

# The IMPACT Program

*Pharmacists in Family Practice:  
A Resource*

## PRACTICE ENHANCEMENT GUIDE

### Optimizing Medication Use in Family Practice: Medication-focused Practice Enhancements

**Get the most out of your IMPACT Pharmacist**



**The IMPACT Program**  
*Pharmacists in Family Practice:  
A Resource*

**REFER IF YOUR PATIENT:**

- Needs help with optimal control of a **chronic condition** (such as diabetes, blood pressure, cholesterol, pain, arthritis)
- Is taking **multiple medications** (to simplify, ensure appropriate dosing times, manage or prevent drug related problems)
- Might be having an **adverse drug event**.
- Has **recently been hospitalized** (for counselling on medication changes)

**Most Common Inhaled Bronchodilators**

Agent	Short-Acting B <sub>2</sub> -Agonists		Long-Acting B <sub>2</sub> -Agonists		Anticholinergics		Combination
	Salbutamol	Terbutaline	Salmeterol	Formoterol	Ipratropium	Tiotropium	Salbutamol/Ipratropium
Brand Name	Ventolin® Generics	Bricanyl®	Serevent®	Oxeze®	Atrovent®	Spiriva®	Combivent®
System	MDI Diskus® Inhalation	Turbuhaler®	MDI Diskus®	Turbuhaler®	MDI Inhalation	HandiHaler®	MDI Inhalation
Colour	Blue	Blue bottom					
Onset	5-15 min	5-15 min					
Duration	4-6 h	4-8 h					
Adult Dose	1-2 pfs TID-QID PRN	1-2 pfs TID-QID PRN					

**Table 1: How Medication-focused Practice Enhancements Improve Medication Management**

Medication Management Process	Problems in Family Practice	Example of Enhancement Developed
Provide group education regarding medications	Patients need additional information on their condition; physician unable to provide all that is needed	Cholesterol Clinic Day (Chapter 5) — provides information that would benefit the patients and physicians of the practice site, and that is often not
Completing Section 8 forms	Forms are neither available nor easily completed	
Reporting adverse drug reactions (ADR)	Rarely done; voluntary system; forms not readily available or easily completed	

**DIABETES PATIENT CARE FLOWSHEET**

**Practice Site Letterhead**

Name: \_\_\_\_\_ D.O.B.: \_\_\_\_\_ Chart # \_\_\_\_\_ Diagnosis Date: \_\_\_\_\_ Type of DM: \_\_\_\_\_

Risk factors: Obesity  Fam Hx  Smoker  CVD  BP  Lipids  Gest DM

Complications/Comorbidities: Retinopathy  Nephropathy  Neuropathy  Foot Disorders  Other

Past Medical/Surgical Health: \_\_\_\_\_

Medications	Date				
Diabetic medications: Oral Insulin					
BP medications: ACEI/ARB Diuretic Beta blocker CA++ channel blocker					

**Chart Audit for Prevalence of Drug and Disease Indicators**

Patient sex:  M  F

Patient age: \_\_\_\_\_ or DOB (yy.mm.dd): \_\_\_\_\_

Date of last visit (yy.mm.dd): \_\_\_\_\_

Physician name: \_\_\_\_\_

Chart #: \_\_\_\_\_

Site #: \_\_\_\_\_

Date: \_\_\_\_/\_\_\_\_/\_\_\_\_  
D M Y

**Excluded patients**

Less than one visit to the family physician in the last 12 months  Yes  No  Don't Know

More than 20 visits to the family physician in the last 12 months  Yes  No  Don't Know

Awaiting placement to a nursing home or long-term care  Yes  No  Don't Know

Alcoholism  Yes  No  Don't Know

Palliative care patient  Yes  No  Don't Know

Family physician only sees as a home visit (i.e., patient cannot come to the clinic)  Yes  No  Don't Know

**If you chose Yes for any of the above criteria, DO NOT collect any further information on this form.**



The goal of the IMPACT program, as the acronym suggests, is to Integrate family Medicine and Pharmacy to Advance primary Care Therapeutics. A growing body of research supports our belief that having pharmacists working in family practice settings enhances patient care.<sup>1</sup> This guide is the product of more than 10 years of planning and collaboration between investigators, government and community leaders.

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From previous page:

1. Sellors J et al., A Randomized Controlled Trial of a Pharmacist Consultation Program for Family Physicians and their Elderly Patients. *CMAJ* July 8, 2003;169(1):17-22.

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# HOW TO USE THIS GUIDE

## Who Is This Guide For?

This Practice Enhancement Guide (PEG) is for pharmacists beginning to work with a family health team (FHT). It is also useful for physicians and clinic/office managers considering working with a pharmacist in their practice, and community pharmacists hoping to become more involved with a FHT.

## Why Read This Guide?

Medication management can be challenging in the family practice office. Prescription refills, drug plan paperwork, drug samples, checking for drug interactions, calls from community pharmacists and monitoring for efficacy and safety are just some of the tasks required. There are many steps in the medication management process in primary care, such as diagnosis, prescribing and monitoring.

Most studies evaluating the use of evidence-based recommendations in practice show that 30% to 50% are not used in clinical practice.<sup>2</sup> Studies examining compliance in patients show that 30% to 50% of patients do not adhere to specific treatments and advice.<sup>3</sup>

"...Enormous amounts of new knowledge are barreling down the information highway but are not arriving at the doorsteps of our patients."<sup>4</sup>

Having a pharmacist working in family practice is one approach to minimize drug-related problems. A pharmacist working with a FHT uses various methods to help improve the efficiency and effectiveness of prescribing.

This guide contains tools and strategies developed in the Integrating family Medicine and Pharmacy to Advance primary Care Therapeutics (IMPACT) demonstration project. Use these examples as templates or starting points for your own practice.

## What Does This Guide Contain?

A definition of medication-focused practice enhancements, an explanation of how they are useful for optimizing medication use in family practice, and a brief introduction to the enhancements included in this guide

are found in the **Optimizing Medication Use in Family Practice** section.

The **Action Plans** section contains a detailed plan and checklist to aid in the development, implementation and evaluation of a practice enhancement.

The **Practice Enhancement Examples** section describes the enhancements developed through the IMPACT program with examples for those interested in introducing specific enhancements in their own practices.

Finally, more tools are found in the **Directory of Resources** and the **Appendix**, which is a template of questions that can be used to document practice enhancements.

*PEG and the IMPACT Toolkits are available on the IMPACT website: <http://www.impactteam.info>*

## How Was This Guide Developed?

Practice changes for both physicians and pharmacists involve a complex series of steps and take time to evolve. The IMPACT project proposed an integrated series of medication-focused practice enhancements and supports to facilitate collaboration, promote a positive experience overall and strengthen the intervention to improve drug therapy use.

The introduction of IMPACT pharmacists to FHTs created an opportunity to address system change. One integration goal was to develop the pharmacist as a facilitator to improve drug-related office systems, which would decrease or eliminate medication errors and drug-related problems.

After six weeks of working at their practice sites, each pharmacist requested a group discussion be held with their physicians to build consensus regarding the pharmacist's role in system innovation and to identify each practice site's unique needs.

The medication-focused practice enhancements described in this guide evolved naturally from the various practice sites. Once the enhancements were completed and implemented, an IMPACT staff member interviewed each pharmacist to learn about enhancement development, implementation and evaluation.

2. Lenfant C. Shattuck lecture — Clinical research to clinical practice — Lost in translation? *N Engl J Med* 2003;349:868-74.

3. Osterberg L, Blaschke TN. Adherence to Medication. *N Engl J Med* 2005;353:487-97.

4. *Supra*.

# OPTIMIZING MEDICATION USE IN FAMILY PRACTICE

## Goals

- Better patient outcomes
- More efficient medication use procedures within a family practice
- Reduced workload of medication management procedures
- Decreased complexity of medication use for patients
- Improved knowledge of best practice therapeutics for physicians, pharmacists, office staff and patients
- Improved continuity of care between a family practice and other health care groups (e.g., hospitals, pharmacies, community or home care)

## Medication-focused Practice Enhancements

Medication-focused practice enhancements are processes or tools that increase the efficiency and effectiveness of medication prescribing and use when implemented in practice.

**Table 1: How Medication-focused Practice Enhancements Improve Medication Management**

Medication Management Process	Problems in Family Practice	Example of Enhancement Developed
Teaching medical students and residents about drug therapy; determining how to best use the skills and knowledge of the pharmacist in the family practice	Challenges in how to use the pharmacist in the clinic	Pharmacist Referral Pocket Card (Chapter 1) — informs physicians and residents within a practice about the services a pharmacist can provide, and what types of cases they could refer to a pharmacist
Monitoring patients with chronic conditions	Can be challenging, as patients are often on many medications and see more than one physician	Diabetes Patient Care Flowsheet (Chapter 2) — facilitates the summary of information on patients with diabetes to improve the management of their medications and other aspects of their disease state, which could lead to better health outcomes for the patients
Referring patients to other professionals for consultation	Hard to determine which patients would benefit most from a pharmacist consultation	Chart Screening Form (Chapter 3) — identifies patients in need of potential follow-up with a pharmacist and areas of quality improvement in medication management
Provide drug information to practitioners	Time constraints and busy schedules often make group meetings difficult to organize	Case Presentation to Physicians (Chapter 4) — educates physicians about the role and abilities of the pharmacist in the practice site/health care team, and the various reasons patients can be referred to the pharmacist

# OPTIMIZING MEDICATION USE IN FAMILY PRACTICE

**Table 1: How Medication-focused Practice Enhancements Improve Medication Management**

<b>Medication Management Process</b>	<b>Problems in Family Practice</b>	<b>Example of Enhancement Developed</b>
Provide group education regarding medications	Patients need additional information on their condition; physician unable to provide all that is needed	Cholesterol Clinic Day (Chapter 5) — provides information that would benefit the patients and physicians of the practice site, and that is often not available in the community
Completing Section 8 forms	Forms are neither readily available nor easily completed	Section 8 Forms (Chapter 6) — incorporates the forms into the electronic medical record (EMR) to make use easier
Reporting adverse drug reactions (ADR)	Rarely done; voluntary system; forms not readily available or easily completed	ADR Forms (Chapter 6) — incorporates the forms into the EMR for ADR reporting, which is vital to post-marketing surveillance and ultimately, patient safety
Managing drug samples	Difficult to organize and maintain an up-to-date sample cupboard and keep track of who receives samples	Drug Sampling Procedures (Chapter 7) — achieves tighter control of patient confidentiality and samples from pharmaceutical representatives, to decrease waste and improve the efficiency of the physicians' day
Anticipating drug interactions (DIs)	Hard to check in advance; overload of information and community pharmacist calls can be overwhelming	Drug Interaction Protocol Presentation (Chapter 8) — calls for a presentation to the practice physicians that will ease their transition process, guide them to ensure they achieve the full potential of an add-on DI module of an EMR, and aid them to use the DI database more effectively
Monitoring procedures	Monitoring chronic conditions and their medications is often difficult and procedures vary	Hypertension Care Policy (Chapter 9) — monitors system to ensure appropriate patients get their blood pressure checked
Monitoring patient's blood glucose	Difficult to assess patient's blood glucose based on their oral reports (greatly influenced by the patient's recall ability)	Blood Glucose Record (Chapter 10) — provides a log of a patient's blood glucose readings to guide adjustments in pharmacotherapy for diabetes

# OPTIMIZING MEDICATION USE IN FAMILY PRACTICE

## Medication-focused Practice Enhancements in This Guide

### Pharmacist Referral Pocket Card

#### Objectives

The pocket card educates the physicians and residents within a practice about the services a pharmacist can provide and what type of cases they would want to refer a patient to a pharmacist.

#### Description

It is a two-sided, laminated card approximately 5" by 3", containing the pharmacist's contact information, a list of the services a pharmacist can provide, and notes on when to refer a patient to a pharmacist.

Chapter 1 contains a detailed description and an example of the practice enhancement.

### Diabetes Patient Care Flowsheet

#### Objective

A diabetes patient care flowsheet facilitates the summary of information on patients with diabetes to improve the management of their medications and other aspects of their disease state, which could lead to better health outcomes for the patients. It also helps physicians incorporate and accomplish these objectives in their practice. As well, completing the flowsheet allows the physicians to bill for a special financial reimbursement related to diabetes.

#### Description

The flowsheet is a two-page form filled in by both physicians and the pharmacist that includes the patient's risk factors, complications/comorbidities, medications, lipid profile, etc.

Please see Chapter 2 for a detailed description and an example of the practice enhancement.



### Chart Screening Form

#### Objectives

A chart screening form uses objective and measurable indicators of patient health to identify patients in need of follow-up with a pharmacist or to identify areas for quality improvement in medication management across the practice.

#### Description

The form contains the patient's demographic information and indicators related to the diagnoses of interest (e.g., drug information and laboratory values). Drug look-up lists outlining the generic and trade names of the appropriate drugs are included, as are common abbreviations that are often observed in patient charts.

For a detailed description and an example of the practice enhancement, please see Chapter 3.

# OPTIMIZING MEDICATION USE IN FAMILY PRACTICE

## Case Presentations

### Objective

Presenting case studies to physicians educates them about the role and abilities of the pharmacist in the practice site and health care team, and informs them about the various reasons why patients can be referred to the pharmacist. The physicians may want more general continuing education that is more patient-specific and can be submitted for credit.

### Description

Case studies are presented to the practice site physicians using a PowerPoint presentation (or similar software) and handouts are provided related to the case study. For example, a pharmacist may provide handouts that detail a patient's list of medications before and after a consultation. Handouts may also include guidelines related to a specific disease.

Please see Chapter 4 for a detailed description and two examples of the practice enhancement.

*"[During the case presentation] we went over the patient's issues and I explained to the physicians the detailed process I go through during the interview: chart review, medication review, patient education, research, thought process... Subsequently, I have had about 10 new referrals."*

— IMPACT demonstration project participating pharmacist

## Cholesterol Clinic Day

### Objective

The overall objective of this practice enhancement is to provide a clinic given by a pharmacist, nurse practitioner and dietitian (or other allied health care professionals) that would be most beneficial for the patients and physicians of the practice site, and that is often not available in the community. The clinic provides education and information about cholesterol in general, and specifically as it pertains to the patients themselves, including their lipid values, lifestyle factors and medications.

### Description

The cholesterol clinic day is run by the pharmacist, dietitian and nurse practitioner of the practice site (or other allied health care professionals working at the practice site). Patients selected by the practice site physicians have 60-minute appointments. Each appointment consists of three 20-minute visits, one each with the pharmacist, dietitian and nurse practitioner. Each health care professional has specific tasks that are performed during their time with the patient.

Chapter 5 contains a detailed description and examples related to the practice enhancement.

## Section 8 and Adverse Drug Reaction Forms

### Objectives

Adding the Section 8 form to the electronic medical record (EMR) system of a practice makes it easier for the physicians to use. Including the adverse drug reaction (ADR) reporting form within the EMR encourages physicians to report any ADRs their patients may experience (particularly because reporting is often not common practice).

### Description

A one-page electronic form (for both the Section 8 and ADR reporting forms) with some fields that autopopulate is added to the shared drive.

For a detailed description of the practice enhancement, please see Chapter 6.

## Drug Sampling Procedures

### Objective

The drug sampling procedures practice enhancement achieves tighter control with patient confidentiality and with samples that pharmaceutical representatives supply a practice site, to decrease the amount of waste, and to improve the flow and efficiency of the physicians' day.

### Description

The drug sampling procedure consists of a variety of components: a drug sample cupboard, binder, expired drug list, letter to pharmaceutical representatives and requested pharmaceutical sample list.

- The drug sample cupboard can be organized according to therapeutic/disease states.

# OPTIMIZING MEDICATION USE IN FAMILY PRACTICE

- The binder contains contact information for each pharmaceutical company. The information can also be kept electronically and placed on the shared drive of the practice site's network.
- An expired drug list keeps track of the month of expiry, description of the product, how much is left, the pharmaceutical representative's phone number (for disposal or restocking) and the date the samples were removed.
- A letter informs the pharmaceutical representatives of the new policy.
- Physicians create a requested pharmaceutical sample list to inform representatives of what samples are accepted at the practice site.

Please see Chapter 7 for a detailed description and examples related to the practice enhancement.

## Drug Interaction Protocol Presentation

### *Objective*

Electronic medical record (EMR) systems purchased by practice sites often contain add-on Drug Interaction (DI) modules. While the DI modules can be useful, they can also lead to a variety of problems. The objective of the practice enhancement is to guide practice physicians in their use of software to ensure they can achieve the full potential of an add-on DI module of an EMR and aid them in using the DI database more effectively.

*"I see this as a great opportunity to make some interventions that would allow [the physicians] to make this program more meaningful to themselves, the patients and the community pharmacists."*

*— IMPACT demonstration project participating pharmacist*

### *Description*

A PowerPoint presentation (or other similar software) created for the practice site physicians. The presentation may contain several case studies that can be used to engage the physicians to determine what the issues

could be for that patient. A pharmacist can then demonstrate how the information can be accessed through the DI software using screen shots of the EMR.

Chapter 8 contains a detailed description of the practice enhancement.

## Hypertension Care Policy

### *Objective*

A hypertension care policy helps practice site personnel monitor the blood pressure of all appropriate patients to ensure that these patients have their blood pressure checked when they are coming to see the physician. The policy is documented so all practice site personnel know the policy for blood pressure monitoring at their site.

### *Description*

A hypertension care policy is a documented procedure at the practice site.

For a detailed description and an example of the practice enhancement, please see Chapter 9.

## Blood Glucose Record

### *Objective*

A blood glucose record provides a record or log of patients' blood glucose readings to guide physicians and other health care professionals in making adjustments in the patients' pharmacotherapy for diabetes.

### *Description*

The record is a form filled in by the patient. It can be as many pages as necessary. It can also be added to the shared drive of the practice site, allowing it to be easily translated into any language desired by a patient. The font size and width of the columns can also be easily adjusted for visually impaired patients or those with motor coordination difficulties that result in larger handwriting.

Chapter 10 contains a detailed description and examples of the practice enhancement.

## Action Plan to Develop Medication-focused Enhancements in Practice

There are three steps to developing a medication-focused enhancement or modifying one provided in this guide for your family practice:

- 1) Analyzing the current situation;
- 2) Implementing the enhancement into the practice, and
- 3) Evaluating the practice enhancement.

There is an Action Plan Checklist at the end of this section to aid you in this process.

### I. Analyzing the Current Situation

#### Deciding on a practice enhancement

Consulting physicians, office staff, pharmacists and other allied health care professionals in the practice as well as patients and local pharmacists is important to determine what your practice site needs. Ideas can also be generated through:

- Brainstorming
- Conducting a needs assessment
- Observing and reflecting
- Reviewing literature
- Researching relevant local, provincial or federal websites (*please see the Directory of Resources*)
- Networking with other family practices
- Reviewing the IMPACT practice enhancements to see if any would work for your practice

#### Prioritizing ideas for change

Presentation and discussion at meetings provide a forum to explain the objectives of the practice enhancements and to get feedback from practice physicians and staff on what they feel is most important for their patients.

Establishing criteria to determine top priorities helps this process, such as the number of patients the proposed enhancement will help within the practice, feasibility within the current system and/or the timeframe in which

results would be anticipated. Coming to a consensus with physicians and office staff on what is feasible and acceptable is paramount to the success of your enhancement. Any additional evidence presented on the advocated changes adds value.

#### Team members

The team consists of people who develop/modify, implement, evaluate and are affected by the practice enhancement, namely:

- Lead physician or clinic/office manager
- Physician(s) interested in taking the lead for the practice on developing a practice enhancement
- Pharmacists, including local community pharmacists
- Other allied health care professionals if the practice enhancement affects their workload or job sharing
- Practice site staff

#### Practice enhancement supporters

Research shows that having support from key members of the family practice improves quality of care for patients. These *local opinion leaders* can “influence the practice of other physicians because they are well-known, respected, and trusted to evaluate medical innovations within the local context.”<sup>5</sup> They influence practice patterns and may accelerate “the uptake of knowledge.”<sup>6</sup> Local opinion leaders are “not necessarily innovators or authority figures, but are trusted by their colleagues to evaluate new information and assess the value of new medical practices”; are “approached frequently for clinical advice; have good listening skills”; and “are perceived as clinically competent and caring.”<sup>7</sup>

Identify individuals from the practice site or community who embody these characteristics and invite them to participate in developing the medication-focused practice enhancement. A local opinion leader could be someone internal or external to the family practice, such as a colleague or a local consultant.

<sup>5</sup> Majumdar SR, McAlister FA, Tsuyuki RT. A cluster randomized trial to assess the impact of opinion leader endorsed evidence summaries on improving quality of prescribing for patients with chronic cardiovascular disease: Rationale and design. *BMC Cardiovasc Disord* 2005;5:17.

<sup>6</sup> *Ibid.*

<sup>7</sup> Soumerai SB, McLaughlin TJ, Gurwitz JH, et al. Effect of local medical opinion leaders on quality of care for acute myocardial infarction: A randomized controlled trial. *JAMA* 1998;279:1358-63.

## Available resources

The following types of resources may be helpful:

- Evidence from the literature on the implementation of similar enhancements
- Evidence from the literature on the clinical conditions or therapeutic choices that are the focus of the practice enhancement
- The network of pharmacists working in family practices in Ontario
- Guides or toolkits used for similar interventions available from various organizations

The Directory of Resources lists more suggestions. Also, see the appropriate chapter for resources specific to each practice enhancement in this guide.

## Incentives encouraging enhancement implementation

- Practice site fee bonus billings (e.g., completing the diabetes patient care flowsheet allows the physicians at the practice site to bill for a special financial reimbursement related to diabetes)
- Building relationships between professionals in practice
- Saving time
- Improving processes
- Continuing education credits (e.g., MainPRO credits)
- Seeing concrete indicators of better quality of care delivered

## Making the practice enhancement part of routine policy and procedure

- Determine and document the current process of care
- Identify specific areas to integrate the practice enhancement
- Document new processes
- Discuss new processes with team
- Revise new processes based on consensus with relevant parties
- Train appropriate personnel regarding the new policy and procedure

## Developing objectives of implementing the practice enhancement

An *objective*:

- Describes the specific, precise changes that are expected
- Covers one theme identified
- Shows what the participant will gain (from the participant point of view)
- Begins with an action verb

Many advantages can be realized by developing your objectives, such as:<sup>8</sup>

- Discussing your activity more clearly and precisely
- Choosing the methods that allow you to attain your targeted objectives
- Easily establish a direct relationship between the objectives and your evaluation of what has been accomplished

## Creating consensus for the planned enhancement

You can either discuss at a group meeting, or meet with individuals to obtain agreement to move forward.

## Learning the new information or process

Identifying, explaining and documenting steps for learning the new information or process can occur in any or all of the following:

- Education sessions
- Group administrative meetings
- Individualized written information
- Pilot of the process with a mock patient
- Pilot of the process with a real patient
- Reminders, including signs, pocket cards, etc., used in daily practice areas

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<sup>8</sup>. Pregent R. *Charting Your Course: How to Prepare to Teach More Effectively*. Madison: Magna Publications, 1994.

# ACTION PLANS

## Motivating people

- Provide information regularly on the results (e.g., the number of patients for whom the new process has been used) and the outcomes (e.g., changes in clinical outcomes, such as hemoglobin A1C results)
- Identify early successes and communicate them to the practice site team

## Achieving early successes

Identify early quick wins in your discussions with the practice site physicians, the office staff, and other health care professionals in the office.

These successes can include changes and details such as:

- The number of physicians using the new process or tool (e.g., each physician trying a diabetes patient care flowsheet for one or two patients)
- The number of patients for whom the new process or tool was used (e.g., a cholesterol clinic day allowed six patients in the practice to be seen during the clinic)
- The time period in which the new process or tool was used (e.g., hypertension care policy being put in place for one month at the practice site)
- The results of the use of the process or tool (e.g., the chart audit form identified three patients for whom monitoring was required, and four patients with uncontrolled blood pressure)

## Measuring success

Create a strategy to evaluate the enhancement implementation. Consult the group to determine what is considered a success. For example, success could be more patients seen, improved monitoring or better clinical surrogate outcomes, such as blood pressure control.

## Preparing to evaluate

Identify who will be involved in the evaluation, including those who will plan the evaluation and those who will collect and analyze the data.

Determine the types of outcomes to evaluate. Some examples include the patient perspective of the process or tool (e.g., patient satisfaction), process measures (e.g., how many patients were seen with the new process or tool), outcome measures (e.g., improvements in clinical measures, such as changes in pain or blood pressure control, or changes in hospital admissions for heart failure).

Determine the feasibility of the extent of the evaluation. Identify how much time is available for the evaluation and tailor it to what is feasible for the practice.

## 2. Implementing the Practice Enhancement

### Describing the practice enhancement

Create a general plan that describes the medication-focused practice enhancement, the steps that will be undertaken to implement it, the tasks involved in its implementation and the personnel required.

*"I provided informal teaching sessions . . . and have had many requests for many more topics. I see this as a great practice enhancement in the short- and long-term."*

— IMPACT demonstration project participating pharmacist

# ACTION PLANS

## Completing tasks

Assign the tasks to the appropriate personnel. If this cannot be done, identify the challenges and determine if they can be overcome.

## Feasible timelines

Create a timeline that identifies the start date, the milestones, the end date (if applicable) and when progress of the practice enhancement is to be reviewed.

Determine who will be responsible for monitoring the timeline.

Monitor how well the timeline is followed. Be sure to allow for a learning curve — often when practice enhancements are first implemented, it may take more time to complete a task than before the change.

## Continuing motivation and incentives

Monitor the uptake of incentives. Address areas in which the incentives are not working. The incentives may have to be reassessed and changed to accommodate the practice site staff and their objectives.

## Reinforcing learning with real life situations

Integrate patient cases into learning whenever possible. Plan a strategy that can aid in identifying patients within the practice who could benefit from the enhanced process. Use identifiable patient cases when the process entails improving clinical management for patients in the practice and the information is only used internally by those responsible for providing direct patient care for the patients in the evaluation. If patient cases are to be discussed externally or their data are to be presented, the information must be de-identified to maintain

confidentiality. This can be done by assigning identification numbers.

## Communicating, advertising and publishing successes/challenges

Successes and challenges can be communicated internally through newsletters or meetings. The experience can be shared externally through posters, publications or conference presentations.

## 3. Evaluating the Practice Enhancement

### Describing the practice enhancement evaluation

Describe the evaluation strategy in detail and include the timeline. Include the following questions as part of an evaluation strategy:

- How well did the enhancement meet its goals?
- What was done well?
- What could be improved?
- What will the next/altered plan consist of?
- Does the measurement strategy need to be changed?

### Sharing evaluation results

The evaluation results can be shared within the practice site through a newsletter, posters or meetings. Publishing abstracts, manuscripts, poster presentations at conferences, etc., can be used to share the results externally.

# ACTION PLANS

## Action Plan Checklist

### Questions to Consider

Check when Addressed (✓)

#### 1. Analyzing the Current Situation

What are the needs? (How to decide on an enhancement to implement)

How can the ideas for change be prioritized?

Who is on the team?

Who are the local opinion leaders?

What resources are available?

What incentives can be provided?

How can the plan become part of routine policy and procedure?

What are the objectives?

How will a consensus be created for the planned enhancement?

How will learning the new information or process occur?

How will people continue to be motivated?

What types of early successes can be achieved?

How will success be measured? (Creating a strategy)

How can an evaluation be conducted?

#### 2. Implementing the Practice Enhancement

Can real life situations be used to reinforce learning?

Are continuing motivation and incentives in place?

Can successes be communicated/advertised/published?

Are timelines feasible?

Can the responsibilities be completed?

#### 3. Evaluating the Practice Enhancement

How well did the enhancement meet its objectives?

What was done well?

What could be improved?

What will the next/altered plan consist of?

Does the measurement strategy need to be changed?

Will the evaluation results be shared?

## Pharmacist Referral Pocket Card

### A. Enhancement Objectives

The pocket card serves as a quick reference guide to let the physicians and residents know the various ways they can use the services of a pharmacist, and what type of cases they can refer to the pharmacist. It also contains the pharmacist's contact information to encourage communication.

### B. Tool or Enhancement Description

The pocket card is a two-sided laminated card approximately 5" by 3". Please see the end of this chapter for an example.

### C. Medication Management Improvements

A pocket card provides information and educates the physicians and residents about patient populations in whom medication management can be improved and the areas in which a pharmacist can assist in improving medication management. The **educational** component of the practice enhancement allows physicians and residents to better utilize a pharmacist to assist in medication management.

A pocket card will likely increase the number of referrals and the scope of reasons for patient referral to a pharmacist. Through **referral**, the pharmacist would make suggestions and recommendations for changes that would likely lead to drug therapy changes.

Patients benefit from improved medication management through the pocket card because the physicians are better able to **identify** the populations who can benefit from a pharmacist consultation.

The practice benefits from the greater **team** approach to patient care that the enhancement promotes, and each member will be better able to use their time and expertise for patient care.

Community pharmacists could likely experience improved medication management from a pocket card, because a suggestion on the card could be to have the practice pharmacist act as a liaison with community and hospital pharmacists for the physician. This would allow for the

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Acknowledgement: Bruyère Family Health Network,  
Ottawa, ON

**communication** of issues regarding a certain patient that the community pharmacist may not have been aware of and may help the community pharmacist better manage his or her patients as well.

This practice enhancement is important for the achievement of better health outcomes for patients because it can serve as a catalyst and educational tool to encourage physicians to refer patients, who then see a pharmacist, who can make recommendations that would hopefully lead to **better health outcomes** for them. A pocket card not only provides information about referrals but also informs physicians that the pharmacist can also provide access to drug information and education, which would indirectly help physicians improve the health outcomes for patients.

Depending on the practice site's patient demographics, a significant proportion of patients can benefit from this enhancement.

### References and resources

The information in a pocket card comes from research that shows how pharmacists can help improve drug-related outcomes. The following articles were used for the example pocket card shown:

Canadian Medical Association and Canadian Pharmacists Association. *Approaches to Enhancing Drug Therapy: Joint Statement*. Ottawa: Canadian Medical Association and the Canadian Pharmacists Association, 1997.

Howard M et al. Collaboration between community pharmacists and family physicians: Lessons learned from the Seniors Medication Assessment Research Trial. *J Am Pharm Assoc* 2003;43:566-72.

Koshman S, Pottie K, Viner G. Rethinking the way we manage medications: Using pharmacists in community family practice. *Can Fam Physician* 2003;49:1066-8.

## PRACTICE ENHANCEMENT EXAMPLES

### Pharmacist Referral Pocket Card

Lemelin J, Hogg W, Baskerville N. Evidence to action: A tailored multifaceted approach to changing family physician practice patterns and improving preventive care. *CMAJ* 2001;164:757-63.

Sellors J et al. A randomized controlled trial of a pharmacist consultation program for family physicians and their elderly patients. *CMAJ* 2003;169:17-22.

#### D. Development Process

When a pharmacist first arrives at a practice site, physicians and residents may be struggling to understand why they would refer a patient to a pharmacist, what types of patients they would refer and if there are other tasks the pharmacist can assist with. The pocket card serves as an important tool to educate the team members, and also allows the physicians and residents to have the information with them at all times.

Create a list of patient populations who would benefit from a referral and a list of services a pharmacist can provide for physicians at the practice site.

Format the list of patient populations and services using bullet-form. Peers and the practice site physicians can review it for wording and priorities. Several drafts may be created to accommodate feedback.

Once the text is finalized, format the pocket card to make it the appropriate size, then have it printed and laminated.

#### E. Implementation Process

To implement this enhancement, hold briefings at different chart rounds or physician meetings to introduce the cards and distribute them to all physicians and residents. Once a pocket card is fully implemented at a practice site, it will likely not need to be modified.

#### F. Overcoming Challenges

Some challenges may arise while developing a pocket card. For instance, formatting the information into a pocket-sized card can be difficult and time-consuming. This challenge can be overcome as familiarity with computer programs increases or by asking a colleague with more experience with computer programs for help.

If the practice is large, it may be hard to gather everyone together at once for distribution. The cards cannot be explained and questions addressed if they are simply placed in mailboxes. If absolutely necessary, add a short note explaining the card and encouraging physicians to keep it with them as a reminder. Face-to-face distribution is highly recommended.

Also, if the practice is large or part of a teaching institution, there may be a high turnover rate, leading to problems ensuring newcomers receive the card. These challenges can be overcome if the pharmacist keeps a list of whom he or she has spoken to and who has been given the card. Having the card added to the regular orientation materials handed out helps as well.

Finalizing the text may be difficult because of the amount and variety of feedback received. It can be hard to include everyone's suggestions and opinions particularly if no consensus can be reached or if the suggestions vary widely. Try including only the points everyone agrees on, to start.

#### G. Facilitating Factors


There are certain practice site characteristics that may help implementation. For instance, if the practice is a teaching site, residents often carry information, reference guides and educational materials in this format.

#### H. Evaluation Results

No strategy to evaluate this enhancement was undertaken.

## Pharmacist Referral Pocket Card

### Pharmacist Referral Pocket Card Example

 **Get the most out of your  
IMPACT Pharmacist**


# The IMPACT Program

*Pharmacists in Family Practice: A Resource*

Pharmacist Name  
Practice Address  
Contact Phone #  
Email Address

### WHAT OTHER SERVICES ARE PROVIDED?

- Access to drug information (e.g., new drugs, new practice guidelines and evidence)
- Education in pharmacology and therapeutics
- Assistance with office system changes to improve the medication use process
- Addressing drug coverage and insurance issues to ensure seamless care with community pharmacies
- Communication with patient's community and/or hospital pharmacists as needed

 **Get the most out of your  
IMPACT Pharmacist**

# The IMPACT Program

*Pharmacists in Family Practice:  
A Resource*

### REFER IF YOUR PATIENT:

- Needs help with optimal control of a **chronic condition** (such as diabetes, blood pressure, cholesterol, pain, arthritis)
- Is taking **multiple medications** (to simplify, ensure appropriate dosing times, manage or prevent drug related problems)
- Might be having an **adverse drug event**.
- Has **recently been hospitalized** (for counselling on medication changes)
- Is taking a drug at **high risk for adverse events**
- Is having a **medication adherence** issue
- Could benefit from **medication counselling** (e.g., new medications)
- Needs help **tapering or changing** a medication

## Diabetes Patient Care Flowsheet

### A. Enhancement Objectives

A diabetes patient care flowsheet facilitates the summary of information on patients with diabetes to improve the management of their medications and other aspects of their disease state, which could lead to better health outcomes for the patients. It also helps the physicians incorporate and accomplish these objectives in their practice.

As well, completing the flowsheet allows eligible physicians at a practice site to bill for a special financial reimbursement related to diabetes.

### B. Tool or Enhancement Description

A two-page form filled in by both physicians and the pharmacist, this flowsheet can also be placed on the practice's shared drive and used electronically. Please see the end of this chapter for an example of a diabetes patient care flowsheet.

### C. Medication Management Improvements

A diabetes patient care flowsheet is a tool that **summarizes** all medications patients are taking and pertinent medical information related to diabetes on a single piece of paper. This improves medication management by presenting information in one convenient and comprehensive list.

When physicians complete the flowsheet and manage their diabetic patients in this manner, they are **reimbursed** by provincial health insurance.

Many patients with diabetes do not realize the seriousness of their disease. A flowsheet can trigger a **dialogue** between the physicians and the pharmacist with their patients to encourage the patients' understanding of their disease, which could have a large impact. **Supplement** the flowsheet with discussion with the patients and patient education to ensure its potential is reached.

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Acknowledgement: Fairview Family Health Network, Toronto, ON

Health care providers in the practice site may approach patients with diabetes following their own template or line of thinking. This can cause some information to be missed or overlooked. A flowsheet can trigger more **systematic** thinking, which can ultimately benefit the patient by having all aspects of their disease state considered. The flowsheet can help all members of the practice follow the same line of evidence-based reasoning for the treatment of diabetes.

The flowsheet can be faxed to specialists or other health care professionals involved in the management of care of a patient. Informing all **personnel** involved with the care of a patient, such as a community pharmacist, enhances the patient's medication management.

A **handout** containing the patient's actual laboratory values and their target levels can be created from the flowsheet. Having this information educates and empowers patients, and helps them understand the purpose of their medications. Benefits extend to other health professionals patients have contact with, because the handout can be shown to or shared with them.

Patients can benefit from a diabetes patient care flowsheet because it can serve as a guideline for individualized medication management for each patient, and as a **prompt** to encourage the pharmacist and physicians into considering medications that should be prescribed for a person with diabetes. Areas of drug therapy that could be improved are observed more readily. Using first-line drug therapies as an example, is there a good indication why a patient is not on an angiotensin-converting enzyme inhibitor (ACE-I)?

## Diabetes Patient Care Flowsheet

**Drug therapy** can be optimized in several different ways, depending on the needs of each individual patient. Doses of existing medications can be adjusted (elevated or lowered), changes can be made in attempting to reach various targets (e.g., blood pressure or cholesterol targets), medications can be streamlined by removing a drug that is not working well or is redundant, a new drug could be added or the dosing regimen can be simplified to improve the patients' compliance (e.g., if a patient is taking a medication three times per day and is having difficulty doing so, the regimen can be changed to once daily for that medication).

*"I had one patient who was put on compliance packaging. She benefited from it a lot and her diabetes medication was reduced drastically. This was very positive and rewarding to be able to make a difference."*

— IMPACT demonstration project participating pharmacist

Patients may yield more benefits from a flowsheet because the **monitoring** of their disease state may improve. Because a flowsheet contains areas for the recording of certain laboratory values (hemoglobin A1c, lipids, etc.), the physician or pharmacist can gauge whether the patient is overdue for certain analyses. Also, the pattern of laboratory values over time can be observed. For example, if the laboratory values are not close to the target levels and remain far from target over time, this may trigger the physician to treat the patient more aggressively.

Regular use of a diabetes patient care flowsheet should result in more patients with diabetes achieving their **targets** with their glucose levels, blood pressure, cholesterol levels, etc.

Overall patient monitoring could improve by having all of the flowsheets of patients with diabetes in a **central** repository where the progress of each patient could be checked more easily. It may also be easier for physicians to observe trends occurring in each patient (e.g., disease improving or worsening).

The **organization** of the practice can potentially change with the implementation of a diabetes patient care flowsheet. Some changes may be observed in the manner in which the physicians practice as a flowsheet becomes integrated into their daily routine, which can lead to changes in how the physicians manage their patients. Time may be used more efficiently because all relevant information for a patient is contained in one document.

#### D. Development Process

Physicians may be planning to create such a template and can use the presence of a pharmacist at their site as an opportunity to begin the process. In addition, a pharmacist can suggest the use of a template to the physicians of their practice site.

Begin by researching different diabetes management tools available on the Internet. Ask peers and other contacts for a list of materials that can be accessed and used for initial drafts.

Hold a meeting with the practice site physicians to discuss the material found and any specific needs or requests made by the physicians. The templates from the Internet may have to be modified to incorporate the needs of the physicians (e.g., more space needed for writing out medication names). Create a new form incorporating all the different areas requested by the physicians, and format it in a user-friendly way.

Ensure the form created includes the criteria required for reimbursement from provincial health insurance.

## Diabetes Patient Care Flowsheet

After a draft is created, hold a short meeting with the physicians to obtain feedback. Needs may vary by practice site. For example, some practice sites may request that the flowsheet is organized according to disease state, while others may prefer that the patient medications and laboratory results are grouped together instead.

Present each version and incorporate feedback into a new one. It can be expected that at least three drafts will be created, and require both formal and informal meetings with physicians. Depending on the practice site, the diabetes patient care flowsheet can be distributed in hard copy (if the practice site is paper-based) or electronically.

Because of the possibility of the creation of a large number of drafts through the revision process, it is suggested that a working draft be implemented at the practice site to determine how the diabetes patient care flowsheet actually works in practice before making further revisions. The implementation process starts with this working draft.

### **References and resources**

A diabetes patient care flowsheet incorporates information from the 2003 Canadian Diabetes Association Guidelines, available at:  
<http://www.diabetes.ca/cpg2003/downloads/cpgcomplete.pdf>.

The flowsheet can be an amalgamation of various flow sheets available and can be modified for the practice site physicians. For example, see:  
[http://www.healthservices.gov.bc.ca/msp/protoguides/gps/diabetes\\_care.pdf](http://www.healthservices.gov.bc.ca/msp/protoguides/gps/diabetes_care.pdf) (page 16).

### **E. Implementation Process**

After using the flowsheet in their practice for a time, the physicians may notice that certain sections are not useful. These physicians can then provide further practical feedback for additional revisions (e.g., the lipid panel may be reorganized to reflect how the laboratory reports the values).

Once a draft is finalized, store the flowsheet on the practice site's shared drive for future use.

### **F. Overcoming Challenges**

Implementing a flowsheet may present some challenges. For example, adopting it may be slower than anticipated. This can be overcome by using verbal reinforcement from the physicians at the practice site who are using the flowsheet and who find it useful. In addition, the pharmacist can fill out the flowsheet and place it in the patients' charts to prompt the physicians.

If the practice uses an electronic medical record (EMR) system, a paper diabetes patient care flowsheet may be difficult to implement, and vice versa. This challenge can be easily overcome by changing the format to one more people will use (either producing hard copies or putting the file on a shared drive for electronic use).

It can be challenging when attempting to create a form that accommodates the needs of many different individuals. The revision process can be streamlined by creating a new draft only after a certain amount of feedback has been given, instead of creating a new draft for every suggestion.

### **Challenges that may be difficult to overcome**

It may not be possible to include everyone's suggestions and opinions, particularly if no consensus can be reached or if the suggestions are widely divergent.

### **G. Facilitating Factors**

Involving physicians in the creative process by asking for their feedback and suggestions enhances and encourages the integration of the flowsheet at the practice.

### **H. Evaluation Results**

No strategy to evaluate this enhancement was undertaken.

## PRACTICE ENHANCEMENT EXAMPLES

### Diabetes Patient Care Flowsheet

#### DIABETES PATIENT CARE FLOWSHEET

##### Practice Site Letterhead

Name: \_\_\_\_\_ D.O.B.: \_\_\_\_\_ Chart # \_\_\_\_\_ Diagnosis Date: \_\_\_\_\_ Type of DM: \_\_\_\_\_

Risk factors: Obesity  Fam Hx  Smoker  CVD  BP  Lipids  Gest DM

Complications/Comorbidities: Retinopathy  Nephropathy  Neuropathy  Foot Disorders  Other







Past Medical/Surgical Health: \_\_\_\_\_

	Date						
<b>MEDICATIONS</b>	<b>Diabetic medications:</b> <i>Oral</i> <i>Insulin</i>						
	<b>BP medications:</b> <i>ACEI/ARB</i> <i>Diuretic</i> <i>Beta blocker</i> <i>CA++ channel blocker</i>						
	<b>Lipid lowering medications:</b>						
	<b>Aspirin:</b>						
	<b>Other:</b>						

	Procedures/Targets						
<b>3 TO 6 MONTHS</b>	<b>Blood glucose:</b> Pre-prandial 4–7 Post-prandial 5–10						
	<b>A1C:</b> Target <0.07 (<115% upper limit of normal)						
	<b>Hypoglycemia:</b> (frequency)						
	<b>Fasting glucose meter/lab comparison:</b> (within 20% of simultaneous lab value)						
	<b>BP:</b> Goal ≤130/80 Overt nephropathy ≤125/75						
	<b>Height/Weight:</b> BMI <25						
	<b>Waist circumference:</b> Men 102 cm (40 in) Women 88 cm (35 in)						

## PRACTICE ENHANCEMENT EXAMPLES

### Diabetes Patient Care Flowsheet

	Date						
Annually and/or as Indicated	<b>Fasting lipid profile:</b> Total Chol (goal <4)						
	Triglycerides (goal <1.5)						
	HDL (goal >1)						
	LDL (goal <2.5)						
	Total Chol/HDL ratio (goal <4)						
	<b>Lifestyle counselling:</b> Smoking cessation Activity/Exercise/Diet Stress						
	<b>Screen for nephropathy:</b> Microalbumin: creatinine ratio (≤2.0 ; ≤2.8 )						
	<b>Fundal exam:</b>						
	<b>Last ophthalmologist/optometrist appt:</b>						
	<b>Feet exam:</b>	R L	R L	R L	R L	R L	R L
	<b>Sensory loss testing:</b> With 10 g mono filament/ 128 Hz tuning fork						
	<b>Influenza vaccine, pneumococcal vaccine:</b>						
	Creatinine (dd/mm/yyyy): _____ ( / / )						
Creatinine clearance (dd/mm/yyyy): _____ml/min ( / / )							
Cockcroft-Gault Equation: [(140-age)*actual weight (kg)] ÷ serumCr (µmol/L) × 1.2 {Multiply by 0.85 for women}							
Gastrointestinal Disturbance: _____				Erectile Dysfunction: _____			
Diabetes Education Classes: _____				Specialists: _____			
_____				_____			

## Chart Screening Form

### A. Enhancement Objectives

The chart screening form uses objective and measurable indicators of patient health (process or outcomes) to identify patients in need of follow-up with a pharmacist or to identify areas of quality improvement in medication management across the practice. The results can also be used to stimulate discussion about areas for potential improvement in the quality of care at the practice site (but should not be used to draw conclusions regarding the quality of care).

### B. Tool or Enhancement Description

The chart screening form is filled in by individuals performing the chart reviews. The form consists of four sections in which the exclusion, vascular-, symptom- and drug-based criteria, diagnoses, demographics and drug information are recorded. The final page of the form lists the generic and trade names of the drugs of interest, and common abbreviations of drug names that are often observed in patient charts. Review one year of data using the day the chart screening is performed as a guide, such that the year preceding the chart screening is audited. Please see the end of this chapter for an example of this tool.

### C. Medication Management Improvements

Patients referred to the pharmacist through the use of the chart screening form can receive a comprehensive medication **consultation**. The physician reviews the pharmacist's assessment and may incorporate the pharmacist's recommendations in the patient's medication management. For example, if the form identifies a patient who requires laboratory monitoring to prevent an adverse drug event, the pharmacist would highlight this for the physician who could consider additional monitoring for the patient. If the form identifies a patient with an uncontrolled medical condition (e.g., high cholesterol), the pharmacist may recommend a change in or the addition of a medication.

The criteria listed on the form can serve as a basis for developing and implementing a change in practice **processes**. For example, if a large number of patients are identified who do not have up-to-date laboratory tests,

Enhancement Authors:  
Lisa Dolovich, Aparna Uppaluri

the practice site may develop a process to ensure patients who may benefit from routine screening are receiving it at regular intervals. The form can serve as a quality of care **audit** for the practice site to use internally to measure aspects related to drug therapy.

The form can also serve as an **educational** tool for physician trainees regarding medication management criteria for specific medications.

### D. Development Process

When the practice site team first begins looking for indicators to identify patients who may benefit from follow-up with a pharmacist or a practice review of medication management quality of care, the first step is consulting literature on previous work. For example, the method reported by McColl et al. (*see References and resources, below*) estimates the impact of an intervention in terms of reduced morbidity and/or mortality in a family practice setting, while considering the likely prevalence of the condition, access to relevant therapies and services, and the projected uptake of the intervention. This framework can be used as a starting point.

The team then develops a list of candidate indicators and assesses each possible indicator against three criteria to ensure they fit within the objectives of the study and/or practice site.

The three criteria used for this example were:

- 1) A focus on drug therapy problems and chronic diseases common in seniors and family medicine;
- 2) Reliance on data elements that should be obtainable from the medical record, and
- 3) Identification of quality gaps that could be remedied within six months.

Determine the level of supporting evidence and the sources for each potential indicator. The levels can include consensus statements by the various societies, randomized controlled trials and observational studies.

## Chart Screening Form

Choose the indicators for the chart screening form with group consensus.

After selecting the indicators, group them into three main categories according to the nature of the actions that would most likely be taken if a potential problem were detected. The three categories can include:

Category 1: Disease detection and monitoring, in which an office visit would be scheduled or a laboratory test would be requested

Category 2: Drug therapy (laboratory) monitoring, in which a laboratory test would be requested

Category 3: Potential underuse, overuse or suboptimal drug use, in which a pharmacist or physician consultation is scheduled

The next step in the process is creating and pilot-testing a draft. Test five to 10 charts. It can take approximately 10 to 15 minutes to review one chart depending on the length of form used and the type of patient chart available (electronic versus paper). Chart screening is generally faster using an electronic medical record (EMR).

The patient's health care number or other identifying information can be kept on a separate page from the rest of the data gathered to help ensure patient confidentiality. Write the same number on the separate page and the form, to allow the chart auditor to track information if questions arise, or to link the information to the patient for referral to the pharmacist once the data are collected.

This process also keeps the data collected de-identified for many of the patients, limiting the availability of confidential data outside the patient's chart.

Two or three versions of the form may be tested before the group is satisfied and the data can be gathered. It can be helpful to do a preliminary analysis of the data gathered from the pilot-testing to ensure the data being collected can be used in the form required.

### References and resources

The following references were consulted for the creation of the chart screening form:

Canadian Diabetes Association Clinical Practice Guidelines Expert Committee. Canadian Diabetes Association 2003 Clinical Practice Guidelines for the Prevention and Management of Diabetes in Canada. *Can J Diabetes* 2003;27:S1-S152.

Evidence-Based Recommendations Task Force. 2005 Canadian Hypertension Education Program Recommendations. Canadian Hypertension Education Program. Accessed February 18, 2005 at [www.hypertension.ca](http://www.hypertension.ca)

Fick DM, Cooper JW, Wade WE, Waller JL, Maclean JR, Beers MH. Updating the Beers criteria for potentially inappropriate medication use in older adults. *Arch Intern Med* 2003;163:2716-24.

Field TS et al. Risk factors for adverse drug events among older adults in the ambulatory setting. *J Am Geriatr Soc* 2004;52:1349-54.

Gandhi TK et al. Adverse drug events in ambulatory care. *New Engl J Med* 2003;348:1556-64.

Genest J, Frohlich J, Fodor G, McPherson R (the Working Group on Hypercholesterolemia and Other Dyslipidemias). Recommendations for the management of dyslipidemia and the prevention of cardiovascular disease: 2003 update. *CMAJ* 2003;168:921-4.

Gurwitz JH et al. The incidence of adverse drug events in two large academic long-term care facilities. *Am J Med* 2005;118:251-8.

MacKinnon NJ, Hepler CD. Preventable drug-related morbidity in older adults, 1. Indicator development. *J Managed Care Pharm* 2002;8:365-71.

McCull A, Roderick P, Gabbay J, Smith H, Moore M. Performance indicators for primary care groups: an evidence based approach. *BMJ* 1998;317:1354-60.

Morris CJ, Cantrill JA, Hepler CD, Noyce PR. Preventing drug-related morbidity – determining valid indicators. *Int J Qual Health Care* 2002;14:183-98.

## Chart Screening Form

Talley N, Jones M, Nuyts G, Dubois D. Risk factors for chronic constipation based on a general practice sample. *Am J Gastroenterol* 2003;98:1107-11.

Writing Group for the Women's Health Initiative Investigators. Risks and benefits of estrogen plus progestin in healthy postmenopausal women. Principal results from the Women's Health Initiative randomized controlled trial. *JAMA* 2002;288:321-33.

### E. Implementation Process

The first steps in the process of implementing a chart screening form into a practice involves determining who the chart auditor(s) will be and training the individual(s).

A chart auditor can be an individual who is part of the practice (e.g., a nurse or other staff member) or an individual who is external and brought into the practice. If the chart auditor is external, have the person sign a confidentiality agreement to maintain patient confidentiality.

Good candidates for chart auditing have experience reading medical records, are comfortable with medical terminology, are detail-oriented and take care in their work. These qualities should ensure that the data collected are done so accurately.

Create a guide for the chart auditor to explain the chart screening form. The chart auditor can keep the guide and refer to it later should questions arise during the screening process.

The chart screening form can be used as a template for a guide. Notes and information can be added beside each area, which describe the data that are needed in more detail. For example, information in the guide would indicate that a hospitalization would include an admission, but not emergency room visits and day surgeries.

The information can also direct the chart auditor to the area within a patient's chart that would likely provide the information that is needed.

The guide notes may also serve as reminders for the chart auditor to move onto the next area in the form. For

example, if the chart auditor checks off that a patient is taking a diuretic, a reminder can direct the chart auditor to determine if it is a potassium-wasting diuretic, and if so, to record the requisite laboratory values.

In addition to creating and supplying a guide, it can be useful to fill in the form with the chart auditor trainee using two or three patient charts. Answer any questions that may arise that are not included in the guide, then add the information to the guide for future reference.

The chart auditor then begins completing two or three chart screening forms without assistance; however, the trainer remains in the room with the chart auditor and watches to ensure the chart auditor looks at all required areas of the patient's chart (e.g., summary, visit notes, specialist notes, laboratory values, etc.) and does so in the correct order (e.g., the summary that lists a patient's diagnosis and medications should be checked first).

If it is deemed necessary, the trainer and chart auditor can again work together completing two or three more patient charts to address issues that arise.

Following this step, the chart auditor completes one patient chart alone and the trainer assesses it. If the trainer feels confident in the chart auditor's ability, the chart auditor can be left to screen charts alone using the guide as a reference.

The data gathered from the chart screening form can be used in two ways:

- 1) Each form can be reviewed and if the patient meets the criteria determined by the practice, then a copy of the form itself or a completed pharmacist consultation referral form can be forwarded to the pharmacist. The pharmacist would then book an appointment and conduct a medication assessment.
- 2) The data can be entered into a data management computer program. The data can then be used to create a summary profile of the practice site for the medication-related indicators from the form. The practice profile summary can be reviewed by each member of the practice and discussed at a team meeting. The practice profile summary can contain

## Chart Screening Form

both statements and graphs depicting the combined results from the data gathered using the form. For example: 12% of women over age 65 are using hormone replacement therapy (HRT); 7% of patients over age 65 have been prescribed more than eight medications; 20% of patients on potassium-wasting diuretics had no K<sup>+</sup>-levels recorded in the chart in the past year.

If the practice uses an EMR system, the indicators on the form can also be programmed as alerts.

### F. Overcoming Challenges

#### ***Challenges that may be difficult to overcome***

Abstracting data from medical records can be time-consuming and labour intensive, particularly if there is information missing and/or the patients' charts are paper-based. If the patients' records are not up-to-date, under- and/or over-reporting of the chosen indicators may occur.

### G. Facilitating Factors

If the practice site is fully computerized, the amount of time required to abstract the necessary data is decreased.

### H. Evaluation Results

Between May and November 2004, 1808 charts were reviewed from a random sample of patients 65 years of age and older in seven Ontario family practice networks using a structured form. The form included 22 indicators that were chosen based on established validity, high expected potential for improving health or reducing drug-related risk, high expected prevalence, and feasibility for data abstraction. One year of data were examined using the day the chart review was performed as a guide, such that the year preceding the chart review was audited. Of all patient charts reviewed, 36% (n=654; range 24% to 56%) of patients met three or more of the criteria. It was found that 18% (n=319; range 6% to 29%) of patients were using more than eight medications. Also, 10% of patients (n=177; range 5% to 27%) were taking a potassium-wasting diuretic and had either no potassium level recorded, or were found to have low potassium. Five per cent (n=88; range 3% to 17%) of patients had diabetes and an A1C higher than 0.075. In addition, 5% (n=86; range 2% to 7%) of patients had hyperlipidemia, an elevated low-density lipoprotein (LDL) level, and had not been prescribed a lipid-lowering agent.<sup>9</sup>

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<sup>9</sup> Dolovich L, et al. Chart audit of indicators for underutilization of effective drug therapy and drug related risk in primary care. *Can J Pharmacol* 2005;12:e60.

## PRACTICE ENHANCEMENT EXAMPLES

### Chart Screening Form

#### Chart Audit for Prevalence of Drug and Disease Indicators

Patient sex:  M  F  
 Patient age: \_\_\_\_\_ or DOB (yy.mm.dd): \_\_\_\_\_  
 Date of last visit (yy.mm.dd): \_\_\_\_\_  
 Physician name: \_\_\_\_\_

Chart #: \_\_\_\_\_  
 Site #: \_\_\_\_\_  
 Date: \_\_\_\_ / \_\_\_\_ / \_\_\_\_  
           D      M      Y

#### Excluded patients

- |   |                              |                             |                                     |
|---|------------------------------|-----------------------------|-------------------------------------|
| Less than one visit to the family physician in the last 12 months                       | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> Don't Know |
| More than 20 visits to the family physician in the last 12 months                       | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> Don't Know |
| Awaiting placement to a nursing home or long-term care                                  | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> Don't Know |
| Alcoholism  | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> Don't Know |
| Palliative care patient   | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> Don't Know |
| Family physician only sees as a home visit<br>(i.e., patient cannot come to the clinic) | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> Don't Know |

**If you chose Yes for any of the above criteria, DO NOT collect any further information on this form.**

#### Considered for referral for medication management consultation:

Patient has to be 65 years of age or over *and* meet either

- 2 criteria in Section 1 *or*
- 1 criterion each in Section 1 and Section 2

#### Section 1: Vascular and Symptom Based Criteria

1. Elevated blood pressure — one reading >155/95mmHg or 140/90mmHg in diabetics
2. Elevated — HbA1c >0.075 (7.5%)
3. Elevated LDL-C >3.4mmol/L (F) or >2.6mmol/L (M)
- 4a. Diagnosis of hypertension and *no* blood pressure readings in the past 12 months **or**
  - b. Diagnosis of diabetes and *no* HbA1c readings in the last 12 months **or**
  - c. Diagnosis of hyperlipidemia and *no* LDL readings in the past 12 months
5. Diagnosis of osteoarthritis or rheumatoid arthritis
6. Using narcotics (codeine, morphine or other as per list)
7. Diagnosis of hypertension, diagnosis of diabetes and not using an ACE-I
8. Diagnosis of hypertension, elevated blood pressure and using an NSAID
9. Diagnosis of hyperlipidemia, elevated LDL and not using a lipid lowering agent
10. Diagnosis of hypertension, high blood pressure and not using a potassium wasting diuretic

#### Section 2: Drug-Based Criteria

1. Using an NSAID with *no* BUN/creatinine levels measured in past 12 months or BUN/creat is elevated
2. Using a potassium wasting diuretic with *no* potassium levels measured in the past 12 months or low potassium
3. Using ACE-I and *no* BUN/creatinine levels measured in the past 12 months or BUN/creat is elevated
4. Using ACE-I and *no* potassium levels measured in the past 12 months or elevated potassium
5. Using phenytoin and drug level is elevated
6. Using theophylline and drug level is elevated
7. Using lithium and drug level is elevated
8. Using digoxin and the drug level is elevated
9. Using estrogen/hormone replacement therapy (ERT or HRT)
10. Using more than eight medications

#### Other

11. More than two hospitalizations in past 12 months

## PRACTICE ENHANCEMENT EXAMPLES

### Chart Screening Form

#### Screening Form

Review the patient chart for each of the following criteria.  
At least two of the boxes should be checked for each criteria.

Chart #: \_\_\_\_\_

Site #: \_\_\_\_\_

Date: \_\_\_\_/\_\_\_\_/\_\_\_\_  
          D      M      Y

#### Section 1: Vascular and Symptom Based Criteria

##### 1. Record HbA1c readings measured in the past 12 months: (if > 3 in past 12 months, record 3 most recent readings)

Check (✓) if there are no readings in the past 12 months, and proceed to question 2.

Date (DD/MM/YY) Begin with most recent	HbA1c reading	Elevated (check box if >0.075)
		<input type="checkbox"/>
		<input type="checkbox"/>
		<input type="checkbox"/>

##### 2. Record blood pressure (BP) readings in the past 12 months: (if > 4 readings in past 12 months, record 4 most recent)

Check (✓) if there are no readings in the past 12 months, and proceed to question 3.

Date (DD/MM/YY) Begin with most recent	Systolic (mmHg)	Diastolic (mmHg)	Elevated (>155/95mmHg or 140/90mmHg in diabetics)
		<input type="checkbox"/>	
		<input type="checkbox"/>	
		<input type="checkbox"/>	
		<input type="checkbox"/>	

##### 3. Record LDL (cholesterol) readings in the past 12 months and complete the following table:

Check (✓) if there are no readings in the past 12 months, and proceed to question 4.

Date (DD/MM/YY) Begin with most recent	LDL reading	Elevated (female and LDL >3.4 or male and LDL >2.6)
		<input type="checkbox"/>
		<input type="checkbox"/>
		<input type="checkbox"/>

## PRACTICE ENHANCEMENT EXAMPLES

### Chart Screening Form

4. Patient has osteoarthritis or rheumatoid arthritis  Yes  No
- 
5. Patient using narcotics (codeine or morphine)  Yes  No
- 

#### Section 2: Drug-Based Criteria

6. Patient using a NSAID  Yes  No  Don't Know
- (BUN/creatinine measured within 12 months)*  Yes  No  Don't Know
- (Last BUN/creatinine measurement within 12 months is elevated)*  Yes  No  Don't Know
- 
7. Patient using a potassium wasting diuretic  Yes  No  Don't Know
- (Potassium measured within 12 months)*  Yes  No  Don't Know
- (Last potassium measurement within 12 months is low)*  Yes  No  Don't Know
- 
8. Patient using Phenytoin  Yes  No  Don't Know
- (Drug level is elevated)*  Yes  No  Don't Know
- 
9. Patient using Digoxin  Yes  No  Don't Know
- (Drug level is elevated)*  Yes  No  Don't Know
- 
10. Patient using Theophylline  Yes  No  Don't Know
- (Drug level is elevated)*  Yes  No  Don't Know
- 
11. Patient using ACE-I  Yes  No  Don't Know
- (BUN/creatinine measured within 12 months)*  Yes  No  Don't Know
- (Last BUN/creatinine measurement within 12 months is elevated)*  Yes  No  Don't Know
- (Potassium level measured within 12 months)*  Yes  No  Don't Know
- (Last potassium measurement within 12 months is elevated)*  Yes  No  Don't Know
- 
12. Patient using Lithium  Yes  No  Don't Know
- (TSH measured in past 12 months)*  Yes  No  Don't Know
- (Drug level is elevated)*  Yes  No  Don't Know
- 
13. On Estrogen Replacement Therapy  Yes  No  Don't Know
- 
14. Is the patient taking more than 8 medications?  Yes  No  Don't Know
- 

#### Other

15. Was patient hospitalized more than 2 times in past 12 months?  Yes  No  Don't Know
-

## PRACTICE ENHANCEMENT EXAMPLES

## Chart Screening Form

## Additional Information

**Diagnoses**

Does patient have any of the following conditions? (based on written words in chart):

Diabetes	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Don't Know
Hypertension/high blood pressure	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Don't Know
Hyperlipidemia/hypercholesteremia/high cholesterol	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Don't Know

**If No checked for all 3 conditions do not complete the drug lists below.**

**Is the patient using any of the following diuretics:****(✓ check only if using drug)**

- chlorthalidone (Hygroton™, Novo-thalidone™, Apo-chlorthalidone™)
- furosemide (Lasix™, Novo-semide™, Apo-furosemide™, Furoside™, Urito™)
- hydrochlorothiazide (Hydrodiuril™, Novo-hydrazide™, Apo-hydro 25 [or 50] Hydrochlorothiazide™)
- hydrochlorothiazide & losartan (Hyzaar™)
- hydrochlorothiazide & spironolactone (Aldactazide-25™ [or 50], Novo-spirozine-25™ [or 50])
- hydrochlorothiazide & triamterene (Apo-triazide™, Novo-triamzide™, Nu-triazide™, Dyazide™)
- indapamide (Lozide™, Gen-indapamide™, Apo-indapamide™)
- metolazone (Zaroxolyn™)
- spironolactone (Aldactone™, Novo-spiroton™)
- triameterene (Dyrenium™)

**Using any of the following ARBs:****(✓ check only if using drug)**

- candesartan (Atacand™)
- irbesartan (Avapro™)
- losartan (Cozaar™, Hyzaar™)
- telmisartan (Micardis™)
- valsartan (Diovan™)

**Using any of the following ACE inhibitors:****(✓ check only if using drug)**

- benazepril (Lotensin™)
- captopril (Capoten™, Syn-captopril™, Apo-capto™, Nu-capto™, Novo-captopril™, Gen-captopril™)
- cilazapril (Inhibace™)
- enalapril (Vasotec™)
- fosinopril (Monopril™)
- lisinopril (Prinivil™, Zestril™)
- lisinopril & hydrochlorothiazide (Zestoretic™, Prinzide™)
- perindopril (Coversyl™)
- quinapril (Accupril™)
- ramipril (Altace™)

**Using any of the following antilipemic drugs:****(✓ check only if using drug)**

- atorvastatin (Lipitor™)
- bezafibrate (Bezalip™)
- cholestyramine resin (Questran™, Novo-cholamine Light™, PMS-cholestyramine™, Syn-cholestyramine™)
- clofibrate (Atromid-S™, Novo-fibrate™)
- colestipol HCL (Colestid™)
- fenofibrate (Lipidil™, Apo-fenofibrate™, Nu-fenofibrate™, Lipidil Micro™)
- fluvastatin (Lescol™)
- gemfibrozil (Lopid™)
- pravastatin (Pravachol™)
- rosuvastatin (Crestor™)
- simvastatin (Zocor™)

## Chart Screening Form

## Drug Classes

Cardiovascular drugs include:

- digoxin (Lanoxin™)

Estrogen Replacement Therapy (ERT) products include:

- conjugated estrogens (C.E.S™, Premarin Tablets™), conjugated estrogens & medroxyprogesterone acetate (Premplus™)
- estradiol-17 (Climara™, Estalis™, Estalis-sequi™, Estrace™, Estracomb™, Estraderm™, Estradot™, Estring™, Estrogel™, Oesclim™, Rhoxal-estradiol Derm™, Vagiferm™)
- estradiol benzoate (Climacteron™)
- estradiol valerate (Delestrogen™)

Lithium includes:

- lithium (Carbolith™, Lithane™, Lithizine™)

Narcotics include:

- codeine preparations (codeine, codeine phosphate, Tylenol™ #1 or 2 or 3 or 4, Emtec™, Empracet™, Atasol™, Exdol™, Nnovo-gesic™, AC&C™, 282™, 292™)
- fentanyl (Duragesic™)
- hydromorphone hcl (Dilaudid™, Hydromorphone™)
- meperidine hcl (Demerol™)
- morphine (M.O.S.-Sulfate™, Morphitec™, M-Eslon™, MS Contin™, Oramorph SR™, Morphine Sulphate™, Stalex™, MS-IR™)
- oxycodone (Percocet™, Percodan™, Oxycocet™, Oxycodan™, Endocet™, Endodan™)

NSAIDs include:

- celecoxib (Celebrex™)
- diclofenac sodium (Voltaren™, Novo-diclofenac™, Apo-diclo™, Nu-diclo™, Arthrotec™)
- diflunisal (Dolobid™, Apo-diflunisal™, Novo-diflunisal™)
- fenoprofen (Nalfon™)
- floctafenine (Idarac™)
- flurbiprofen (Froben™, Ansaid™, Apo-flurbiprofen™, Nu-flurbiprofen™, Novo-flurprofen™)
- ibuprofen (Apo-ibuprofen™, Novo-profen™, Motrin™)
- indomethacin (Indocid™, Novo-methacin™, Apo-indomethacin™, Nu-indo™, Indotec™, Novo-methacin™)
- ketoprofen (Rhodis™, Apo-keto™, Orudis™, PMS-ketoprofen™, Novo-keto™)
- meloxicam (Mobicox™)
- naproxen (Naprosyn™, Naxen™, Apo-naproxen™, Novo-naproxen™, Nu-naprox™)
- piroxicam (Feldene™, Apo-piroxicam™, Novo-piroxicam™, Nu-pirox™, Kenral-piroxicam™ [or Rho-, Gen-, PMS])
- rofecoxib (Vioxx™)
- sulindac (Clinoril™, Novo-sundac™, Apo-sulin™, Nu-sulindac™)
- tiaprofenic acid (Albert-tiafen™, Surgam™, Apo-tiaprofenic™, Novo-tiaprofenic™)
- tolmetin (Tolectin™, Novo-tolmetin™)

Potassium Wasting drugs include:

- furosemide (Lasix™, Novo-semide™, Apo-furosemide™, Uritol™)
- hydrochlorothiazide (Hydrodiuril™, Novo-hydraside™, Apo-hydro™)
- indapamide (Lozide™, Gen-indapamide™, Apo-indapamide™)
- metolazone (Zaroxolyn™)

## Case Presentation to Physicians

### A. Enhancement Objectives

When a pharmacist first joins a practice site, the practice site physicians may not be clear on how or why to refer a patient to a pharmacist. Presenting case studies to the physicians helps educate them about a pharmacist's role in the health care team and informs them about the various reasons why patients can be referred.

The physicians' objective can differ from the pharmacist's, depending on the physician. The physicians may want more general continuing education (i.e., Continuing Medical Education) that is more patient specific. These case study presentations may be submitted for credit. Also, the practice may use these presentations as an opportunity for physicians to discuss cases.

### B. Tool or Enhancement Description

PowerPoint presentations (or similar software) and handouts are used. For example, an IMPACT pharmacist provided handouts that detailed a patient's list of medications before and after meeting with the pharmacist. Handouts can also include guidelines related to a specific disease; for example, chronic obstructive pulmonary disease (COPD).

Please see the end of this chapter for examples of case study presentations and handouts.

### C. Medication Management Improvements

For a pharmacist, each case study is an example of improved medication management and the presentation can show the practice site physicians how the pharmacist managed the patient's medication.

For example, presenting the case study of a very complicated patient can demonstrate to the practice site physicians how patients manage their own medication without the physicians' knowledge. It may lead the physicians to **consider** how they manage their own patients and may help them realize that more can be done during a consult than has been done in the past. It could lead the physicians to ask the patients more questions or to spend a few extra minutes going over their medications with them.

Because case study presentations have the potential to teach the physicians what other questions could be asked of their patients about their medications, theoretically the physicians may be able to more thoroughly manage their

Enhancement Author: Margaret Jin  
Acknowledgement: Stratford Family Health Network, Stratford, ON

patients' medications by improving **communication** between the patient and the physician (if the physicians have more time for extended consultations). This could then assist patients in providing better information to their physicians as to how they are taking their medications (e.g., taking more or less than the amount prescribed) and then lead to appropriate changes in drug therapy (by identifying drug-related problems) and improved medication management. Because case presentations have the potential to change the approach physicians take with their patients, patient engagement in medication use could improve their candidness with their physicians.

In addition, the presentations may lead to an increase in the referrals to the pharmacist and other health care professionals by the physicians. An increase in referrals may improve the flow of the referral process and the **efficiency** of the physicians and the practice by having the pharmacist (and/or other health care professionals) assist in managing the health of their patients.

An increase in the number of referrals would also have the potential to improve the patients' engagement in the use of their medications. A pharmacist has the time to explain what each medication is and its purpose. A pharmacist can also determine whether patients are taking their medication correctly and if dosing changes are needed. More **drug-related problems** can be identified and resolved, which, in turn, leads to better health outcomes.

### D. Development Process

Physicians ask or the pharmacist suggests presenting case studies to the team. All patients in the practice could benefit from this enhancement, depending on the number of physicians who attend the case study presentations.

Discuss possible cases with peers and physicians. Create a first draft of the presentation that can be sent to peers for review. Incorporate the feedback into a final draft for the presentation.

After giving one presentation, the pharmacist may be asked to continue presenting case studies if the first is well received.

## Case Presentation to Physicians

**References and resources**

The case study presentations should incorporate information from clinical practice guidelines and related articles to help a pharmacist provide documented information for a case study, information the physicians would also find helpful. The following articles were used for the example case studies shown:

Canadian Diabetes Association. 2003 Clinical practice guidelines for the prevention and management of diabetes in Canada. *Can J Diabetes* 2003;S1-S140.

Genest J, Frohlich J, Fodor G, McPherson R, for the Working Group on Hypercholesterolemia and Other Dyslipidemias. Recommendations for the management of dyslipidemia and the prevention of cardiovascular disease: 2003 update. *CMAJ* 2003;169:1-10.

Global Initiative for Chronic Obstructive Lung Disease. Pocket Guide to COPD diagnosis, management, and prevention. A guide for health care professionals (Update July 2004). GOLD Pocket Guide. Available at: <http://www.goldcopd.com>.

Hemmelgarn BR et al. The 2004 Canadian Hypertension Education Program recommendations for the management of hypertension: Part I – Blood pressure measurement, diagnosis and assessment of risk. *Can J Cardiol* 2004; 20:31-40.

Hunter MH, King DE. COPD: Management of acute exacerbations and chronic stable disease. *Am Fam Physician* 2001;64:603-12.

Khan NA et al. The 2004 Canadian recommendations for the management of hypertension: Part II – Therapy. *Can J Cardiol* 2004; 20:41-54.

O'Donnell DE et al. Canadian Thoracic Society recommendations for the management of chronic obstructive pulmonary disease – 2003. *Can Respir J* 2003;10(Suppl A):11A-65A.

O'Donnell DE et al. Canadian Thoracic Society COPD Guidelines: Summary of highlights for family doctors. *Can Respir J* 2003;10:183-5.

Touyz RM et al. The 2004 Canadian recommendations for the management of hypertension: Part III – Lifestyle modifications to prevent and control hypertension. *Can J Cardiol* 2004;20:55-9.

**E. Implementation Process**

The pharmacist may not be directly involved in organizing meetings for the presentations. Often, the lead physician organizes the meetings, tracks the physicians attending the meetings and books the projector. The lead physician informs participants about the meeting date, time and location; however, be prepared to organize meetings if that is the lead physician's preference. This may entail:

- Coordinating a date that is acceptable to all (or the majority) of the physicians at the practice site
- Booking a room and projector for the designated day
- Informing all practice site physicians of the day, room and time of the presentation

Present the case study and supply handouts to the physicians. One-page handouts are more likely to be read than longer ones.

Ask for informal or formal feedback after the first case study presentation.

**F. Overcoming Challenges**

Researching and writing the presentation in the time allotted may be a challenge. Budgeting time and asking physicians for direction and suggestions for relevant resources can focus a pharmacist's work, saving both time and effort.

Gathering all physicians together at one time may not be possible because of varying schedules. Hold presentations when a majority of physicians are available, and offer to hold them again to ensure all physicians attend at least once.

**G. Facilitating Factors**

Starting and continuing case study presentations are helped by many factors at the practice site: the team members' openness to new ideas, willingness to use them, and ability to make changes when they recognize ideas that do not work.

**H. Evaluation Results**

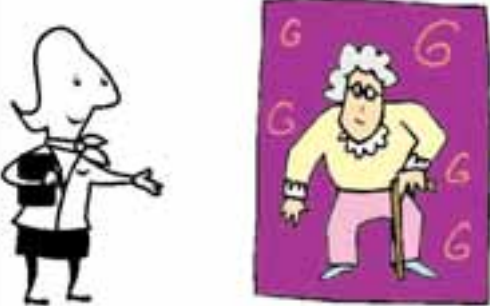
No strategy to evaluate this enhancement was undertaken.

## PRACTICE ENHANCEMENT EXAMPLES

### Case Presentation to Physicians

#### Case Study I Presentation Example

Meet the patient



### Patient Demographics

- JM, 70 y.o. female
- Dx: Type 2 Diabetes, High cholesterol, Hypertension, OA, Polymyalgia Rheumatica, Constipation, Coronary Artery Disease, Hypothyroidism, Depression, GERD, Migraines, Asthma/COPD
- Smoker, (5 cigs 2 x week), 5'6", 87.3kg
- No exercise, no alcohol, sleeps – 3 pillows

### Current medication list from the PATIENT

- She self-increased the following
  - Arthrotec 75mg – 2 bid
  - Morphine SR 30mg – 2 bid
- Was the doctor aware?

NO

### DATA Creatinine

DATE	CR
August 8	76
February 10	108
June 10	165

### CREATININE CLEARANCE

Modified Cockcroft-Gault Formula (CPS):

- Male:
 
$$Cl(cr) = \frac{1.2 (140 - \text{age [y]}) \times (\text{weight [kg]})}{\text{serum creatinine } (\mu\text{mol/L})}$$
- Female: multiply above equation by 0.85
- Usually use IBW if BMI > 30 or TBW
- IBW (Male) =  $51.56 + (1.85 * [ht-60])$
- IBW (Female) =  $48.67 + (1.65 * [ht-60])$
- Ht in inches

### DATA Creatinine & Creatinine Clearance

DATE	CR	Cl (cr) (mL/min)
August 8	76	56 mL/min
February 10	108	39 mL/min
June 10	165	26 mL/min

■ Normal Cl(cr) > 90 mL/min

## ASSESSMENT

- Potential medication which may ↑ Cr
  1. Arthrotec 75 mg 2 bid
  2. Losartan 50 mg od
- Medications that may be affected by ↑ Cr
  1. Metformin 500 mg bid
  2. HCTZ 25 mg od

## ARTHROTEC 75MG 2 BID

- Maximum dose = 75 mg bid
- NSAIDs may cause a dose dependent reduction in prostaglandin formation and may precipitate overt renal decompensation (> risk in impaired renal function, heart failure, liver dyafx, diuretics and elderly)
- D/C NSAID is usually followed by recovery to the pretreatment state

## LOSARTAN 50MG OD

- Pt has been on losartan since at least 5 years
- Minor increases in serum creatinine were observed in < 0.1 of patients with essential hypertension treated with losartan alone. No patient discontinued taking losartan alone due to increased serum creatinine. [CPS 2004]

## METFORMIN 500MG BID

**Canadian Diabetes 2003 Clinical practice guidelines:**

- Metformin is contraindicated in pts with Cr(cl) < 60 ml./min because of risk of lactic acidosis
- 0.03 cases/1000 patient-years with approximately 0.015 fatal cases/1000 patient-years

## HCTZ 25MG OD

- Thiazides may decrease GFR and precipitate or increase azotemia
- Treatment should be d/c or withheld in the presence of increasing azotemia, oliguria and in severe progressive renal disease
- Suggest further renal investigation for JM

Speak to physician  
(to discuss plan)



## PRACTICE ENHANCEMENT EXAMPLES

## Case Presentation to Physicians

## PLAN

1. Suggest titrate Arthrotec 75 mg 2 bid to a lower dose or discontinue
2. Suggest d/c metformin 500 mg bid
3. Suggest continue hotz 25 mg od until further investigation regarding renal fx
4. Suggest monitor Cr, BUN, FBS, HbA1C, albumin to creatinine ratio

## PLAN cont'd

5. Patient education
  1. Monitor blood sugars bid
  2. BP weekly
6. Pharmacist follow-up in 1-2 months
  1. Pain – OA and migraine
  2. Diabetes – blood sugars

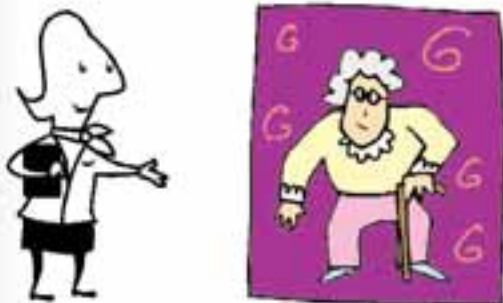
## Call Patient: July 21, 2004

- Discontinue metformin
- Check blood sugars at least twice daily
- Reduce Arthrotec 75 mg bid
- Pt also complained of constipation
- Make a f/u appointment to review blood sugars, pain and constipation

## Follow-Up Assessment Report

- Constipation (Rome Criteria Questionnaire)
- Suggest D/C docusate sodium because evidence shows that it does not help constipation
- Suggest Lactulose 15-30 mL od

## Follow-up



## Review the following

1. Pain
2. Diabetes
3. Constipation

## PRACTICE ENHANCEMENT EXAMPLES

## Case Presentation to Physicians

## PAIN

- Low back, leg & knee pain (pain=9)
- Morphine SR 45 mg bid, pred 5 mg bid
- Experience btp around 2:00 pm and in am
- Suggest morphine 5 mg 1-2 q4-6h prn btp (10% of total daily dose given q4-6h prn)

## DIABETES

- BS: July 28 – August 10
- Average AC breakfast = 9.3 [4.0-7.0]
- Average AC dinner = 7.4 [4.0-7.0]
- Average HS = 9.6 [5.0-10.0]
- Current dose: Novolin 30/70 42IU qam
- Suggest: Add Novolin 30/70 3IU qpm

## CONSTIPATION

- Rome Criteria Questionnaire
- No longer constipated (but doesn't like taste of lactulose)



## RENAL FUNCTION

- ◇ After lowering dose of Arthrotec 75 mg 2 bid to 1 bid (July 21 to August 31):
  - Creatinine = 94 (August 31)
  - Creatinine clearance = 45 mL/min
- ◇ Diabetes – still need to f/u
- ◇ Pain – still need to f/u

## ANY QUESTIONS



## PRACTICE ENHANCEMENT EXAMPLES

## Case Presentation to Physicians

## Case Study Presentation Handout Example

JM's current medication list according to patient, chart and pharmacy	
Medication name, dose, frequency	Indications, comments
Atorvastatin (Lipitor) 20mg once daily	Cholesterol
Losartan (Cozaar) 50mg once daily	Hypertension
Hydrochlorothiazide 25mg once daily	Hypertension
Metformin 500mg bid	Type 2 Diabetes
Novolin GE 30/70 42units qam	Type 2 Diabetes
Levothyroxine 0.15mg once daily	Hypothyroidism, increased from 0.125mg June 24/04
Prednisone 5mg 2 once daily (she takes 1 bid)	Polymyalgia Rheumatica pain, she changed sig on her own
Arthrotec 75mg one tab bid (she takes 2 bid)	OA back, legs, knee, she self-increased dose
Morphine SR 30mg one tab bid (she takes 2 bid)	OA back, legs, knee, she self-increased dose
Fluoxetine 20mg three (60mg) once daily (she takes 2 qam, 1 qpm)	Fatigue, depression, she changed sig on her own and she thinks it is for pain
Lorazepam 1mg bid prn	Irritable, uptight (usually in the afternoon, takes 1 tablet twice a week)
Pantoprazole 40mg bid	GERD
Cimetidine 400mg bid prn	GERD, usually takes one tab twice a week
Docusate Sodium (Soflax) 100mg 3 capsules (300mg) once daily	Stool softener, not working, she still has hard stools & constipation
Sumatriptan (Imitrex) 100mg once daily prn tid prn	Migraines, almost every day, sometimes bid prn, rarely
Parke Davis Analgesic balm	Migraines
Gravol Suppository prn	Migraines

**Cockcroft-Gault Formula for Creatinine Clearance:**<sup>10</sup>

Male:

$$Cl(cr) = \frac{1.2 (140 - \text{age [y]}) \times (\text{weight [kg]})}{\text{serum creatinine } (\mu\text{mol/L})}$$

Female: multiply above equation by 0.85

Usually use TBW or IBW if BMI &gt; 30:

$$IBW (\text{Male}) = 51.56 + (1.85 * [\text{ht}-60])$$

$$IBW (\text{Female}) = 48.67 + (1.65 * [\text{ht}-60])$$

Ht in inches

On August 5, JM discontinued her docusate sodium and started lactulose 30mL at bedtime. She now has a bowel movement every other day and does not feel constipated. Compared to June 24, her constipation symptoms from the Rome Criteria questionnaire include:  
[Scale: Absent (0), Mild (1), Moderate (2), Severe (3), Very Severe (4)]

Symptoms in the last week	June 24, 2004	August 11, 2004
Discomfort in the abdomen	Severe	Absent
Pain in the abdomen	Moderate	Absent
Bloating in the abdomen	Moderate	Absent
Stomach cramps	Severe	Mild
Painful bowel movements	Severe	Absent
Rectal burning during or after a bowel movement	Moderate	Absent
Rectal bleeding or tearing during or after a bowel movement	Absent	Absent
Incomplete bowel movement, like she didn't finish	Moderate	Absent
Bowel movements that were too hard	Severe	Absent
Bowel movements that were too small	Absent	Absent
Straining or squeezing to try to pass bowel movements	Severe	Absent
Feeling like she had to pass a bowel movement but she couldn't (false alarm)	Severe	Absent

Therefore, the lactulose has improved her constipation.

<sup>10</sup> Repchinsky C., ed. *The Compendium of Pharmaceuticals and Specialties (CPS)*. Ottawa, ON: Canadian Pharmacists Association, 2005; p.L7.

## PRACTICE ENHANCEMENT EXAMPLES

## Case Presentation to Physicians

## Case Study 2 Presentation Example

## OBJECTIVES

- To review COPD guidelines
- To illustrate the role of the pharmacist in assessing medications

## Reason for referral

1. Suboptimal control of chronic disease (COPD)
2. Review inhalers



## Meet the patient



## Patient Demographics

- JM, 62 y.o. female
- Dx: COPD, Chronic bronchitis, OA, OP, Swollen ankles/hands
- Smoker, (3-4 cigs/day) since 16 y.o.
- 5'3", 50.5 kg
- No exercise, no alcohol
- Drinks 2-3 bottles of water/day

## Medication list from the PATIENT

- Tiotropium 18 ug od
- Ipratropium 20 ug inh – 2 pf 4-6x day
- Salbutamol 100 ug inh - 2 pf qid
- Salbutamol 2.5 mg or 5 mg neb bid
- Fluticasone 250 ug inh – 2 pf bid

## OTHER MEDICATIONS

- CES 0.625 mg od
- Arthrocee 50 mg qhs
- Lorazepam 1 mg qhs
- Rabeprazole (Pariet) 10 mg prn
- Risedronate (Actonel) 35 mg once/week
- ASA 650 mg – 2 qam

## PRACTICE ENHANCEMENT EXAMPLES

### Case Presentation to Physicians

#### DATA - COPD

- Sx: SOB, wheezing, difficulty breathing
- August 18: FEV1 = 22%
- August 18: FEV1/FVC = 39% [83%]
- Chronic obstructive lung disease, emphysema, and early respiratory failure
- Does not qualify for home oxygen
- ECG: sinus tachycardia, VR=105 bpm, right atrial enlargement

#### GOALS OF COPD MANAGEMENT

- Smoking Cessation
- Prevent disease progression
- Relieve symptoms
- Improve exercise tolerance
- Improve health status
- Prevent and treat complications and exacerbations
- Reduce mortality
- Prevent or minimize side effects from treatment

#### PATIENT EDUCATION

Review the use of inhalers with JM

1. No straight posture
2. Neck and chin bent forward
3. Did not hold breath during inhalation
4. Inhaled, then opened mouth – expel drug
5. Shake inhaler between puffs

#### GLOBAL INITIATIVE FOR COPD, JULY 2004

Figure 5-3-8. Therapy at Each Stage of COPD

Old	I: Mild		II: Moderate		III: Severe
New	I: At Risk	I: Mild	II: Moderate	II: Severe	III: Very Severe
Classification	FEV1 > 80% FEV1/FVC > 70% No chronic symptoms	FEV1 > 50% FEV1/FVC > 50% With or without symptoms	FEV1 > 30% FEV1/FVC > 30% With or without symptoms	FEV1 > 10% FEV1/FVC > 10% With or without symptoms	FEV1 < 10% FEV1/FVC < 10% With or without symptoms
	Avoidance of risk factor(s), influenza vaccination				
	Add short-acting bronchodilator when needed				
	Add regular treatment with one or more long-acting bronchodilators			Add rehabilitation	
				Add inhaled glucocorticosteroids if frequent exacerbations	
				Add long-term oxygen if chronic respiratory failure Consider surgical treatments	

#### PHARMACOLOGIC TX

- Short-Acting/Long-Acting B<sub>2</sub>-Agonists
- Short-Acting/Long-Acting Anticholinergics
- Methylxanthines (Theophylline)
- Inhaled glucocorticoids
- Systemic glucocorticoids
- Combination products

#### B<sub>2</sub>-AGONISTS

- Bronchodilators
- SABA – wear off within 4-6 hours
- LABA – duration of effect ≥ 12 hours
- Regular tx with LABA is more effective and convenient than tx with SABA

### B<sub>2</sub>-AGONISTS A/E

- Resting sinus tachycardia
- Fine tremors of skeletal muscle → hands
- Headache, palpitations, transient muscle cramps, insomnia, nausea, weakness and dizziness

### Anticholinergics

- The bronchodilating effect of SA inhaled anticholinergics lasts longer than that of SABA, with some bronchodilator effect generally apparent up to 8 hours
- Tiotropium: duration > 24 hours
- A/E: dry mouth, urinary incontinence, bitter metallic taste, acute glaucoma (mask)

### METHYLXANTHINES

- Theophylline SR is effective in COPD, but due to its potential toxicity, inhaled bronchodilators are preferred
- Small therapeutic window
- A/E: atrial and ventricular arrhythmias, grand mal convulsions, headaches, insomnia, nausea, heartburn

### INHALED GLUCOCORTICOSTEROIDS

- Regular tx of inhaled glucocorticosteroids does not modify the long-term decline of FEV1 in pts with COPD
- **Appropriate to use in Stage III and IV and repeated exacerbations (3 in last year)**
- Reduce the frequency of exacerbations and improve health status

### INHALED GLUCOCORTICOSTEROID A/E

- Oral candidiasis → rinse mouth
- Hoarseness, sore throat
- Skin bruising (forearms)
- Possible decrease in bone density

### ORAL GLUCOCORTICOSTEROIDS

- Long-term treatment is not recommended in COPD b/c of lack of evidence of benefit
- Beneficial in the management of **exacerbations** of COPD
- Shorten recovery time and help restore lung function more quickly and may reduce the risk of early relapse
- Prednisone 40 mg od x 10 days

## PRACTICE ENHANCEMENT EXAMPLES

## Case Presentation to Physicians

## WHAT DO WE DO FOR JM?

1. Identify stage of COPD
2. Simplify her medication
  1. Stop tiotropium or ipratropium
    1. What is the difference?
  2. Consider combination products
    1. Symbicort or Advair?
  3. Stop Fluticasone
  4. Suggest Salbutamol to be used PRN only

## PATIENT EDUCATION

- Smoking Cessation
- Do not stop using inhalers, even when feeling better (she did that the week she was on prednisone and Levaquin)
- Inhaler technique – review with every visit

## FOLLOW UP – 1 WEEK

- JM feeling better
- Was able to vacuum



## REFERENCES

- Canadian Thoracic Society COPD guidelines, May/June 2003
- Global Initiative for Chronic Obstructive Lung Disease, July 2004

## PRACTICE ENHANCEMENT EXAMPLES

### Case Presentation to Physicians

#### Common COPD Drugs<sup>11</sup>

Drug	Inhaler (µg)	Nebulizer Solution (mg/ml)	Oral	Injection Vials (mg)	Duration (hours)
<b>B<sub>2</sub>-agonists (short-acting)</b>					
Fenoterol	MDI: 100–200	1	0.5% (syrup)		4–6
Salbutamol (albuterol)	MDI, DPI: 100, 200	5	5 mg Syrup 0.024%	0.1, 0.5	4–6
Terbutaline	DPI: 400, 500		2.5, 5	0.2, 0.25	4–6
<b>B<sub>2</sub>-agonists (long-acting)</b>					
Formoterol	MDI, DPI: 4.5–12				≥12
Salmeterol	MDI, DPI: 25–50				≥12
<b>Anticholinergics (short-acting)</b>					
Ipratropium bromide	MDI: 20, 40	0.25–0.5			6–8
Oxipropium bromide	MDI: 100	1.5			7–9
<b>Anticholinergics (long-acting)</b>					
Triotropium	DPI: 18				≥24
<b>Short-acting B<sub>2</sub>-agonists + anticholinergic</b>					
Fenoterol/Ipratropium	MDI: 200/80	1.25/0.5			6–8
Salbutamol/Ipratropium	MDI: 75/15	0.75/4.5			6–8
<b>Methylxanthines</b>					
Aminophylline			200–600 mg	240 mg	Up to 24
Theophylline (SR)			100–500 mg		Up to 24

<b>Glucocorticosteroids (inhaled)</b>					
Beclomethasone	MDI, DPI: 50–400	0.2–0.4			
Budesonide	DPI: 100, 200, 400	0.20, 0.25, 0.5			
Fluticasone	MDI, DPI: 50–500				
Triamcinolone	MDI: 100	40		40	
<b>Long-acting B<sub>2</sub>-agonists + glucocorticosteroids</b>					
Formoterol/Budesonide	DPI: 4.5/80, 160 (9/320)				
Salmeterol/Fluticasone	DPI: 50/100, 250, 500 MDI: 25/50, 125, 250				
<b>Glucocorticosteroids (systemic)</b>					
Prednisone			5–60 mg		
Methyl-prednisolone	10–2000 mg		4, 8, 18 mg		

DPI: dry powder inhaler; MDI: metered dose inhaler

LU 132 (Formoterol, Salmeterol, combinations): For the treatment of asthma in patients who are using optimum anti-inflammatory treatment and are still experiencing breakthrough symptoms. The drug is not used for relief of acute symptoms.

<sup>11</sup> Global Initiative for Chronic Obstructive Lung Disease. Figure 5-3-6. Commonly Used Formulations of Drugs Used in COPD. *Global strategy for the diagnosis, management, and prevention of chronic obstructive pulmonary disease*. Updated 2004. Based on an April 1998 National Heart Lung, and Blood Institute/World Health Organization Workshop. 2004: 69. Available at: <http://www.goldcopd.com/Guidelineitem.asp?l1=2&l2=1&intId=1385&archived=1>

## PRACTICE ENHANCEMENT EXAMPLES

## Case Presentation to Physicians

Most Common Inhaled Bronchodilators							
Agent	Short-Acting B <sub>2</sub> -Agonists		Long-Acting B <sub>2</sub> -Agonists		Anticholinergics		Combination
	Salbutamol	Terbutaline	Salmeterol	Formoterol	Ipratropium	Tiotropium	
Brand Name	Ventolin® Generics	Bricanyl®	Serevent®	Oxeze®	Atrovent®	Spiriva®	Combivent®
System	MDI Diskus® Inhalation	Turbuhaler®	MDI Diskus®	Turbuhaler®	MDI Inhalation	HandiHaler®	MDI Inhalation
Colour	Blue	Blue bottom	Green/aqua	Green/aqua bottom	White with green cap	Grey	Clear with orange cap
Onset	5-15 min	5-15 min	20-30 min	5 min	5-30 min	30 min	5-15 min
Duration	4-6 h	4-8 h	12 h	8-12 h	4-8 h	> 24 h	4-8 h
Adult Dose	1-2 pfs TID-QID PRN	1-2 pfs TID-QID PRN	MDI: 2 pfs BID Diskus®: 1 pf BID	1 pf BID	2 pfs TID-QID	1 capsule inhaled OD	2 pfs QID
Maximum Dose	800 ug (8 pfs)	3 mg (6 pfs)	100 ug	48 ug	160 ug (8 pfs)	1 capsule	12 pfs
Supplied	MDI (200 dose) 100 mcg/puff Nebules/Soln: 5mg/mL-10mL 1mg/mL-2.5mL 2mg/mL-2.5mL	0.5 mg/inh (200 doses)	MDI: (120 dose) 25 mcg/pf Diskus®: (60 d) 50 mcg/inh	6 mcg/inh 12 mcg/inh (60 doses)	MDI (200 dose) 20 mcg/puff Nebules/Soln: 250ug/mL- 20mL 125ug/mL-2mL 250ug/mL-2mL	18 mcg/cap (30 caps/pk)	120 mcg/20 mcg (200 doses)
Ontario Drug Benefit Coverage LU = Limited Use	MDI Covered Inhalations - LU (Codes 265-9) Diskus® = Not covered	Covered	LU (Code 132)	LU (Code 132)	MDI Covered Inhalations - LU (Codes 256-9)	Covered	MDI Covered Inhalations - LU (Codes 256-9)

Table created by: Margaret Jin, Stratford Family Health Network, Stratford ON; 2005.

## PRACTICE ENHANCEMENT EXAMPLES

### Case Presentation to Physicians

<b>Most Common Inhaled Corticosteroids</b>					
<b>Agent</b>	<b>Beclomethasone</b>	<b>Budesonide</b>	<b>Fluticasone</b>	<b>Salmeterol + Fluticasone</b>	<b>Budesonide + Formoterol</b>
Brand Name	Vanceril® QVAR®	Pulmicort®	Flovent	Advair Diskus®	Symbicort®
System	MDI	Turbuhaler®	MDI Diskus®	Diskus®	Turbuhaler®
Colour	Brown	Brown bottom	Orange	Purple	Bright red bottom
DOSE	Doses should be delivered BID				
Low Dose Adults	200-500 mcg	200-400 mcg	100-250 mcg		
Medium Dose Adults	500-1000 mcg	400-800 mcg	250-500 mcg		
High Dose Adults	> 1000 mcg	> 800 mcg	> 500 mcg		
Max Daily Dose	1000 mcg	2400 mcg	2000 mcg		
Supplied	Vanceril® 50 mcg/puff (200 doses)  QVAR® 50 mcg/puff 100 mcg/puff (200 doses)	MDI: (200 doses) 100 mcg/inh 200 mcg/inh 400 mcg/inh  NEBUAMP 0.125 mg/mL 0.25 mg/mL 0.5 mg/mL	MDI: (120 doses) 25 mcg/puff 50 mcg/puff* 125 mcg/puff* 250 mcg/puff*  Diskus®: (60 doses) 50 mcg/puff 100 mcg/puff 250 mcg/puff* 500 mcg/puff*	MDI: (120 doses) 25/125 mcg 25/250 mcg  Diskus®: (60 doses) 50/100 mcg 50/250 mcg 50/500 mcg	100/6 mcg 200/6 mcg
Ontario Drug Benefit Coverage LU = Limited Use	MDI Covered	Turbuhaler Covered Nebuamp - LU (Codes 260-4)	* MDI & Diskus® Covered	MDI & Diskus® Covered LU (Code 330)	Covered LU (Code 330)

Table created by: Margaret Jin, Stratford Family Health Network, Stratford ON; 2005.

## PRACTICE ENHANCEMENT EXAMPLES

### Cholesterol Clinic Day

#### A. Enhancement Objectives

A clinic day offers practice site physicians and patients education and information on a particular topic of interest. A cholesterol clinic day offers information on cholesterol in general and specifically as it pertains to the patients themselves (e.g., their lipid values, lifestyle factors, medications).

#### B. Tool or Enhancement Description

The enhancement is a cholesterol clinic day run by a pharmacist, dietitian and nurse practitioner (or other allied health care professionals working at the practice site). Patients selected by the practice site physicians have appointments for the cholesterol clinic day. An hour-long appointment consists of three 20-minute visits, one each with the pharmacist, dietitian and nurse practitioner. Physicians may select patients who have been newly diagnosed with hypercholesterolemia or who are resistant to medications. Each health care professional has specific tasks to perform during the 20-minute visit.

A **nurse practitioner** collects the data required for a computer program that documents and calculates a patient's cardiac risk to create a report for each specific patient (The Cardioview™ program is one such tool). Before the clinic day, the off-site physicians' offices fax the lipid data used to create this patient-specific report to the site where the clinic will be held. The nurse practitioner reviews the report with the patient and answers any of their questions. The nurse practitioner may also provide the patients with information on:

- Atherosclerosis, stroke prevention and cardiovascular disease protection
- The differences between total cholesterol (TC), low-density lipoprotein (LDL), high-density lipoprotein cholesterol (HDL), TC:HDL and triglycerides
- Modifiable risk factors (e.g., exercise, smoking cessation, obesity)
- Other risk factors (e.g., diabetes, hypertension, family history)

The **pharmacist** collects information regarding the medications of the patients, including over-the-counter

Enhancement Author: Margaret Jin  
Acknowledgement: Stratford Family Health Network, Stratford, ON

(OTC) and herbal drugs, and vitamins. The pharmacist assesses the patient's adherence to their cholesterol-lowering medications (if applicable) and documents the results. Questions the pharmacist can ask the patients include: When do you take the medication? Do you take it every day? If you do not take it every day, why not? The pharmacist also reviews all cholesterol-lowering medications with the patients using a chart that outlines the potential benefits, adverse effects, how they are to be taken (i.e., with/without food) and if there is a grapefruit interaction with the medication. The pharmacist also provides education on OTC and herbal drugs specific to the patient, where applicable.

The **dietitian** reviews the patients' diet and provides an overview of the key components of dietary modification and the potential benefits of modifying their risk factors. The dietitian can also provide recommendations that describe the ways in which patients can decrease their fat intake and increase their fibre intake by food group. The dietitian can also offer the patients individual follow-up for a detailed assessment.

The nurse practitioner and pharmacist then document the type of education they provided on a one-sheet form for each patient. This form also documents the patient's lipid values, lifestyle factors and adherence to their medications. The patient-specific form is then submitted to the patient's physician at the end of the clinic day.

The patients can also be given a folder with the report calculating their cardiovascular risk and a handout explaining cholesterol. It is important to provide patients with their lipid panel results and their target lipid values (dependent on their cardiovascular risk level) using a chart format. In addition, the folder can contain a list of cholesterol-lowering prescription medications.

The health care professionals follow-up with patients as necessary.

## PRACTICE ENHANCEMENT EXAMPLES

### Cholesterol Clinic Day

Please see the end of this chapter for an example of the patient-specific form given to the doctor, the chart given to patients outlining their lipid results and their target lipid values, the evaluation form and the list of medications used to lower cholesterol.



#### C. Medication Management Improvements

A cholesterol clinic day improves medication management because part of the assessment the patients receive includes a medication **evaluation** by a pharmacist. Through this evaluation, the pharmacist is able to identify and address any drug-related issues with the patient. If necessary, the pharmacist can communicate any issues identified with the patient's family physician.

For example, a patient may not want to take his or her atorvastatin (10 mg, once daily) because he or she has vacation plans. (Patients may take a *vacation* from their medications as well.) If this occurs, the patient will be off the medication for the length of their vacation. The pharmacist can **reinforce** how important it is to take the medication daily to prevent strokes. The pharmacist can also tell the patient to inform his or her family physician because it may affect future cholesterol blood work. The pharmacist would then inform the family physician of the patient's poor compliance.

The pharmacist also **educates** patients about cholesterol-lowering medications, and discusses the risks and benefits of all medications. This can be done regardless of whether patients are prescribed cholesterol-lowering medications.

**Drug-related issues** are identified and discussed, improving medication management for both patients and the practice site.

In addition, lifestyle issues, such as smoking cessation, exercise and diet, can be identified and addressed by the nurse practitioner and the dietitian. Through discussing medication and lifestyle issues and receiving relevant information, the patients' **compliance** may improve because their understanding of risks, benefits, behaviours and medications has increased.

Also, as a result of a medication assessment, a pharmacist can make changes to the **drug therapy** of the patients. For example, for a patient who participates in a cholesterol clinic day, the pharmacist may suggest increasing calcium from 500 mg once daily to calcium 500 mg three times daily and vitamin D intake from 400 IU to 800 IU once daily.

The general education provided by the three allied health care professionals during a clinic improves the patients' understanding of cholesterol and the need to have their cholesterol assessed regularly. This could improve patient **monitoring** if they use their new knowledge to remind or ask their physicians (if needed).

The practice site physicians can also benefit because the clinic days allow them to **spend less time** on lifestyle and medication education as the patients receive assessments and information from other health care professionals in the practice.

Having a clinic day may also **attract** more patients to the practice site.

A practice's **organization** could change if clinics similar to a cholesterol clinic day were held every three to four months at the practice site. For example, the physicians may refer their patients to a clinic before adding medications to their patient's regimen.

Although **community pharmacists** are not directly involved in a cholesterol clinic day, they may also benefit if

## PRACTICE ENHANCEMENT EXAMPLES

### Cholesterol Clinic Day

the patients who participate show their cholesterol results to their local pharmacists. The community pharmacists can aid the patients in achieving their target cholesterol goals by reinforcing the lifestyle education and providing support or participating in future clinic days.

A cholesterol clinic day is very important to achieving better health outcomes for patients because it increases **awareness** of high cholesterol risks and medications that could be part of a strategy to lower their cholesterol values. A clinic can also provide information on prevention.

Starting clinics promotes a more **conscientious effort** to improve lifestyle choices and adhere to medication routines, which may lead to the lowering of cholesterol, the maintenance of target cholesterol levels and better patient health outcomes.

#### D. Development Process

The allied health care professionals of a practice site hold a meeting to discuss hosting a clinic day. They determine what topic would be most beneficial for patients and physicians that is not available within the community.

After the topic is chosen, they hold several more meetings to organize the clinic day. They draft a letter to the physicians outlining their plan from their different perspectives. The letter is then given to the site's lead physician, who may present the idea to all physicians at a formal meeting and get their approval or agreement.

Informal meetings to discuss specific details and create handouts are held after the physicians agree.

The team of health care professionals can create a follow-up letter and handouts for the physicians, as well as a process to document the results of the clinic in the patients' charts.

An evaluation form can also be created to assess the patients' attitudes and thoughts regarding their participation in the clinic. (Please see the end of the chapter for an evaluation form that was used in the past

by a pharmacist to evaluate a cholesterol clinic day.) Pharmacists can review and revise the provided evaluation form to ensure it is relevant to the chosen topic. The other allied health care professionals review the evaluation form and provide feedback for changes. Several drafts may be completed.

The allied health care professionals determine if they want to use a computer program to aid in calculating patients' cardiovascular risk. Using a program already available at the practice site is practical. If the allied health care professionals do not have experience using the program, contact a representative of the company to arrange a review. The representative can also be asked to suggest methods to promote the clinic day.

The allied health care professionals should involve the practice site physicians as much as possible in the clinic day. For example, the physicians can refer their patients to the clinic, as they know which of their patients have been newly diagnosed with hypercholesterolemia or have difficulties with compliance with their medications.

#### References and resources

A cholesterol clinic day may incorporate information from evidence-based medicine. The following references were used for the clinic example shown:

Genest J, Frohlich J, Fodor G, McPherson R; for the Working Group on Hypercholesterolemia and Other Dyslipidemias. Recommendations for the management of dyslipidemia and the prevention of cardiovascular disease: Summary of the 2003 update. *CMAJ* 2003;169:921-4.

Rx Files, September 2004. Available at:  
<http://www.rxfiles.ca>

#### E. Implementation Process

The pharmacist, dietitian and nurse practitioner hold meetings to discuss how a cholesterol clinic day will be implemented at their practice site. It may be decided to involve one practice site physician to present the idea to the other practice site physicians, as the physicians often hold formal meetings.

## PRACTICE ENHANCEMENT EXAMPLES

### Cholesterol Clinic Day

Several factors can influence the day a clinic day is held. Often, a practice site has a day during the week in which patients are not scheduled to be seen, and exam rooms are available. Obviously, the clinic must be held on a day the health care professionals are scheduled to work.

Use a variety of methods, such as email and fax, to inform the practice site physicians of the day the clinic will be held and ensure all physicians are made aware of the day.

The practice site receptionist can also be involved in the clinic by scheduling the patients' appointment times and organizing the rooms. The receptionist can also inform the allied health care professionals when a patient is ready, and give the evaluation forms to the patients.

If there are more practice site offices involved in the clinic, the receptionists at those offices can fax the cholesterol blood work to the office in which the clinic is held to ensure the allied health care professionals have the patients' most recent blood work.

#### **F. Overcoming Challenges**

It can be challenging if the workload is not shared evenly among the health care professionals involved in the clinic day. Overcome this by using more efficient communication between all parties involved to ensure the equal distribution of work among all members.

Another challenge may be getting physicians to refer patients to the clinic. Promote the clinic by ensuring the physicians and patients are aware of the date and the benefits.

Finding a day on which all health care professionals are available and no patients have been scheduled is another challenge. By communicating effectively, compromising and rearranging schedules, this challenge can be overcome.

#### ***Challenges that may be difficult to overcome***

The practice site physicians may have a different goal in mind than the allied health care professionals. These differing views can negatively influence the physicians' engagement and interest in the clinic.

#### **G. Facilitating Factors**

The setting and layout of a practice site can facilitate a clinic day, especially if there is a room available for each allied health care professional involved that contains both a computer and a printer.

#### **H. Evaluation Results**

Evaluating a clinic day is important for several reasons. From the perspective of the pharmacist, dietitian and nurse practitioner, an evaluation can determine how well allied health care professionals work together. For the practice site physicians, an evaluation can determine if the clinic had a positive effect on their patients' health outcomes. An evaluation can also ensure that patients learned about their disease state and lifestyle choices through the information and education they gained from the cholesterol clinic.

## PRACTICE ENHANCEMENT EXAMPLES

## Cholesterol Clinic Day

After their entire appointment, give patients a form to evaluate the clinic. The form can ask the patients to rate their level of agreement with a series of statements related to the clinic day, and specifically, to each health care professional they visited. The results from the original enhancement are as follows:

### Results of an Evaluation of a Cholesterol Clinic Day

A five-point scale was used:

1 = Strongly Disagree

2 = Mildly Disagree

3 = I do not know

4 = Mildly agree

5 = Strongly agree

Statement	Mean±SD
I felt comfortable answering the pharmacist's questions	4.3±1.0
I did not feel comfortable asking the pharmacist questions	1.5±0.6
I am satisfied with the service the pharmacist provided me with	4.5±0.6
I felt comfortable answering the nurse's questions	5.0±0.0
I did not feel comfortable asking the nurse questions	1.5±0.9
I am satisfied with the service the nurse provided me with	5.0±0.0
I felt comfortable answering the dietitian's questions	5.0±0.0
I did not feel comfortable asking the dietitian questions	1.3±0.5
I am satisfied with the service the dietitian provided me with	5.0±0.0
I know why I am taking my cholesterol medication	NA
I know how to take my cholesterol medication	NA
I know what to do if I have side effects from my cholesterol medication	NA
I feel confident I will be able to manage my medication	NA
I have an understanding of lifestyle changes I can make (i.e., diet, exercise, smoking, alcohol)*	5.0±0.0
I found the Clinic area to be a pleasant place	5.0±0.0
I am satisfied with the overall service provided by the Clinic (nurse, dietitian and pharmacist)	5.0±0.0
I found the Cardioview™ (computer printout) helpful in my understanding of my cardiac risks	5.0±0.0

For all statements n=4; \*n=3 (one patient did not rate their agreement with the statement)

## PRACTICE ENHANCEMENT EXAMPLES

### Cholesterol Clinic Day

#### Cholesterol Clinic Day Report Example

Site name

Date

Dear Doctor \_\_\_\_\_:

At our clinic today, we met with your patient, \_\_\_\_\_. We reviewed the recent findings of the lipid panel and discussed the following:

<p><b>ADHERENCE</b></p> <p><input type="checkbox"/> If patient is taking a cholesterol lowering agent</p> <ul style="list-style-type: none"> <li>• Name of drug: _____</li> <li>• Instructions: _____</li> <li>• Patient IS/IS NOT taking medication as instructed</li> <li>• If not, WHY?</li> </ul> <p><input type="checkbox"/> If patient is not taking a cholesterol lowering agent, the reason for not taking medication: _____</p> <p><input type="checkbox"/> Is patient taking any alternative therapy to lower cholesterol not prescribed by the physician? YES/NO</p> <ul style="list-style-type: none"> <li>• If YES, which ones? _____</li> </ul>	<p><b>CHOLESTEROL EDUCATION</b></p> <p><input type="checkbox"/> Total cholesterol: _____</p> <p><input type="checkbox"/> HDL: _____</p> <p><input type="checkbox"/> TC:HDL RATIO: _____</p> <p><input type="checkbox"/> LDL: _____</p> <p><input type="checkbox"/> Triglycerides: _____</p> <p><input type="checkbox"/> Stroke prevention: _____</p> <p><input type="checkbox"/> Cardiovascular protection: _____</p> <p><input type="checkbox"/> Other: _____</p> <p><input type="checkbox"/> Review of condition: _____</p> <p><input type="checkbox"/> Review risk factors (bp, diabetes, smoking, family hx, cardiovascular disease): _____</p>
<p><b>LIFESTYLE ISSUES</b></p> <p><input type="checkbox"/> Alcohol intake: _____</p> <p><input type="checkbox"/> Exercise: _____</p> <p><input type="checkbox"/> Smoking: _____</p> <p><input type="checkbox"/> Diet: _____</p> <p>_____</p> <p>_____</p>	<p><b>EDUCATION OF MEDICATIONS</b></p> <p><input type="checkbox"/> Review of cholesterol-lowering agents (see chart)</p> <ul style="list-style-type: none"> <li>• Adverse effects</li> <li>• Grapefruit interaction</li> <li>• With or without food</li> <li>• Other: _____</li> </ul> <p><input type="checkbox"/> Herbal medications</p> <ul style="list-style-type: none"> <li>• Safety issues</li> <li>• Adverse effects</li> <li>• Other: _____</li> </ul>

Other comments: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

# PRACTICE ENHANCEMENT EXAMPLES

## Cholesterol Clinic Day

### Medications that Decrease Cholesterol

	GENERIC NAME (TRADE NAME)	LDL	HDL	TG	SIDE EFFECTS/ COMMENTS	FOOD
S T A T I N S / H M G	Atorvastatin (Lipitor)	↓35–60%	↑5–15%	↓7–30%	Side effects < 10%, generally better tolerated than other agents  Common: Upper GI disturbances, muscle pains, headache, rash & sleep disturbances	No grapefruit (except pravastatin & rosuvastatin)  +/- Food
	Fluvastatin (Lescol)	↓20–35%				
	Lovastatin (Mevacor)	↓25–40%				
	Pravastatin (Pravachol)	↓20–35%				
	Rosuvastatin (Crestor)	↓40–65%				
	Simvastatin (Zocor)	↓35–50%				
F I B R A T E S	Bezafibrate (Bezalip)	↓5–20%	↑10–20%	↓20–50%	Common: GI upset, rash & abdominal pain  Less common: headache, itchiness, decreased libido, dizziness, drowsy, muscle aches, increase glucose, sleep/vision changes	+ Food
	Fenofibrate (Lipidil Micro, Lipidil Supra)					+ Food
	Gemfibrozil (Lopid)					½ hour before food
R E S I N S	Cholestyramine (Questran)	↓15–30%	↑3–5%	No change or possible ↑	Common (<30%): Constipation, nausea & bloating  Increase fluid & bulk in diet (Metamucil may be required)  Mix with juice, water, milk, applesauce	+/- Food  2 hours apart from other meds
	Colestipol (Colestid)					
O T H E R	Ezetimibe (Ezetrol)	↓17%	↑1.3%	↓6%	Decreases intestinal cholesterol absorption	+/- Food
	Nicotinic Acid (Niacin) (Nicotinamide — not effective!!)	↓5–25%	↑15–35%	↓20–50%	Flushing (↓ by ASA/Advil ½ hour pre), dry eyes, itchiness, headache, GI upset, increase uric acid (gout), increase glucose	+ Food

Table created by: Margaret Jin, Stratford Family Health Network, Stratford ON; 2005.

## PRACTICE ENHANCEMENT EXAMPLES

### Cholesterol Clinic Day

#### Evaluation Form Example

Date: \_\_\_\_\_ Name: \_\_\_\_\_

#### Tell Us What You Think About the Cholesterol Clinic

We would like to know what you think about the **service** provided to you by the **Cholesterol Clinic**. We will use your answers to improve our service. Your honest answers and comments are very important to us. These questions should take about 5 to 10 minutes to answer.

**Please read each statement and then check (✓) the box on the right that best describes how much you agree or disagree with the statement.**

Statement	Strongly disagree	Mildly disagree	I do not know	Mildly agree	Strongly agree
<b>About the Pharmacist...</b> I felt comfortable <b>answering</b> the pharmacist's questions.					
I <b>did not</b> feel comfortable <b>asking</b> the pharmacist questions.					
I am satisfied with the service the pharmacist provided.					
<b>About the Nurse...</b> I felt comfortable <b>answering</b> the nurse's questions.					
I <b>did not</b> feel comfortable <b>asking</b> the nurse questions.					
I am satisfied with the service the nurse provided.					
<b>About the Dietitian...</b> I felt comfortable <b>answering</b> the dietitian's questions.					
I <b>did not</b> feel comfortable <b>asking</b> the dietitian questions.					
I am satisfied with the service the dietitian provided.					
<b>About me . . .</b> I know why I am taking my cholesterol medication.					
I know how to take my cholesterol medication.					
I know what to do if I have side effects from my cholesterol medication.					
I feel confident I will be able to manage my medication.					
I have an understanding of lifestyle changes I can make ( i.e., diet, exercise, smoking, alcohol).					
<b>About the Clinic...</b> I found the Clinic area to be a pleasant place.					
I am satisfied with the overall service provided by the Clinic (nurse, dietitian and pharmacist).					
I found the Cardioview™ (computer printout) helpful in my understanding of my cardiac risks.					

**Please use the back of the page for additional comments.**

**Thank you for your help.**

## PRACTICE ENHANCEMENT EXAMPLES

### Section 8 and Adverse Drug Reaction Forms

#### A. Enhancement Objectives

##### **Section 8 Form**

Incorporating the Section 8 form into a practice's electronic medical record (EMR) system makes it easier for physicians to use.

##### **Adverse Drug Reaction (ADR) reporting form**

Adding an ADR reporting form to the EMR encourages physicians to report any ADRs their patients experience. Reporting is often not a common practice, but can lead to long-term benefits for patients. If ADRs are reported, the pharmaceutical companies learn of long-term effects of medications, which could affect their use and prescribing practices.

#### B. Tool or Enhancement Description

##### **Section 8 Form**

A one-page electronic form, with some fields that autopopulate, that is added to a shared folder in the practice site's computer network. All practice site physicians have access to the file in the EMR when needed.

##### **ADR Reporting Form**

A one-page electronic form, with some fields that autopopulate, that is added to a shared folder in the practice site's computer network. All practice site physicians have access to the file in the EMR when needed.

#### C. Medication Management Improvements

##### **Section 8 Form**

Adding Section 8 forms to the EMR is important for achieving **better health** outcomes. It increases the use of the forms, which increases the chances patients have of gaining access to and a means to pay for medications they need.

Patients' drug therapy improves because they have access to medications not normally covered by their drug plans or by the government. Increased access to a variety of **therapy choices** leads to improvements in health outcomes and disease states.

Enhancement Author: Nita Patel  
Acknowledgement: Beamsville Medical Centre,  
Beamsville, ON

An electronic Section 8 form can have patient-specific fields that automatically self-populate for the physicians, such as the date of birth, health card number, etc., which were filled in manually by the physicians in the past. Physicians benefit from an increase in **efficiency** because of the decreased time required to complete the form. There are also fewer chances for error (e.g., incomplete fields, transposed numbers), which improves the likelihood of **approval** on the first submission.

By allowing practice site physicians to complete and send Section 8 forms to the Ministry of Health electronically, there is an increased probability the forms will be returned more quickly. **Faster** response time means patients receive their medications faster, benefiting eligible patients.

**Community pharmacies** also benefit from the efficiency, because approved medications reach them faster.

With the form directly available on the EMR, the physicians have direct access to important clinical **information**, such as the status of and reasons for forms already sent.

While patient monitoring does not improve with the Section 8 form on the EMR, the monitoring **results** can because patients start taking medications that work better for them.

##### **ADR Form**

The ADR reporting form provides Health Canada and pharmaceutical companies with information on different reactions patients have with medications.

Using the form can improve medication management for patients. If ADRs are reported more frequently, more data

## PRACTICE ENHANCEMENT EXAMPLES

### Section 8 and Adverse Drug Reaction Forms

can be gathered, providing a **more complete picture** of a medication. That in turn allows pharmaceutical companies to communicate the particular benefits or warnings regarding a specific drug to physicians — all of which could impact drug therapy. Pharmaceutical companies could also develop better drugs or information to assist physicians in making their decisions regarding drug therapy for their patients.

Physicians would have to devote some **time** to filling out the form to make it effective.

#### D. Development Process

Both the Section 8 and ADR reporting forms are available in physician reference books and from the provincial government. When required for a patient, these forms are photocopied and filled in manually.

#### Section 8 Form

When a pharmacist begins working at a practice site, he or she may be approached by the practice site physicians for clarification regarding certain details or fields on the form. The pharmacist may decide that an electronic version of the form would be more efficient.

This enhancement can assist the physicians to become more comfortable using the Section 8 form, and an electronic form will be more user-friendly for physicians who work in a paperless practice site.

A significant portion of patients can benefit from this practice enhancement, depending on the practice site's demographics.

Suggest the enhancement at a meeting held with the practice site physicians. Gauge whether the physicians would use the electronic version of the form if it were made available.

If the EMR system used at the practice site is new or unfamiliar, approach other team members for information on where to place the electronic form on the shared drive.

The physicians can also provide feedback and suggestions on how to have certain fields in the Section 8 form populate automatically.

#### ADR Reporting Form

When a pharmacist begins working at a practice site, he or she can speak with the practice site physicians to determine if the ADR reporting form is used at the practice site.

*"I can understand why some physicians loathe filling out insurance forms and Section 8s. If there is no standard template, it can be a lengthy process. [I wrote a Section 8 form this month.] Luckily the EMR had a fill-in-the-blank template so... it didn't take too long."*

— IMPACT demonstration project participating pharmacist

In the long term, a significant portion of the practice site's patients can benefit from an electronic version of the ADR reporting form.

If the form is currently not being used at a practice site electronically or manually, speak with the practice site physicians to determine why and if there is some way in which it would be used. When asking for approval from the physicians for this enhancement, ask them for feedback, such as negative aspects of the paper-based form. For example, after the form is completed and submitted, pharmaceutical companies often call physicians to gather more information, which takes great amounts of the physicians' time.

If the EMR system used at the practice site is new or unfamiliar, approach other team members for information on where to place the electronic form on the shared drive.

## PRACTICE ENHANCEMENT EXAMPLES

### Section 8 and Adverse Drug Reaction Forms

#### E. Implementation Process

The paper Section 8 and ADR reporting forms that are available in the physician reference books or through the provincial government can be scanned to create electronic files of the forms. The electronic files can then be placed onto the shared drive, which ensures all physicians have access to them.

If the software is new or unfamiliar, approach the clinic/office manager to learn how to use it and to determine the best method to implement the enhancement.

If difficulties are encountered while trying to have fields automatically populate, approach the physicians or other team members more familiar with the software.

After a preliminary electronic version of the form is created, ask a physician to test it to ensure it is functioning correctly before it is made available to all physicians at the practice site.

After the forms have been pilot-tested by a physician, make the forms available to all physicians at the practice site. The pharmacist can informally (e.g., mention in passing) or formally (e.g., send an email) inform the practice site physicians that the forms are available electronically.

#### F. Overcoming Challenges

A pharmacist may face challenges during the development of the electronic forms if he or she lacks experience working with computers generally, or specifically, working with the software used at a practice site. For example, when creating a form with fields that self-populate, the pharmacist must ensure that the appropriate information appears, and that the punctuation and spacing appear correctly. Overcome this challenge by approaching the practice site physicians, personnel or the company that created the EMR software for help.

Challenges can also happen when trying to get physicians to use the forms. Although the physicians may have been informed of their availability electronically, reminders may be needed periodically to overcome this challenge.

#### *Challenges that may be difficult to overcome*

Because physicians are not required to complete the ADR reporting form, encouraging them to use the electronic version may be a challenge, especially if the physicians are concerned about the time required to do so. It is also challenging if the practice site is not EMR-based, or if the EMR used by the practice site does not support autopopulation in the form.

#### G. Facilitating Factors

There are specific characteristics of a practice site that can facilitate implementing this enhancement: the practice site is EMR-based and the practice site physicians prefer to have all forms available in an electronic format because they are easier to use.

#### H. Evaluation Results

No strategy to evaluate this enhancement was undertaken.

**Example Note:** As this enhancement is an electronic file that autopopulates specific fields for members of the practice site, it is not possible to include a paper document in this guide that illustrates the enhancement.

## Drug Sampling Procedures

### A. Enhancement Objectives

Enhancing drug sampling procedures creates tighter controls for patient confidentiality and samples provided by pharmaceutical companies, decreases samples wasted, and improves the flow and efficiency of the physicians' day.

### B. Tool or Enhancement Description

The enhancement consists of a variety of components: a drug sample cupboard, binder, expired drug list, letter to pharmaceutical representatives and a requested pharmaceutical sample list.

The drug sample cupboard can be organized to group samples according to therapeutic/disease states, e.g., antidepressants, analgesics, respiratory, cardiac and hormone replacement therapy (HRT).

The binder contains the contact information for each pharmaceutical company in alphabetical order. Each company has one laminated page with a chart containing the name, email address, and telephone and fax information for the pharmaceutical representative, as well as the name of the drug the representative specifically samples. The binder can also have business card holder sheets with the business cards of the pharmaceutical representatives. Keep the binder in a common area for everyone in the practice site to access. The information can also be kept electronically on the shared drive, which allows for easy updating.

An expired drug list charts the month of expiry, description of the product, how much is left, the pharmaceutical representative's phone number (to arrange for expired samples to be removed) and the date the samples were removed.

The letter to pharmaceutical representatives informs them of the practice site's new policy, the purpose, and how to proceed with detailing, samples and continuing education.

Enhancement Author: Rashna Batliwalla  
Acknowledgement: Riverside Court Medical Clinic,  
Ottawa, ON

The requested pharmaceutical sample list is created by the physicians and lists the specific drugs accepted at the practice site.

Please see the end of this chapter for examples of the letter, requested pharmaceutical sample list, and binder pages. There are also photographs demonstrating the organization of a drug sample cupboard.

### C. Medication Management Improvements

The drug sampling procedures enhancement is directed toward improving the medication management of a practice site and in particular, the efficient use of the **physicians' time** (including the time between seeing patients).

Some physicians sample more than others in a practice site. A drug sampling procedure allows pharmaceutical representatives to **target** these physicians and prevents other physicians from having their day interrupted by the representatives.

A drug sampling procedure can instruct practice site staff to ask pharmaceutical representatives to inform them of **upcoming visits**. If a physician is too busy, the staff can inform the representative, which saves time and prevents disruptions for all parties. In addition, certain days of the week are very busy for a practice site. Pharmaceutical representatives can be asked to avoid visiting the practice site on these busy days.

A pharmacist working at the practice site can act as a **liaison** between the pharmaceutical representative and the practice site physicians. For example, if a pharmaceutical representative wishes to detail the practice site physicians regarding new products, the representative will be required to first contact the



## Drug Sampling Procedures

pharmacist, who then informs the physician about the new drug and determines whether the physician would like more information. If the physician is interested, the pharmacist contacts the pharmaceutical representative. Other practice site personnel can also act as a liaison, such as a clinic/office manager.

The practice site can also provide the pharmaceutical representatives with different methods to detail the physicians in a formal way without causing disruptions to the physicians' day. For example, the pharmaceutical representative can book a full continuing medical education session (CME) to discuss new medications.

The practice site could start **Lunch & Learns**, and have pharmaceutical representatives invite guest speakers to provide an overall picture of a product, instead of having a pure detailing of a product, which reduces the amount of biased information from the pharmaceutical industry.

In addition, the pharmacist can create a binder for the practice site that alphabetically lists all of the **pharmaceutical companies** that sample for a practice site. Thus, if a physician needs to contact a certain representative, they can do so quickly and efficiently.

The practice site can also inform the pharmaceutical representatives about the types of materials they can and cannot leave behind, as physicians do not have time to look at all information. This ensures the **information** left for physicians to read is pertinent to their needs.

Although the drug sampling procedure is not geared towards the patient, some indirect benefits can arise for the medication management of patients.

To maintain patient confidentiality and the flow of patient traffic in the hallway, pharmaceutical representatives can be asked not to proceed to the back of the clinic unless **invited** to do so by the clinic staff, physicians or the pharmacist.

The enhancement also ensures that drug samples required by patients are always available by maintaining the drug sample **stock** of a practice site. As more samples are needed, physicians inform the pharmacist who contacts the pharmaceutical representative. This helps low-income patients in particular, for whom physicians often provide samples on a regular basis.

A drug sampling procedure can also allow changes in the drug therapy of patients by allowing patients to try new drugs on a **trial basis** without having to spend money and fully commit to new drugs that may not work or not work as well.

*"It's nice to see clinic members taking advantage of the sample binder to reach rep contacts... The resource tool is being utilized without having to always refer to me, which is a good sign."*

— IMPACT demonstration project participating pharmacist

For drug sampling efficiency, the procedure may change the **workflow** organization of a practice site. When the enhancement is first implemented, the office staff consult the pharmacist before sending a pharmaceutical representative to see the physicians to ensure there is no overlap of drug sampling.

The drug sampling procedure may also improve medication management by controlling the number and organization of drug samples brought in by representatives. This can be achieved in several ways.

The physicians can generate a **requested sample list**, and not sign for any samples unless they are on the list. Pharmaceutical representatives can be given the option of making a special request to have special consideration of drug samples not on the list. This saves space in the cupboard and reduces waste.



## PRACTICE ENHANCEMENT EXAMPLES

### Drug Sampling Procedures

As sample drug stores run low, the drug names can be entered into a chart so the pharmaceutical representative can be contacted and invited to the practice to provide more samples. Periodically ask the physicians if they have any samples they wish to request. This ensures that drug samples are available for the physicians when needed.

Because the pharmacist organizes sampling pods and jars in the drug sample **cupboard**, the representatives will not be able to go through the cupboard without permission.

A drug sampling procedure can indirectly lead to other improvements. Physicians often want details on **new drugs**, which could change their first line choices for drug therapy. Better drug sample organization can help **monitoring** as well. A significant portion of patients who receive drug samples can benefit from this enhancement.

#### D. Development Process

The suggestion for a drug sampling procedure can come from either the physicians or the pharmacist at a practice site. Often, a pharmacist joining a practice can be a catalyst for drug sample organization.

Hold a meeting with the physicians to determine their specific needs and requests. Some practice site physicians may not want to be detailed at all by pharmaceutical representatives, while others may want to be kept abreast of new products available. Physicians may request that the pharmaceutical representatives be screened by the pharmacist to determine if there is a need for a visit.

Also meet with the clinic/office manager to discuss the best way to address the issues brought up by the physicians for their practice site.

Maintain communication with the physicians through meetings or email for the duration of the development process.

Organize, implement and execute the drug sampling procedure at the practice site. If other personnel take over these duties, review the procedure with the appropriate personnel and train them for the required amount of time (this can vary, but in the past has taken two to three hours).

Organize the drug sample cupboard by removing and disposing of expired pharmaceuticals. Expired drugs can be disposed of initially through the pharmacist's medication waste management program at their pharmacy, if applicable, or by the appropriate pharmaceutical representative. The drug sampling procedure that is created should include a stipulation that pharmaceutical representatives are responsible for the disposing of their own drug samples. The current drug samples are organized in a manner that is logical and efficient for each practice site. For example, they can be organized according to therapeutic/disease states, e.g., antidepressants, analgesics, respiratory, cardiac and HRT.

The site may have a stack of business cards that have been left by pharmaceutical representatives. Organize the cards by company and create an alphabetical list of companies. Each pharmaceutical company can have a laminated page with a chart containing the name, email address, telephone and fax information for the pharmaceutical representative, as well as the name of the drug the representative specifically samples. Put these pages in a binder that can also contain business card holder sheets for the business cards. Keep the binder in a common area for everyone in the practice site to access, and keep the information electronically on a shared drive for easy updating.

Create a chart for the physicians to fill in to request samples when stock is running low. If the pharmacist is in the practice site, the physicians can directly tell him or her what needs to be restocked.

The pharmacist or other team members (such as the clinic/office manager) develops an outline of the new



## Drug Sampling Procedures

procedures. Another team member reviews it to ensure the letter represents all the points the physicians requested.

Once an initial draft of the letter is created, consult the physicians for feedback. Some suggestions may be to change the wording so the letter has the appropriate tone, to ensure the representatives understand the reasons for the policy, and that while physicians value their relationships, they want to increase efficiency. Two to three drafts of the letter may need to be created.

The final version of the letter outlining the purpose and how to proceed with detailing, samples and continuing education is then printed on practice site letterhead and distributed to the pharmaceutical representatives by either the pharmacist or members of the office staff (e.g., the clinic/office manager).

### E. Implementation Process

Use brief encounters with the physicians in the hallway or formal meetings with the physicians to inform them the drug sampling procedure is in place. Also send out a general email to the whole practice site, and place electronic copies of the documents in the shared drive.

Because the front office staff members often have the first encounter with the pharmaceutical representatives, they should be trained to recognize situations in which it is appropriate to refer the representative to the pharmacist or to go directly to the physician. These situations are specific to each practice site.

### F. Overcoming Challenges

Some challenges may arise when implementing this enhancement.

When pharmaceutical representatives are informed of the new policy, why it has been put in place and the fact that they must meet with the pharmacist prior to meeting with the doctor, they may view the pharmacist's role as a

conflict of interest and not understand the pharmacist's role in the process. Printing the policy and letter on practice site letterhead indicates the entire team is in favour of the policy, and helps ease this issue.

Despite the policy, the representatives may not inform site staff of visits. Often representatives drop by without phoning ahead. Inform the representatives of particularly bad days or times to visit, to limit the inconvenience.

In some practice sites, the pharmacist may work at a pharmacy located in the same building as the practice. Knowing this, the pharmaceutical representatives may stop by to see the pharmacist at the pharmacy, which can interrupt his or her day. This challenge can be overcome by sending the representatives to other practice site personnel on the days the pharmacist is not working at the practice site.

### G. Facilitating Factors

Certain features of a practice site can make the drug sample procedure easier to adopt, such as an area designated for drug samples (like a cupboard) and a good working relationship between physicians and pharmaceutical representatives.

Existing issues around drug samples may also make the practice site more open to implementing a procedure policy. A cluttered drug sample collection or representatives who proceed directly to physician offices without checking with office staff (which leads to patient confidentiality concerns, as patient charts are often in the open behind the scenes) are problems a drug sample procedure can help fix.

### H. Evaluation Results

No strategy to evaluate this enhancement was undertaken.

## Drug Sampling Procedures

## Letter to Pharmaceutical Representatives Example

## Practice Site Letterhead

**POLICY REGARDING DRUG REPRESENTATIVES AND RELATIONSHIP  
WITH THE PHARMACEUTICAL INDUSTRIES.**

Due to the high patient volume in the office and the need for tighter controls on our pharmaceutical sample stock, we ask that visiting pharmaceutical representatives follow the following procedures at our clinic:

**DETAILING:**

- 1) Please let the front desk know that you are stopping by *prior* to your visit. This way, if it is too busy a day to speak to you, we can let you know before you spend any unproductive time at our clinic.
- 2) Do *not* proceed to the back of the clinic before being invited to do so by our staff or physicians. Please respect that patient flow and hallway traffic cannot be affected by your visit, and patient confidentiality is of utmost importance.
- 3) Do *not* drop off samples of any new medications unless they are included on our requested list.

**SAMPLES:**

- 1) The *only* samples that will be accepted are those on our accepted list. The physicians will not sign for any other samples.
- 2) For your samples to be considered for our requested list, leave a list of available samples with the front desk.
- 3) Do *not* go through our sample drawers or cupboards (unless requested by office staff). We will assess what samples if any are required to be restocked.

**CONTINUING MEDICAL EDUCATION:**

- 1) CME: To request that a CME event be held at the clinic, please contact Dr. \_\_\_\_\_ directly through email. We will provide a needs assessment and dates for acceptable events.
- 2) No “drug lunches” without a Guest Speaker will be considered.
- 3) For CME events outside the office, please leave an invitation at the front desk with an RSVP contact. Interested physicians will contact you individually to accept invitations.

We appreciate the relationship we currently have with our representatives but have to maintain impartiality, professionalism and patient care as priorities. Hopefully working within these guidelines will allow a continuing smooth working relationship. The above policies do not preclude any physician at the clinic from attending or accepting invitations at their own discretion. Any written feedback will be welcomed via our office staff.



### Requested Pharmaceutical Sample List Example

#### Practice Site Letterhead

#### REQUESTED PHARMACEUTICAL SAMPLE LIST

As outlined in our office policies, representatives are reminded that only the samples on the following list will be accepted at the Clinic. The list will be updated monthly. To have your drug name added to the list please leave a list of available samples with the front desk. *Representatives will be contacted by an office staff member when restocking is required.*

The following is the Clinic's Pharmaceutical Sample List:

#### Allergy/Asthma

Advair™  
Flonase™  
Nasonex™  
Oxeze™  
Pulmicort™  
Spiriva™  
Symbicort™

#### Antibiotics/Antivirals

Biaxin™  
Diflucan™  
Famvir™  
Macrobid™  
Suprax™  
Tequin™  
Valtrex™  
Zithromax™

#### Cardiac

Altace™  
Avapro™  
Coversyl™  
Crestor™  
Diovan™  
Lipitor™  
Plavix™

#### Contraceptives

Alesse™  
Cyclen™  
Diane-35™  
Evra™  
Marvelon™  
Nuvaring™  
Ortho 7/7/7™  
Plan-B™  
Tri-cyclen™

#### Pain

Bextra™  
Celebrex™  
Mobicox™  
Pennsaid™

#### Psychiatric

Celexa™  
Effexor XR™  
Paxil CR™  
Remeron™  
Wellbutrin™  
Zyprexa™

#### Stomach

Dicetel™  
Nexium™  
Pantoloc™  
Pariet™  
Prevacid™

#### Topicals

Differin™  
Elidel™  
Prevex HC & B™  
Stievamycin™

#### Other

Cialis™  
Di-Vi-Sol™  
Imitrex™  
Levitra™  
Maxalt™  
Starnoc™  
Tempra™, Advil™ or Motrin™  
(pediatric)  
Viagra™





# PRACTICE ENHANCEMENT EXAMPLES

## Drug Sampling Procedures

### Binder Page Example

Pharmaceutical Company Name			
Representative	Phone number	Email address	Products

## PRACTICE ENHANCEMENT EXAMPLES

### Drug Sampling Procedures

Photographs Illustrating the Organization of a Drug Sample Cupboard



## Drug Interaction Protocol Presentation

**A. Enhancement Objectives**

Electronic medical record (EMR) systems purchased by practice sites often contain add-on Drug Interaction (DI) modules that can be useful, but can also lead to a variety of problems. A DI protocol presented to site staff eases the technology adoption, guides the physicians to ensure they achieve the full potential of the tools, and helps them use the DI database more effectively.

**B. Tool or Enhancement Description**

The DI protocol is presented to the practice site physicians (using PowerPoint or similar software) featuring screen shots of their site's EMR. The presentation can contain several case studies that can be used to engage the physicians by having them determine what the issues could be for that patient. A pharmacist can then demonstrate how the information can be accessed through the DI software using the EMR screen shots.

**C. Medication Management Improvements**

By attending a presentation that describes the DI software, the physicians should be able to use the DI module to its full **potential** (instead of overriding all interactions as they appear with the software, the physicians should be able to adequately assess the drug interactions that do appear when prescribing medications). Using the software properly has a large, positive impact on medication management. Efficient use of the software enables the physicians to readily observe potential DIs and to access drug information more easily.

Patients can benefit from improved medication management because using the software efficiently decreases the probability of patients being prescribed medications that have possible interactions with their **existing medications**. Although there is always the possibility of a DI when any medication is prescribed, implementing and using the software successfully decreases the likelihood of this occurring.

Also, physicians may be more likely to prescribe appropriately by knowing the **software's limitations**.

Enhancement Author: Robin Brown  
Acknowledgement: Claire Stewart Medical Centre,  
Mount Forest, ON

For example, a physician may prescribe more medications that the DI module lists as having a potential interaction because they can recognize that, in actuality, the medications do not interact.

When physicians first start using DI software, they may find that they have to sort through information without having the necessary tools. Instead of increasing efficiency, this situation can consume a large amount of a **physician's time**. A pharmacist can present necessary information on the large number of potential interactions the software can produce, some of which are not substantiated in the literature. The pharmacist can also give information on common and potential DIs, enabling the physicians to focus on significant points by learning to effectively analyze and recognize the information the software provides.

For example, a DI module may produce a potential DI that is not based on sound, evidence-based information, but instead, is based on a single case study within the literature. Another **software limitation** practice site physicians may not be aware of is that when one specific drug in one class interacts with a specific drug in another class, the software may extrapolate this across every drug in both classes, which leads to extraneous, unsubstantiated DIs.

By increasing familiarity of the DI software, the presentation enables physicians to prescribe more **confidently**, which potentially leads to better choices of medications for the patient because the physicians can access and analyze potential DIs more readily. Physicians still prescribe in the same manner, but with more information.

A DI module being used efficiently at a practice site allows the physicians to share responsibility for catching potential DIs with the community pharmacist. A DI

## PRACTICE ENHANCEMENT EXAMPLES

### Drug Interaction Protocol Presentation

module serves as an added measure of **vigilance** by serving as the primary mechanism, making the community pharmacist the secondary watchdog.

Catching potential DIs at the point of prescribing (rather than filling of the prescription) also results in more efficient use of time for all involved. Otherwise, the community pharmacist has to notify the physician of potential problems and wait for a revised prescription. Eliminating **unnecessary steps** decreases the amount of time and effort spent by the pharmacist, the physician and the patient.

Although a pharmacist's presentation may be directed toward the practice site physicians, **nurses** can also benefit successful DI software implementation because they can also access drug information more easily, indirectly leading to improved medication management at their practice site.

#### D. Development Process

Some EMR software may already contain DI modules. The practice site physicians may ask their pharmacist to review the documentation provided by the EMR software company to learn how the module works, so the pharmacist can later show the physicians how to use the software. Alternatively, the pharmacist can suggest this enhancement to physicians if it is applicable to their practice site.

The EMR company can be approached directly to obtain additional training. The pharmacist and other practice site members can learn to use the software effectively and can learn the other functions not directly related to DIs.

Work with the DI module to gain more experience using the software. Approach the practice site physicians to learn what difficulties they have with the software. For example, often when DI software is first used, patient information must be updated before the physicians can move onto the next levels to actually prescribe a medication. This may cause the physicians to feel the

software takes more time, instead of being a tool to increase efficiency.

Discuss the option of giving a presentation on the software's strengths and weaknesses, and most effective use with the lead physician. Create a presentation that includes general drug interactions, the significance of the interactions and the limitations of different drug databases. Use specific cases to discuss common drug combinations and potential drug interactions that are useful for the physicians at the site.

If it is possible to save screen shots, incorporate the images into the presentation to demonstrate how to access and use the database, step by step, for various functions such as accessing patient information.

After creating an initial draft of the presentation, send it to colleagues or physicians at the practice site for feedback and suggestions. Suggestions can vary from removing some information, including other information, reorganizing and rewording the presentation.

After incorporating feedback, send the revised presentation to the same individuals for more feedback and repeat the process until the presentation is finalized.

## PRACTICE ENHANCEMENT EXAMPLES

## Drug Interaction Protocol Presentation

**References and resources**

Because DI modules can provide potential DIs that may not be based on sound, evidence-based information (e.g., a potential DI may be highlighted that is based on a single case study in the literature), use a variety of references to provide information in the presentation.

Some references can be used to provide specific examples and others can provide more general information. The following references were used by an IMPACT pharmacist who gave a DI module presentation to the physicians at a practice site:

Aronson JK. Classifying drug interactions. *Br J Clin Pharmacol* 2004;58:343-4.

Bailey DG, Dresser GK, Kreeft JH, Munoz C, Freeman DJ, Bend JR. Grapefruit-felodipine interaction: Effect of unprocessed fruit and probable active ingredients. *Clin Pharmacol Ther* 2000;68:468-77.

Fugh-Berman A, Ernste E. Herb-drug interactions: Review and assessment of report reliability. *Br J of Clin Pharmacol* 2001;52:587-95.

Glassman PA, Simon B, Belperio P, Lanto A. Improving recognition of drug interactions: Benefits and barriers to using automated drug alerts. *Med Care* 2002;40:1161-71.

Hahn J. Drug interactions: Investigating their mechanisms, clinical significance and management strategies. Pharmacy Connects, March 1997. Available at: <http://www.pharmacyconnects.com>

Hansten PD. Drug interaction management. *Pharm World Sci* 2003;25:94-7.

Herman RJ. Drug interactions and the statins. *CMAJ* 1999;161:1281-6.

Kosoglou T et al., Pharmacodynamic interaction between the new selective cholesterol absorption inhibitor ezetimibe and simvastatin *Br J Clin Pharmacol* 2002;54:309-19.



Managing Drug Interactions. PowerPoint presentation given by W. Bartle BSc Phm, PharmD.

Westphal JF. Macrolide-induced clinically relevant drug interactions with cytochrome P-450A (CYP) 3A4: An update focused on clarithromycin, azithromycin and dirithromycin. *Br J Clin Pharmacol* 2000;50:285-95.

Williams D, Kelly A, Feely J. Drug interactions avoided — A useful indicator of good prescribing practice. *Br J Clin Pharmacol* 2000;49:369-72.

**E. Implementation Process**

The pharmacist may or may not be involved in organizing the meeting for the presentation. Meeting times may have to be rescheduled several times to maximize the number of physicians who can attend. Ensure that all practice site physicians are invited to attend the meeting, however unlikely it is that all can attend.

The presentation is a one-time event that helps the practice adopt and use DI software successfully.

## PRACTICE ENHANCEMENT EXAMPLES

### Drug Interaction Protocol Presentation

#### F. Overcoming Challenges

Some challenges may be related to the DI software itself and lead to the creation of the practice enhancement. DI modules are often generic and warn of extraneous potential DIs, ones not supported by evidence-based information. This characteristic may lead to too many possible DIs being highlighted, which could result in the physicians and pharmacist becoming less vigilant. Ultimately, this could lead to potentially important interactions being missed. The presentation can overcome this by informing the physicians of the type and number of interactions that regularly appear in the software and are not substantiated in literature.

In addition, DI modules may only provide information on drug-drug interactions and not include drug-disease or drug-food interactions, which can often be important. The presentation educates physicians about this potential software limitation and makes them aware of these potential interactions, which could possibly improve their vigilance.

Various challenges may arise during presentation development. Pharmacists have to ensure that they themselves know and understand the software sufficiently to be able to effectively educate and guide others. This challenge can be overcome by working with the software on their own and obtaining additional training from the EMR company.

Due to the abundance of information in the literature, it may be difficult to determine what information to exclude to keep the presentation within a timeframe that will keep the attention of the physicians. Feedback from colleagues or the practice site physicians helps with this challenge.

In addition, the DI software may not be able to be used directly in the presentation, which can prevent the pharmacist from effectively demonstrating the most efficient manner to use it. This challenge can be overcome if screen shots of the software can be taken.

Finding the time to develop an effective presentation can also be challenging. Budgeting time and asking for direction to relevant resources helps to focus efforts.

It may be difficult to coordinate a meeting time that can accommodate all physicians' schedules. It is unlikely that all the practice site physicians will be able to attend one meeting. Offer to present the DI protocol more than once to ensure all physicians attend the presentation.

#### G. Facilitating Factors

If the practice is already EMR-based and the EMR used has a DI module, this enhancement is easier to implement. A smaller practice can make it easier to organize the meeting for the presentation.

#### H. Evaluation Results

No strategy to evaluate this enhancement was undertaken.

**Example Note:** At the time of writing, it is not possible to include a paper document in this guide that illustrates the enhancement.

## Hypertension Care Policy

### A. Enhancement Objectives

A hypertension care policy monitors patient blood pressure and ensures the appropriate patients have their blood pressure checked during a physician visit. The policy is documented so all practice members know how to proceed.

### B. Tool or Enhancement Description

A hypertension care policy is a documented procedure used by a practice site to monitor patients' blood pressure levels.

Please see the end of this chapter for an example of a hypertension care policy.

### C. Medication Management Improvements

A hypertension care policy can **remind** physicians to check blood pressure, **identify** patients with uncontrolled blood pressure who require anti-hypertensive medications, **facilitate** the monitoring of blood pressure medications patients are taking, and **indicate** changes needed in dosing. Each of these actions improves medication management.

A hypertension care policy gives pharmacists the information they need to provide **patient care**. It allows physicians and pharmacists to monitor **treatment efficacy**, which benefits patients.

The practice may see more patients reach their targets for hypertension or screen more patients for hypertension. In addition, it can improve the care of patients on a practice level.

Patients also benefit through increased opportunities to discuss their blood pressure results with their health care team. If the patients know their target blood pressure, their actual blood pressure and why it is important to meet their target, the patients' **compliance** may improve. Patients may want to know how to improve their condition and why medications may need to be changed, instead of just following instructions or ignoring them completely.

Enhancement Author: Shelly House  
Acknowledgement: Caroline Medical Group,  
Burlington, ON

Patients can achieve other health benefits through the policy. For example, if the blood pressures of the patients in the practice site are known, their **risk** of heart disease can be determined using the 10-year Framingham risk equation.

In addition, if a physician is hesitant to reach blood pressure targets aggressively using medications, the physician can use a borderline high blood pressure level as a reason to encourage **lifestyle** modifications in the patient, such as losing weight.

A hypertension care policy has the potential to benefit a large proportion of the patients at a practice site, because all patients older than 40 will be affected (the age at which practice sites commonly begin monitoring patient blood pressure).

In-service **training** may be required for practice site personnel who help with blood pressure monitoring.

More information on a patient's blood pressure levels also helps **community pharmacists** if they receive it from the practice site or the patient directly. For instance, a community pharmacist can determine if targets are being reached, patients are compliant with their medications, or if patients have uncontrolled hypertension. They can then relay information back to the practice site and the patient.

### D. Development Process

Although many practice sites have policies regarding monitoring patients' blood pressures, they may not be formally documented or may have less frequent monitoring than recommended by current guidelines. If a policy is not formally documented, it may be difficult for a pharmacist joining a practice to be aware of the exact details of the practice's current policy.

## Hypertension Care Policy

Organize a meeting with the practice site staff to discuss the current policy. Through discussion, the physicians can determine if the policy and the roles of the practice site personnel will be changed. Document the policy, likely with only one draft, and begin the process of implementing it.

### **References and resources**

Review clinical practice guidelines, such as the Canadian Hypertension Education Program (CHEP) guidelines, to determine what to use in a hypertension care policy. Modify guidelines to reflect the practice site's needs (e.g., frequency of monitoring).

### **E. Implementation Process**

Contact the clinic/office manager to discuss the new policy and to gain insight into the best way to implement it. Hold a meeting with practice site personnel to inform them of any changes in policy, particularly those whose responsibilities will change as a result.

### **F. Overcoming Challenges**

When a pharmacist first joins a practice, it may be challenging to determine what the blood pressure policy is, if it is not documented. Asking the practice site physicians what their blood pressure monitoring policy is, if indeed they have one, overcomes this challenge.

Practice site personnel may benefit from assistance or education about the names of all anti-hypertensive medications (particularly those with other indications) in order to consistently monitor blood pressure in appropriate patients. The pharmacist can offer to train these team members to help them recognize blood pressure medications when implementing the new policy.

Another potential problem arises if blood pressure is monitored but the value is not recorded in the chart. For example, the personnel at the practice may place the patient on the blood pressure monitoring machine and then leave the patient while the measurements occur.

The next individual to enter the room is the physician. The physician may not document the blood pressure value in the chart, particularly if it is at target.

If this is an issue at a practice site, the personnel responsible for placing the patients on the blood pressure monitoring machine can place an abbreviation for blood pressure in the chart with a space beside it. This serves as a prompt for the physicians to document the blood pressure value in the chart.

### **Challenges that may be difficult to overcome**

A challenge may arise when the pharmacist is attempting to organize a meeting time to implement the hypertension policy that is conducive to all relevant practice site personnel who must attend. This challenge might not be overcome, as it is unlikely that all the relevant personnel will be able to attend one meeting.

### **G. Facilitating Factors**

Some factors may help a policy be adopted at a site. If the site already has other policies, another can be easily added and implemented. If certain practice staff are directly responsible for monitoring blood pressure, only a small group of people need to be informed of the new policy.

### **H. Evaluation Results**

No strategy to evaluate this enhancement was undertaken.

### Hypertension Care Policy

#### Hypertension Care Policy Example

- Check patient's blood pressure (BP) when the patient is in for a BP check and/or a medication review when the patient is on **antihypertensive medication**.
- Check the patient's blood pressure (BP) if it has not been checked within the past **year**.
- Check the patient's blood pressure (BP) if they are on **antihypertensive medications** and the patient has not had their BP checked within the past **three months**.

## PRACTICE ENHANCEMENT EXAMPLES

### Blood Glucose Record

#### A. Enhancement Objective

A blood glucose record provides a log of patients' blood glucose readings to guide adjustments in pharmacotherapy for diabetes.

#### B. Tool or Enhancement Description

A blood glucose record is a form filled in by the patient. The record can be modified to be as many pages as deemed necessary by the physician and/or other health care professionals.

The record can also be placed on the practice site's shared drive, and can be easily translated into any language desired by a patient. The font size and width of the columns can also be easily adjusted for visually impaired patients or those with motor coordination difficulties whose handwriting is larger.

Please see the end of this chapter for two examples of a blood glucose record.

#### C. Medication Management Improvements

A blood glucose record completed by a patient can lead to improved medication management. As the Canadian Diabetes Association Guidelines state:

... recent evidence indicates benefits of testing on glycemic control, especially, when this information is used to make appropriate, timely treatment adjustments. In people with type 2 diabetes treated with medications, testing at least once daily is associated with a 0.6% lower A1C than less frequent monitoring. In those managed by lifestyle alone, any frequency of testing is associated with a lower A1C. In people with type 2 diabetes, postprandial plasma glucose (PG) results are generally better correlated to A1C than tests taken at other time of the day. In people with very poor glycemic control, however, fasting plasma glucose (FPG) may more strongly impact overall glycemia.<sup>12</sup>

Enhancement Author: Lisa McCarthy  
Acknowledgement: Stonechurch Family Health Centre, Hamilton, ON

A blood glucose record can help patients and practitioners monitor **pharmacotherapy** for diabetes. These readings can be used to adjust the doses and timing of medication administration as appropriate.

The record can also include an area to record diabetes-related medications and doses (including dose changes) to improve **efficiency** for the clinician when determining if medication changes or dose adjustments are needed.

A blood glucose record can help **empower** patients to become more involved in monitoring their therapy as they become active participants in controlling the condition.

In doing so, the monitoring of their blood glucose may also lead to improvements in the patients' **adherence** to their medications because they can see improvements as they use their medication.

Patients benefit because practitioners who use the patient's record can highlight the times of day to perform readings; consistent readings allow the practitioner to monitor the patient's blood glucose **patterns** over time.

For example, a record can help identify trends and identify episodes of hypoglycemia or hyperglycemia, which allows the physician and/or other health care professionals to change the timing and dosing of certain medications ensuring the patients achieve the **full benefit** of the medications they are prescribed.

In addition, a blood glucose record can be modified to fit the needs of each patient specifically, which increases the likelihood that the patient will use it. A record can help patients **organize** their blood glucose readings and

<sup>12</sup> Canadian Diabetes Association. 2003 Clinic Practice Guidelines: Frequency of SMGB. Available at: <http://www.diabetes.ca/cpj2003/chapters.aspx>, then Monitoring Glycemic Central, then Self-monitoring of Blood Glucose, then Frequency of SMBG.

## PRACTICE ENHANCEMENT EXAMPLES

### Blood Glucose Record

medication changes, which can then benefit the clinicians who require this important information when they are adjusting any medications that can have an effect on a patient's blood glucose levels.

The practice can benefit because a **greater proportion** of their patients may reach their targets for diabetes.

#### D. Development Process

A pharmacist may be referred a patient with challenging medication needs who requires a blood glucose record. If the practice site does not have a record template, the pharmacist can create one that will meet patient needs.

If the practice site offers a diabetes clinic, work with the other health care professionals at the clinic (or with those who work closely with the patients with diabetes at the practice site) to draft a record that can be easily tailored to specific patient populations, as these health care professionals are familiar with the diabetic population who attend the clinic/practice site.

For example, the practice site may service a large proportion of patients who share the same cultural background and a primary language that is not English.

After the patient population needs and challenges have been discussed, create a draft highlighting the glucose readings the patients should take. Give the draft to the health care professionals who work with diabetic population at the practice site for review and feedback. Usually two drafts are needed to finalize the record.

If any languages other than English have been identified for a specific patient or the patient population at the practice site, the blood glucose record can be translated using Babel Fish (available at <http://www.babelfish.altavista.com>), an online tool that translates words and simple sentences.

#### E. Implementation Process

Ask another health care professional who works closely with patients with diabetes to test the record to ensure

no other changes are needed. Seek feedback from practice site staff or patients fluent in the appropriate languages to ensure the translated record is correct before distributing it to patients.

When a draft is finalized, discuss the best way to implement the record with the clinic/office manager. Place the blood glucose record on the shared drive and inform other team members that a new tool is available. If the practice site does not have an electronic medical record (EMR) system, the record can be introduced and distributed (in hard copy format) at meetings. Also send an email or memo to clinic staff to inform them of the new tool.

The record can be modified to meet the needs for specific patients, such as different languages or different font sizes.

Follow up after a few months to determine how the record is being used.

#### F. Overcoming Challenges

It may be difficult for patients to remember to bring their record with them to their scheduled appointments. This challenge can be overcome by contacting the patient (either via the telephone or email) between visits to remind them.

#### G. Facilitating Factors

If a practice site uses an EMR system, this can facilitate the introduction of a blood glucose record because it can allow wide access to the record by the practice site staff.

In addition, by having an electronic version of the record available to the practice site staff, the record can be easily modified to tailor the record to meet the needs of a specific patient.

#### H. Evaluation Results

No strategy to evaluate this enhancement was undertaken.

## PRACTICE ENHANCEMENT EXAMPLES

### Blood Glucose Record

#### English Blood Glucose Record Example

Blood Glucose Record													
Name:		Date:											
Prepared by:		Breakfast			Lunch			Dinner			Bedtime		
		Before		After		Before		After		Before		After	
		Time	Value	Time	Value	Time	Value	Time	Value	Time	Value	Time	Value
Sunday													
Monday													
Tuesday													
Wednesday													
Thursday													
Friday													
Saturday													

## PRACTICE ENHANCEMENT EXAMPLES

### Blood Glucose Record

#### Spanish Blood Glucose Record Example

Azúcar en Sangre											
Nombre:	Fecha:										
	Preparado por:		Desayuno		Almuerzo		Cena		Hora de acostarse		
	Hora	Número	Antes	Hora	Número	Después	Hora	Número	Después	Hora	Número
Domingo											
Lunes											
Martes											
Miércoles											
Jueves											
Viernes											
Sábado											

# DIRECTORY OF RESOURCES

## PRACTICE CHANGE

### Articles

Cook DJ, Montori VM, McMullin JP, Finfer SR, Rocker GM. Improving patients' safety locally: Changing clinician behaviour. *Lancet* 2004;363:1224-30.

Dolovich L. Facilitating behaviour change. In: Repchinsky C, ed. *Patient Self-Care: Helping Patients Make Therapeutic Choices*. Ottawa: Canadian Pharmacists Association, 2002:23-9.

Dunning M, Abi-Aad G, Gilbert D, Hutton H, Brown C, eds. *Experience, Evidence and Everyday Practice: Creating Systems for Delivering Effective Health Care*. London: King's Fund Publishing, 1999.

Greenhalgh T, Robert G, MacFarlane F, Bate P, Kyriakidou O. *Diffusion of Innovations in Service Organizations: Systematic Review and Recommendations*. *Milbank Q* 2004;82:581-629.

Grol R. Beliefs and evidence in changing clinical practice. *BMJ* 1997;315:418-21.

Michie S, Johnston M, Abraham C, Lawton R, Parker D, Walker A; for the Psychological Theory Group. Making psychological theory useful for implementing evidence based practice: A consensus approach. *Qual Saf Health Care* 2005;14:26-33.

Oxman AD, Flottorp S. An overview of strategies to promote implementation of evidence based health care. In: *Evidence Based Practice in Primary Care*, 2<sup>nd</sup> ed. Blackwell BMJ Books, 2001:91-109.

### Websites

Knowledge translation program, University of Toronto: <http://www.ktp.utoronto.ca>

## PHARMACISTS IN PRIMARY CARE

### Articles

Howard M et al. Collaboration between community pharmacists and family physicians: Lessons learned from the Seniors Medication Assessment Research Trial. *J Am Pharm Assoc* 1003;43:566-72.

Sellors J et al. A randomized controlled trial of a pharmacist consultation program for family physicians and their elderly patients. *CMAJ* 2003;169:17-22.

### Websites

IMPACT program: <http://www.impactteam.info>

## PRACTICE ENHANCEMENTS

### Websites

Health Knowledge Central (HKC): <http://www.healthknowledgecentral.org>

## Documenting the Medication-focused Practice Enhancements

*This Practice Enhancement Guide and other useful information are available on the IMPACT website: <http://www.impactteam.info>*

It is often necessary to document changes made to standard operating procedures at a practice site (e.g., adding tasks to roles). Certain information is required for this documentation. By knowing what information you require, a list of questions can be created that can be used to draw out the necessary information.

Below is the interview guide used to document the medication-focused practice enhancements detailed in this guide.

### A. Enhancement Objectives

1. What do you feel is the overall goal of the enhancement?
2. How well does this agree with what you think the practice site physicians think is the overall goal of the innovation?

### B. Tool or Enhancement Description

1. Is the tool a form to be filled in by physicians? Pharmacists? Patients?
2. How many pages are in the tool?
3. Please provide a hard copy/electronic file of the tool or enhancement.

### C. Medication Management Improvements

1. How is this practice enhancement related to improved medication management?
2. Who can benefit from improved medication management from this practice enhancement?
  - a. Patients? If yes, how so?
  - b. Practice physicians? If yes, how so?
  - c. The practice? If yes, how so?
  - d. Community pharmacists? If yes, how so?

3. How does drug therapy change? Monitoring improve? Patient engagement in medication use improve? Practice organization change? Etc.
4. Does the practice enhancement incorporate any information from evidence-based medicine or clinical practice guidelines? If yes, please provide the references.
5. How important do you feel these practice enhancements are to the achievement of better health outcomes for patients?
6. Through the implementation of such practice enhancements, how are better patient health outcomes achieved?

### D. Development Process

1. Please describe the background details of how the practice enhancement was developed.
2. Why was this practice enhancement chosen?
  - a. How many patients in the practice could benefit from this enhancement? Please provide a number or percentage.
  - b. Was the practice enhancement feasible in the practice site? If yes, please describe the characteristics of the practice site that made the practice enhancement feasible (possible/plausible).
3. Who was involved in the creation of the practice enhancement? Please describe the role they played.
  - a. Were any members of the practice involved in the brainstorming that led to the practice enhancement? Who were they? E.g., physicians, office staff, nurse practitioner, dietitian, etc.
  - b. Did any members of the practice provide feedback in the early drafts of the practice enhancement? Who were they? E.g., physicians, office staff, nurse practitioner, dietitian, etc.
  - c. What kind of feedback or suggestions were provided and by whom?

## Documenting the Medication-focused Practice Enhancements

4. Please describe the steps that were taken to create the practice enhancement.
  - a. How many meetings were held with members of the practice? Who was at these meetings?
  - b. Were meetings held to discuss the needs of the practice physicians? If yes, what kind of needs or requests did the physicians discuss?
  - c. How many drafts were created?
5. Please provide a list of any references or websites that you used or consulted.

### E. Implementation Process

1. How was the implementation strategy decided on?
  - a. Were there meetings with member of the practice site? Who was at the meetings?
2. Was the enhancement tested with only a few doctors in the beginning (pilot-testing)?
  - If yes, did the doctors provide suggestions to improve or modify the practice enhancement before it was distributed to the entire practice?  
— If yes, what kinds of suggestions were made and by whom?
3. Was the practice enhancement distributed to all members of the practice at one time for implementation?
4. Was the practice enhancement modified after being fully implemented into the practice?
  - If yes, what kinds of modifications were made? Who made the suggestions?
5. Was the practice enhancement distributed/implemented in an electronic fashion or through hard copies?

### F. Overcoming Challenges

1. What are some of the challenges that you faced in:
  - a. Developing the practice enhancement?
  - b. Implementing the practice enhancement?

- c. Creating the evaluation strategy?
- d. Which challenges could be overcome? Which could not?
- e. (If applicable) Why do you think some challenges could not be overcome?

### G. Facilitating Factors/Successes

1. Please describe any successes you feel are relevant to the practice enhancement.

### H. Evaluation Results

1. Please describe why you think it is important to evaluate the practice enhancement.
2. Have you thought about how you might evaluate this enhancement? If yes, what evaluation strategy has been developed?
3. **If no**, do you have any ideas as to how you think the practice enhancement could be evaluated?
  - a. Do you think the evaluation strategy might involve examining clinical outcomes, such as laboratory results, tracking the number of hospitalizations, morbidity and mortality, tracking the number of office visits or tracking the number of requests for prescription renewal?
  - b. Do you think the evaluation strategy might focus more on practice-related outcomes? If yes, please provide examples.
  - c. Do you think the evaluation strategy will examine factors at the physician level? Patient level? Practice site level? Community pharmacist level?
    - If yes, please describe these factors.
  - d. What kind of information do you think will be tracked and recorded? E.g., the number of physicians involved? The number of patients involved?

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- e. What form do you think the evaluation strategy will use? E.g., a form to be filled in? A questionnaire?
4. **If yes**, does the evaluation strategy involve examining clinical outcomes, such as laboratory results, tracking the number of hospitalizations, morbidity and mortality, tracking the number of office visits or tracking the number of requests for prescription renewal?
- a. Does the evaluation examine practice-related outcomes? If yes, please describe these outcomes.
  - b. Does the evaluation strategy examine factors at the physician level? Patient level? Practice site level? Community pharmacist level?
    - If yes, please describe these factors.
  - c. What kind of information is being tracked and recorded? E.g., the number of physicians involved? The number of patients involved?
  - d. Have you created forms/questionnaires that will be used to evaluate the practice enhancement?
    - If yes, please provide copies of them.
    - If no, please describe the kind of form/questionnaire you may use.
5. Are there any results from the evaluation of the practice enhancement?
6. If yes, please provide copies of the information.
7. If no, how do you think you will present the evaluation results? E.g., do you think you will use tables or graphs?



## Need More Information?

This guide is a sample of available resources. It can be used with the **IMPACT Pharmacist Program Toolkit: How to Integrate a Pharmacist into Family Practice**. For detailed appendices and **IMPACT** project results, or to comment on this guide, visit our website: <http://www.impactteam.info>.

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# The **IMPACT** Program

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