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COMPUS

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Evaluation Framework for COMPUS Intervention Tools

Supporting Informed Decisions

À l'appui des décisions éclairées

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Canadian Optimal Medication Prescribing and Utilization Service

Evaluation Framework for COMPUS Intervention Tools

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TABLE OF CONTENTS

ABBREVIATIONS

CAC	COMPUS Advisory Committee
CCAF	Canadian Comprehensive Auditing Foundation
CERC	COMPUS Expert Review Committee
COMPUS	Canadian Optimal Medication Prescribing & Utilization Service
GERD	gastroesophageal reflux disease
GI	gastrointestinal
PPI	proton pump inhibitor
NSAID	non-steroidal anti-inflammatory drug

1 INTRODUCTION

In March 2004, the Canadian Optimal Medication Prescribing and Utilization Service (COMPUS) was launched by the Canadian Coordinating Office for Health Technology Assessment (CCOHTA) — now the Canadian Agency for Drugs and Technologies in Health (CADTH) — as a service to federal, provincial, and territorial jurisdictions and other stakeholders. COMPUS is a nationally coordinated program funded by Health Canada.

The goal of COMPUS is to optimize drug-related health outcomes and cost-effective use of drugs by identifying and promoting optimal drug prescribing and use. Where possible, COMPUS builds on existing applicable Canadian and international initiatives and research. COMPUS goals are achieved through three main approaches:

- identifying evidence-based optimal therapy in prescribing and use of specific drugs
- identifying gaps in clinical practice, then proposing evidence-based interventions to address these gaps, and
- supporting the implementation of these interventions.

Direction and advice are provided to COMPUS through various channels, including the following:

- the COMPUS Advisory Committee (CAC), which includes representatives from the federal, provincial, and territorial health ministries and related health organizations.
- the COMPUS Expert Review Committee (CERC) whose members are listed on page ii of this document. The mandate of CERC is advisory in nature and is to provide recommendations and advice to the COMPUS Directorate at CADTH on assigned topics that relate to the identification, evaluation, and promotion of best practices in the prescribing and use of drugs across Canada.
- stakeholder feedback.

2 COMPUS TOPICS

CAC has identified proton pump inhibitors (PPIs) and management of diabetes mellitus as being priority areas for optimal practice initiatives, based on the following criteria:

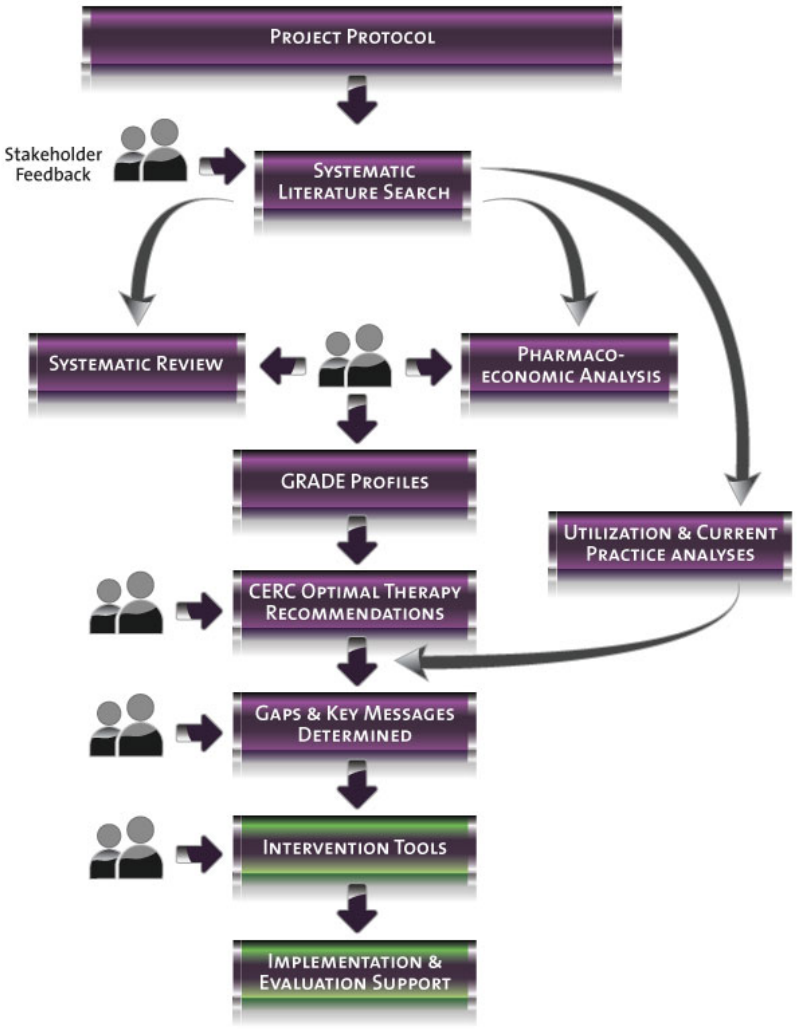
- large deviations from optimal utilization (overuse or underuse)
- size of patient populations
- impact on health outcomes and cost-effectiveness
- benefit to multiple jurisdictions
- measurable outcomes
- potential to effect change in prescribing and use.

3 OVERVIEW OF EVALUATION FRAMEWORK PROJECT

This diagram (on the right) illustrates the implementation of optimal drug therapy and evaluation steps in the COMPUS process. Evaluation occurs at the jurisdictional levels. Each jurisdiction evaluates the impact of implementation and shares its respective findings with COMPUS.

Support is provided by COMPUS to assist jurisdictions with the implementation of evidence-based interventions and evaluation frameworks.

COMPUS contracted the Drug Policy Futures research group at the University of Victoria in British Columbia to develop a generic evaluation framework that can be used for supporting the evaluation of current and future COMPUS topics. This framework is intended to assist those interested in evaluating the impact of interventions or initiatives designed to improve prescribing and use.



4 OVERVIEW OF EVALUATION METHODS

COMPUS produces intervention tools to disseminate educational messages on optimal drug therapy to health professionals and patients. Educational messages are based on comprehensive scientific reviews of available evidence and economic evaluations. The intervention tools are developed in collaboration with experts in continuing professional development and may 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 evaluations that could be undertaken by educational providers, their sponsors, or COMPUS to evaluate the effectiveness of these tools and interventions. Sections 1 and 2 present 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 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.

4.1 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; so do 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.

4.1.1 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 assessments 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 the 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.

4.1.2 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.

4.1.3 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 *chang*e 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 the ability 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 scepticism 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.

4.1.4 Educator diaries or logs

Educator diaries may be a useful way to draw on a presenter's or detailer's observations during a workshop or academic detailing visit as they can present 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.

4.1.5 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 these session participants, who are simultaneously surveyed on 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.

4.1.6 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.

4.1.7 General challenges/barriers

- One challenge cited as a top priority for continuing education programs is to deliver educational services that enable physicians to acquire continuing medical education 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 affected by lack of time on the part of health professionals or by 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[1] — 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' behaviours, attitudes, and self-efficacy; as well as the knowledge and satisfaction of participants, and the relevance and interest of topics.

4.1.8 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.

4.2 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.

4.2.1 Measures of impact

A preliminary step to undertaking an impact evaluation using administrative claims data is to identify specific measures within available data that will provide evidence of whether the educational intervention has changed drug utilization.

Factors to consider in identifying measurable outcomes for an intervention include:

- Identifying a clear prescribing or health outcome that would be predicted to occur, based on an educational intervention.
- Clarifying whether administrative claims databases in a given province contain data on the relevant patient populations, prescription drugs, and/or patient diagnoses. For example, some drug claims databases contain only data for publicly covered prescription drugs, not for every drug that may be prescribed.

In many cases, some messages from an educational intervention to health professionals will be measurable, whereas other messages will not be. To ensure that the impact of key messages will be measurable, it is preferable to consider impact measures during the development of these messages.

Example — PPIs
For COMPUS's PPI materials, both the policy and academic levels of evaluation could 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 gastrointestinal (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 enough 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]

4.2.2 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 requirements

This type of before-and-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 the drug classes of interest during the period of evaluation could also confound the data analysis.

4.2.3 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 a 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. Returning to the example of PPIs, 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 intervention control group divided by the ratio in the delayed intervention control 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., for the PPI topic, this might be 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., in the case of PPIs, 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.

4.2.4 General challenges/barriers in impact evaluation using administrative databases

a) 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.

b) 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.

c) 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.

d) 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.

4.2.5 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 options described here 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.

5 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).

5.1 Environmental Scan: Local Context and Capacity

1. ***Who should look at these materials?*** *Key informant interviewers to assess the capacity of local organizations to use the COMPUS materials and their appropriateness as sources of guidance to 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.

a) *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 the 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 the 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: Interview the staff of several education programs by telephone.
c) Higher cost: Face-to-face discussion is needed to decide who disseminates the 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 messages with existing guidelines, patient handouts, and drug program policies. What modifications might be needed to achieve consistency?

Preliminary assessment of the COMPUS 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.

In the case of PPIs, COMPUS's evidence-based review and materials helped led to changes in Nova Scotia's public drug coverage policies for PPIs. Changes reflected COMPUS's key messages on the therapeutic equivalency of PPIs and double-dose PPI therapy. COMPUS materials have been adapted for use in Nova Scotia and other provinces by academic detailing programs and others.

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 guidelines 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 local guidelines or public drug plan coverage.

3. What are anticipated opposing messages that could undermine COMPUS's messages?

Review by local specialists, 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, for PPIs, 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."[8] 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.[9] 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, including the following options.

Options:

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

5.2 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 offices or workplaces?

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 COMPUS 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 the 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: Interview staff of education programs 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 may produce several types of educational materials, including newsletters and materials for presentations to physicians and pharmacists. 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 may choose to adapt a COMPUS newsletter based on local needs while using other COMPUS materials, such as an alternate prescription pad or prescribing aid without alteration.
- 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.
- A public drug plan may choose to change a provincial drug coverage policy in response to a COMPUS review and current evidence, as occurred in Nova Scotia following COMPUS's review of PPIs. 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 or messages.

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 relevant drug utilization.
c. Higher cost: Feedback for physicians on individual prescribing.

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.

6 POST-INTERVENTION: EVALUATION OPTIONS AND RECOMMENDATIONS FOR COMPUS 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.

6.1 Printed Materials

This section contemplates which methods could be considered for evaluation of interventions using printed educational materials such as newsletters disseminated by mail.

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

To evaluate printed educational materials, 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. A questionnaire for this evaluation 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.

A patient survey could be used to evaluate patient educational materials. A 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 specific types of patients (e.g., for an intervention on PPIs, this could be patients receiving PPI prescriptions). However, it would take a very dedicated physician to remember to give the materials to the patient.

6.1.2 Low to 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 rarely been 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.

6.1.3 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 educational materials to a large group of physicians presents an ideal case for quantitative evaluation of the impacts on prescribing. (However, evidence suggests that behavioural change will be less significant from an intervention featuring only printed educational materials than in the case of other multi-faceted interventions, such as academic detailing or audit and feedback.[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.[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 the 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 educational materials adds little to the cost, since this involves delaying only a portion of the mailing of materials.

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

Focus groups could be used to explore how physicians or pharmacists have used educational 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.

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

Representative interviews with physicians or pharmacists on educational materials may be worthwhile. 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.

6.2 Didactic or Interactive Sessions

As part of its offerings of educational tools on optimal drug therapy, COMPUS may produce materials for presentations to physicians and pharmacists in didactic and interactive formats. These sessions are made available as slide 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.

6.2.1 Low-cost surveys: Short end-of-session 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 a continuing education session. 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.

6.2.2 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 the session could encourage behavioural change or provide information about the impact of the session.

6.2.3 Low to moderate cost: Interviews or surveys with presenters.

Since presentations featuring COMPUS materials 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.

6.2.4 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 previously.

6.2.5 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.[13,14]

6.2.6 High cost: Focus group discussions with a sample of participants immediately after several sessions.

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.

6.2.7 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.

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 trials and designed delays. One option is that clusters might be defined by continuing medical education areas, where physicians served by a particular program would be grouped together for purposes of randomization into early intervention and delayed control groups.

6.3 Academic Detailing

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 multi-faceted educational interventions.[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 the evaluation of academic detailing services and accompanying materials.

6.3.1 Low-cost surveys: Long survey for detailers. Short end-of-presentation survey of three to 10 questions for physicians.

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 overtaxing the time of the physician.

6.3.2 Low to moderate cost: Interviews or surveys with detailers.

A survey of detailers on the acceptability and usefulness of academic detailing materials is an approach recommended in CADTH's *Academic Detailing Templates*.[4] 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 materials or messages, feedback from detailers could be collected either through interviews or a written survey and could be analyzed across programs.

6.3.3 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.

6.3.4 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.

6.3.5 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.

6.3.6 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.[15] 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.

7 POST "POST-INTERVENTION": FEEDING RESULTS OF EVALUATIONS INTO THE NEXT WAVE OF MATERIALS ON OTHER DRUG CLASSES

7.1 Purpose

The purpose of an evaluation in an ongoing program is normally to produce improvements in the quality of future processes and outputs. The process of using information from evaluations is not always straightforward. Accordingly, this section of the Framework outlines options for collecting information from completed evaluations and feeding them into COMPUS's future processes and outputs.

7.1.1 Application of Plan-Do-Study-Act to COMPUS intervention tools

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 educational materials:

- **P**: The "Planning" phase primarily involves systematic review of evidence concerning a drug class identified for review.
- **D**: The "Doing" phase involves: (a) extracting three actionable messages concerning appropriate changes in prescribing and utilization, and will involve (b) the 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 current Framework), and (b) the execution of some of those options by COMPUS and its clients, the users of materials.
- As COMPUS obtains feedback on a given drug class from the various evaluations of its materials, it is recommended that an evaluation of the evaluation be done with one open-ended question:
  Do you think this approach to evaluation will be useful for COMPUS's next drug class?
- **A**: The "Acting" phase is a process of applying the lessons of these 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.)
- At this last phase in the PDSA cycle, COMPUS would be in a position to choose whether to change its approach to message or materials development, dissemination strategies, or evaluation for a future drug class.

APPENDIX I: SUGGESTED READING

Qualitative evaluation:

Green J, Thorogood N. *Qualitative methods for health research*. London: Sage; 2004.

Krueger RA, Casey MA. *Focus groups: a practical guide for applied research*. 3rd ed. London: Sage; 2000.

Pope C, Mays N. *Qualitative research in health care*. 3rd ed. Malden MA: Blackwell; 2006.

Morse JM. *Qualitative research methods for health professionals*. 2nd ed. London: Sage; 1995.

Patton MQ. *Qualitative research & evaluation methods*. 3rd ed. London: Sage; 2002.

Quantitative evaluation:

Bowling A. *Research methods in health: investigating health and health services*. 2nd ed. Philadelphia: Open University Press; 2002.

Crombie IK, Davies HTO. *Research in health care: design, conduct and interpretation of health services research.* New York: Wiley; 1996.

Donner A, Klar N. *Design and analysis of cluster randomization trials in health research*. London: Arnold; 2000.

Peat J. *Health science research: a handbook of qualitative methods*. London: Sage; 2002.

Shadish WR, Cook TD, Campbell DT. *Experimental and quasi-experimental designs for generalized causal inference*. Boston: Houghton Mifflin; 2002.

Systematic reviews:

Bloom BS. Effects of continuing medical education on improving physician clinical care and patient health: a review of systematic reviews. *Int J Technol Assess Health Care* 2005;21(3):380-5.

Grimshaw JM, Thomas RE, MacLennan G, Fraser C, Ramsay CR, Vale L, et al. Effectiveness and efficiency of guideline dissemination and implementation strategies. *Health Technol Assess* 2004;8(6):iii-iv,1-72. Available: http://www.ncchta.org/execsumm/summ806.htm (accessed 2006 Mar 9).

APPENDIX II: QUALITATIVE SURVEYS

Overview

These surveys represent recommended questions to elicit feedback for any intervention and can be adapted to meet the exigencies of the specific topic.

The following survey tools have been adapted from the general evaluation framework related to PPIs and have been modified to fulfill a more generic role.

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

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

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

4. **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

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

6. **Academic detailing surveys**
- Questions to evaluate the physician's experience with the academic detail
- 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-mentioned survey tools, it is also recommended that COMPUS develop a brief website-user survey to collect information from new users who are visiting the COMPUS website to download the any of these survey 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 the 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 to 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 detail (How did the detail go?)

The goal of these questions is to achieve some systematic feedback on the physicians' perceptions of the detail'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. How would you rate these materials in terms of how useful they are in your day-to-day practice?

Very useful	**1**	**2**	**3**	**4**	**5**	**Not useful at all**

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

Most helpful	**1**	**2**	**3**	**4**	**5**	**Least helpful**

(b) Prescribing aid

Most helpful	**1**	**2**	**3**	**4**	**5**	**Least helpful**

(c) Alternate prescription pad

Most helpful	**1**	**2**	**3**	**4**	**5**	**Least helpful**

(d) Other _____

Most helpful	**1**	**2**	**3**	**4**	**5**	**Least helpful**

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 (ask for each piece of written information being evaluated) will change the way you currently practice. (Check one.)

Strongly agree	**1**	**2**	**3**	**4**	**5**	**Strongly disagree**

Please explain:

2. For the next patient presenting themselves with this condition, you would use this information (Check one.):

- ☐ All of the time
- ☐ Most of the time
- ☐ Half of the time
- ☐ None of the time
- ☐ Seldom
- ☐ Never

Short Survey #2: Questions for organizations that have disseminated the materials

1. Which COMPUS intervention materials did your organization disseminate? (Check all that apply — this list could be added to, depending on the specific intervention materials.)

- ☐ Newsletter
- ☐ Prescribing aid
- ☐ Alternate prescription pad
- ☐ Other_____

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, i.e., whether the recipients would incorporate this material in their practice?

Very useful	**1**	**2**	**3**	**4**	**5**	**Not useful at all**

6. Do you agree or disagree with this statement: Our organization would consider disseminating similar printed educational materials produced by COMPUS on FUTURE topics related to optimal prescribing?

Strongly agree	**1**	**2**	**3**	**4**	**5**	**Strongly disagree**

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 these COMPUS educational materials 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.

Types of health professional provided with materials:	Number of health professionals provided with materials:
☐ Physicians	
☐ Pharmacists	
☐ Other(s):	

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. How did the users of this material judge its usefulness?

Very useful	**1**	**2**	**3**	**4**	**5**	**Not useful at all**

3. What aspects of the educational materials were deemed to be most useful)?

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

5. 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 have 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.

Message #1:_____.

Very comfortable	**1**	**2**	**3**	**4**	**5**	**Very uncomfortable**

Comments?

Message #2:_____.

Very comfortable	**1**	**2**	**3**	**4**	**5**	**Very uncomfortable**

Comments?

Message #3:_____.

Very comfortable	**1**	**2**	**3**	**4**	**5**	**Very uncomfortable**

Comments?

2. On average, how frequently do you see patients who are taking the treatments covered in this intervention (this could include patients prescribed these treatments by you or by 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 who are on the treatment drug or therapy, how long do your patients typically stay on this therapy?

- ☐ For only very short periods of time, such as the length of one script (30 days)
- ☐ For short periods of time, such as one to four months
- ☐ For medium periods of time, such as between four months and a year
- ☐ For long periods of time, for more than a year
- ☐ Continuously

4. How often are those patients in your practice taking the treatment drug reassessed to determine the appropriateness of their dose or their continued need for this therapy? (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.)

Very comfortable	**1**	**2**	**3**	**4**	**5**	**Very uncomfortable**

Please briefly comment on your comfort level:

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

Very important	**1**	**2**	**3**	**4**	**5**	**Not important at all**

(b) How important is it that you recommend lower-cost agents?

Very important	**1**	**2**	**3**	**4**	**5**	**Not important at all**

(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	**1**	**2**	**3**	**4**	**5**	**Very unlikely**

8. If you checked "1" or "2" 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.

Message #1:_____

Message #2:_____

Message #3:_____

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 — Length of session
- ☐ Interactive session (case study) — Length of session
- ☐ Other? — Length of session

Key questions:

1. What aspect of this session needs to be improved in order to have more impact next time?

- ☐ Time management
- ☐ Content
- ☐ Delivery
- ☐ Other Aspect

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

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 — Length of session
- ☐ Interactive session (case study) — Length of session
- ☐ Other? — Length of session

Key Questions:

1. Please indicate your agreement with this statement: "The energy and enthusiasm for the subject (as evidenced by the level of questions and discussion) was very high."

Strongly agree	1	2	3	4	5	Strongly disagree

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

(a) Interest in the material:

Very interested	1	2	3	4	5	Not interested at all	Unable to assess

(b) Support for the key messages:

Very strong support	1	2	3	4	5	Very weak support	Unable to assess

(c) Satisfaction with the material:

Very satisfied	1	2	3	4	5	Not at all satisfied	Unable to assess

(d) Satisfaction with your answers to their questions:

Very satisfied	1	2	3	4	5	Not at all satisfied	Unable to assess

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

- ☐ Overwhelming
- ☐ More than necessary
- ☐ Just right
- ☐ Insufficient
- ☐ Unable to assess

4. The session was:

Too Long	1	2	3 Just right	4	5	Too Short

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

Very appropriate	1	2	3	4	5	Not appropriate at all

6. What additional materials or details, 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 have 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.

Message #1:_____.

Very comfortable	**1**	**2**	**3**	**4**	**5**	**Very uncomfortable**

Comments?

Message #2:_____.

Very comfortable	**1**	**2**	**3**	**4**	**5**	**Very uncomfortable**

Comments?

Message #3:_____.

Very comfortable	**1**	**2**	**3**	**4**	**5**	**Very uncomfortable**

Comments?

2. On average, how frequently do you see patients who are taking the treatments covered in this intervention (this could include patients prescribed these treatments by you or by 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 who are on the treatment drug or therapy, how long do your patients typically stay on this therapy?

- ☐ For only very short periods of time, such as the length of one script (30 days)
- ☐ For short periods of time, such as one to four months
- ☐ For medium periods of time, such as between four months and a year
- ☐ For long periods of time, for more than a year
- ☐ Continuously

4. How often are those patients in your practice taking the treatment drug reassessed to determine the appropriateness of their dose or their continued need for this therapy? (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.)

Very comfortable	**1**	**2**	**3**	**4**	**5**	**Very uncomfortable**

Please briefly comment on your comfort level:

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

Very important	**1**	**2**	**3**	**4**	**5**	**Not important at all**

(b) How important is it that you recommend lower-cost agents?

Very important	1	2	3	4	5	Not important at all

(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 recommending changes to the patient's medication to lower cost agents? (Check one.)

Very likely	1	2	3	4	5	Very unlikely

8. If you checked "1" or "2" 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.

Message #1:_____

Message #2:_____

Message #3:_____

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 — Length of session
- ☐ Interactive session (case study) — Length of session
- ☐ Other? — Length of session

Key questions:

1. What aspect of this session needs to be improved in order to have more impact next time?

- ☐ Time management
- ☐ Content
- ☐ Delivery
- ☐ Other Aspect

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

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 — Length of session
- ☐ Interactive session (case study) — Length of session
- ☐ Other? — Length of session

Key Questions:

1. Please indicate your agreement with this statement: "The energy and enthusiasm for the subject (as evidenced by the level of questions and discussion) was very high."

Strongly agree	**1**	**2**	**3**	**4**	**5**	**Strongly disagree**

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

(a) Interest in the material:

Very Interested	**1**	**2**	**3**	**4**	**5**	**Not interested at all**	**Unable to assess**

(b) Support for the key messages:

Very strong support	**1**	**2**	**3**	**4**	**5**	**Very weak support**	**Unable to assess**

(c) Satisfaction with the material:

Very satisfied	**1**	**2**	**3**	**4**	**5**	**Not at all satisfied**	**Unable to assess**

(d) Satisfaction with your answers to their questions:

Very satisfied	**1**	**2**	**3**	**4**	**5**	**Not at all satisfied**	**Unable to assess**

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

- ☐ Overwhelming
- ☐ More than necessary
- ☐ Just right
- ☐ Insufficient
- ☐ Unable to assess

4. The session was:

Too Long	**1**	**2**	**3** **Just right**	**4**	**5**	**Too Short**

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

Very appropriate	**1**	**2**	**3**	**4**	**5**	**Not appropriate at all**

6. What additional materials or details, if any, would have been helpful to you in preparation or 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 needs to be improved in order to have more impact next time?

- ☐ Time management
- ☐ Content
- ☐ Delivery
- ☐ Other Aspect

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

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 #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. Please indicate your agreement with this statement: "The energy and enthusiasm for the subject (as evidenced by the level of questions and discussion) was very high."

Strongly agree	**1**	**2**	**3**	**4**	**5**	**Strongly disagree**

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

(a) Interest in the material:

Very Interested	**1**	**2**	**3**	**4**	**5**	**Not interested at all**	**Unable to assess**

(b) Support for the key messages:

Very strong support	**1**	**2**	**3**	**4**	**5**	**Very weak support**	**Unable to assess**

(c) Satisfaction with the material:

Very satisfied	**1**	**2**	**3**	**4**	**5**	**Not at all satisfied**	**Unable to assess**

(d) Satisfaction with your answers to their questions:

Very satisfied	**1**	**2**	**3**	**4**	**5**	**Not at all satisfied**	**Unable to assess**

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

- ☐ Overwhelming
- ☐ More than necessary
- ☐ Just right
- ☐ Insufficient
- ☐ Unable to assess

4. The session was:

Too Long	**1**	**2**	**3**	**4**	**5**	**Too Short**
			Just right			

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

Very appropriate	**1**	**2**	**3**	**4**	**5**	**Not appropriate at all**

6. What additional materials or details, if any, would have been helpful to you in preparation or delivery of this session?

Short Survey # 8: Questions for pharmacists to evaluate case-study or interactive sessions

Key questions:

1. Please rate how practical and relevant the case studies were in relation to the situations you see in your practice environment?

Very practical and relevant	**1**	**2**	**3**	**4**	**5**	**Not at all practical nor relevant**

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

Very adequately	**1**	**2**	**3**	**4**	**5**	**Not at all adequately**

3. In your opinion, how would you rate the level of enthusiasm and the engagement of the participants of either the large or small session?

Very enthusiastic and engaged	**1**	**2**	**3**	**4**	**5**	**Not at all enthusiastic nor engaged**

4. Can you comment on what may have contributed to the level of enthusiasm or engagement of the participants?

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:
- ☐ Case #2:
- ☐ Case #3:
- ☐ Case #4:

2. Overall, did you find any of these cases too academic?

Case #1:

Too academic	**1**	**2**	**3** **Just right**	**4**	**5**	**Not at all academic**

Case #2:

Too academic	**1**	**2**	**3** **Just right**	**4**	**5**	**Not at all academic**

Case #3:

Too academic	**1**	**2**	**3** **Just right**	**4**	**5**	**Not at all academic**

Case #4:

Too academic	**1**	**2**	**3** **Just right**	**4**	**5**	**Not at all academic**

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 is one thing that could be done to improve the quality of the discussion in the small group session?

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 is one thing that 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 detail.
- ☐ 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 needs to be improved in order to have more impact next time?

- ☐ Time management
- ☐ Content
- ☐ Delivery
- ☐ Other Aspect

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

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 — Length of session
- ☐ Interactive session (case study) — Length of session
- ☐ Other? — Length of session

Key Questions:

1. Please indicate your agreement with this statement: "The energy and enthusiasm for the subject (as evidenced by the level of questions and discussion) was very high."

Strongly agree	**1**	**2**	**3**	**4**	**5**	**Strongly disagree**

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

(a) Interest in the material:

Very Interested	**1**	**2**	**3**	**4**	**5**	**Not interested at all**	**Unable to assess**

(b) Support for the key messages:

Very strong support	**1**	**2**	**3**	**4**	**5**	**Very weak support**	**Unable to assess**

(c) Satisfaction with the material:

Very satisfied	**1**	**2**	**3**	**4**	**5**	**Not at all satisfied**	**Unable to assess**

(d) Satisfaction with your answers to their questions:

Very satisfied	**1**	**2**	**3**	**4**	**5**	**Not at all satisfied**	**Unable to assess**

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

- ☐ Overwhelming
- ☐ More than necessary
- ☐ Just right
- ☐ Insufficient
- ☐ Unable to assess

4. The session was:

Too Long	**1**	**2**	**3**	**4**	**5**	**Too Short**
			Just right			

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

Very appropriate	**1**	**2**	**3**	**4**	**5**	**Not appropriate at all**

6. What additional materials or details, if any, would have been helpful to you in preparation or delivery of this session?

Short Survey #10: Questions to evaluate the physician's experience with the academic detail

Key questions:

1. How helpful has this visit been for you?

Very helpful	**1**	**2**	**3**	**4**	**5**	**Not very helpful at all**

2. How would you rate this session in terms of what you learned that was new, surprising, or particularly memorable?

Very high (new, surprising or memorable)	**1**	**2**	**3**	**4**	**5**	**Not very high (new, surprising or memorable)**

3. Will this session *reinforce* what you already do or will you tend to do things somewhat *differently* after this session?

Will do things differently	**1**	**2**	**3 About the same**	**4**	**5**	**Will reinforce what I do already**

4. Would you like to hear about more topics?

Would like to hear about more topics	**1**	**2**	**3 About the same**	**4**	**5**	**I'm ok where I am right now**

5. Would you recommend my session to any of your colleagues?

I would recommend you	**1**	**2**	**3**	**4**	**5**	**I'm not ready to recommend you at this time**

6. What new topics would you be interested in hearing about in future visits?

Long Survey #10: Questions to evaluate the physician's experience with the academic detail

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 always answered adequately?

Always adequately	**1**	**2**	**3**	**4**	**5**	**Not always adequately**

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, what would give you more confidence in those messages? (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 your likelihood of implementing the key messages, please feel free to add them in the space provided.

Message #1_____

Very likely	**1**	**2**	**3**	**4**	**5**	**Very unlikely**

Comments?

Message #2_____

Very likely	**1**	**2**	**3**	**4**	**5**	**Very unlikely**

Comments?

Message #3_____

Very likely	**1**	**2**	**3**	**4**	**5**	**Very unlikely**

Comments?

Quality of the detail:

1. Can you comment on the length of the detailing visit? (Check one.)

Too long	**1**	**2**	**3** Just right	**4**	**5**	**Too short**

2. Did you find yourself open to accepting the key messages of the visit or was there something that was irritating or blocked you from accepting the key messages?

Was open to accepting the key messages	**1**	**2**	**3**	**4**	**5**	**Was blocked from accepting the key messages**

3. Feel free to add any comments on what might have blocked you from accepting the key messages

4. Can you state, in one specific way, how you might apply this new information?

Barriers to change:

1. What do you think are the key barriers to changing how you currently practice with these treatment drugs? Check any that apply.

- ☐ I think that I am already rationally prescribing these treatments to patients; therefore, there's not much room to improve.
- ☐ Many specialists promote a different message regarding these treatments and this may be a barrier to my adapting to the key messages.
- ☐ I don't think it's necessary to consider the price of the prescription when I make a prescribing decision.
- ☐ Other (please state)_____.

2. 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 detail: _____

Name of the physician: _____

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

Key questions:

1. What aspect of this session needs to be improved in order to have more impact next time?

- ☐ Time management
- ☐ Content
- ☐ Delivery
- ☐ Other Aspect

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?

4. Overall, are there any characteristics of this particular physician that I need to remember for next time so that my detail will have more impact (is better understood, better accepted, or likely to be better acted upon)?

Long Survey #11: Questions for detailers after they have visited a physician

Date and length of detail: _____

Name of the physician: _____

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

1. Please indicate your agreement with this statement: "The energy and enthusiasm for the subject (as evidenced by the level of questions and discussion) from the physician was very high."

Strongly agree	**1**	**2**	**3**	**4**	**5**	**Strongly disagree**

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

(a) Interest in the material:

Very interested	**1**	**2**	**3**	**4**	**5**	**Not interested at all**	**Unable to assess**

(b) Support for the key messages:

Very strong support	**1**	**2**	**3**	**4**	**5**	**Very weak support**	**Unable to assess**

(c) Satisfaction with the material:

Very satisfied	**1**	**2**	**3**	**4**	**5**	**Not at all satisfied**	**Unable to assess**

(d) Satisfaction with your answers to questions:

Very satisfied	**1**	**2**	**3**	**4**	**5**	**Not at all satisfied**	**Unable to assess**

3. Was the physician satisfied with the amount of evidence used to support the key messages in the presentation?

Very satisfied	**1**	**2**	**3**	**4**	**5**	**Not at all satisfied**	**Unable to assess**

4. I felt the session was:

Too Long	**1**	**2**	**3**	**4**	**5**	**Too Short**
			Just right			

5. What additional materials or details, if any, would have been helpful to you in preparation or delivery of this session?

APPENDIX III: EVALUATION FRAMEWORK CASE STUDY: COMPUS PROTON PUMP INHIBITOR MATERIALS IN A PROVINCE

To illustrate how the evaluation framework might be applied to a particular case, the authors have considered the potential use of the evaluation framework in conjunction with interventions using COMPUS's educational materials on proton pump inhibitors (PPIs) at a provincial level. For the purpose of preparing this case study, these interventions on PPIs would not have been implemented in the province. The authors used this example as a hypothetical case; however, the authors have included reference to attributes of actual programs where this provided more perspective to the case study.

To stimulate additional thoughts about possible additional dimensions for evaluation of the whole process of managing dissemination of COMPUS materials, 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.

CCAF's 12 Attributes for Effectiveness (adapted for this framework)*
1. Direction: Does everyone understand what they [the PPI materials] are meant to be doing?
2. Relevance: Do [new] activities [and materials] continue to make sense in terms of addressing means for which they [the organizations] were intended?
3. Appropriateness: Are we going about our objectives in the right way [if we disseminate the materials]?
4. Responsiveness: How well does this organization anticipate and respond to change [and opposing messages]?
5. Acceptance: Do those who use a program or service [or package of materials and its dissemination channel] judge it to be satisfactory?
6. Secondary impacts: What are the unintended effects of our activities, be they positive or negative? (omitted)
7. Costs and productivity: Is output increasing while costs are decreasing? Are unit costs appropriate?
8. Financial results: How do revenues compare with costs? How do assets compare with liabilities?
9. Working environment: Does the working environment promote commitment, initiative, safety, and employee development?
10. Protection of assets: How well-protected are key resources?
11. Monitoring and reporting: Does everyone have the information about the evaluation? Is it used?
12. Achievement of intended results: What succeeded? What failed? How challenging were the goals?

* 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*.[16]

Environmental scan: Local context and capacity

1. Who should look at these materials?

The applicable drug plan division of the Ministry of Health, as a contributor to COMPUS and a leading payer for PPIs in the province, has the greatest interest in evaluating and using the PPI materials. The drug plan may decide to delegate that evaluation and use to one of several organizations that it sponsors.

For purposes of this case study, assume the drug plan sponsors several educational programs for physicians, including academic detailing, a regular evidence-based newsletter for practitioners produced by the provincial university, a drug therapy course sponsored by the university, and continuing medicine education programs through the university's faculty of medicine.

Alternatively, the drug plan may decide to evaluate and use the PPI materials itself for its direct communications to physicians and patients. The drug plan also communicates directly by fax, and occasionally by telephone, with physicians who are applying for prior authorization for their patients to be covered by the drug plan.

In addition, the drug plan has indirect connections with a variety of other educational initiatives. It may have representatives on joint advisory committees responsible for guideline development in the province.

#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.

For this case study, consider that no decision had been made on what channels of dissemination will be used for COMPUS's PPI materials. Several of the above-mentioned alternatives present themselves. The following are speculations by the researchers producing this framework on issues that could influence the choice of which channel to choose.

a) Evidence-based Practitioner Newsletter

This evidence-based newsletter is sent regularly to all physicians in the province. Only occasionally has the university mailed out materials supplied by another organization. One option for the university 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 university would need to answer is whether or not such materials could be mailed out without its normal practice of offering local specialists the opportunity to comment on drafts. Another question is whether COMPUS PPI materials are consistent with previous messages in the evidence-based newsletters. The third question concerns the timing of the mailing. If the university has two or

three draft newsletters already in the pipeline, they might want to delay mailing of PPI materials. The drug plan might not want to wait so long and might choose an alternate channel for dissemination.

One of the advantages of using the university channel is that it facilitates impact evaluation of the PPI materials. The university is set up to conduct routine analysis of the impact of the newsletter 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) Academic Detailing Program

A limited program of academic detailing operates in the province. 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 program is itself a small sample. One strategy would be for the physicians and the pharmacist who visits them to be field testers of the PPI materials before they are sent to the entire province.

c) Drug Therapy Course

The course is offered every spring in a major centre in the province to an audience of 200 to 300 physicians and other health professionals. Although initiated and managed by prominent members of the university, the course is financially independent from the university and the drug plan. 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 push-button 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 timing of the next course is such that the next opportunity to use and evaluate the PPI materials in the course would be one year from now.

d) Educational Feedback Through Prescribing Portraits

This is a new program launched by the drug program in collaboration with the provincial medical association. The centrepiece of the program is the provision to physicians of a confidential individual portrait of their prescribing of certain classes of medications. Two topics have already been chosen for the program, and the COMPUS's PPI materials could be the third topic, approximately one year from now. However, there is another, earlier way that this prescribing portrait program could be the vehicle for disseminating PPI materials.

Like the evidence-based newsletter, the prescribing portrait program will use the method of "designed delays" to monitor its impact on prescribing. Half the general practitioners of the province 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 the new program would be to what extent does the dissemination of the PPI materials distract the 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 program funds?

e) Evidence-based Guidelines Advisory Committee

The drug plan is unlikely to choose this as the primary dissemination channel for PPI materials because the scope and agenda of the committee is so broad. However, if the committee revises its guidelines for the treatment of peptic ulcer or gastroesophageal reflux disease (GERD) in the near future, the drug plan might supply the committee 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 an example with hypertension therapy. The Ministry of Health and the provincial medical association agreed on disseminating a "Hypertension Flow Sheet" — a chart insert to improve ongoing monitoring of hypertension patients whom physicians are paid to use (an annual fee per patient with hypertension). The flow sheet was approved by the evidence-based guidelines committee. After the flow sheet was in widespread use, the committee began updating its guidelines for the treatment of hypertension. At the same time, the prescribing portrait group was independently developing educational materials focussed on first-line prescribing for uncomplicated hypertension. In the midst of this, in a current edition of the evidence-based newsletter, the 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 the Drug Plan

The drug plan 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, it is likely the drug plan would have included them in its mailings to physicians and pharmacists announcing its policy of preferential listing of a particular PPI.

> **#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 of whether or not 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 previously, 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. Past issues of the evidence-based newsletter, and evidence-based 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 Ministry of Health and the medical association's agreed-upon "Hypertension Flow Sheet" and advisory committee 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 evidence-based newsletter was explicit about the evidence on the superiority of thiazide diuretics for most patients. Some would say the guidelines are consistent with the newsletter, just slightly more permissive. Others would declare the guidelines are not evidence-based and are inconsistent with the newsletter's 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.

> **#2. Relevance: Do [new] activities [and materials] continue to make sense in terms of addressing means for which they [the organizations] were intended?**
>
> Some may regard the relevance of the PPI materials as deriving only from the current discrepancy between the evidence and real-world prescribing. Others may regard the relevance of the PPI materials as being influenced by, and having influence on, the perceived relevance of the organization disseminating the materials.

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.

> **#4. Responsiveness: How well does this organization anticipate and respond to change [and opposing messages]?**
>
> Have potential opposing messages been taken into account in the development of evidence-based messages and materials to promote optimal therapy?

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

As a result of the environmental scan of local context (Question 2, 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.

> **#5. Acceptance: Do those who use a program or service [or package of materials and its dissemination channel] judge it to be satisfactory?**
>
> A few inexpensive interviews and focus groups can test "face validity" of the PPI materials and prevent wastage of a large amount of resources on disseminating messages that physicians instantly reject.

Focus groups may reveal that many physicians are sceptical of the evidence-based newsletter and consider it a virtual arm of government (the drug plan). 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 viewpoints 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 the case study, with the policy of preferential listing of one PPI established for the past three years, the financial benefits to the drug plan 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.

#7. Costs and productivity: Is output increasing while costs are decreasing? Are unit costs appropriate?

Is there a channel of dissemination with a low unit cost that can be used for PPI materials? What are the unit costs of the alternative modes of dissemination and how do those costs compare with anticipated relative impacts?

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.

An estimated cost of each issue of the evidence-based newsletter is $10,000 to $20,000, or between $2 and $4 per doctor. The estimated cost for the prescribing portrait program to add 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 of these programs' 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, when preparing draft prescribing portraits for antihypertensives, focus groups with physicians revealed that the portraits were initially too complicated. Physicians made a strong case 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?

The production of antihypertensive prescribing portraits that are acceptable to physicians and to the prescribing portrait program 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 that 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 of value.

Post-intervention: Evaluation options and recommendations

1. Printed materials

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.

The method of randomized delayed mailings has been used to evaluate the evidence-based newsletter, 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.

#12. Achievement of intended results: What succeeded? What failed? How challenging were the goals?

#8. Financial results: How do revenues compare with cost? How do assets compare with liabilities?

Impact evaluations using design delays are not just to address the question of whether there was an impact overall, but also to address questions of which types of printed materials were more successful than others, which topics, which formats, and so on. No comprehensive assessment of financial results of an educational program has been done in the province. However, an independent assessment of the preferential listing policy has been done showing it saved millions of dollars.

2. Didactic sessions

The drug therapy course 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 of the audience instantaneously.

#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-ended questions. One prescribing project included not only a retrospective survey recalling the impact 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 drug plan claims database.

4. Academic detailing

Impacts of academic detailing were initially evaluated by comparisons of trends in drug claims data between the intervention community and 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 is considerably higher, but offers the opportunity for additional grant funding and meta-analysis across multiple topics of academic detailing.

Researchers in the province 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.

#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.

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