

---



---

**PHARMACY PRACTICE**


---



---



## Medication Profiles In An Outpatient Cancer Facility

Neal Davies and Carole Chambers

### INTRODUCTION

Complete medication histories obtained by pharmacists have been documented and implemented as a clinical pharmacy service since the 1960s<sup>1</sup>. The clinical value of pharmacist-acquired versus physician-acquired medication histories is also well documented and validated<sup>2-5</sup>. However, in a 1987 American survey<sup>6</sup>, written medication histories were provided at only 10.9% of all hospitals. Many studies have directly evaluated the clinical usefulness of medication histories<sup>2,7</sup>. A quantitative analysis of medication histories in an outpatient cancer clinic has not been reported.

The Tom Baker Cancer Centre (TBCC) services approximately 15,000 outpatients yearly. The pharmacy department is currently a non-computerized dispensary which lacks complete medication profiles that satisfy Canadian Society of Hospital Pharmacists (CSHP) guidelines<sup>8</sup>. The Fourth Interim Report of the Pharmaceutical Inquiry of Ontario (The Lowy Inquiry) recommended the development of complete medication profiles as well as the expansion of the clinical role of pharmacists in hospitals. In response to this recommendation, the TBCC undertook a pilot project aimed at the creation and implementation of complete medication profiles.

### PROGRAM DEVELOPMENT

Several unpublished attempts have been made at the TBCC to gather the information necessary to establish complete medication profiles. These previous attempts utilized profiles which consisted of portable medication records which the patient was expected to update. Despite the desirability of patients completing their own profiles, many patients were not sufficiently motivated to keep an accurate account of all their medications and dosages. Other patients had language barriers to overcome. There is also a tendency for patients to disregard over-the-counter (OTC) products as medications. Thus, previous attempts to im-

plement complete medication profiles failed.

A complete medication history profile form was created according to CSHP guidelines (Tables I and II). The profile consisted of two separate pages. Table I was established to chronologically track all prescription medications obtained at TBCC. Table II was established to account for other prescription medications obtained outside the cancer clinic as well as all OTC products used by each patient on a regular basis.

A sample of 50 patients was interviewed by a pharmacy intern in the waiting room of the day care unit. Patients were asked a series of questions to determine what out-of-clinic

**Table I: Cancer Centre Prescription Medications**

A. Patient Medical Data		Name:				
Height:		Hospital #:				
Weight:		Date of Birth:				
Drug Allergies:		Address:				
Admission Date:						
Previous diagnosis:						
Chronic conditions (other than malignancy)						
Initial Physician:						
B. Cancer Centre Medications						
Date started	Drug	Dose	Route of Admin.	Frequency of Administration	Presc. # # of doses	Present Physician

Neal M. Davies, B.Sc.(Pharm), is a pharmacy intern in the Department of Pharmacy at the Tom Baker Cancer Centre, 1331-29th Street N.W., Calgary, Alberta T2N 4N2.

Carole R. Chambers, B.Sc.(Pharm) M.B.A., is the pharmacy manager in the Department of Pharmacy at the Tom Baker Cancer Centre.

Address correspondence to: Neal M. Davies at the address above.

prescription medications and what OTC products they currently used. The results were measured by clocking the time of interview, chart review, etc. Every patient's chart was reviewed weekly and a manual update of Table I was completed after every clinic visit. Pharmacists reviewed the medication history forms for completeness and accuracy.

### PROGRAM EVALUATION

The mean age of the patients was 54 years (range: 24 to 79 years). Half of the patients interviewed were female.

The time required to conduct an interview ranged from one to ten minutes with an average of 3.2 minutes. The analysis of workload measurements obtained through this trial was within ten percent of those published by CSHP for workload units required for a medication history service<sup>9</sup> (Table III). The time to conduct a medication history interview was less than CSHP guidelines. This difference may be explained by the increased time spent on patient selection and chart review prior to each interview. A subjective improvement in interviewing skills over the course of the trial also led to a reduction in interviewing times.

The average number of out-of-clinic prescriptions was 1.66/patient with a range between zero and six prescriptions. Furthermore, on average, patients self-medicated with 1.42 products (range: zero to four) on a regular basis. The variety of OTC drug products regularly used by our patients was quite remarkable (Table IV). This information was previously unavailable in the patients' chart.

An expert panel of senior oncology pharmacists concluded that eight (16%) of the patient drug histories obtained by the pharmacy intern contained clinically important information that had not been noted in the patients' records. This important information included:

1. One well-defined allergy to penicillin.

**Table II: Out of Clinic Prescription Medications and OTC Products**

A.					
Name:					
Hospital #:					
Date of Birth:					
Address:					
B. All current medications prescribed outside this clinic					
Date started	Drug	Dose	Route of Administration	Frequency of Administration	Prescribing Physician
*					
C. Non prescription Medications Checklist					
1. Antacids					
2. Analgesics					
3. Antidiarrheals					
4. Antihistamines					
5. Cough and cold products					
6. Laxatives					
7. Dermatologicals					
8. Vitamins and Iron					
9. Antinauseants					
10. Herbs/Natural products					
11. Others					
* The actual form had spaces set aside for section B.					

**Table III: Medication History Service — Average Unit Values**

	CSHP N = 23	TBCC N = 50
Patient Selection	0.46 minutes	0.87 minutes
Chart Review	2.05 minutes	3.30 minutes
Medication History Interview	7.04 minutes	3.18 minutes
Document in Patient's Chart	6.57 minutes	5.60 minutes
Travel	1.10 minutes	1.00 minutes
Interpretation and Recommendations	—	1.50 minutes
Total	17.22 minutes	15.45 minutes

2. Two potential drug interactions between non-steroidal anti-inflammatory drugs and methotrexate.
3. A self-medication problem between Tylenol® #3 and Ex-lax®.
4. A potential drug interaction between digoxin and methotrexate.
5. A potential drug interaction between flurouracil and cimetidine.
6. Two omissions of pertinent patient data (i.e., height and weight).

The clinically important information identified from the medication profiles was noted in the patient's chart and conveyed to the nursing and medical staff.

### CONCLUSION

The need for maintaining a complete medication profile is not only necessary for accreditation, but is also essential for optimal patient care. The sharing of information and the exchange of ideas among health professionals benefits everyone, especially the patient.

This trial program revealed the necessity for medication histories. The medication profile can be used to easily assess a vast array of medication interactions, cross sensitivities, and cross dependence. The extra information retrieved by pharmacists taking a medication history is clearly

Table IV: OTC Drug Usage

OTC Category	# of Patients Reporting Use	Usage
Antacids	2	4%
Antidiarrheals	3	6%
Antihistamines	4	8%
Antinauseants	5	10%
Cough & Cold Products	1	2%
Dermatologicals	1	2%
Herbs and Natural Products	3	6%
Laxatives	4	8%
Painkillers	30	60%
Vitamins	18	36%

N = 50

clinically important<sup>7</sup>. The pharmacist involved can also gain clinical skills and improve interpersonal skills. The trial program facilitated a liaison between the pharmacy and nursing departments and fostered increased communication.

Medication profiles could easily become integrated into the existing drug information program. Based on our own time studies, it would be

acceptable to utilize the CSHP workload measurement unit values to project the staff resources required. ☒

#### REFERENCES

1. Owyang E, Miller RA, Brodie DC. The pharmacist's new role in institutional patient care. *Am J Hosp Pharm.* 1968; 25:624.
2. Badowski SA, Rosenbloom D, Dawson DH. Clinical importance of pharmacist-obtained medication

histories using a validated questionnaire. *Am J Hosp Pharm.* 1984; 41:731-2.

3. Covington TR, Pfeiffer FG. The pharmacist-acquired medication history. *Am J Hosp Pharm.* 1972; 29:692-5.
4. Gurwich EL. Comparison of medication histories acquired by pharmacists and physicians. *Am J Hosp Pharm.* 1983; 40:1541-2.
5. Wilson RS, Kabat HF. Pharmacist-initiated patient drug histories. *Am J Hosp Pharm.* 1974; 28:49-53.
6. Stolar MH. ASHP national survey of hospital pharmaceutical services — 1987. *Am J Hosp Pharm.* 1988; 45:801-18.
7. Burkle WS, Lacrotti RL, Mateke CR. Documenting the influence of clinical pharmacists. *Am J Hosp Pharm.* 1982; 39:481-2.
8. Anon. Standards of Practice. Toronto, ON: *Can Soc of Hosp Pharm.* 1986.
9. Gesy KF, Schnell BR, eds. Summary report the development of a Canadian hospital pharmacy workload measurement system, 1984.
10. Caselnova DA, Dzierba SH, O'Neill MS, et al. Implementing clinical pharmacy services in an outpatient oncology clinic. *Am J Hosp Pharm.* 1985; 42:1348-52.
11. Einarson TR. The dilemma of clinical pharmacy research. *Can J Hosp Pharm.* 1988; 41:289-94.