Pharmacists and Primary Health Care

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PHARMACISTS AND PRIMARY HEALTH CARE

Pharmacists are the drug therapy experts. Because of their knowledge, skills and accessibility, pharmacists are positioned to ensure that patients, other health care providers and the health care system safely achieve optimal drug therapy outcomes. In the primary care setting, pharmacists provide direct patient care; face-to-face counselling and education for their patients; prescribing advice for other providers;advice on cost-effective drug therapy and options for treatments; and chronic disease therapy management. Pharmacists are essential to optimal primary health care.

EXECUTIVE SUMMARY

Overview

The World Health Organization (WHO) defined primary health care as the principal method of delivering health care at the most local level of the system. It is the health care provided to a patient at first contact with that system. For primary care to be both successful and accepted, the full involvement of both health care providers and their patients is essential. Pharmacists, nurses, physicians and their communities are attempting to evolve practices to meet these new demands. This document will explore the role of the pharmacists and the need for system change. Change is an issue which everyone agrees with, but we will also discuss the more challenging issue of how to implement change. We do not promote a "one size fits all" approach to primary health care teams. We believe that communities, like patients, have different needs and therefore different solutions must be explored. We will also make recommendations on the areas we believe require further study and consideration.

Pharmacists — the Drug Experts

Pharmacists are the drug experts on the health care team; their university training is devoted almost entirely to understanding drugs. They are also the most accessible care providers because they offer longer hours and can often be accessed without an appointment. To date, the profession in Canada has taken two divergent paths, the public setting in hospitals and the private route in community pharmacies. Their responsibilities in these different practice settings have also been divergent. In hospitals, pharmacists play a critical role in patient care and the focus of their expertise is on providing advice on medication therapies. While pharmacists in community settings do provide a wide array of advice to patients on health matters and medicines, the way they are paid has forced them to focus primarily on the dispensing of medication.

Over the past few years, there has been a shift within the community practice; increasingly, patients are turning to pharmacists for a more holistic approach to their care. Pharmacists have responded by applying the extensive knowledge they acquired in university to the direct care of their patients. The result has been new and innovative practices. Given the increasing stresses on the health care system and the lack of availability of nurses and doctors, this shift makes sense.

Some of the services that pharmacists are currently able to provide include pharmacy based home visits, multidisciplinary reviews of patients' progress, screening for diseases, pharmacist-managed therapies such as tobacco control strategies, chronic disease management like diabetes, asthma, lipid-lowering, osteoporosis, and anti-coagulation therapies. They also provide information, education, and counseling to patients and identify any barriers to patient compliance.

The Shift to the Future

Pharmacists can also do more — like their counterparts in nursing they are pushing the boundaries and further defining practice models to meet the needs of their patients. They are exploring roles that would allow them to provide health promotion and disease prevention strategies, such as the giving of immunization shots, performing limited physical assessments and initiating medication therapies with the appropriate collaborative drug therapy management authority. Naturally, they are looking at documenting the care they provide in patients' medical records. Pharmacists know from their experiences in the dispensary how critical it is to keep accurate records of patient care.

Pharmacists want to work collaboratively; they understand the pitfalls of isolation, just as many family practitioners do. The silos that currently exist within the health sector act as barriers to better health outcomes and work to increase costs while decreasing services. Interaction between health care providers from different occupational backgrounds must be complementary, but some supplementary or role extension for certain health care providers will also make sense when efficiency gains can be made without sacrificing quality standards, including patient satisfaction. Pharmacists, nurse practitioners and other health care providers cannot replace physicians, but they can, and should, supplement physicians.

The Barriers to Change

Interdisciplinary training is one of the necessary next steps if Canadians are to maintain a vigorous health care system. While the public, health professionals and governments have all acknowledged that the system must be updated to reflect the new realities, there continue to be barriers to implementing change. For pharmacists, those barriers include:

- ***Underutilization of pharmacists' skills, education and services.*** A growing body of evidence demonstrates that full utilization of pharmacists' skills and services will help contain drug costs, reduce pressures on more expensive areas of the health care system, and improve health outcomes.
- ***Outdated compensation schemes.*** Currently, pharmacists are paid a fee for each prescription dispensed. This fee-for-service model of payment discourages collaboration with other providers and the expansion of pharmaceutical care.
- ***Lack of access to the full patient record.*** Community pharmacists have inadequate access to diagnosis, medical history and laboratory values of their patients; this is not the case in hospital settings.
- ***Professional shortages.*** There is a shortage of pharmacists in Canada impacting on patient care in both the community and hospital setting.
- ***Necessary changes to legislation and practice models.*** Governments must make changes so pharmacies can become health consultation centres.

Conclusion

Canadians have recognized the need for change in the way the health care system works. The challenge that remains to governments and health professionals is how to implement that change. We have the advantage of learning from the experiences in other countries and from the many pilot programs and research projects that have taken place in this country. In Australia, England and the United States, we have seen the implementation of different approaches that enhanced the contribution of the pharmacists to the delivery of primary health care. We can now cherry pick from existing practices to reach Canadian solutions. We know there is no one right approach and regional and local needs will influence best practices, but there is sufficient evidence to take the first steps towards expanding services.

When a group of health professionals from Saskatchewan went to the UK to look at their primary care delivery model, the single element that seem to underpin the success of the UK transition was that the government trusted both their pharmacists and their communities to make the right decisions. The benefits of that trust are being seen. Canadian governments need to take that same necessary step. They need to trust in the five years of university training that pharmacists receive and they need to depend on Canadians' trust in pharmacists.

Recommendations

- ***Pharmacists must be recognized as essential members of the primary health care team in order to ensure optimal drug use.***

The pharmacist is the drug therapy expert. Only the pharmacist has the university education entirely devoted to medications and their use. This provides the pharmacist with a unique perspective to assist other members of the primary health care team to provide optimal drug therapy and manage patient outcomes. Pharmacists are emerging from "behind the counter" to play a pivotal role in patient care management in the primary health care setting.

- ***Pharmacists are the most accessible members of the primary health care team and should be positioned as first contact provider whenever possible and appropriate.***

Pharmacists have been shown to be the most accessible providers of health care compared with physicians and nurse practitioners. Pharmacists and pharmacies are situated in a variety of locations, including grocery stores, malls, medical buildings and independent locations. Pharmacies tend to be open longer hours and on weekends, when other primary care providers are no longer available. This increased access allows pharmacists to enter into new and expanding roles in the primary health care setting.

- ***Pharmacists must become medication managers in patient-centred practices.***

Medication management is a patient-centred, outcomes-oriented, pharmacy practice. It requires the pharmacist to work in concert with the patient and the patient's other health care providers to promote health, prevent disease and assess, monitor, initiate, and modify medication use to ensure that drug therapy is safe and effective. The pharmacist is the logical member of the primary health care team to gauge the use and efficacy of medications.

- ***Pharmacies must become health consultation centres.***

Making medication management the key to successful care programs means redesigning the traditional pharmacy environment and services. Private consulting areas, home visits by pharmacists, immunization and other disease prevention strategies, screening and chronic disease management services are but a few of the innovations underway to ensure that pharmacies will become health consultation centres.

- ***Pharmacists must work with government and other providers to clearly define the services to be included and paid for in primary health care.***

The role of each provider on the primary care team needs to be defined; services to be provided need to be established. This will allow for adequate planning and the development of models for referral, reporting, funding and reimbursement schemes.

- ***Protocols and outcome measures for quality pharmacy services in primary health care must be developed and implemented.***

In all areas of health care, quality needs to be assured. Developing and implementing protocols and outcome measures will help to ensure a sound return on public money, the most appropriate use of health human resources and positive impact on quality of life.

- ***Payment methods for pharmacy-focused primary health care services need to be developed.***

Pharmacists need to be reimbursed for services provided in the primary care setting. Schedules need to be flexible to reflect the variety of arrangements required to accommodate rural and remote areas as well as busy urban settings. These services must be treated separately from routine dispensing of medications.

- ***Governments and providers must work towards the provision of fully integrated primary health care. Communication must be enhanced between pharmacists and the rest of the primary health care team.***

Pharmacists are often faced with making clinical decisions that will affect patient outcomes with limited information about their patients. Providing the infrastructure for pharmacists to have access to the same patient information as other health care providers will improve health care. Developing and adopting technology that enhances communication and facilitates the sharing of health information between the pharmacist and others on the primary health care team is essential. Pharmacists must become fully integrated members of the primary health care team.

Action Required

Action is required on several fronts to recognize and integrate pharmacists as members of the primary health care team, and thus optimize health care:

- Infractructure and legislation must be updated by governments
- Reimbursement schemes and drug benefit plans must be changed
- Communication tools must be adopted by health care practitioners
- Protocols for intervention, monitoring and referral must be established to accommodate the establishment of effective primary health care teams.
- Benchmarks to indicate progress and quality must be developed to ensure best practices.

BACKGROUND

In 1978, the World Health Organization (WHO) defined primary health care as the principal method of delivering health care at the most local level of the system. It is the health care provided to a patient at first contact with that system. For primary care to be both successful and accepted, the full involvement of both health care providers and their patients is essential.[1]

It is generally agreed that a responsible and progressive primary health care approach must:[1-3]

- Be accessible and cost effective with methods that are practical, evidence-based and socially acceptable to the community as a whole.
- Provide comprehensive quality programs that include health promotion and education, disease prevention strategies, and diagnostic, curative, rehabilitative, supportive, and palliative services.
- Provide basic, around the clock health care, such as appropriate treatment for common diseases and injuries, provision of drug therapy, consultation on maternal and child health.
- Empower patients and communities to ensure available resources are used effectively and fully, while understanding the needs and characteristics of the population it is serving.
- Promote an inter- and multi-disciplinary approach for developing and providing health care.
- Demand a concerned, accountable and collaborative environment for health care practice.
- Recognize the importance of seamless care between the primary, secondary and tertiary levels of care.

Primary health care is the focus for reforming the delivery of health care in Canada. Optimal health care need no longer be hospital or medical-specialist focused, nor based on consultation (secondary care) or referral (tertiary care). There is a concerted effort for Canadians to receive health care in the primary care setting, where both acute and chronic diseases can be managed more effectively and efficiently.

The Commission on the Future of Health Care in Canada (Romanow Commission) clearly identified the path for primary health care reform in Canada while providing the leadership for change. Romanow promotes cooperation and integration of the health care system. Such efforts are intended to seamlessly provide care across practice settings through appropriate use of individual health providers and teams. In order to ensure the best care for their patients, providers must develop new ways of working and interacting with each other. The creation of wider multidisciplinary teams will lead to the re-alignment of existing skills and the development of new ones. There is now an integrated, or team, approach to providing primary health care services. Pharmacists are positioning themselves as drug therapy experts, both as stand-alone primary health care providers and as part of primary health care teams.[3]

THE PROFESSION AND PRACTICE OF PHARMACY IN CANADA

Canadian pharmacists have a minimum of five years of university education and participate in life-long learning through continuing professional development activities. They must complete complex courses, including pharmacology, microbiology, physiology and anatomy, and applied and clinical health care. The amount of information in medical literature concerning drug therapy has exploded over the past decade, so pharmacists have also become experts in evaluating and interpreting this material. The education and continuing education of pharmacists is constantly evolving to reflect new evidence in the literature and new practice concepts. Research is now a fundamental part of pharmacy practice in Canada.

Pharmacy is the only health profession whose education is entirely devoted to medications and their use. This puts the pharmacist in the unique position, either in cooperation with other members of the primary health care team or as independent providers, of providing optimal drug therapy and managing patient outcomes. It allows pharmacists to manage their patients' drug therapy; that is, pharmacists are medication managers.

In Canada, the practice of pharmacy is divided mainly, but not equally, among two practice settings: community and hospital. Up to now, the two practice settings have taken divergent paths. Pharmacists in Canada can participate in the health system from a private or public market perspective. The majority practice in a community setting. As of January 1, 2004 in Canada, there were just over 20,000 pharmacists practising at approximately 7,500 community sites. There is one community pharmacist for every 1,500 Canadians. There are more than 4,200 pharmacists practising in several hundred accredited Canadian hospitals.

In community pharmacy, there is often only one pharmacist on duty with responsibility for many patients' drug therapies. Traditionally, community pharmacists tend to be closely tied to the dispensing process. But because they are so accessible, community pharmacists frequently provide over-the-counter (OTC) drug and health advice on minor ailments to patients and drug therapy information to physicians. Pharmacies are located throughout the country from large cities to rural farm areas, from outports to the far north. In some smaller communities in Canada, patients have immediate access to a pharmacy with a pharmacist but not to a physician. Community pharmacists' main interaction with other health care providers is with physicians.

Hospitals tend to employ relatively large numbers of pharmacists whose primary role is providing pharmacotherapeutic advice rather than dispensing medication. Pharmacists are essential members of multidisciplinary teams; their clinical services in hospitals are considered indispensable. Besides ensuring the safe supply of drugs to their patients, they provide drug and therapy information and participate in activities such as drug utilization audits.

As pharmacists in hospital care settings redesign the practice of their profession, so will pharmacists in community settings. Advances in drug and other therapies have contributed to both the increasing complexity of health care and the capacity to receive such care in the primary setting. There are incredible opportunities for pharmacists who are prepared to meet these challenges and optimize their roles in the primary health care setting.

It is likely that primary health care pharmacy in Canada will develop as a hybrid of hospital- and community-based practice, as it is in Britain.[4] The primary health care pharmacists will still be responsible for the dispensing of medications, but because of their unique skills, knowledge and accessibility, they will fully participate in patient care.

PHARMACISTS AND PRIMARY HEALTH CARE—THE ROLE OF THE PHARMACIST

The role most people associate with a pharmacist is dispensing medications. However, pharmacists have a more important role in meeting the needs of their patients as the medication management experts.

Medication management is a strategy that attempts to use drug therapy more efficiently to achieve definite outcomes that improve a patient's quality of life. Medication management in primary health care requires a reorientation of pharmacists and other providers towards effective drug therapy outcomes. It is a set of relationships and decisions through which primary health care practitioners and their patients work together to design, implement, and monitor a therapeutic plan to produce specific drug therapy outcomes.

Applying the definition of primary care health, pharmacists do provide integrated, accessible, accountable health care services in a variety of areas. They are capable of developing and sustaining partnerships with patients and other providers and practising in the context of family and community. Pharmacy-based primary health care services are comprehensive, coordinated, continuously provided and meet the needs of their patients. Pharmacists are the most accessible and trusted of all health care providers (Ipsos Reid poll 2003). They are readily available by phone or in person, with or without an appointment. In many communities, pharmacists are available 24 hours a day, seven days a week. The benefits to patients include valuable access to information on drug therapies and treatment of minor ailments; the prevention and resolution of drug-related problems; improved outcomes, and increased satisfaction. Pharmacists are able to use drug-related encounters with patients to provide information and either resolve or make a referral for other health care needs. The benefit to prescribers is easy access to quality drug and prescribing information.

Pharmacists participate in primary health care services in a variety of practice settings such as the traditional community pharmacy, ambulatory clinics, long-term and home care settings. There are many services pharmacists provide that are currently within the scope of their practice. Some are traditional roles that pharmacists perform as independent providers; others require their participation in providing primary health care in collaboration with physicians and other members of the primary health care team. Current primary health care roles for pharmacists include:

- Visiting patients in their homes for focused medication reviews
- Working with physicians to help meet a patient's medication needs
- Selecting and/or recommending cost-effective drug therapy options
- Screening for diseases
- Managing (as an independent provider) therapies such as smoking cessation
- Managing (in a collaborative setting) chronic therapies for diabetes, asthma, osteoporosis, cholesterol and anticoagulation
- Providing information, education, and counselling to patients
- Identifying barriers to patient compliance
- Participating in multidisciplinary reviews of patients' progress
- Monitoring outcomes and unintended consequences of drug therapy
- Providing specialized services to patients previously treated in hospital, such as home infusion of injectable drugs
- Providing direct patient care for minor ailments

Along with other health care providers, pharmacists are expanding and further defining practice models to meet the needs of patients in the primary health care setting. Expanded primary health care roles for pharmacists could include (see Appendix B):

- Providing health promotion and disease prevention strategies, such as immunization administration
- Being responsible for managing medication (including refills) for chronic diseases (this is both an independent and collaborative role, easily shifting workload from physicians to pharmacists)
- Obtaining prescriptive authority to allow for the provision of direct patient care independent of other providers, ranging from providing therapies for relatively minor ailments, such as allergic rhinitis, to services such as emergency contraception
- Performing triage, in person or by telephone, for the general public during emergency situations such as SARS, to alleviate burden on acute care centres
- Performing limited physical assessment and initiating medication therapy with appropriate collaborative drug therapy management authority
- Documenting care provided by the pharmacist in the health care record

PHARMACISTS AND PRIMARY HEALTH CARE—THE CHALLENGES

Since 1997, spending on drugs in the community setting (both prescription and nonprescription) has been the second-largest health care expense in Canada, behind hospital spending and ahead of physician services. Drug expenditures (excluding drugs prescribed in hospitals) grew from $3.8 billion in 1985 to $19.6 billion in 2003. It represents 16.2% of total health care spending compared to 8.5% in 1976. During this period, data from the Canadian Institute of Health Information (CIHI) shows that spending on drugs has grown faster than inflation and beyond the rate attributable to population growth. Prescription drugs make up the largest component of the total spending on drugs (80.3% in 2002, up from 67% in 1985).[5]

Increased drug expenditures, combined with health care reforms and a growing recognition of the positive impact pharmacists can have on patient care, has resulted in a dramatic increase in the demand for pharmacists and their services. Romanow identified the pharmacist as a core member of the primary health care team. And while the community pharmacist may be the most accessible health care provider for the public, in reality, they are often the provider furthest removed from the rest of the health care team.

Pharmacists have the greatest knowledge and education with respect to drugs, yet are underutilized in primary health care. Currently, pharmacists can and do evaluate drug therapies; monitor for drug interaction and allergies; recommend alternative drug therapies; identify and resolve drug-related problems; perform patient and population specific drug-use reviews; provide education on prevention, treatment and disease management; monitor outcomes of therapy; offer compliance services; provide drug level monitoring and adjust doses, provide health screening and promotion. While these skills are not being used to their full potential, pharmacists also have the ability and training to work within a collaborative practice setting to improve patient and population health outcomes, improve seamless care between hospital and community settings, increase health screening programs, and expand their role in primary care.

Some of the challenges to increasing collaboration between pharmacists and other primary health care providers and optimizing patient care in the primary health care setting include:

- ***Incomplete integration of pharmacists' skills, education and services.*** Pharmacists are an underutilized resource in ensuring effective use of primary health care services. A growing body of evidence demonstrates what health planners, researchers, providers and patients already know: fully integrating pharmacists' skills and services will help contain drug costs, reduce pressures on more expensive areas of the health care system, and improve health outcomes and value for health care investment. Unlike other health care services where physical location is a barrier to integration, the community pharmacy is decentralized and likely easy to integrate with other primary health care services. Pharmacists are part of the community and are located close to where patients live and work. Pharmacies provide an ideal building block for integrated and multidisciplinary primary health care.
- ***Outdated legislation and practice models.*** Governments must implement changes, either through public or private initiatives, so pharmacies become health consultation centres, allowing the pharmacist's role to be more of a consulting nature. A funding mechanism that enables pharmacists to participate as a team member with the primary health care team is essential. Changes to provincial and federal legislation are necessary so pharmacists can initiate and modify drug therapies. They must be given the authority to provide services as such physical assessment and patient immunization. Pharmacists must be included in initiatives such as home care teams. The role of pharmacy technicians must be clearly defined and regulated, perhaps using the hospital model.
- ***Outdated compensation schemes.*** Currently pharmacists are paid a fee for each prescription dispensed. This fee-for-service model of payment discourages collaboration with other providers and the expansion of focused medication management. Methods for obtaining compensation or economic and professional credit for patient care services must continue to be addressed, and structures designed to measure the pharmacist's effectiveness as part of a health team instituted.

- ***Lack of access to full patient records.*** Unlike hospital pharmacists, community pharmacists have inadequate access to the diagnosis, medical history, laboratory values and drug history of their patients. The information is critical to optimizing the role of the pharmacist in primary health care. For the past two decades, pharmacists have, and continue to, integrate electronic records and information into their practices to enhance patient care. Yet the lack of electronic health records integrated with pharmacy information systems (and also electronic hospital records) is a barrier to communication and collaboration between the pharmacist and the rest of the primary health care team. Pharmacists must have access to their patients' full medical records. They must also be able to order and monitor laboratory and other diagnostic tests as independent providers.
- ***Strains on pharmacy human resource.*** There is a shortage of pharmacists in Canada which has an impact on patient care in both community and hospital settings. It is unlikely that the number of pharmacists in Canada or practice innovations have kept pace with the increased drug use in the past decade. The health care system, governments and pharmacy educators need to ensure an adequate supply of pharmacists, allowing for the availability of pharmacists to provide pharmaceutical care as an essential component of primary health care. Also, using pharmacy technicians better will ensure optimal use of pharmacists and their skills.
- ***The need to foster and facilitate positive working relationships between different groups of health practitioners to achieve integrated patient-centred care.*** Scopes of practice may vary both within and between health care providers. These arrangements may be setting-specific and should be clearly understood by all concerned. Interaction between health care providers from different occupational backgrounds will usually be complementary, but some supplementary or role extension for certain health care providers are feasible and necessary in situations where efficiency gains can be made without sacrificing quality standards, including patient satisfaction. Pharmacists, nurse practitioners and other health care providers do not replace physicians. They must complement and supplement physicians in the primary health care setting.
- ***The need to develop post-baccalaureate credentials to support expanded roles.*** The extent to which new practice competencies need to be developed and certified by licensing bodies, as a basis for expanded practice roles, merits further study.

EVIDENCE OF PHARMACIST VALUE IN PRIMARY HEALTH CARE

Evidence about the benefits of clinical pharmacy services has been mainly positive. Several randomized trials have shown that pharmacists can play a key role in disease management models for anticoagulation treatment, hypertension, cholesterol management, asthma, and other chronic conditions. The trials' results demonstrate that pharmacists improve patient safety, disease and drug therapy management, compliance and quality of life for their patients. Pharmacists are also effective in improving health care spending that can result in overall savings to the health care system.

There are concrete examples in the literature supporting that pharmacists are valuable, trusted and necessary in the health care setting.

Clinical evidence demonstrates pharmacist-provided services result in:

- Greater patient safety
- Improved disease and drug therapy management
- Effective health care spending including savings in a variety of arenas
- Improved compliance
- Improved quality of life

Community pharmacists working in partnership with patients and physicians have a major beneficial impact on cholesterol risk management, according to the results of a Canadian study. The purpose of the Study of Cardiovascular Risk Intervention by Pharmacists (SCRIP) was to evaluate the efficacy of a program of intervention by community pharmacists to improve the cholesterol management in patients at high risk of cardiovascular events. A total of 675 patients were enrolled from 54 community pharmacies. Patients received either usual care or intervention by a pharmacist. The study was stopped early due to the overwhelming benefit seen in the intervention group. The study demonstrated the value of the pharmacist in improving disease and drug therapy management.[6]

The BC Community Asthma Study demonstrated that an enhanced pharmacist-based asthma education program based on the principles of medication management (responsibility for outcomes and increased patient involvement) significantly improved clinical and economic outcomes in patients. The study showed that pharmacists can improve the quality of life for their patients with asthma.[7]

In a British study, pharmacists conducted consultations with elderly patients to review medication and identify potentially appropriate repeat prescriptions. The study indicated that pharmacists can effectively and safely manage repeat prescriptions while reducing costs and without adversely affecting physician workload. Review by a pharmacist resulted in more drug changes and lower prescription costs. There was a slight decrease in mortality among patients who were assigned to the pharmacists' intervention group.[8]

Other studies have confirmed the important role of pharmacists in primary care settings. An American study compared pharmacist-managed anticoagulation services to usual medical care. Pharmacist-cared-for patients had fewer emergency room visits and hospitalizations compared to patients in the control group. There was also improved patient safety and decreased overall costs to the health care system.[9] Another American study conducted in a medically underserved rural area of the country concluded that medication management as provided by pharmacists reduced inappropriate prescribing, enhanced disease management and patient safety, and improved medication compliance without adversely affecting quality of life.[10] In Australia, a pilot collaborative medication management service (general practitioners and community pharmacists) was tested and evaluated. Based on the results of the project, a home medication review service is being implemented nationally with the potential to improve patient and system outcomes and contain costs.[11]

Perhaps the best argument for the importance of the pharmacist in the primary care setting is simply to describe what is underway on many fronts on the international level. Appendix A illustrates some initiatives in Great Britain, Australia and Germany.

While the evidence for the benefits of clinical pharmacy services has been generally positive, there have been some criticisms of earlier trials. Recent meta-analyses and systematic reviews suggest that the earlier trials contained design flaws. The reviews concluded that there is evidence supporting the effectiveness of pharmacists during hospital admissions. In the past as well, there was little evaluation of the impact of pharmaceutical care on economic, clinical, and humanistic outcomes.[12,13] Pharmacists continue to research the impact of their services in a variety of settings. Recent publications have demonstrated the high quality of current research and their findings have confirmed those of earlier trials.[6,7]

PHARMACISTS AND PRIMARY HEALTH CARE IN CANADA—PRACTICE MODELS

Pharmacists are being challenged to provide more primary health care. As such, there is a need to propose new models for the delivery of primary health care that make better use of the full range of services available from pharmacists, in order to do a better job of keeping people healthy and reduce the burden of chronic illnesses. Pharmacists need to develop practical and sustainable models to restructure the provision of cost-effective and patient-focused primary health care pharmacist services and integrate pharmacy with the primary health system.

Theoretical models developed by the Canadian Health Services Research Foundation[14] (CHSRF) and applied to pharmacy include:

- The pharmacist as an integral member of the primary health team in a clinic setting or a physician's office
- The pharmacist as a consultant to a number of pharmacies, clinics or physicians' offices
- Pharmacist directed and managed primary health care clinics or primary care practices in established community pharmacy settings
- Primary health care in the community pharmacy setting

The following examples use these models to illustrate how the pharmacist can provide expanded services in the primary health care setting.

Case 1 – *The pharmacist as an integral member of the primary health team in a clinic setting or a physician's office*

- Mary, 78, is 14 kg (31 lbs) overweight.
- Lab work recommended by the pharmacist revealed Mary's renal and hepatic function is normal.
- Mary also has long standing hypertension, not well controlled, which has been treated with hydrochlorothiazide 12.5 mg daily.
- An ACE inhibitor is added to Mary's antihypertensive regimen to help control her blood pressure and prevent diabetes-related kidney disease.
- The pharmacist also counselled Mary on avoiding certain OTCs because of potential effects on her blood pressure, blood sugar and renal function.

In Case 1, Mary, who lives at the Oak Park Seniors Complex, was diagnosed six months ago with type 2 diabetes. Interventions by members of the primary health care practice associated with the seniors' centre to control Mary's weight and blood sugar without medications have not been successful. Mary's physician has decided to start Mary on oral hypoglycemic agents and other appropriate medications. The physician asks one of the pharmacists associated with the primary health practice to review Mary's current medications and make recommendations on a diabetic regimen.

The pharmacist enrols Mary in the practice's Diabetic Monitoring Program and orders some preliminary lab work. The pharmacist recommends that Mary initially be treated with metformin for her diabetes. Because Mary is overweight but has normal renal and hepatic function, metformin is an appropriate initial therapy.

The primary care practice, under the direction of the pharmacist, has reviewed the literature on the treatment of type 2 diabetes. As a group, they have made a decision because of the clinical evidence to use the older oral antidiabetic agents as initial therapy and reserve the newer, more expensive oral hypoglycemics as second- or third-line therapy. The pharmacist associated with the practice performs concurrent and retrospective drug utilization reviews on all therapies for type 2 diabetes to ensure optimal outcomes for their diabetic patients.

Case 2 – *The pharmacist as a consultant to a number of pharmacies, clinics and physicians' offices*

- Rita is a 67-year-old woman with long standing type 2 diabetes and hypertension. She also has osteoarthritis (OA).
- Rita lives alone and frequently has her medications delivered from her pharmacy. Sometimes she is late with refills and sometimes early.
- Two weeks ago Rita was discharged from hospital diagnosed with heart failure for which she was prescribed three new medications. This brings her to a total of seven prescribed medications. Research has shown an increasing number of problems with following directions and side effects. Rita also self-medicates for her OA and takes other OTC products.
- Her primary health care pharmacist flags her as needing a home visit along with a complete medication assessment.

In Case 2, Rita could benefit from pharmacy home visit services. She lives alone and does not have regular contact with her primary health care pharmacist as she routinely has her prescriptions delivered. Rita has just been discharged from hospital, newly diagnosed with heart failure. New medications for heart failure were started and Rita's therapy for hypertension was discontinued. Changes were made to the doses of her diabetes medications.

Rita's nephew brought in the new prescriptions and asked that they be delivered. Rita's primary health care pharmacist and physician have identified her as benefiting from a pharmacy-focused home visit. The home visit pharmacist completes a full medication review and makes several recommendations. A summary of the visit will be sent to Rita's primary health care physician and pharmacist as well as her cardiologist. Involving the patient's regular pharmacist is crucial to help ensure continuity of care.

Case 3 — *Pharmacist directed and managed primary health care clinics or primary care practice in established community pharmacies*

- George, 37, is a teacher who lately feels a little stressed and is worried about his blood pressure (BP). Over the past few weeks he has visited his primary health care pharmacist four times for a BP check. Consistently George's BP has been at least 145/95. George is about 9 kg (20 lbs) overweight, smokes half a pack of cigarettes a day and just does not seem to have enough time for routine exercise.
- George's primary health care pharmacist writes a referral to a primary health care physician noting some of George's self-medications and lifestyle concerns may be contributing to his hypertension. George does not take any prescription drugs.

In Case 3, George's pharmacist is his first contact with the primary health care setting. The pharmacist screens George for hypertension and appropriately refers him to a physician for further assessment and intervention.

George begins drug therapy and a lifestyle modification program. George's pharmacist tailors his prescribed medications through a collaborative drug therapy management agreement with George's physician. The pharmacist also provides advice on OTC medications and guides George's smoking control program.

Case 4 – *Primary health care in the community pharmacy setting*

- Elizabeth has been diagnosed by her physician with seasonal allergic rhinitis.
- Her private insurance pays for a nasal steroid and antihistamine with a pharmacist-initiated prescription.
- Elizabeth's pharmacist provides the medications in a timely and safe fashion and just as with a physician-initiated prescription, there will be refills.
- Elizabeth's pharmacist is responsible not only for monitoring the effectiveness and safety of the regimen, but for the drug therapy outcomes.

In Case 4, Elizabeth, a healthy 27-year-old, has seasonal allergies and rhinitis. Twice a year usually during the early spring and fall, Elizabeth needs a nasal steroid and non-sedating long-acting antihistamine for several weeks. And twice a year, Elizabeth's community pharmacist provides her with her medications. The pharmacist has prescriptive authority (in collaboration with Elizabeth's physician) to prescribe the nasal spray and oral antihistamine. Her refills for these medications are treated as any other. Elizabeth's pharmacist communicates electronically with her physician with a progress note that will become part of Elizabeth's permanent medical health record.

CONCLUSION

Pharmacist involvement improves primary health care services. The pharmacist has been identified as being an essential member of the primary health care team. According to Romanow:[3]

> *"...pharmacists can play an increasingly important role as part of the primary health care team, working with patients to ensure they are using medications appropriately and providing information to both physicians and patients, monitor patients' use of drugs and provide better information and communication on prescription drugs."*
>
> — Commision on the Future of Health Care in Canada

The patient is better served by the pharmacist being incorporated into all aspects of primary health care. The evidence on involving a pharmacist is growing. Patients will receive better care and the health care system will spend less money to provide that better care. Pharmacists and pharmacies inherently have the qualities to help sustain an effective, responsible and progressive primary health care system, as envisioned by the WHO.

New and expanding roles for pharmacists in primary health care are described in Appendix B. Our profession has so much to offer. The challenge now is for governments to take a proven professional service and incorporate it into primary health care as a standard of care.

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APPENDIX A

INTERNATIONAL EXPERIENCE

Health policy makers around the world are incorporating an expanded role for community pharmacists in new models of primary health care. The greatest changes have taken place in the centrally managed and funded health care programs in England, Scotland and Australia. But reforms are also taking place in more mixed funding models such as Germany.

England, Wales and Scotland

Post-devolution in the UK, some variations in the delivery of health care are becoming apparent. While England, to some extent, still takes the lead and Wales follows very closely, Scotland appears to have had more success at moving certain changes forward. The first 14 pharmacists to be licensed as prescribers by the Royal Pharmaceutical Society of Great Britain were recently announced.[15] All 14 are currently practitioners in Scotland; the next group to be licensed are expected from England. These pharmacists have supplementary prescribing rights, which will enable them to develop an expanded role in direct patient care and the management of chronic disease.

Changes in the use of pharmacists in health care in the UK first became apparent with the Conservative government's experiments with the "internal market" in health care. A feature of this was the allocation of nominal drug budgets to family physicians. This resulted in group practices of physicians employing pharmacists to assist at the practice level in developing prescribing policy. Health authorities also employed pharmacists as prescribing advisers to develop standards and policies. While drug budgets had only a limited impact on costs, the arrangements led to pharmacists working alongside physicians as a part of a primary care team. In this model, the role of pharmacists was limited to involvement with group practice. Subsequent developments in primary care have led to community pharmacists playing a much greater role as members' providers of primary health care. New models have focused on the accessibility of community pharmacists in traditional store settings as the basis for their new role.

Recent proposals for pharmacy with respect to primary health care were outlined in 2000 in the *Pharmacy in the Future – Implementing the NHS Plan* report.[16] The creation of primary care trusts as the basic structure of primary care focused on the National Health Service (NHS) resulted in separate envelopes of funding for local pharmaceutical services. These services, primarily clinical in nature, have evolved as pharmacy-based solutions to local health care needs. Examples of programs include smoking cessation, malaria prophylaxis, and screening or cardiovascular disease.

Further expansion of the role of community pharmacists has been aimed at developing the direct care role of community pharmacists. These reforms in the UK were recently further consolidated by the publication of the Vision document for pharmacists in the NHS of the future.[17] The 10 roles of the pharmacists were listed as follows:

- Provide convenient access to prescription and other medicines
- Advise patients and other health care professionals on the safe and effective use of medicines
- Be a point of first contact with health care services for people in the community
- Provide medicines management services, especially for people with enduring illness
- Promote patient safety by preventing, detecting, and reporting adverse drug reactions and medication errors
- Contribute to seamless and safe medicines management throughout the patient journey
- Support patients as partners in medicine taking
- Prescribe medicines and monitor clinical outcomes
- Be a public health resource and provide health promotion, health improvement and harm reduction services
- Promote value for money in the use of medicines and to reduce wastage

It is clear that the government has solidly backed first, a primary health care model as the basis of the health care system, and second, as a key development, the expansion of the pharmacist's role in the community.

Australia

Pharmacy services in Australia are provided in the national Pharmaceutical Benefits Scheme. Terms and conditions are negotiated centrally between the government and the Pharmacy Guild of Australia. In the present five-year agreement, pharmacists are remunerated for providing medication management services in the community. A major program is the home medication review for elderly patients. Persons over age 65 on five or more medications are eligible. The pharmacist is paid for the review and the physician responsible for the patient is also paid a fee for reviewing and acting on the results of the review. Pharmacists need to be certified to perform the review. Some who do conduct the review are staff pharmacists in traditional community pharmacies; others are employed by a traditional pharmacy on contract to provide the reviews on a sessional basis.

Germany

Recent reforms in Germany focus on developing the role of the community pharmacist in the management of chronic diseases. The first nation-wide contract concerning the provision of pharmaceutical care including remuneration was closed between the German Pharmacists Association, representing the interests of the community pharmacists, and the largest country-wide operating health insurance fund. The agreed family/domiciliary pharmacy concept includes remuneration for advanced services, such as pharmaceutical care (drug profiles, medication review, counselling and a medication report), starting with asthma/COPD services as the first indication.

APPENDIX B

NEW AND EXPANDING ROLES FOR PHARMACISTS

Primary health care is the first contact a patient has with the health care system, usually through a family physician. One challenge for health care reform is to provide different ways to make that first contact and expand the roles of non-physician providers. Pharmacists are in an excellent position to be first contact providers in many settings. They have a key advantage for the provision of care as they are the most accessible health care providers. Easy accessibility will allow a niche for pharmacists to enter into new and expanding roles in the primary health care setting.

NEW AND EXPANDING ROLES FOR PHARMACISTS

Function	Activities	Examples of practice	What is needed to position pharmacists in PHC	Other stakeholders
Immunization management	Promotion of immunization services Immunizing patients	Routine immunization Crises immunization Travel clinics Catch-up clinics for immigrants	Education/training Legislative changes Changes to reimbursement schemes	Provincial DoH NPs PHC physicians
Chronic disease management	Collaborative drug therapy management Protocol-driven prescribing Physical assessment Overseeing compliance Patient education Therapeutic drug monitoring	Hypertension clinics Anticoagulation clinics Asthma clinics Diabetes clinics GERD clinics Monitoring of drug levels (chronic diseases) to evaluate efficacy and toxicity and adjust doses based on drug levels	Education/training Legislative changes Changes to reimbursement schemes Designated private consultation areas Access to patient diagnosis and lab data Protocols for intervention, monitoring and referral	NPs PHC physicians Public/private providers of drug therapy Specialist physicians Hospitals Lab services
Direct patient care	***Minor illnesses*** Triage/screening Physical assessment Use of non-invasive diagnostic tools Protocol-driven prescribing Patient education	Assessment and treatment of: Pharyngitis Allergic rhinitis Contact dermatitis Uncomplicated cystitis URTIs (viral) Minor soft tissue injuries	Education/training Legislative changes Changes to reimbursement schemes Changes to drug formularies to allow for the coverage of certain OTC medications Designated private consultation areas Access to patient diagnosis and lab data Protocols for intervention and referral	PHC physicians NPs Public/private providers of drug therapy Lab services
	Interventions on a more serious level Triage/screening Physical assessment Use of non-invasive diagnostic tools Protocol driven prescribing Patient education Therapeutic drug monitoring	Emergency contraception Monitoring of drug levels (on an acute basis such as antibiotics) to evaluate efficacy and toxicity and adjust doses based on drug levels	Education/training Legislative changes Changes to reimbursement schemes Designated private consultation areas Access to patient diagnosis and lab data Protocols for intervention, monitoring and referral	PHC physicians NPs Public/private providers of drug therapy Specialist physicians Hospitals Lab services

NEW AND EXPANDING ROLES FOR PHARMACISTS — continued

Function	Activities	Examples of practice	What is needed to position pharmacists in PHC	Other stakeholders
Screening	Screening of at risk patients for chronic diseases Screening for diagnostic purposes	Hypertension Colon cancer Osteoporosis Diabetes Pregnancy tests	Education/training Legislative changes Changes to reimbursement schemes Access to patient diagnosis and lab data Protocols for intervention and referral	PHC physicians NPs Provincial DoH Lab services
Health promotion	Promotion of healthy life styles on an individual or community basis	Tobacco cessation clinics/advice	Education/training Changes to reimbursement schemes Designated private consultation areas	PHC physicians NPs Public/private providers of drug therapy
Home care	Medication review Collaborative drug therapy management Protocol driven prescribing Physical assessment Overseeing compliance Patient education Home care worker education and guidance	Home visits Palliative care	Education/training Legislative changes Changes to reimbursement schemes Designated private consultation areas Access to patient diagnosis and lab data Protocols for intervention, monitoring and referral	Specialist physicians PHC physicians NPs Provincial DoH Home care workers Lab services

Abbreviations

DoH: departments of health
GERD: gastroesophageal reflux disease
NP: nurse practitioners
OTC: over the counter
PHC: primary health care
URTI: upper respiratory tract infection

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