

The Role of the Nurse Practitioner and Clinical Pharmacist

IN COLLABORATIVE PATIENT CARE AND DRUG THERAPY MANAGEMENT IN CANADIAN CANCER CENTRES

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Introduction

It is anticipated that because of our aging population the incidence and prevalence of cancer in Canada will continue to increase. The rise in the volume of patients will need to be met with an expansion of oncology services. This should include an increase in the number of healthcare professionals involved in the initial patient assessment, the safe delivery of chemotherapy and supportive care medications, surveillance and palliative care. The current and anticipated shortage in qualified medical oncologists in Canada is being mitigated in many cancer centres by utilizing clinical practice associates or general practice oncologists. Expanding the role of non-physician healthcare professionals, such as nurse practitioners (NPs) and pharmacists, may be another solution to concerns regarding the oncology workforce.

Pharmacists are ideally suited to work in a systemic therapy collaborative practice because of their knowledge of pharmacology, drug toxicities, drug interactions, order entry systems and funding mechanisms in those jurisdictions that do not have a fully funded public drug coverage system. Nurse practitioners also work effectively within cancer care programs as part of a multidisciplinary team. In addition to their ability to prescribe supportive care medications and chemotherapy, they can offer psychosocial care, perform certain procedures and participate in patient education. Nurse practitioners also have formal training in patient assessment and physical examination.

Over the last decade a growing number of nurse practitioners and clinical pharmacists are providing direct patient care as part of a collaborative agreement with oncologists, particularly in the United States.¹ Collaborative agreements may be informal or, more appropriately, a written agreement describing a cooperative practice relationship between a NP or pharmacist and a physician, with legal authority to prescribe medications.^{2,3} In North Carolina, pharmacists can prescribe medications under a collaborative agreement with a supervising physician.⁴ The State Board of Pharmacy and Medical Board must first approve this collaborative agreement. Once this process has been completed, the pharmacist is licensed as a clinical pharmacist practitioner (CPP). The scope of practice varies between institutions but may include

the ability to assess patients, order supportive care medications (antiemetics, growth factors, anticoagulants, bisphosphonates, blood products, antibiotics, smoking cessation products), order intravenous chemotherapy, depot hormone therapies and order laboratory and imaging investigations.

Similar collaborative agreements exist in cancer centres in California and other states, where CPPs may also prescribe take home oral cancer drugs such as capecitabine and tyrosine kinase inhibitors. Pharmacists and nurse practitioners can also prescribe narcotics but require a special license from the United States Drug Enforcement Agency (DEA).⁵ Surveys of state pharmacy organizations and state pharmacy boards in the United States have demonstrated that collaborative practices in the oncology and non-oncology settings have a positive effect on pharmacist-physician relationships.⁶

Although some Canadian provinces now have legislation that allows pharmacists to have limited prescribing privileges in the retail setting, many jurisdictions still don't have laws which allow hospital or cancer centre pharmacists to prescribe.⁷ Nurse practitioners are legislated in several provinces to prescribe. They also directly assess patients and perform a number of other functions historically done by physicians, depending on the scope of their practices as defined by their healthcare authority.

We surveyed comprehensive cancer centres from each province to determine the current status of the nurse practitioner and pharmacist in the setting of a collaborative practice and to see whether they were prescribing supportive care medications and chemotherapy.

Methods

Pharmacists and nurse practitioners working in comprehensive cancer centres in 10 Canadian provinces were surveyed either by telephone or by e-mail. A structured questionnaire was used to determine their scope of practice, involvement in direct patient care and prescribing. A senior pharmacy student or pharmacist conducted the survey. The survey was started on November 1, 2010 and completed on January 18, 2011.

Results

There was one response from each of the 10 provinces (Table 1). In four provinces (AB, ON, NS and NB), both NPs and pharmacists have prescribing privileges in their institutions

as part of a collaborative agreement. However, the pharmacist does not prescribe in any of the centres surveyed. There are six centres with NPs who prescribe one or more types of oncology medications (Table 2). Two centres (NS and AB) indicated that NPs were involved in prescribing intravenous chemotherapy, oral chemotherapy, hormone therapies and supportive care medications. Three centres (NS, ON and AB) follow patients in their clinics who are no longer on active treatment.

In Manitoba, NPs supervise chemotherapy but do not prescribe the drugs. They do prescribe supportive care medications except narcotics. In the cancer centres in NS and NB that were surveyed, NPs use preprinted orders for chemotherapy, while centres surveyed in Ontario and Alberta used electronic ordering systems. In three of the centres where NPs are prescribing chemotherapy, they treat patients in both the adjuvant and metastatic settings. Centres indicated in the survey that NPs prescribe chemotherapy after the oncologist initiates cycle 1 (Table 2). In those centres where chemotherapy patients were under the supervision of NPs, they are referred back to their oncologists when there are serious adverse events, significant dose adjustments required, after assessment of disease status and at the end of a prescribed number of chemotherapy cycles.

Newfoundland and Labrador does not have legislation that allows institution-based pharmacists to enter into a collaborative agreement with a physician or prescribe. Pharmacists in NL do supervise the administration of oral chemotherapy (capecitabine and temozolomide) for patients receiving combined modality concomitant chemotherapy and radiation but they must have a physician order investigations and sign chemotherapy orders. There is one NP working within a cancer centre in the department of radiation oncology who has authority to prescribe hormone therapies and supportive care medications. There were only two centres where NPs prescribe take home cancer drugs. Cancer centres in Saskatchewan and Quebec that were surveyed indicated they do not have any oncology nurse practitioners. Pharmacists do not have the authority to prescribe in those centres.

The cancer centres with NPs supervising and prescribing drug therapy indicated an improvement in job satisfaction and thought there was a decrease in wait-times for patients to start chemotherapy.

Discussion

Our survey results suggest that the role of both nurse practitioners and pharmacists in Canadian cancer centres is expanding to include more direct patient assessment and drug therapy management. Although several provincial nursing, pharmacy and medical boards allow NPs and pharmacists to enter into collaborative agreements with physicians, only NPs are prescribing cancer therapies at the time this survey was conducted.

The reasons why there aren't more NPs with prescribing authority in collaborative practice working in Canadian cancer centres is not clear. A 2008 survey of British specialist nurses working in cancer and palliative care looked at the benefits and barriers to uptake of nurse prescribing training.⁸ The main reason for obtaining prescribing privileges was the

TABLE 1
SURVEYED CANCER CENTRES AND THE CHEMOTHERAPY PRESCRIBING STATUS FOR NURSE PRACTITIONERS (NPs) AND PHARMACISTS

Province	Number of cancer centres surveyed	NPs in collaborative practice	NPs prescribing	Pharmacists in collaborative practice	Pharmacists prescribing
NL	1	Yes*	Yes	No	No
NS	1	Yes	Yes	Yes	No
PE	1	No	No	No	No
NB	1	Yes	Yes	Yes	No
QC	1	No	No	No	No
ON	1	Yes	Yes	Yes	No
MB	1	Yes	Yes	No	No
SK	1	No	No	No	No
AB	1	Yes	Yes	Yes	No
BC	1	No	No	No	No

*Radiation oncology nurse practitioner

TABLE 2
SCOPE OF PRACTICE FOR NPs PRESCRIBING ONCOLOGY MEDICATIONS

Province	Order entry system	Intravenous chemotherapy*	Oral chemotherapy	Hormone therapy	Supportive care drugs**
NL	Computer	No	No	Yes	Yes
NS	Preprinted orders	Yes*	Yes*	Yes	Yes
NB	Preprinted orders	Yes*	No	No	Yes
ON	Computer	Yes*	No	No	No
MB	Computer	No	No	No	Yes
AB	Computer	Yes*	Yes*	Yes	Yes

* Ordered by NP after cycle 1.

** Except narcotics

prospect of improving care. The main reasons why nurse specialists did not pursue prescribing training were: resource issues, lack of medical support and mentorship, and concerns about the relevance of prescribing as a nursing role.

There are a number of factors that may be limiting pharmacists from expanding their roles in oncology. The separation of prescribing and dispensing is thought to be an important safety or quality control issue. However, within a cancer centre or program, it is likely that a limited number of clinical pharmacists will enter into a collaborative agreement to prescribe, thereby separating the functions and maintaining quality assurance. Healthcare administrators and governments may not support the transition of pharmacists from their traditional roles to those where they would have the

authority to directly assess cancer patients and prescribe medications. We did not interview oncologists as part of this study to determine their attitudes towards NPs and pharmacists expanding their roles in direct patient care and prescribing. However, the support is likely high because the increased participation of the NPs and pharmacists should in theory free up more time for oncologists to see new patients, formulate treatment plans, participate in research and fulfill their administrative commitments. Many cancer centre pharmacies are short staffed making it difficult for pharmacists to expand their clinical roles. This issue will need to be addressed for pharmacists to increase the scope of their practices.

Unlike nurse practitioners, many pharmacists may lack the clinical assessment and diagnostic skills needed to participate more fully in collaborative practices. These skills could be easily acquired through formal education programs or through supplemental training within cancer centres.

Concerns have also been raised about the attitudes of patients regarding the expanded role for pharmacists in areas like clinical assessment. Our experience with pharmacist-led oral chemotherapy clinics suggests that the patient satisfaction is high. Clients and their families are always instructed that pharmacists are part of a multidisciplinary team, which allows us to better monitor safety and reduce clinic waiting times. Internal audits of our pharmacy-/general practice oncology-led rectal cancer neoadjuvant capecitabine clinics have demonstrated a reduction in serious adverse events.

Limitations

This survey was conducted at a limited number of comprehensive cancer centres throughout the country. For the smaller provinces, data from a single centre may be reflective of current practices in the entire province. However, for larger provinces like Ontario with multiple cancer centres and clinics, there may be differences in practice for both NPs and pharmacists that are not reflected in this study. We did not conduct the survey in any of the Territories.

Conclusions

The disciplines of nursing and pharmacy are evolving rapidly, thus allowing practitioners to diversify and deliver direct patient care as part of a collaborative practice. Our survey suggests that only nurse practitioners are prescribing chemotherapy in Canadian cancer centres and that more needs to be done to encourage and assist qualified pharmacists who wish to obtain the right to prescribe within their scope of practice. For pharmacists, the decision to enter into a collaborative practice with the authority to prescribe should be based on competency and not necessarily on educational attainment. Pharmacist may be required to complete a multi-step process to demonstrate they have the required competencies, similar to the process used by the Alberta College of Pharmacists.⁷ Outcomes from the expanding role of NPs and pharmacists in oncology should be measured to assess their impact. Oncology healthcare professionals, health authority administrators and provincial and territorial medical and pharmacy boards should work together to rapidly facilitate the development of collaborative practice guidelines and regulations.

Recommendations

- Implement changes to the Pharmacy Act for those provinces that currently do not incorporate practice standards for pharmacist prescribing in their regulatory guidelines.
- Develop formal collaborative practice agreements. Collaboration with other health providers is an important and integral component to pharmacist prescribing. The pharmacist should develop a collaborative practice model, which includes ongoing two-way communication and documentation regarding drug therapy decisions with other health care professionals.
- Develop educational and competency requirements. The pharmacist should participate in continuing education programs, annually complete a professional development log for review, use a self-assessment tool to identify strengths and opportunities for further development, and participate in assessments of practice.
- Develop a process for notification of other health care professionals. Actions related to prescribing and medication management need to be communicated verbally, in writing or through electronic media, when appropriate, to other health professionals. All actions should be supported by documentation.
- Include the ability to order laboratory tests into the pharmacist's collaborative agreement. Pharmacists should have the authority to order laboratory tests for the purpose of monitoring drug therapy outcomes.
- Provide for quality assurance. The pharmacist in a collaborative practice should develop, maintain and coordinate a comprehensive quality assurance program to assure the quality of their prescribing.

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