
Short Survey #6: Questions for presenters at pharmacist didactic sessions

Date and length of presentation: __________________

Description of the audience: __________________

Numbers in attendance: __________________

Format of session:  
- Didactic session  
- Interactive session (case study)  
- Other?  

Key Questions:

1. What aspect of this session – time management, content, or delivery – needs to be improved in order to have more impact next time?

2. Overall, what single aspect of this session needs to be removed so that the session has more impact on the attendees (is better understood, better accepted, or likely to be better acted upon)?

3. What single thing needs to be added to this session so that it has more impact (is better understood, better accepted, or better acted upon) on the attendees?
Long Survey #6: Questions for presenters at pharmacist didactic sessions

Date and length of presentation: __________________

Description of the audience: __________________

Numbers in attendance: __________________

Format of session:
- Didactic session
- Interactive session (case study)
- Other?

Key Questions:

1. What was your impression of the overall energy and enthusiasm for the subject, as evidenced by the level of questions and discussion?
   - Positive
   - Neutral
   - Uninspired
   - Unable to assess

2. In terms of satisfaction, what was the response of the attendees concerning their:
   (a) Interest in the material:
      very satisfied
      1 2 3 4 5
      very unsatisfied
      unable to assess
   (b) Support for the key messages:
      very satisfied
      1 2 3 4 5
      very unsatisfied
      unable to assess
   (c) Satisfaction with the material:
      very satisfied
      1 2 3 4 5
      very unsatisfied
      unable to assess
   (d) Satisfaction with your answers to their questions:
      very satisfied
      1 2 3 4 5
      very unsatisfied
      unable to assess

3. The amount of evidence used to support the key messages in the PPI presentation was:
   - Overwhelming
   - More than necessary
   - Just right
   - Insufficient
   - Unable to assess
4. The session was:

☐ Too long
☐ Just right
☐ Not long enough

5. Indicate the overall level of appropriateness of the quality of the evidence provided with the presentation on PPIs:

<table>
<thead>
<tr>
<th>very appropriate</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>not appropriate at all</th>
</tr>
</thead>
</table>

6. What additional materials, if any, would have helped you in the preparation and delivery of this session?
Short Survey #7: Questions for presenters at physician interactive sessions

Date and length of presentation: __________________

Description of the audience: __________________

Numbers in attendance: __________________

Format of session:

☐ Didactic session  Length of session
☐ Interactive session (case study)  Length of session
☐ Other?  Length of session

Key questions:

1. What aspect of this session – time management, content, or delivery – needs to be improved in order to have more impact next time?

   [Blank box]

2. Overall, what single aspect of this session needs to be removed so that the session has more impact on the attendees (is better understood, better accepted, or likely to be better acted upon)?

   [Blank box]

3. What single thing needs to be added to this session so that it has more impact (is better understood, better accepted, or better acted upon) on the attendees?

   [Blank box]
Long Survey #7: Questions for presenters at physician interactive sessions

Date and length of presentation: __________________

Description of the audience: __________________

Numbers in attendance: __________________

Format of session:  
- Didactic session  Length of session
- Interactive session (case study) Length of session
- Other? Length of session

1. What was your impression of the overall energy and enthusiasm for the subject, as evidenced by the level of questions and discussion?

- Positive
- Neutral
- Uninspired
- Unable to assess

2. In terms of satisfaction, what was the response of the attendees concerning their:

(a) Interest in the material:

| very satisfied | 1 | 2 | 3 | 4 | 5 | very unsatisfied | unable to assess |

(b) Support for the key messages:

| very satisfied | 1 | 2 | 3 | 4 | 5 | very unsatisfied | unable to assess |

(c) Satisfaction with the material:

| very satisfied | 1 | 2 | 3 | 4 | 5 | very unsatisfied | unable to assess |

(d) Satisfaction with your answers to their questions:

| very satisfied | 1 | 2 | 3 | 4 | 5 | very unsatisfied | unable to assess |

3. The amount of evidence used to support the key messages in the PPI presentation was:

- Overwhelming
- More than necessary
- Just right
- Insufficient
- Unable to assess
4. The session was:
   - [ ] Too long
   - [ ] Just right
   - [ ] Not long enough

5. Indicate the overall level of appropriateness of the quality of the evidence provided with the presentation on PPIs:

<table>
<thead>
<tr>
<th>very appropriate</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>not appropriate at all</th>
</tr>
</thead>
</table>
Short Survey # 8: Questions for pharmacists to evaluate case-study or interactive sessions

Key questions:

1. Overall, how practical and relevant were the case studies to the situations you see in your practice environment? Please be specific.

2. How adequately did the cases follow from and build upon what you learned in the didactic part of the program? Please be as specific as possible.

3. In your opinion could anything be done to improve the enthusiasm and the engagement of the participants of either the large or small session?
Long Survey #8: Questions for pharmacists to evaluate case-study or interactive sessions

1. Which cases did you discuss? (Check all that apply.)
   - Case #1: Mr. Evans
   - Case #2: Susan George
   - Case #3: Frank Kelly
   - Case #4: Fran Brown

2. Overall, did you find any of these cases too academic?
   - Case #1: Mr. Evans
     - Yes
     - Maybe a bit
     - Not at all
   - Case #2: Susan George
     - Yes
     - Maybe a bit
     - Not at all
   - Case #3: Frank Kelly
     - Yes
     - Maybe a bit
     - Not at all
   - Case #4: Fran Brown
     - Yes
     - Maybe a bit
     - Not at all

3. Overall, how adequately did these cases reflect the situation you would typically see in the real world?

   | very adequately | 1 | 2 | 3 | 4 | 5 | very inadequately |

4. In your opinion, what was the quality of the discussion in the small group session?

   | very high quality | 1 | 2 | 3 | 4 | 5 | very low quality |

5. What could be done to improve the quality of the discussion in the small group session?

   

Evaluation Framework for COMPUS Intervention Tools on Proton Pump Inhibitors
6. In your opinion, what was the quality of the discussion in the large group session?

very high quality 1 2 3 4 5 very low quality

7. What could be done to improve the quality of the discussion in the larger group session?

8. What could be done, from your perspective, to improve the quality of these small group and larger group discussion sessions? (check any that apply)

☐ The discussion in the smaller group needs to be better facilitated.
☐ The discussion in the larger group needs to be better facilitated.
☐ The cases need to provide more detailing.
☐ The cases need to be simpler.
☐ There were too many cases; we could have done fewer in more depth.
☐ There weren’t enough cases; we could have done more in the time allowed.
☐ Other comments on the quality of the small or large group session:
Short Survey #9: Questions for presenters at pharmacist interactive sessions

Date and length of presentation: ______________________

Description of the audience: ______________________

Numbers in attendance: ______________________

Format of session: [ ] Didactic session Length of session
[ ] Interactive session (case study) Length of session
[ ] Other? Length of session

Key questions:

1. What aspect of this session – time management, content, or delivery – needs to be improved in order to have more impact next time?

2. Overall, what single aspect of this session needs to be removed so that the session has more impact on the attendees (is better understood, better accepted, or likely to be better acted upon)?

3. What single thing needs to be added to this session so that it has more impact (is better understood, better accepted, or better acted upon) on the attendees?
Long Survey #9: Questions for presenters at pharmacist interactive sessions

Date and length of presentation: __________________

Description of the audience: __________________

Numbers in attendance: __________________

Format of session:
- Didactic session
- Interactive session (case study)
- Other?

1. What was your impression of the overall energy and enthusiasm for the subject, as evidenced by the level of questions and discussion?

- Positive
- Neutral
- Uninspired
- Unable to assess

2. In terms of satisfaction, what was the response of the attendees concerning their:

(a) Interest in the material:

   | very satisfied | 1 | 2 | 3 | 4 | 5 | very unsatisfied | unable to assess |

(b) Support for the key messages:

   | very satisfied | 1 | 2 | 3 | 4 | 5 | very unsatisfied | unable to assess |

(c) Satisfaction with the material:

   | very satisfied | 1 | 2 | 3 | 4 | 5 | very unsatisfied | unable to assess |

(d) Satisfaction with your answers to their questions:

   | very satisfied | 1 | 2 | 3 | 4 | 5 | very unsatisfied | unable to assess |

3. The amount of evidence used to support the key messages in the PPI presentation was:

- Overwhelming
- More than necessary
- Just right
- Insufficient
- Unable to assess
4. The session was:

- [ ] Too long
- [ ] Just right
- [ ] Not long enough

5. Indicate the overall level of appropriateness of the quality of the evidence provided with the presentation on PPIs:

<table>
<thead>
<tr>
<th>very appropriate</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>not appropriate at all</th>
</tr>
</thead>
</table>
Short Survey #10: Questions to evaluate the physician’s experience with the academic detailing

Key questions:

1. Has this been helpful for you, and in what way? (Please be specific.)

2. Is there anything that was really new, surprising, or particularly memorable about this session?

3. Are there one or two things that you would do differently in your practice after this session? (Will this session reinforce what you already do?)

4. Would you like to hear about future academic detailing visits on other topics? (Would you recommend my session to any of your colleagues?)
Long Survey #10: Questions to evaluate the physician’s experience with the academic detailing

1. What is the most important key message you took away from the detailing visit? (Please state in your own words.)

2. How credible is the main message presented in the discussion? (Select one.)

   | very credible | 1 | 2 | 3 | 4 | 5 | not credible at all

3. Are there parts of the detailing experience that were particularly bothersome or that did not concur with your beliefs?
   - Yes
   - No

   If yes, which part?

4. Did you have enough time to ask questions of the detailer?
   - Yes
   - No

5. Were your questions answered adequately?
   - Yes
   - Sometimes
   - No

6. The detailing visit aims to inspire you to be confident in acting on the key messages provided. Of the messages presented by the academic detailer, is there anything you need to have more confidence in? (Check all that apply.)

   - More references to peer-reviewed studies
   - More evidence that this message is supported by specialists or disease groups
     - Any specialist(s) or group(s) in particular?
   - More evidence that this message is supported by local experts
   - More explanation of the relevance of this message and its application to my practice.
   - Other (please state)
7. Please select how likely you are to implement each of the following three key messages; and if you have any comments on the key messages, please feel free to add them in the space provided.

All PPIs are equally efficacious as initial therapy (the major difference is cost).

| very likely | 1 | 2 | 3 | 4 | 5 | very unlikely |

Comments?

More may not always be better (double-dose PPIs may not be necessary).

| very likely | 1 | 2 | 3 | 4 | 5 | very unlikely |

Comments?

PPIs are not efficacious in the treatment of asthma, chronic cough, and laryngeal symptoms that may be associated with GERD.

| very likely | 1 | 2 | 3 | 4 | 5 | very unlikely |

Comments?
Quality of the detailing:

1. Can you comment on the length of the detailing visit? (Check one.)
   - [ ] Too long
   - [ ] Just right
   - [ ] Too short

   Comments?

2. Is there something about the detailing visit that was irritating or blocked you from accepting the key messages? (Please be specific.)

3. Can you state in one specific way how you might apply this information?

Barriers to change:

1. What do you think are the key barriers to changing how you currently practice with PPIs? Check any that apply.
   - [ ] I think that I am already rationally prescribing PPIs to patients, therefore there’s not much room to improve.
   - [ ] Many specialists promote high dose PPI treatments of certain PPIs and this may be a barrier to my adapting to the key messages.
Many of my patients need a high dose PPI to start with, and so I am not inclined to start them on a lower dose.

I don’t think it’s necessary to consider the price of the prescription when I make a prescribing decision.

I believe PPIs have a place in treating respiratory symptoms that sometimes accompany GERD, so I will continue to use them in that manner.

2. Other barrier? (Please state.)

3. What is the one thing that you need from the next detailing visit that could help you overcome the key barrier you identified?
Short Survey #11: Questions for detailers after they have visited a physician

Date and length of detailing: __________________

Name of the physician: __________________

Other factors affecting the quality of the detailing (business of the office, etc.):

Key questions:

1. What aspect of this detailing – time management, content, or delivery – needs to be improved in order to have more impact next time?

2. Overall, what single aspect of this session needs to be removed so that the session has more impact on the attendees (is better understood, better accepted, or likely to be better acted upon)?

3. Overall, are there any characteristics of this particular physician that I need to remember for next time so that my detailing will have more impact (is better understood, better accepted, or likely to be better acted upon)?
4. What single thing needs to be added to (or removed from) this detailing so that it has more impact (is better understood, better accepted, or better acted upon) by the physician?
Long Survey #11: Questions for detailers after they have visited a physician

Date and length of detailing: __________________

Name of the physician: __________________

Other factors affecting the quality of the detailing (business of the office, etc.):

1. What was your impression of the overall energy and enthusiasm for the subject, as evidenced by the level of the physician’s questions and the quality of the discussion?
   - Positive
   - Neutral
   - Uninspired
   - Unable to assess

2. In terms of satisfaction, what was the response of the physician concerning his or her:
   (a) Interest in the material:

<table>
<thead>
<tr>
<th>very satisfied</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>very unsatisfied</th>
<th>unable to assess</th>
</tr>
</thead>
</table>

   (b) Support for the key messages:

<table>
<thead>
<tr>
<th>very satisfied</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>very unsatisfied</th>
<th>unable to assess</th>
</tr>
</thead>
</table>

   (c) Satisfaction with the material:

<table>
<thead>
<tr>
<th>very satisfied</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>very unsatisfied</th>
<th>unable to assess</th>
</tr>
</thead>
</table>

   (d) Satisfaction with your answers to their questions:

<table>
<thead>
<tr>
<th>very satisfied</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>very unsatisfied</th>
<th>unable to assess</th>
</tr>
</thead>
</table>

3. The amount of evidence used to support the key messages in the visit on PPI’s was:
   - Overwhelming
   - More than necessary
   - Just right
   - Insufficient
   - Unable to assess
4. **The session was:**

- [ ] Too long
- [ ] Just right
- [ ] Not long enough

5. **Indicate the overall level of appropriateness of the quality of the evidence provided with the presentation on PPIs:**

- [ ] Very appropriate
- [ ] Somewhat appropriate
- [ ] Neutral
- [ ] Somewhat inappropriate
- [ ] Not appropriate at all
APPENDIX III: EVALUATION FRAMEWORK FOR COMPUS MATERIALS ON PPIS: CASE STUDY IN BRITISH COLUMBIA

The first draft of the evaluation framework was tested by trying to apply it to the circumstances in British Columbia. This resulted immediately in some improvements in the draft framework, such as the inclusion of the section on pre-intervention considerations. It was decided to develop this strategy further by doing a more thorough application of the framework to the circumstances in British Columbia, using other drug classes as illustrations if necessary.

To stimulate additional thoughts about possible additional dimensions for evaluation of the whole process of managing dissemination of COMPUS Materials on PPIs, this case study uses a modified checklist of 12 Attributes of Effectiveness that originated in the 1990s from the Canadian Comprehensive Auditing Foundation (CCAF). The following table shows the modified checklist, and further explanation of each attribute can be found in text boxes throughout the case study.

<table>
<thead>
<tr>
<th><strong>CCAF’s 12 Attributes for Effectiveness (adapted for this framework)</strong></th>
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<tbody>
<tr>
<td><strong>1.</strong> Direction: Does everyone understand what they [the PPI materials] are meant to be doing?</td>
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<tr>
<td><strong>2.</strong> Relevance: Do [new] activities [and materials] continue to make sense in terms of addressing means for which they [the organizations] were intended?</td>
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<tr>
<td><strong>3.</strong> Appropriateness: Are we going about our objectives in the right way [if we disseminate the materials]?</td>
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<td><strong>4.</strong> Responsiveness: How well does this organization anticipate and respond to change [and opposing messages]?</td>
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<tr>
<td><strong>5.</strong> Acceptance: Do those who use a program or service [or package of materials and its dissemination channel] judge it to be satisfactory?</td>
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<tr>
<td><strong>6.</strong> Secondary impacts: What are the unintended effects of our activities, be they positive or negative? (omitted)</td>
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<td><strong>7.</strong> Costs and productivity: Is output increasing while costs are decreasing? Are unit costs appropriate?</td>
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<td><strong>8.</strong> Financial results: How do revenues compare with costs? How do assets compare with liabilities?</td>
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<td><strong>9.</strong> Working environment: Does the working environment promote commitment, initiative, safety, and employee development?</td>
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<td><strong>10.</strong> Protection of assets: How well protected are key resources?</td>
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<td><strong>11.</strong> Monitoring and reporting: Does everyone have the information about the evaluation? Is it used?</td>
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<tr>
<td><strong>12.</strong> Achievement of intended results: What succeeded? What failed? How challenging were the goals?</td>
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* This list of attributes has been adapted from the CCAF’s 12 Attributes for Effectiveness, as described in: BC Ministry of Children and Family Development, Corporate Accountability and Performance Framework."
A. Environmental scan: Local context and capacity

1. Who should look at these materials?

The Pharmaceutical Services Division (PSD, hereafter referred to by its old name, PharmaCare) of the BC Ministry of Health, as a contributor to COMPUS and a leading payer for PPIs in BC, has the greatest interest in evaluating and using the PPI materials. PharmaCare may decide to delegate that evaluation and use to one of several organizations that it sponsors.

PharmaCare sponsors several educational programs for physicians, including academic detailing by the Community Drug Utilization Program in North Vancouver; the bimonthly *Therapeutics Letter* produced by the Therapeutics Initiative at the University of BC; the annual Drug Therapy Course sponsored by the Therapeutics Initiative; and an ongoing program through the University of British Columbia’s Faculty of Medicine’s Division of Continuing Professional Development and Knowledge Translation called “Education for Quality Improvement of Patient Care” (EQIP).

Alternatively, PharmaCare may decide to evaluate and use the PPI materials itself for its direct communications to physicians and patients. PharmaCare operates a telephone Help Desk serving both physicians and patients. PharmaCare also communicates directly by fax and occasionally by telephone with physicians who are applying for prior authorization (“Special Authority”) for their patients to be covered by PharmaCare.

In addition, PharmaCare has indirect connections with a variety of other educational initiatives. It has representatives on the Guidelines and Protocols Advisory Committee, a joint program of the Ministry of Health and the BC Medical Association. PharmaCare is consulted by other members of the Ministry of Health on updates for the web-based BC Health Guide, the Ministry’s official lay guide to self-care for consumers. Researchers involved in EQIP were approached by developers of the new curriculum for nurse practitioners for advice on instruction materials concerning pharmaceuticals.

### CANADIAN COMPREHENSIVE AUDITING FOUNDATION’S 12 ATTRIBUTES OF EFFECTIVENESS

#1. Direction: Does everyone understand what they [PPI materials] are meant to be doing?

Some may regard the direction or purpose of the PPI materials to be to directly influence physicians via the educational messages. Others may regard the direction or purpose to be to facilitate other ways to influence prescribing, such as providing independent evidence supporting a change in insurance coverage for PPIs.

At the time of writing, no decision had been made on what channels of dissemination in BC will be used for COMPUS’s PPI materials. Several of the above-mentioned alternatives presented themselves. The following are speculations by the researchers producing this framework on issues that could influence the choice of which channel to choose.
a) The Therapeutics Letter

Since 1994, the Therapeutics Initiative has sent its bimonthly newsletter concerning evidence-based prescribing to all physicians in British Columbia. Only occasionally has the Therapeutics Initiative mailed out materials supplied by another organization. One option for the Therapeutics Initiative would be to send out COMPUS PPI materials with a short covering commentary on what COMPUS is and why physicians should follow its recommendations.

A question the Therapeutics Initiative would need to answer is whether such materials could be mailed out without its normal practice of offering local specialists the opportunity to comment on drafts as is usual with the Therapeutics Letter. Another question is whether COMPUS PPI materials are consistent with previous messages in the Therapeutics Letter. The third question concerns the timing of the mailing. If the Therapeutics Initiative has two or three draft Therapeutics Letters already in the pipeline, they might want to delay mailing of PPI materials. PharmaCare might not want to wait so long and might choose an alternative channel for dissemination.

One of the advantages of using the Therapeutics Initiative channel is that it facilitates impact evaluation of the PPI materials. The Therapeutics Initiative is set up to conduct routine analysis of the impact of the Therapeutics Letter by using a three-month delay in mailing to randomly selected communities from a set of matched pairs of communities comprising approximately 20% of the province.

b) Community Drug Utilization Program

Since 1993, a small program of academic detailing has operated in North and West Vancouver in association with the Department of Pharmacy at Lions Gate Hospital. From the beginning, the BC Ministry of Health has pondered whether to expand the program to other jurisdictions. Uncertain about the return on investment, the Ministry has repeatedly opted to continue the program on a small scale with periodic evaluation.

One of the challenges of disseminating the PPI materials through this channel, besides the obvious one that it serves only about 100 physicians, is that the topics for academic detailing visits are selected to interest participating physicians because visits are voluntary. To decide whether the PPI materials would be of interest to physicians, it is necessary to interview or conduct focus groups with a small sample. The number of physicians who participate regularly in the Community Drug Utilization Program is itself a small sample. One strategy would be for the North Vancouver physicians and the pharmacist who visits them to be field testers of the PPI materials before they are sent to the entire province.

c) Annual Drug Therapy Course

For the past decade, this course has been offered every spring in Vancouver to an audience of 200 to 300 physicians and other health professionals. Although initiated and managed by a physician and a pharmacist who were prominent members of the Therapeutics Initiative, the course is financially independent from the Therapeutics Initiative and PharmaCare. It is a two-day course comprising about a dozen brief lectures on recent topics of interest concerning pharmaceutical therapy. The only difference between this course and standard didactic sessions of continuing medical education is that the course uses a pushbutton audience response system to engage the large numbers of attendees in occasional interactive multiple-choice exercises or opinion surveys. The PPI materials could be disseminated in this course in association with the special didactic sessions. The organizers of the course would need to decide whether the topic was of sufficient
interest for their audience compared with multiple other topics of current interest. One possible approach would be to use the materials during a session discussing the origin and function of COMPUS. This would be a method of obtaining audience feedback on the didactic session and materials. Unfortunately the next course is being held at the end of March 2007, so the next opportunity to use and evaluate the PPI materials in the course would be one year from now.

d) Education for Quality Improvement of Patient Care (EQIP)

EQIP is a new program launched by PharmaCare after two years of planning in collaboration with the BC Medical Association. The centrepiece of EQIP is the provision to physicians of a confidential individual portrait of their prescribing of certain classes of medications. The first portrait will concern antihypertensives. The second will concern statins. COMPUS’s PPI materials could be the third topic, approximately one year from now. However, there is another, earlier way that EQIP could be the vehicle for disseminating PPI materials.

Like the Therapeutics Letter and periodic evaluations by the Community Drug Utilization Program, EQIP will use the method of “designed delays” to monitor its impact on prescribing. Half the general practitioners of BC will be in the early group, and the other half will be delayed by six months to one year. One option is for the PPI materials to be disseminated immediately to the “Delayed” group of general practitioners and to the “Early” group after a six-month to one-year delay. This would be analogous to a crossover trial.

Questions for EQIP’s Working Group (a joint committee of the BC Ministry of Health and the BC Medical Association, with representatives from several other groups) would be to what extent does the dissemination of the PPI materials distract the EQIP implementation team from its primary responsibilities? and what would be the additional cost of such dissemination? Also, should prescribing portraits of PPIs be produced or is the topic of PPI prescribing not a high enough priority on which to spend limited EQIP funds?

e) Guidelines and Protocols Advisory Committee (GPAC)

PharmaCare is unlikely to choose GPAC as the primary dissemination channel for PPI materials because the scope and agenda of GPAC is so broad. However, if GPAC revises its guidelines for the treatment of peptic ulcer or GERD in the near future, PharmaCare might supply GPAC with COMPUS’s PPI materials for possible dissemination to the physicians with the revised guideline.

f) Coordinating multiple channels of dissemination

Illustrating some of the possible challenges of disseminating the PPI materials in a province with multiple channels for educating physicians, is the example of hypertension therapy. In 2006, the BC Ministry of Health and the BC Medical Association agreed on disseminating a “Hypertension Flowsheet” – a chart insert to improve ongoing monitoring of hypertension patients that physicians are paid to use (an annual fee per patient with hypertension.) The flowsheet was approved by GPAC. After the flowsheet was in widespread use, GPAC began updating its guidelines for the treatment of hypertension. At the same time, EQIP was independently developing educational materials focussed on first-line prescribing for uncomplicated hypertension. In the midst of this, the Therapeutics Letter of January-February 2007 focus was that general practitioners should use Cochrane reviews to apply evidence in daily practice; the example used was treatment of uncomplicated hypertension.
g) Direct dissemination by PharmaCare

PharmaCare rarely communicates directly to physicians for purely educational purposes. Normally educational messages are supplementary to an announcement of a policy change. For example, if COMPUS’s PPI materials had been available in 2004, it is likely that BC PharmaCare would have included them in its mailings to physicians and pharmacists announcing its 2004 policy of preferential listing of rabeprazole (Pariet).

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#3. Appropriateness: Are we going about our objectives in the right way [if we disseminate the materials]?

Each organization will assess PPI materials and address the question whether it is appropriate for them to be disseminating those materials given their organization’s objectives.

2. How consistent are the PPI materials with current local messages from these and related organizations?

As indicated in paragraphs above, the decision concerning which channel(s) to choose for dissemination of COMPUS’s information requires assessment of the consistency of COMPUS’s messages with local messages. In BC, past issues of the Therapeutics Letter the Community Drug Utilization Program’s newsletters, and GPAC’s guidelines on the treatment of peptic ulcer and GERD, are available online. Preliminary assessment of the PPI materials’ consistency with these other local materials can be done by non-clinicians, but a quick review by a clinical pharmacologist may be needed to detect subtle inconsistencies.

To illustrate the subtle aspects of assessing consistency, again consider the example of hypertension therapy. The BC Ministry of Health and the BC Medical Association’s agreed upon “Hypertension Flowsheet” and GPAC’s current guidelines for the treatment of hypertension are both quite vague about which classes of drugs are appropriate for first-line treatment of hypertension. They state that any of the following drug classes are appropriate as initial monotherapy: thiazide diuretics, angiotensin converting enzyme (ACE) inhibitors, angiotensin receptor blockers (ARBs), or dihydropyridine calcium channel blockers. In contrast, the Therapeutics Letter was explicit about the evidence on the superiority of thiazide diuretics for most patients. Some would say that the guidelines are consistent with the Therapeutics Letter, just slightly more permissive. Others would declare that the guidelines are not evidence-based and are inconsistent with the Therapeutics Letter message.

If the dissemination of PPI materials is considered a high priority, it may be necessary to convene a meeting of representatives of these different organizations to achieve a consensus on the consistency of COMPUS’s messages with official local messages.
3. What are the anticipated opposing messages that could undermine COMPUS’s messages?

An awareness of messages that contradict key evidence-based messages is important for understanding how physicians may interpret the intervention within an existing frame of reference.

For example, in the case of hypertension therapy, although evidence and guidelines still stress starting with thiazide monotherapy, focus groups with general practitioners revealed that combination therapy (prescribing two or more types of antihypertensives) is an accepted practice. Knowledge of the popularity of combination therapy may influence the packaging of evidence supporting thiazide monotherapy.

B. Formative evaluation: Choice of dissemination channels, methods, and tools

As a result of the environmental scan of local context (Section A above), it may be decided that more thorough inquiries are needed to decide which channels to use for dissemination and what additional packaging is needed.
1. What are the likely reactions of physicians to the main messages?

One approach is to assume that additional packaging may be needed and to conduct a focus group with physicians asking them what packaging and what channels of dissemination would be most believable to them.

In BC, focus groups revealed that many physicians are skeptical of the Therapeutics Initiative and consider it a virtual arm of government (PharmaCare). General practitioners rely on specialists even if they think that specialists are likely to be unduly influenced by financial connections with the pharmaceutical industry. Physicians, particularly specialists, pride themselves in knowing technical information about pharmacology and physiology of medications and rarely pride themselves on knowing statistical information concerning effectiveness and adverse outcomes. For example, the rationale for antihypertensive combination therapy based on a biochemical explanation for synergy between two classes of medications in lowering blood pressure is likely to be more influential than statistical evidence showing little or no difference in major adverse outcomes between monotherapy and combination therapy in mild hypertension.

Often overlooked in the formative evaluation of printed educational materials is the fact that review of preliminary drafts produces greater local consensus than existed before critics joined in the review of the draft documents. One of the challenges for COMPUS’s materials is the lack of local consensus produced by local development. Initial objections to the materials are often not evidence-based, and critics modify their viewpoint to some degree when they scrutinize the evidence more closely.

2. How much should be spent on dissemination, given the anticipated health benefits or financial benefits from the desired changes in prescribing?

In BC, with the policy of preferential listing of rabeprazole established for the past three years, the financial benefits to PharmaCare from slightly better adherence by physicians to the policy are likely to be few and small. In contrast, in provinces where PPIs are still relatively unrestricted, very large financial benefits may be derived from more price-conscious prescribing. This kind of informal “ex ante” (i.e., beforehand) assessment of the economic benefit of intervention may result in a change of direction of the PPI education initiative.
Systematic review of evidence for educational materials can be costly. Local packaging of COMPUS materials can also be quite costly. However if these costs are averaged over the dissemination to every physician in the province, the unit cost can be quite low.

In BC, an estimated cost of each issue of the Therapeutics Letter is $10,000 to $20,000, or between $2 and $4 per doctor. The estimated cost of EQIP adding an individual prescribing portrait is $40,000 to $80,000 in total, or $10 to $20 per general practitioner. A large portion of the costs of both the Therapeutics Letter and EQIP materials is embedded in the review process, including expert committee meetings that cost $3,000 per meeting.

3. **What will be included in the local packaging of the materials?**

Having done a rough estimate of costs and benefits of the various methods of dissemination, a decision needs to be made on what additional packaging will be produced, if any. This decision is not unidirectional. For example, in BC, when preparing draft prescribing portraits for antihypertensives, focus groups with physicians revealed that the portraits were initially too complicated. Physicians pleaded for one simple message. Given the difficulty of communicating quantitative information to physicians, a prescribing portrait may influence the educational message packaged with it. By analogy, it is possible that production of PPI prescribing portraits would result in a small twist on the COMPUS messages. For example, if the diagnosis of GERD is not accurate in the databases used to make the portraits, the COMPUS message about PPI use for laryngitis secondary to GERD might be downplayed.

From the perspective of COMPUS, a method of evaluating how the PPI materials are used in the different provinces would be to collect all the packaging from across Canada and look for patterns, including both replications and contradictions.

4. **How do educators, physicians, pharmacists, and patients respond to the draft package?**

In BC, the production of antihypertensive prescribing portraits that are acceptable to physicians and to the EQIP Working Group has taken four iterations across seven months. It is hoped that the same formats can be applied to other drug classes, such as PPIs, so the duration and cost of development can be substantially reduced. However, every time a focus group identifies a major weakness in draft materials, it is clear that costly mistakes are being prevented and the value of focus groups is underscored.
From the perspective of COMPUS, a method of evaluating the PPI materials would be to collate transcripts or summaries of focus groups and the decisions that followed. Comparisons of different approaches to evaluating the packaging materials and different provinces would also be edifying.

C. Post-intervention: Evaluation options and recommendations

1) Printed materials

In BC over the past decade, there have been a number of projects involving some dissemination of printed materials mostly to physicians but sometimes to patients. When these materials have been tested by focus groups or interviews, those tests were usually done in advance of dissemination. Relatively little qualitative assessment has been done after the educational interventions.

An exception was a recent chart insert pilot study in which a package of printed materials concerning prescribing statins was sent to the general practitioners across the province, and they were invited to participate in a paid 15-minute telephone interview. Eight per cent of general practitioners accepted. A series of questions, with five-point Likert scale answers, was posed to 200 physicians. Among the interviewed physicians, two thirds welcomed a simple display of relative prices of the most common medications. They were much less enthusiastic about more complex displays needed to communicate evidence of effectiveness using bar graphs.

BC has used the method of randomized delayed mailings to evaluate the Therapeutics Letter, prescribing portraits, guidelines for two lab tests, sleep and anxiety guides for patients, and sample chart inserts. There has been publication bias reporting of these evaluations. The positive ones have been published whereas those that showed no impact were not published.

2) Didactic sessions

The Annual Drug Therapy Course in Vancouver has used an “audience response system” for the past decade, as much as a tool for enhanced learning as for evaluation of the didactic sessions. The common technique is to pose several questions at the beginning of the session and then the same
questions at the end of the session and to compare responses before and after. This tool is considerably more informative than the usual hurried hand-in survey at the end of a session, or worse, at the end of a long series of sessions on one day. The information collected from audience response systems is immediate and public, and the percentages voting yes or no are displayed on the projected screen in front the audience instantaneously.

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**#11. Monitoring and reporting: Does everyone have the information about the evaluation? Is it used?**

The immediacy of the audience response system evaluation increases its impact on subsequent didactic sessions. Ideally other types of evaluations would also have a substantial impact on future interventions but usually this is not the case.

3) **Interactive sessions**

In small interactive sessions, there is greater peer pressure to complete an end-of-session evaluation form. Usually more time is available per topic during interactive sessions, the participants feel less tired, and also the fact that they have interacted with other members of the group increases their willingness to contribute suggestions and ideas for improvement in response to open-form questions. The Better Prescribing Project conducted in BC included not only a retrospective survey recalling the impacts of four different small interactive sessions during the past six to nine months, but also the subgroup analysis of changes in prescribing associated with responses on that survey. Physicians who reported that they had changed their prescribing in the survey showed a larger change in prescribing in the PharmaCare claims database.

4) **Academic detailing**

Impacts of academic detailing in BC were initially evaluated by comparisons of trends in drug claims data between North Vancouver (intervention community) and Richmond (the control community). Later, a randomized crossover trial was conducted with a six-month delay between the early and delayed groups of physicians. The cost of a rigorous evaluation design and data analysis was considerably higher, but offers the opportunity for additional grant funding and meta-analysis across multiple topics of academic detailing.

Researchers in BC participated in the Canadian Academic Detailing Collaboration’s process evaluation, including time and motion studies using academic detailers’ logs or diaries, mailed surveys to physicians who either did or did not participate in academic detailing, and expert review of printed materials by specialists in visual communications.
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#9. Working environment: Does the working environment promote commitment, initiative, safety, and employee development?

#10. Protection of assets: How well protected are key resources?

Of all the methods of dissemination, academic detailing involves the greatest commitment to development of local talent and expertise on detailing. An important aspect of evaluation that is easy to overlook is the working conditions of the detailers and degree of risk of losing the investment in local talent. It is hoped that COMPUS’s PPI materials enhance the job satisfaction and efficiency of academic detailing without threatening funding for academic detailing due to perceived redundancy.
REFERENCES


