



the Translator

Canadian Pharmacy ▶ Research ▶ Health Policy ▶ Practice ▶ Better Health

Cancer care pharmacists

The studies featured in this issue of the Translator highlight research demonstrating how the inclusion of pharmacists in cancer care can enhance patient care and patient safety.

- Pharmacists play essential roles in palliative care
- A pharmacist improves care in outpatient brain cancer clinic
- Satellite pharmacy increases inter-professional collaboration and enhances patient care
- Pharmacists adhere to cancer medication error prevention policies

Pharmacists play essential roles in palliative care

Gilbar P, and Stefaniuk K. The role of the pharmacist in palliative care: Results of a survey conducted in Australia and Canada. *Journal of Palliative Care*. 2002; 18(4): 287-292.

Issue: Pharmacists are experts in clinical areas including cancer care and pain management. Pharmacists' expertise in drug therapy, patient counselling and drug information is essential in end-of-life care.¹ Despite the multidisciplinary approach to palliative care, the prevalence and role of pharmacists in palliative care teams has yet to be defined.

A solution: In 2001, a survey was sent to 100 palliative care facilities in Canada and 100 in Australia to obtain information on the responsibilities of palliative care pharmacists. Of the respondents surveyed, 85.5% in Canada, and 55.3% in Australia indicated that sites included pharmacists on palliative care teams; and those without a pharmacist on their team, indicated their desire to incorporate one.

85.5% of Canadian sites employed a palliative care pharmacist.

In Australia, almost half of pharmacists involved in palliative care (47.6%) worked less than 10 hours per week whereas 61% of Canadian pharmacists worked 10-20 hours per week. Few pharmacists in Australia (14.3%) and Canada (6.8%) were employed full time in palliative care. Funding for these pharmacist hours primarily came from pharmacy budgets, with remaining compensation covered by palliative care budgets.

The survey found that the most common clinical duty performed by pharmacists (80%) in both countries was a review

of patients' medication orders. The majority of pharmacists (70%) in both countries provided advice on drug therapy, information and administration, side effects and interactions to patients, their families and the palliative care team. Although more common in Canada, pharmacists also participated in interdisciplinary team rounds and team meetings. Pharmacists were actively involved, to varying degrees, in the direct care of patients and support of their families, and played key roles in providing drug information and education to the palliative care team.

Implications: Palliative care patients will undoubtedly experience drug related issues.² Pharmacists' expertise is a valuable resource in addressing

¹Arter SG, Lipman AG. Hospice care: A new opportunity for pharmacists. *J Pharm Practice*. 1990; 3: 28-33

Pharmacists play essential roles in palliative care

these important concerns. Pharmacists' involvement in palliative care is limited by a lack of pharmacists with expertise in cancer care, insufficient time and remuneration, and their poorly defined role in this setting. These barriers can

be overcome by adding pharmacists to palliative care teams, and increasing direct patient care hours for pharmacists on these teams. Full time positions are ideal for pharmacists to address the medication needs of the terminally

ill. Pharmacists must promote the unique skill set they can offer to the multidisciplinary palliative care team, and actively define their role in palliative care.

³Cusano FL, Chambers CR, Summach DL. A medication error prevention survey: Five years of results. *J Oncol Pharm Practice*. 2009; 15: 87-93

Background or research methods:

A questionnaire was developed to obtain relevant information regarding duties performed by pharmacists in palliative care. These responsibilities were divided

into sections relating to administration, clinical, educational, research, and provision of drug functions. Between 18 June and 31 August 2001, the questionnaire was mailed to directors

of pharmacy at 100 sites most likely to employ a palliative care pharmacist in each of Canada and Australia. The response rates were 76% at Australian sites and 69% at Canadian sites. □

A pharmacist improves care in outpatient brain cancer clinic

Delaney L, Chambers C, Roldán G, De Robles P, Cairncross G, Forsyth P et al. A feasibility study to assess the integration of a pharmacist into neurooncology clinic. *Journal of Oncology Pharmacy Practice*. 2009; 15: 79-85.

Issue: The management of patients with brain tumors has become increasingly complicated, necessitating a multidisciplinary approach. Patients are commonly overwhelmed by the complexity of their care, and staff members of the neuro-oncology team, with demanding workloads, have inadequate time to spend with patients. Pharmacists have typically not been directly involved in outpatient cancer clinics, yet they are acknowledged to have a unique skill set, with an expertise in understanding treatment regimens, side effects, and drug interactions.^{3,4}

A solution: A study was conducted to determine if the incorporation of a pharmacist into the outpatient neuro-oncology clinic could ease the concerns of patients and staff, thus improving the overall patient experience. Sixty-seven percent of pharmacist interventions were spent directly on patient care, answering

100% of staff indicated that the pharmacist should remain part of the team.

drug information questions for patients, reviewing patients' treatment protocols, and managing side effects. The inclusion of a pharmacist alleviated patients' stress regarding the complexity of their treatments and management of side effects. All patients felt they received useful information from the pharmacist, and 90% of patients felt the pharmacist should continue as part of the neuro-oncology team.

The pharmacist directly interacted 44 times with staff regarding drug related issues and drug information relating to interactions and dosage adjustments. The majority of staff (80%) indicated that having a pharmacist on the team improved the overall patient outcomes and experiences. The pharmacist

optimized both patient education regarding their drug treatment, and drug information for staff. Ninety percent of staff thought the presence of the pharmacist improved the efficiency of the clinic, and all staff members thought that the neuro-oncology team should include a pharmacist.

Implications: The addition of a pharmacist to a neuro-oncology team, in an outpatient brain cancer clinic, improved the quality of patient care, served as an essential resource for clinical staff and improved the overall efficiency of the clinic by freeing up physicians and nurses, allowing them to see other patients. This study indicates that contributions by the pharmacist fit with those of other health care professionals, and supports a large pilot study to confirm that a clinical pharmacist should be a permanent member of the outpatient neuro-oncology team.

³Ratka A. The role of a pharmacist in ambulatory cancer pain management. *Curr Pain Headache Rep*. 2002; 6: 191-196
⁴Honda DH. Role of the clinical pharmacist in oncology care. *Front Radiat Ther Oncol*. 1981; 15: 157-161

Background or research methods:

From November 2007 to February 2008 a pharmacist met with patients at the Tom Baker Cancer Centre in Calgary, Alberta, and provided standardized counselling regarding their treatment, side effect management, drug interactions, and addressed other drug related concerns. The pharmacist

followed up with patients by phone one and five days after the start of treatment to address any further drug related issues, and patients could leave messages with the pharmacist outside of clinic hours. The pharmacist was a resource to the multidisciplinary team, proving drug related advice, and answering drug information

questions. At the end of the study, surveys were sent to all patients (13) and staff (13) who interacted with the pharmacist to evaluate the involvement of the pharmacist and the value of pharmacists' contributions to the team. The response rate for the surveys was 85% for both patients and staff. □

Satellite pharmacy increases inter-professional collaboration and enhances patient care

Intrevado P, Jackson HA, Kelm MJ, Abel SR. Interdisciplinary analysis of chemotherapy preparation at a pediatric hospital. *Journal for Healthcare Quality*. 2008; 30(5): 13-19.

Issue: Numerous distractions and frequent interruptions in a central hospital pharmacy make chemotherapy preparation highly susceptible to improper preparation, prescription errors and chemotherapy waste. This high potential for error and the narrow safety window of cancer drugs highlights the importance of continuous quality improvement of chemotherapy preparation and administration.

A solution: Research led by a doctoral student in operations management at McGill University, integrated pharmacists and industrial (systems) engineers to provide a unique perspective on current pharmacy working practices in cancer care. The interprofessional team identified areas for quality improvement at a leading children's hospital in the United States (US), and proposed recommendations to increase safety and the level of cancer care provided. Recommendations included electronic order entry and processing; adequate staffing to allow pharmacists to properly

Annual chemotherapy waste was drastically reduced from \$33,000 to \$1,500,

verify chemotherapy preparations; improved interdepartmental communications; and the use of a dedicated pharmacist for the preparation of cancer drugs. The establishment of a satellite haematology/oncology pharmacy in the outpatient cancer care centre was also highly recommended.

As a result of the recommendations, a satellite pharmacy was implemented, which streamlined operations, encouraged interdisciplinary, patient-centred care, and facilitated communication between departments in the hospital's outpatient centre. As a result, the workload of the main pharmacy decreased because the satellite prepared chemotherapy for the inpatient hospital population. This allowed pharmacists in the main pharmacy to focus on more critically ill patients' orders and allowed more specialized

staff in the satellite pharmacy to focus on cancer therapy preparations.

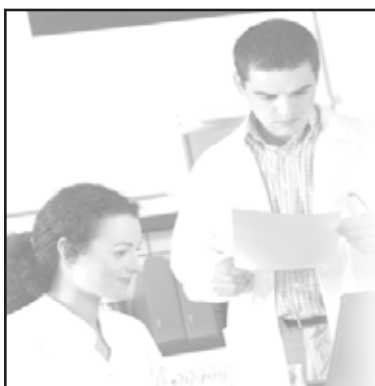
Implications: In an effort to improve safety and operational efficiency, this research has demonstrated how the centralization of cancer care operations via an oncology satellite pharmacy has allowed a single cancer care pharmacist to take ownership of chemotherapy regimens, and has enabled the pharmacist to be thoroughly involved in patient care. It has also enhanced the opportunity for nurses, physicians and parents of paediatric patients to interact with a single, dedicated cancer care pharmacist, which has increased the level of cancer care provided by this hospital. The implementation of an inter-professional approach to care has clearly generated improved outcomes for patients and the health care delivery system. Most importantly, no sentinel events have been reported since the satellite pharmacy has been operational.

Background or research methods:

Pharmacists and industrial engineers were requested to visit a premiere children's hospital in the US to recommend improvements to advance pharmacy operations and develop more established measures for cancer drug preparation to enhance patient

safety. Pharmacists and medication safety experts focused on hospital and clinical operations, while the industrial engineers analyzed work flows, procedures, quality controls, and processing of cancer treatments. The team of investigators was external to the hospital to remove any bias or

preconceived thoughts of current working practices. The pharmacists and industrial engineers met during and after the hospital site visits to establish consistent recommendations.



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Pharmacists adhere to cancer medication error prevention policies

Cusano FL, Chambers CR, Summach DL. A medication error prevention survey: Five years of results. *Journal of Oncology Pharmacy Practice*. 2009; 15: 87-93.

Issue: Medication errors are common among adults and children with cancer, occurring as frequently as 7% in adults and 18% in children's outpatient cancer medications.⁵ Cancer patients are extremely vulnerable to medication errors, since they receive complicated medication regimens, including many drugs with narrow margins of safety.

A solution: Following a fatal medication error reported in the literature in 1995⁶, the Alberta Cancer Board (ACB) pharmacy department established a medication error prevention team to ensure patient safety. This team developed policies to prevent medication errors, and created an annual medication error prevention survey, to document the implementation and adherence of pharmacy departments to these medication error prevention policies. The survey was broken down into four main sections: (1) 'Physician ordering of chemotherapy medications' - with policies in place to ensure clarity and safety of physician orders; (2) 'Verification of questionable chemotherapy medication orders' - following and double checking protocols, and discussing unapproved protocols with prescribers to ensure safe and appropriate use of the medications; (3) 'Handling, admixing, distribution

and administration of chemotherapy medications' - to minimize potential sources of error from distribution to administration; and (4) 'Staff and patient education' - ensuring that pharmacists have the necessary specialty training and provide appropriate education to patients regarding their medications.

Five years of results from the annual medication error prevention survey revealed that over 90% of the medication error prevention policies were followed by the 19 sites comprising the ACB. The highest adherence (95%) was in 'Handling, admixing, distribution and administration' section of cancer drugs. The lowest adherence to individual policies was seen in 'Verification of questionable chemotherapy medication orders,' section, where the policy recommends the use of a pharmacy computer system to assist pharmacists in detecting interactions and dose limitations, and to provide documentation. This policy was practiced only 72% of the times across the 19 sites over the 5-year study period.

Implications: The annual survey is a reminder of the medication error prevention policies for pharmacy departments across the ACB. The

results are published annually, and each year the medication error prevention team identifies potential areas for improvement. Policies are effective for preventing medication errors, and the results of this paper demonstrate that pharmacists do follow these policies aimed at optimizing patient safety. The most significant limitation to interpreting the five year results of the surveys is that often a different pharmacist filled out the survey each year. This human variation could be reduced by specifying that the pharmacy manager be responsible for responding to the survey each year.

Background or research methods:

In October of 2003-07, medication error prevention surveys were faxed to the pharmacy department at each of the 19 sites comprising the ACB. The quality assurance pharmacist was responsible for tabulating the results. The results were presented at the ACB Pharmacy and Therapeutics Committee meeting as well as published in 'Reachout,' the ACB pharmacy monthly newsletter. □

⁵Walsh KE, Dodd KS, Seetharaman K, Roblin DW, Herrinton LJ, Von Worley A, et al. Medication errors among adults and children with cancer in the outpatient setting. *J Clin Oncol*. 2009; 27(6): 891-896

⁶Roush W. Dana-Farber death sends warning to research hospitals. *Science*. 1995; 269: 295-96

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