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## **Hospital Pharmacists: Information Paper on Direct Patient Care and Beyond (2010)**



Canadian Society of Hospital Pharmacists  
Société canadienne des pharmaciens d'hôpitaux

## Hospital Pharmacists: Information Paper on Direct Patient Care and Beyond

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30 Concourse Gate, Unit 3  
Ottawa ON K2E 7V7  
Telephone: 613.736.9733  
Fax: 613.736.5660  
Internet: [www.cshp.ca](http://www.cshp.ca)

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# Hospital Pharmacists: Information Paper on Direct Patient Care and Beyond

## 1. INTRODUCTION

The word “pharmacist” often conjures up images of a neighbourhood drugstore with a kind and trustworthy person in a white coat filling prescriptions and dispensing advice. What many in the lay public may not know is that about 15% of these “kind and trustworthy” healthcare practitioners work in hospitals or hospital-based clinics.<sup>1</sup> As well, the role of the pharmacist has expanded far beyond the days when dispensing prescriptions consisted of “lick, stick, and pour” activities.

Hospitals, clinics, and other healthcare facilities offer unique and rewarding opportunities for pharmacists. These healthcare professional, whose education is directed at the safe and effective use of drugs, provide care to patients in emergency departments, acute care medical wards, critical care units, ambulatory clinics, and chronic care facilities. Many pharmacists are also involved in managing the drug distribution system (e.g., getting the drug to the patient) and other leadership roles in drug use management (e.g., developing policies and procedures). Finally, pharmacists are among the many people working in hospitals and clinics who are involved in clinical research and education.

This paper briefly reviews the recent evolution of pharmacy practice and the training of pharmacists and then summarizes the key roles and activities that hospital pharmacists fulfill in Canada. For a more in-depth review of issues relating to Canadian hospital pharmacy practice, the reader is referred to the most recent report of the Hospital Pharmacy in Canada Survey.<sup>2</sup>

## 2. BACKGROUND

### 2.1 Evolution of Practice

Until the emergence of clinical pharmacy in the 1960s the traditional role of the pharmacist was to

dispense medications.<sup>3</sup> Initially, clinical pharmacy reflected a product- or drug-centred approach, but this model has evolved over recent decades to one that is patient-centred. “Pharmaceutical care”, as defined by Hepler and Strand,<sup>4</sup> is grounded in the prevention of drug-related morbidity and mortality. Although other models of practice, including disease management, medication management, medication therapy management, and seamless care, have since emerged, they are all similar in terms of being patient-centric, with pharmacists taking responsibility for patient outcomes and for safe and effective drug use.<sup>5</sup>

### 2.2 Training and Preparation of Pharmacists

At a minimum, every pharmacist has a university degree in pharmacy. The course of study in these programs is devoted to drugs and their use in improving and maintaining health. In addition to this formal training and the requirement for months of practical training before licensure, all hospital pharmacists continually upgrade their knowledge and skills through continuing education and hands-on experience gained in their clinical practices. Many hospital pharmacists have also pursued formal training and education beyond their baccalaureate degree. A substantial number have completed a residency program in hospital pharmacy practice, an additional year of experiential training that focuses on the application of therapeutic knowledge to clinical practice. These residency programs are accredited by the Canadian Hospital Pharmacy Residency Board (under the auspices of the Canadian Society of Hospital Pharmacists) to ensure quality in terms of both content and learning experience. A growing number of pharmacists have obtained a Doctor of Pharmacy (PharmD), through either traditional or nontraditional programs. The traditional PharmD programs are offered in Canada and are generally 2-year postgraduate programs

CSHP Mission:

CSHP is the national voice of pharmacists committed to the advancement of safe, effective medication use and patient care in hospitals and related healthcare settings.



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.providing advanced education and training in many aspects of pharmacy practice, including direct

patient care. The nontraditional programs are offered only as distance learning programs from institutions in the United States. These consist of postgraduate advanced education and training on a more flexible schedule. Recently, one faculty in Canada (Université de Montréal) implemented an entry-level PharmD (ELPD) program to replace the existing Bachelor of Science in Pharmacy degree. The ELPD curriculum involves an additional year (i.e., total university training of 6 years), with advanced therapeutics and enhanced experiential training. In the not-too-distant future, several other Canadian faculties of pharmacy will implement ELPD programs to replace existing baccalaureate programs.

### 3. WHAT DO HOSPITAL PHARMACISTS DO?

The contemporary hospital pharmacist performs a mix of 5 key roles and responsibilities, which may vary considerably from facility to facility: provision of direct patient care; drug use management; management of the drug distribution system; education of patients and their families, other healthcare professionals, and the pharmacists of the future; and participation in research<sup>2,6</sup> (Table 1).

#### 3.1. Provide Direct Patient Care

Medication use is a complex, multidisciplinary process that begins and ends with the patient. Hospital pharmacists providing direct patient care frequently do so as members of multidisciplinary care teams, where they are recognized as drug therapy experts. As mentioned above, pharmacists provide care for patients in a variety of settings. In many hospitals, pharmacists work directly with patients to prevent, identify, and resolve drug-related issues, in particular by checking the following

aspects of drug therapy:<sup>4</sup>

- patient is taking the right medication
- patient is receiving the right dose of the medication
- patient is receiving pharmacologic and/or nonpharmacologic treatment, as appropriate, for all medical problems
- patient is not receiving any unnecessary or duplicate medication therapy
- patient is receiving or taking medications as prescribed
- patient is not experiencing adverse drug reactions, adverse drug events, or negative consequences as a result of a drug interaction
- optimal medication and therapeutic outcomes are being achieved, and patient's goals for medication use are being reached

Direct patient care activities may take any of the following forms:

- monitoring drug therapy and ordering laboratory tests
- adjusting drug doses
- teaching patients and caregivers about medications and nonpharmacologic therapies
- gathering each patient's medication history at the time of admission to hospital (including performing initial medication reconciliation)
- performing medication reconciliation at the time of transitions (admission, transfers, and discharge)
- participating in patient care rounds, including provision of advice regarding drug therapy
- prescribing medications
- assessing drug allergies and drug–drug, drug–food, and drug–disease state interactions
- identifying and reporting adverse drug reactions
- participating on “code blue” teams
- managing medications
- participating in wellness-related activities, such as smoking cessation and vaccination programs

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Although many pharmacists are qualified to offer these services, the 2007/2008 Hospital Pharmacy in Canada Survey found that many of these services are provided only on a limited basis or only to those patients with the greatest need.<sup>7</sup> The same survey revealed that hospital pharmacists are members of multidisciplinary teams across the spectrum of inpatient and ambulatory patient care services, including general medicine, pediatrics, oncology, and intensive care, among many others.

### 3.2 Manage the Use of Drugs

Pharmacists contribute to the cost-effective use of drugs through the management of formulary systems, the establishment of drug policy and guidelines, and the evaluation of drug use.

Working with other healthcare professionals on the drugs and therapeutics committee, hospital pharmacists apply clinical, therapeutic, financial, and pharmaco-economic information in managing the formulary process. Although there is some debate about the effectiveness of formularies, their intended benefits include more cost-effective prescribing, improved quality of care through better identification of the best treatments, and elimination of inefficient treatments and those with risks of avoidable adverse events.<sup>8-10</sup>

Pharmacists also play an integral role in the development of drug policy. Many hospital pharmacists have been directly involved in developing clinical practice guidelines and critical pathways at the institutional level.<sup>11,12</sup> These guidelines and pathways are used by physicians and other healthcare professionals to guide decisions related to patient care. When properly developed, such policies and guidelines contribute to enhancing the quality of patient care.

Many hospitals have drug-use evaluation (DUE) programs. Within the DUE process, pharmacists systematically evaluate drug usage against predetermined criteria. Hospitals and health regions

have used DUE programs to evaluate the appropriateness of drug therapy within their institutions and to measure the cost-effectiveness of drug use.

### 3.3 Manage the Drug Distribution System

Hospital pharmacists are responsible for overseeing a facility's medication distribution system. They work to ensure that systems and processes are safe, effective, efficient, and designed to minimize the likelihood of medication errors.<sup>13</sup>

Significant progress has been made in delegating the technical tasks related to drug distribution to trained pharmacy technicians and assistants, and in many Canadian jurisdictions pharmacy technicians are poised to become regulated health professionals.<sup>12</sup> As well, several hospitals have moved toward the use of automated medication distribution systems, which help to reduce workloads and opportunities for errors.

Within healthcare facilities, pharmacists play a pivotal role in preventing medication errors and reviewing those that do occur. They work proactively to address medication system issues, thereby reducing the potential for medication errors. They promote best practices, including unit-dose drug distribution in inpatient settings, computerized prescriber order entry, standardization and simplification of prescribing and drug administration processes, use of error-preventive packaging, and institution of 24-hour pharmacy services.

### 3.4 Educate

Hospital pharmacists play an essential role in educating patients and their families about appropriate medication use.<sup>7</sup> They also contribute to the education of undergraduate pharmacy students, pharmacy technician students, hospital pharmacy residents, PharmD students, and other healthcare

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professionals (e.g., physicians, nurses, dieticians) through in-services, medical and/or nursing rounds, participation in conferences, and submissions to reference texts and journals.<sup>14</sup> In fact, for most hospital pharmacists, the education and training of students and graduates is a routine responsibility, and in many hospitals, their involvement in teaching is extensive.

### 3.5 Engage in Clinical Trials and Pharmacy Practice Research

In the hospital setting, research on new drugs or new uses for established drugs typically requires a multidisciplinary approach, and the participation of a pharmacist is routine. In addition, many pharmacists conduct research in various facets of patient care, including multidisciplinary practice models for the provision of healthcare, medication safety, seamless care, and medication reconciliation.

## 4. CONCLUSION

Hospital pharmacists practise in a wide variety of settings and are important players in the drug distribution and drug management systems. Their specialized training in drug therapy and their focus on drug safety make them invaluable to hospitals and to other healthcare facilities in Canada.

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**Table 1**  
**What Hospital Pharmacists Do\***

<b>Provide direct patient care</b>	<b>Educate</b>
<ul style="list-style-type: none"> <li>• Work collaboratively with patients and members of the interdisciplinary healthcare team to optimize health outcomes by preventing, identifying, and resolving drug-related problems; initiate or modify drug therapy; decrease unnecessary drug use; monitor and evaluate response to drug therapy</li> <li>• Promote rational and evidence-based drug use</li> <li>• Identify and report adverse drug reactions</li> <li>• Provide seamless care upon discharge from acute care facilities</li> </ul>	<ul style="list-style-type: none"> <li>• Educate patients and promote their engagement in their own care</li> <li>• Educate healthcare providers (through in-services, medical and/or nursing rounds, participation in conferences, and submissions to reference texts and journals)</li> <li>• Educate undergraduate and graduate pharmacy students</li> <li>• Ensure access to drug therapy expertise</li> </ul>
<b>Manage the use of drugs</b>	<b>Engage in clinical trials and pharmacy practice research</b>
<ul style="list-style-type: none"> <li>• Provide information on the optimal use of medications</li> <li>• Promote cost-effective use of drugs</li> <li>• Create and maintain the hospital formulary</li> <li>• Participate in the development of drug policy and clinical practice guidelines at the institutional, provincial, and/or national level</li> <li>• Evaluate the use of drugs through drug-use evaluation programs (e.g., concordance of medication use with guidelines)</li> </ul>	<ul style="list-style-type: none"> <li>• Participate in multidisciplinary clinical drug trials</li> <li>• Conduct or participate in pharmacy practice research</li> </ul>
<b>Manage the drug distribution system</b>	

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| <ul style="list-style-type: none"><li>• Verify prescribers' orders, check for drug interactions, and confirm doses</li><li>• Work to ensure safe, effective, and efficient drug distribution systems</li><li>• Prevent medication errors by addressing medication system issues</li><li>• Promote unit-dose drug distribution, computerized physician order entry, error-preventive packaging</li><li>• Provide 24-hour pharmacy services or on-call service</li></ul> |  |
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\*Based on the Hospital Pharmacy in Canada 2007/2008 report<sup>1</sup> and the Blueprint for Pharmacy.<sup>6</sup>