

# Admission to Discharge: Development of a Seamless Discharge Prescription Form

*Marcy Jacko Namespetra*

## INTRODUCTION

In April 2005, Leamington District Memorial Hospital announced the hospitalwide implementation of a seamless discharge prescription (SDRx) form. Developed over 2 years of research and supported by the results of a successful pilot project, the SDRx form is a paper-based tool for the documentation of medications at the time of admission to and discharge from this 88-bed community hospital. The form becomes the patient's discharge prescription and is also distributed to all of his or her health care providers as a way of providing current medication information on discharge.

The SDRx form was created in response to a recommendation arising from the Canadian Council on Health Services Accreditation (now known as Accreditation Canada) survey of the hospital in November 2003, which stated that the family physician should receive, at the time of discharge, information about the patient's stay in hospital. The development and implementation of the SDRx form predated the intense rise of interest in medication reconciliation<sup>1</sup> in Canada, which began in 2005 and 2006 with the Safer Healthcare Now! campaign to improve patient safety in the Canadian health care system.<sup>2</sup> The ultimate goal of medication reconciliation is the prevention of adverse drug events at all transition points in the patient's care. Development of the SDRx was Leamington Hospital's first step toward implementing medication reconciliation and supports the concept of seamless care.<sup>3,5</sup>

Barriers to seamless care have been documented in a multitude of published articles.<sup>3,7</sup> Lack of communication between sites of care, the need for patient confidentiality and consent, and constraints of time and money are universal concerns.<sup>5</sup> Three of the major

challenges that Leamington Hospital faced in complying with the accreditation survey recommendation were (1) lack of hospital privileges and timely accessibility to patient information for family physicians, (2) patients' lack of access to family physicians because of a regional physician shortage,<sup>8,9</sup> and (3) lack of communication of complete and accurate medication information to physicians and pharmacists in the community at discharge.

The occurrence of adverse events soon after admission to hospital and after discharge has been well documented,<sup>6,10,11</sup> and efforts to prevent these adverse effects are important factors in increasing patient safety and the quality of care. Among elderly patients, almost 50% of preadmission medications are changed before discharge,<sup>5</sup> and up to one-half of elderly patients discharged from hospital are readmitted within 1 month as a result of medication-related problems.<sup>5</sup> Given these statistics and the aging of the population, preventable adverse drug events may occur because of medication-related discrepancies. Errors that can be prevented by reconciling medications include but are not limited to inadvertent omission of needed home medications, failure to restart home medications following transfer and discharge, duplicate therapy at discharge (as a result of brand and generic combinations or formulary substitutions), and errors associated with incorrect doses or dosage forms on medication orders.<sup>12</sup>

These discrepancies represent dangerous gaps in the collection of medication information that can occur when a patient is admitted to hospital and that may continue through to discharge. The goal in developing the SDRx form was to improve the accuracy of both the initial medication list and the discharge medication list by connecting the 2 processes.



## DESCRIPTION OF THE PROJECT

### Development of the SDRx

A multidisciplinary task group, composed of nurses from the medical unit and the intensive care unit, an internal medicine physician, and a pharmacist, was created to identify a method of improving the documentation of medication information. The team evaluated discharge forms from other institutions, developed a draft form and process, and conducted a pilot study (described below) and evaluation survey before hospitalwide implementation of the SDRx form.

The team evaluated and identified the limitations of several forms already in use.<sup>5,13,14</sup> Many of the examples evaluated involved creating a new list of medications. Leamington Hospital already had a variety of medication lists in patients' charts, which were generated from the initial history taken in the emergency department, from the patient's bag of medications, from the community pharmacy, and upon admission to the nursing unit. However, there was a lack of consistency among the many lists, which created confusion for staff. Transcription errors among the lists could cause preadmission medications to be missed for the entire hospital stay. The team concluded that an improved process would replace the many lists with a single, accurate list.

As documented in the literature, it can take up to an hour to complete a pharmacist-generated discharge form for a single patient.<sup>5</sup> Given the limited pharmacist resources at Leamington Hospital, time constraints prevented pharmacists from being involved in the discharge process for every patient, despite the documented advantages.<sup>5,14</sup> A multidisciplinary approach to gathering and sharing medication information was a more feasible solution.

The team's goal was to close the gaps in collecting medication information from admission to discharge to prevent medication discrepancies. Drug-related problems discovered would be addressed and resolved before discharge. The multidisciplinary team decided on the following criteria for the SDRx:

- initiation of the form upon admission to the hospital
- ease of use for communication with health care professionals outside of the hospital
- single-page format for ease of transmission by fax
- self-explanatory format
- reduced duplication of documentation
- incorporation of discharge prescriptions

After trying out several draft versions, the team adopted the version shown in Appendix 1.

### Process for Using the SDRx

The admitting nurse initiates the form when a patient is admitted to the hospital. Patient demographic characteristics and health care provider information are entered at the top of the form. Medication allergies or intolerances are recorded, with a description of the reaction that occurred.

The patient's current medications are entered in section A of the form. A second page is started if there are more than 15 medications. The nurse then documents the source of the information. If other medication information is discovered later, such as eye drops that were left at home, another staff member will add it to the same list and sign the additional entry. The pharmacists also use this area to document a medication review.

At discharge, the physician follows 3 steps, recorded in section B, to complete the SDRx. First, the physician assesses the preadmission medications and compares them with the current medication administration record, checking off the "Continue", "Change", or "Stop" box on the SDRx. Next, the physician documents any changes to the admission medications (such as an increase in frequency), adds any new medications, and enters quantities and refills for the changed or new medications. In the third step, the physician signs and dates the bottom of the form, which then becomes a valid, signed prescription. As such, the SDRx represents a complete, concise record of the patient's current medications at discharge.

The patient is asked to sign the consent statement at the bottom of the page, and the form is then faxed to the patient's health care providers and the community pharmacy. The nurse or pharmacist then fills out a companion document, the discharge medication teaching sheet (Appendix 2), which is a patient-friendly list of current medications, and reviews the sheet with the patient or caregiver, explaining the patient's medications and highlighting any changes or discontinuations.

### Pilot Project

The SDRx pilot project, which took place over a 6-week period beginning in September 2004, was conducted in a single 19-bed medical unit at Leamington Hospital. All patients admitted by 3 internal medicine specialists were included in the pilot project. Before implementation of the form, the nurses were given instructions on the new process. A sample of the form, with an introductory letter explaining its use, was



sent to local physicians' offices and community pharmacies. Contact information for questions or comments regarding the form was included. The discharge medication teaching sheet was not in effect during the pilot project, but rather was developed in response to feedback compiled from 31 properly completed SDRx forms after completion of the pilot period.

## Evaluation of the SDRx

A subjective, survey-based evaluation of health care professionals' perceptions of the usefulness and acceptance of the SDRx was conducted at the conclusion of the pilot study.

The responses of the 3 internists involved in the pilot project were overwhelmingly positive. They reported that the form was easy to use and that it saved them time in writing discharge prescriptions. They appreciated being able to consider each preadmission medication, to decide whether to continue, stop, or modify it, and to have written documentation for each decision. One internist commented that this process would reduce the risk of patients taking unintended medications after discharge.

Nurses had both positive and negative comments about the new form and its related process. On the positive side, they found that it was easier to provide medication teaching by seeing which preadmission medications were to continue and which were to be changed or stopped. On the negative side, the nurses found that it was difficult for patients to understand the information on a copy of the form, which was written in traditional prescription format, with Latin abbreviations and dosing times expressed in military time. The discharge medication teaching sheet (Appendix 2) was created to replace the patient's copy of the SDRx; it prompts the nurse to discuss the sheet, and the related medication changes, with the patient or caregiver. Filling out the teaching sheet is a time-consuming task, but nurses acknowledge that it is a vital source of discharge information for their patients, made easier by the concise information provided on the SDRx.

Feedback from family physicians who received the form in the community showed that the goal of improving the flow of information to family physicians had been achieved. The physicians reported that the form was self-explanatory, and they appreciated the introductory letter explaining the intent of the form and the process associated with it. They found that they were better informed about their patients' hospital stays. The form was usually reviewed by the physician, filed

with the patient's chart at the office, and used as a follow-up tool during the patient's next office visit.

Community pharmacists found that the information on the SDRx was more complete than a traditional prescription and modified their patients' profiles accordingly to keep records current. The form helped to prevent patients from requesting refills on discontinued medications and those with outdated directions. The "continue" column showed the pharmacist whether a new medication was an addition to previous therapy or a replacement. Pharmacists used the SDRx form as a tool to explain changes in medications when the patient picked up his or her prescriptions.

Although the patients themselves were not directly surveyed, nurses reported that patients were relieved that they did not have to worry about losing their written prescriptions. They liked having the form faxed to the pharmacy, which saved time on the way home from the hospital. Patients appreciated the clear medication instructions that the nurses and pharmacists were able to provide at discharge and appreciated knowing that the family physician would have information about the medication changes made by another physician.

## DISCUSSION

Because of overwhelming acceptance of the SDRx form and process during the pilot study, use of the form spread unofficially to other inpatient units, generally driven by physician requests. The form was officially launched on a hospitalwide basis in April 2005.

Implementation of the SDRx was not without challenges. Some physicians were eager to adopt the new system, whereas others were less willing. There was initial reluctance to use the "continue" column, as many physicians felt that in doing so they would be authorizing refills for medications that they had not initially prescribed. Some physicians did not want to change the practice of writing traditional prescriptions. However, once traditional prescription pads were removed from the nursing units, transition to the SDRx improved.

The community served by Leamington Hospital has reported several significant benefits from use of the SDRx. First and foremost, the flow of medication information among patients' health care providers has improved. The concise 1-page summary records patients' medications from admission to discharge. The family physician, or a nearby clinic, receives accurate information about the patient's stay in hospital in a timely manner. The community pharmacist can update



the patient's profile and can begin filling prescriptions as the patient leaves the hospital. Community home care nurses use the information to reinforce medication teaching in the home.

We believe that we have succeeded in increasing multidisciplinary communication about each patient's medications. The preadmission medications are entered in one location in the patient's chart and are reconsidered at the time of discharge. The chart has been modified by removal of other medication documentation areas, to consolidate the information in one location, and all health care providers in the hospital refer to this location for the patient's medication information. By decreasing the number of medication lists in the patient's chart, time spent writing multiple lists is eliminated. The time saved can be spent on other aspects of patient care or activities such as medication teaching. The patient receives an up-to-date discharge medication teaching sheet, created from information on the SDRx, to help in understanding any changes in medications after discharge.

At Leamington District Memorial Hospital, we believe that patient safety has been increased through use of the form. With a single location for the documentation of preadmission medications, there is less chance of transcription errors, and there is less confusion regarding the patient's discharge medications. With discharge medications documented on the discharge medication teaching sheet, patients are less likely to go home with questions about whether to take certain preadmission medications. The risk of therapeutic duplication is avoided when patients are informed that a certain medication replaces another medication and that they should not take both simultaneously. An added benefit is that the original form becomes a permanent part of patient's chart and serves as a reference during subsequent visits to the emergency department or subsequent admissions.

The SDRx process has improved the efficiency of the prescription-writing process for physicians by streamlining the process into 3 steps: assessing preadmission medications, adding new or changed medications, and signing and dating the form.

The nurses and pharmacists have a complete, concise document of the patient's current medications at the time of discharge, and patients have a current list of medications documented on the discharge medication teaching sheet. Discharges are not delayed because of a need to clarify instructions, and the community pharmacy can begin to fill the patient's prescriptions as the patient is discharged.

News about the SDRx has filtered across the county and has reached 2 neighbouring hospitals. When certain physicians and pharmacists at those sites became aware of the SDRx, they began an initiative to adopt the SDRx. This may be the best evidence available that the SDRx is an attractive and user-friendly means of gathering accurate medication information and disseminating it to the patient's health care team in a low-tech, paper-based manner. Plans for future changes to the SDRx include steps to enhance section A to a best possible medication history<sup>1</sup> format.

In conclusion, use of the SDRx form has yielded several important benefits to Leamington District Memorial Hospital, including streamlining the prescription-writing process for discharging physicians, improving continuity of care by recording each of the patient's medications from admission to discharge, and improving the flow of information from the hospital to family physicians and pharmacists in the community served by the hospital.

#### References

1. *Safer Healthcare Now! Getting started kit: medication reconciliation prevention of adverse drug events* [Internet]. Edmonton (AB): Safer Healthcare Now! Campaign; 2007 May [cited 2007 Jun]. Available from: <http://www.saferhealthcarenow.ca/Default.aspx?folderId=82&contentId=124>
2. Nowlan L. National accreditation body CCHSA endorses Safer Healthcare Now! campaign [press release on Internet]. Ottawa (ON): Canadian Council on Health Services Accreditation; 2005 Jun 28. Available from: <http://www.cchsa.ca/default.aspx?page=101>
3. *Proceedings of the Seamless Care Workshop*; 1998 Oct 30 – Nov 1; Toronto (ON). Ottawa (ON): Canadian Society of Hospital Pharmacists and Canadian Pharmacists Association; 1999.
4. MacKinnon NJ, editor. *Seamless care: a pharmacist's guide to continuous care programs*. Ottawa (ON): Canadian Pharmacists Association; 2003.
5. Schoen J. Making seamless care work for you. *Pharm Pract* 2003;6 Suppl 1:S1-8
6. Nickerson A, MacKinnon N, Roberts N, Saulnier L. Drug-therapy problems, inconsistencies and omissions identified during a medication reconciliation and seamless care service. *Healthc Q* 2005;8 Spec No:65-72.
7. Harrison S. OMA develops standard "inpatient discharge form" for use in Ontario hospitals. *Ont Med Rev* 2005;72(5):40-41.
8. Manzer J. Restructuring catching up with Windsor care. *Med Post* 2000;36(4).
9. Chan B, Schultz S. *Supply and utilization of general practitioner and family physician services in Ontario*. ICES investigative report. Toronto (ON): Institute for Clinical Evaluative Sciences; 2005 [cited 2006 Mar 28]. Available from: [http://www.ices.on.ca/file/FP-GP\\_aug08\\_FINAL.pdf](http://www.ices.on.ca/file/FP-GP_aug08_FINAL.pdf)
10. Forster J, Clark H, Menard A, Dupuis N, Chernish R, Chandok N, et al. Adverse events among medical patients after discharge from hospital. *CMAJ* 2004;170(3):345-349.
11. Baker GR, Norton PG, Flintoft V, Blais R, Brown A, Cox J, et al. The Canadian Adverse Events Study: the incidence of adverse events among hospital patients in Canada. *CMAJ* 2004;170(11):1678-1686.



12. Rogers G, Alper E, Brunelle D, Federico F, Fenn C, Leape L, et al. Reconciling medications at admission: safe practice recommendations and implementation strategies. *Jt Comm J Qual Patient Saf* 2006;32(1):37-50.
13. Connelly S. London Health Sciences Centre (LHSC) integrated discharge prescription (study form) [presentation]. Therapeutics in Action Seminar; 2002 Oct 9; London (ON).
14. Rogers K, Tierney M, Singh A, McLean W. Assessment of a seamless care prescription/discharge notes form. *Can J Hosp Pharm* 2003;56(1):14-23.

**Marcy Jacko Namespetra**, BScPharm, RPh, is the Clinical Lead Pharmacist with the Leamington District Memorial Hospital in Leamington, Ontario.

**Address correspondence to:**

Marcy Jacko Namespetra  
Pharmacy  
Leamington District Memorial Hospital  
194 Talbot Street West  
Leamington ON  
N8H 1N9

**e-mail:** mnamespetra@ldmh.org

**Acknowledgements**

The author wishes to acknowledge the members of the Pilot Project Team: Linda Gaudet, BScPhm; Charlene Allin, RN; Linda Verhoeven, RN; and Enrique Guerra, MD. The author also wishes to acknowledge presubmission review of the article by Barbara Tiessen, RN, MSW, RSW, MSA, Vice President Patient Services and Chief Nursing Executive; Nancy Bauer, RN, ET, Professional Practice Leader (at the time of this project); and Lisa Kolody, BA, MEd, Organizational Development Specialist (at the time of this project).

This project was presented as a brief paper at the 2005 meeting of the International Society for Quality in Health Care, Inc (<http://www.Isqua.org>), held in Vancouver, British Columbia.

**Appendix 1.** The seamless discharge prescription (SDRx) form developed for use in the Leamington District Memorial Hospital and used at the time of the pilot project reported here. After development of the discharge medication teaching sheet (see Appendix 2), section C of the SDRx form, which documents that a copy has been given to the patient, became unnecessary and has therefore been removed from more recent versions of the SDRx form.



**LEAMINGTON DISTRICT MEMORIAL HOSPITAL**  
194 Talbot Street West Leamington, Ontario N8H 1N9 (519) 526-2375

---

**SEAMLESS DISCHARGE PRESCRIPTION** Page \_\_\_ of \_\_\_

To be filled by (Do Not Check) or: \*Check when completed

1. Most Responsible Physician
2. Family Physician
3. Community Dispensing (this only only)
4. Other (CCAC, etc.)

---

DRUG ALLERGIES <small>(Describe reaction)</small>		DRUG SENSITIVITY &/OR INTOLERANCES		
<b>SECTION A</b> To be completed by nurse at time of admission		<b>SECTION B</b> To be completed by physician at time of discharge. Section B serves as valid prescriptions if quantities are entered. Retail pharmacy should use Section B to modify client/patient's profile and to fill new prescriptions. Use appropriate form for limited use marks.		
Current Medications on Admission <small>(Name, Dose &amp; Frequency)</small>	Modifications to Medications (Check)	New or Modified Medication On Discharge <small>(Name, Dose &amp; Frequency)</small>	Qty	Refills
Continue	Stop	Modify		
1.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
5.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
6.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
7.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
8.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
9.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
10.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
11.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
12.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
13.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
14.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
15.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

---

Name: _____ Date: _____ Additional Info Added by: Name: _____ Date: _____	Physician Signature: _____ Physician Name: _____ Date: _____ Telephone Number: _____
---	---

**SECTION C:** To be completed by nurse or pharmacist at time of discharge:  
 Medications reviewed with client/patient/care partner by: \_\_\_\_\_  
 A copy of this form is to be given to the patient/care partner at time of next review.

I consent to the sharing of the information on this form to the individuals listed above.

Date: \_\_\_\_\_ Patient's Signature: \_\_\_\_\_

HX258 AB (04-08)



