

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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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)?

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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.

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

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

PRACTICE ENHANCEMENT EXAMPLES

Diabetes Patient Care Flowsheet

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

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 ₂ -Agonists		Long-Acting B ₂ -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	

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.¹ This guide is the product of more than 10 years of planning and collaboration between investigators, government and community leaders.

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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.