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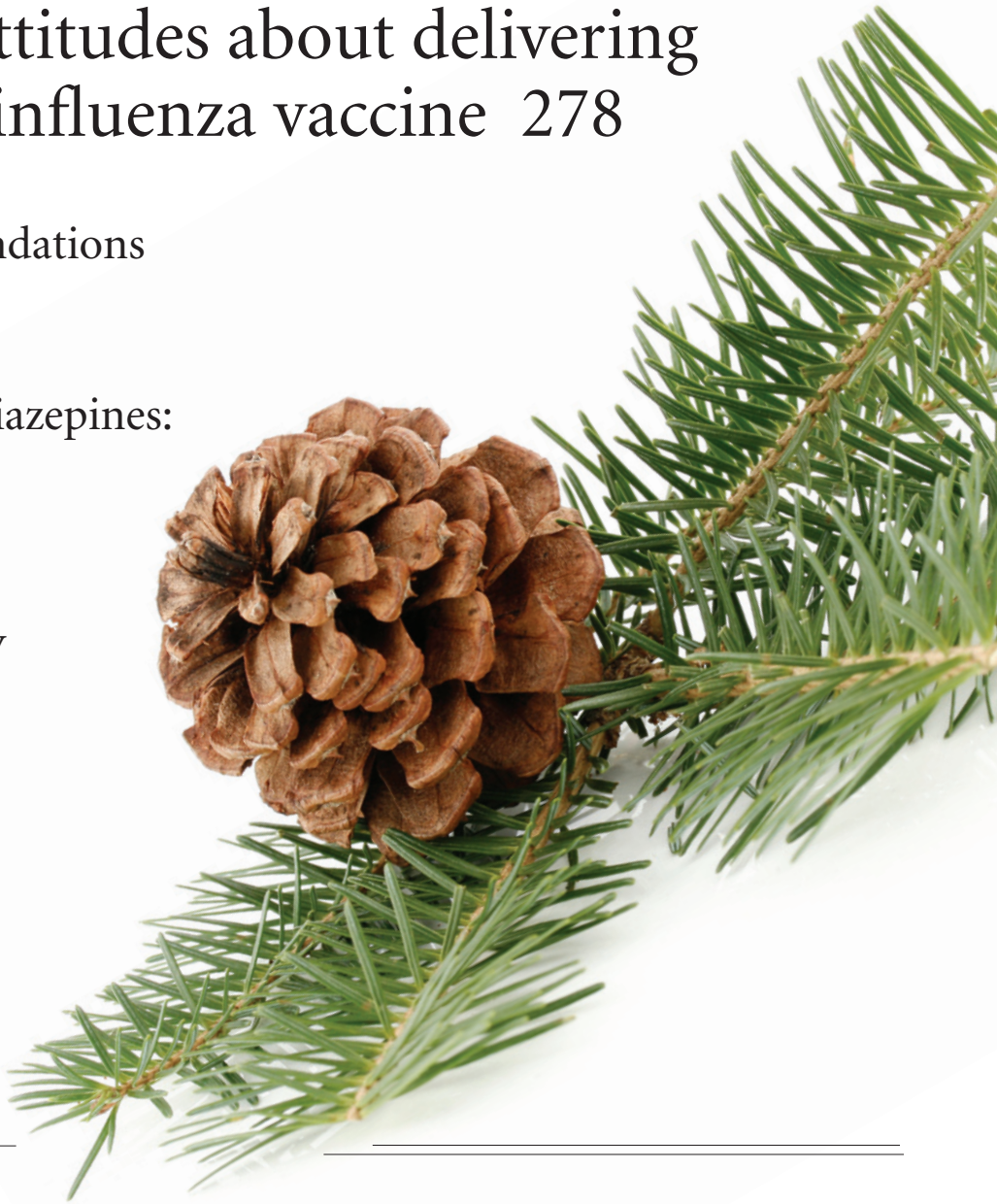

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On the Front Cover

Orally, pine is used for upper and lower respiratory tract infections, blood pressure problems, common cold, cough or bronchitis, fevers, uncomplicated coughs and acute bronchial disease, nasal congestion and hoarseness. Topically, pine is used for mild muscular pain and neuralgia. The applicable parts of pine are the sprout, bark and oil from the needles. Pine bark contains constituents that might inhibit the proinflammatory mediators nitro-oxide and prostaglandin E2. Pine oil seems to have activity against bacteria, yeast, and fungi. There is insufficient reliable information available about the safety of pine.

— *Natural Medicines Comprehensive Database*

Opinion

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2010 Recipients of the "Bowl of Hygeia" Award

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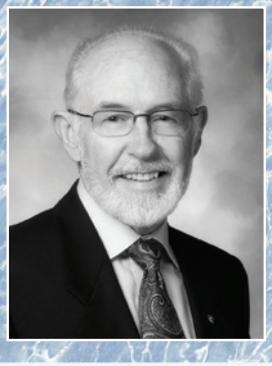

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PAAB

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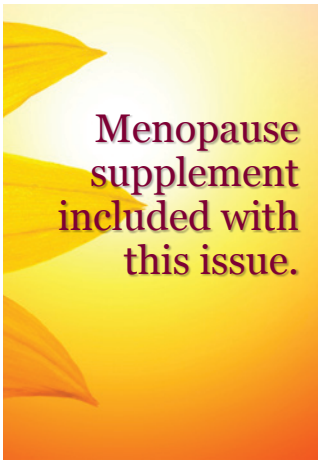

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Universal pharmacare

Coming next issue

- Impact of academic detailing on proton pump inhibitor prescribing behaviour in a community hospital
- University of Alberta undergraduate student / alumni pharmacist mentorship pilot project
- Experience with an adherence assessment form
- Framing the risk of an OTC medication side effect

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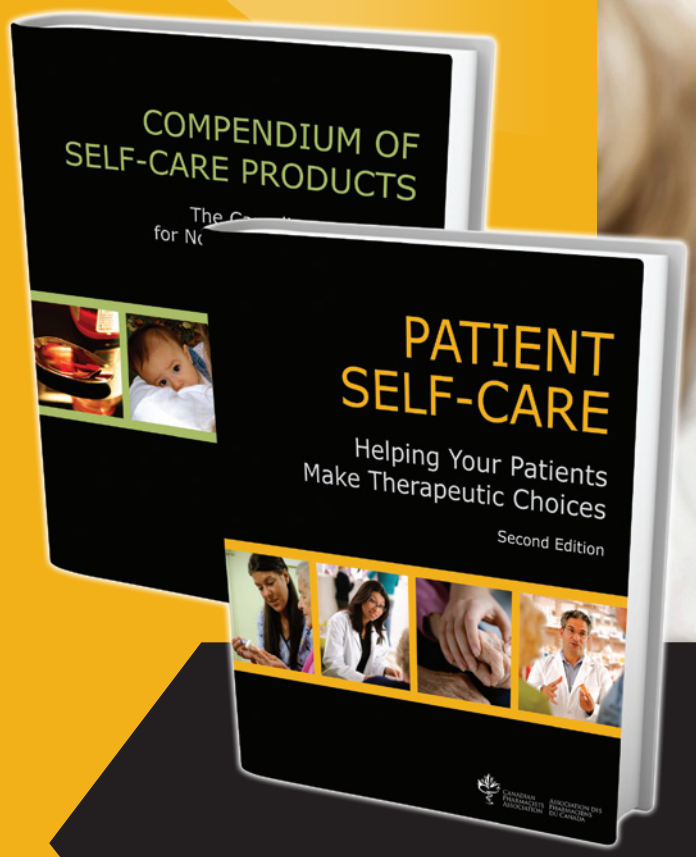

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Sheila Kemp is pharmacist owner at Aikenhead's PharmaChoice in Renfrew, Ontario, and was OPA's Pharmacist of the Year (2009). She uses both references as her primary sources for self-care consultations.

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Rosemary Killeen, RPh, BScPhm

An ounce of prevention

THERE MUST BE SOMETHING ABOUT THE FALL THAT STIRS UP MY CRAVING for preventive health strategies.[1,2] Maybe it's the onset of the cold and flu season or the "Run for the Cure." Not that I have anything against fundraising for breast cancer research — I've even done that run a few times myself. What annoys me is the focus on the cure, as if we should accept that getting cancer is inevitable (you'll note that the words cancer and prevention rarely appear together in any of the glossy public service announcements or heart-tugging corporate social marketing programs).

Ranting aside, this issue of *CPJ* is right up my alley, with 2 articles fitting nicely into my ongoing "an ounce of prevention…" theme. The first, a timely analysis of BC pharmacists' attitudes towards vaccinating during last year's H1N1 pandemic (*see page 278*), provides valuable insights into their willingness and readiness to respond to the need for their expanded scope of practice. Although a recent Statistics Canada report indicates that many Canadians didn't think they needed an H1N1 vaccination last year,[3] it's reassuring to know that, at least in BC, pharmacists are willing to take on a public health role. But as only 41% of Canadians aged 12 years and older were vaccinated in the 2009–2010 H1N1 campaign (as compared to 32% who typically receive a seasonal flu shot), even after all the media hoopla, over 400 deaths and thousands being infected,[3] I think we've still got a lot of educating to do.

This issue also includes our annual update to the Canadian Hypertension Education Program (CHEP) recommendations for pharmacists *(see page 274)*. If I had my way, some of the key messages from this year's guidelines would be in big, bold font instead of regular typeface, in particular, **sustained lifestyle modification is the cornerstone for the prevention and control of hypertension** and **high dietary sodium intake is a significant risk factor for death**, as I'm just not sure these messages get enough airtime with either pharmacists or the public.

As my family will attest, I am particularly concerned with that latter message. Although Health Canada documents state that 1500 mg of sodium per day is adequate to promote good health in adults,[4] the human body was originally designed to function on less than 100 mg per day.[5] Independent of hypertension, excessive sodium intake can also have a direct impact on rates of stroke, renal disease and left ventricular hypertrophy.[5] As well, it has been linked to increased incidence of kidney stones, osteoporosis and stomach cancer, as well as the severity of asthma.[6]

Mieux vaut prévenir...

IL DOIT Y AVOIR QUELQUE CHOSE AVEC L'AUTOMNE QUI RÉVEILLE MA SOIF de stratégies de santé préventives[1,2]. Peut-être est-ce le début de la saison du rhume et de la grippe, ou bien la « Course à la vie ». Non pas que j'aie quoi que ce soit contre la collecte de fonds pour la recherche sur le cancer du sein, j'ai même participé à cette course plusieurs fois. Ce qui m'agace, c'est l'accent mis sur le traitement, comme si nous devions accepter le fait qu'avoir le cancer est une chose inévitable (vous remarquerez que les mots cancer et prévention apparaissent rarement côte à côte sur les communiqués sur papier glacé du gouvernement ou dans les programmes de marketing social des entreprises qui vous serrent le cœur).

Sans tomber dans le pathos, ce numéro de la *RCP* est vraiment tout à fait dans mon rayon, avec deux articles qui cadrent bien dans mon thème permanent du « Mieux vaut prévenir… ». Le premier, une analyse opportune de l'attitude adoptée par les pharmaciens de C.-B. vis-à-vis de la vaccination pendant l'épidémie de grippe H1N1 de l'année dernière *(voir page 278)*, montre bien que ceux-ci sont disposés à répondre à ce besoin que nous avons d'élargir leur rôle. Même si un récent rapport de Statistique Canada indique que de nombreux Canadiens pensaient qu'ils n'avaient pas besoin de se faire vacciner contre la grippe H1N1 l'année dernière[3], il est rassurant de savoir qu'au moins en C.-B., les pharmaciens sont désireux de jouer un rôle dans la santé publique. Toutefois, étant donné que seuls 41 % des Canadiens âgés de 12 ans et plus ont été vaccinés au cours de la campagne 2009-2010 contre la grippe H1N1 (alors qu'en général, 32 % des Canadiens se font vacciner contre la grippe saisonnière), même après le battage publicitaire orchestré par les médias, et que l'on a recensé plus de 400 morts et des milliers de cas[3], je pense qu'il y a encore beaucoup d'éducation à faire.

Dans ce numéro, vous trouverez également notre mise à jour annuelle des recommandations du Programme éducatif canadien sur l'hypertension (PECH) pour les pharmaciens *(voir page 274)*. Si cela ne tenait qu'à moi, certains des messages clés des directives de cette année seraient en gros caractères et en gras, au lieu du style de caractères habituel, en particulier celui rappelant que **le changement des habitudes de vie sur le long terme est la meilleure manière de prévenir et de contrôler l'hypertension** et qu'**une consommation élevée de sodium alimentaire constitue un facteur de risque de décès significatif**, étant donné que je ne suis pas sûre que ces messages soient suffisamment entendus par les pharmaciens et le public.

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This summer, the Sodium Working Group, chaired by Health Canada, released its sodium reduction strategy for Canada.[7] Acknowledging that much of Canadians' current dietary sodium intake (average 3400 mg per day) comes from commercially prepared or processed food, the strategy set an interim goal of 2300 mg per day for most Canadians by 2016. It hopes to accomplish this by working with food manufacturers and the restaurant industry on a voluntary reduction program, similar to the Consensus Action on Salt and Health (CASH) group in the UK, which has been encouraging annual reductions in sodium added to food over the past few years (visit **www.actiononsalt.org.uk/index.htm**). International colleagues report that as public health programs go, a gradual sodium reduction program can be very successful — they estimate that up to a 25% decrease in the rates of cardiac and stroke deaths is possible with no consumer revolt or big promotional spend required and absolutely no risk of adverse reactions.[8,9] Any way you look at it, that's worth a lot more than a pound of cure. ■

Rosemary Killeen is Editor-in-Chief and Deputy Publisher of the Canadian Pharmacists Journal. *She recently commenced studies in the Master's of Public Health (distance learning) program of the London School of Hygiene & Tropical Medicine, University of London, UK. Contact rkilleen@pharmacists.ca.*

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Comme ma famille vous le confirmera, ce dernier message me préoccupe particulièrement. Même si les documents de Santé Canada indiquent qu'un adulte doit consommer au maximum 1 500 mg de sel par jour pour rester en bonne santé[4], à l'origine, le corps humain a été conçu pour fonctionner avec moins de 100 mg par jour[5]. Indépendamment de l'hypertension, un apport excessif de sel peut également avoir un effet direct sur le risque d'AVC, de néphropathie et d'hypertrophie ventriculaire gauche[5]. De plus, il peut être lié à une incidence accrue de calculs rénaux, d'ostéoporose et de cancer de l'estomac, ainsi qu'à la gravité de l'asthme[6].

Cet été, le Groupe de travail sur le sodium, présidé par Santé Canada, a publié sa stratégie de réduction du sodium pour le Canada[7]. Reconnaissant que l'apport en sodium alimentaire d'un grand nombre de Canadiens (3 400 mg par jour en moyenne) provient des aliments préparés ou transformés par l'industrie, cette stratégie se fixe un objectif intermédiaire de 2 300 mg par jour pour la majorité des Canadiens d'ici 2016. Les pouvoirs publics espèrent y parvenir en travaillant avec les fabricants alimentaires et l'industrie de la restauration sur un programme de réduction volontaire, similaire à celui du groupe Consensus Action on Salt and Health (CASH) au R.-U., qui encourage des réductions annuelles de la quantité de sel ajoutée aux aliments depuis quelques années (consultez le site : **www.actiononsalt.org.uk/index.htm**). Des collègues d'autres pays indiquent que vu la progression des programmes de santé publique, un programme de réduction progressive du sodium pourrait donner de très bons résultats. Ils estiment qu'il serait possible de diminuer la fréquence des décès dus à un AVC ou à un accident cardiaque jusqu'à 25 %, sans que cela provoque de protestation de la part des consommateurs ou nécessite de dépenses de publicité importantes et qu'il n'y aurait aucun risque d'effet indésirable[8,9]. Quel que soit l'aspect étudié, la stratégie de prévention l'emporte largement sur la stratégie de traitement. ■

Rosemary Killeen est rédactrice en chef et éditrice associée de la Revue des pharmaciens du Canada. Elle a récemment commencé le programme de Master's of Public Health (formation à distance) de la London School of Hygiene & Tropical Medicine, University of London, R.-U. Écrivez-lui à rkilleen@pharmacists.ca.

Send your letters (up to 300 words) to rkilleen@pharmacists.ca.
All opinions are those of the author.

In his recent column, Matt Koehler has assembled a group of references about drug advertising without much relevance to Canada. I note he was a fourth-year pharmacy student at the University of Toronto last year. If he had been in second-year pharmacy at U of T last year he would have benefitted from my lecture on understanding the Canadian system of advertising control. There is a considerable difference from the US system of advertising control that is the subject of many of the references.

Advertising by definition is biased. However, the Pharmaceutical Advertising Advisory Board (PAAB) ensures it is accurate, risk-to-benefit balanced and evidence-based.

The CPhA is a voting member of the PAAB, whose mission is to maintain high standards of evidence-based drug advertising. The PAAB has operated a successful preclearance review mechanism for 34 years, supported by Health Canada and the pharmaceutical industry.

The comment that pharmacists may be tainted by their association with the drug industry shows that Mr. Koehler seems unaware of legislation passed in Ontario to stop potentially fraudulent payments from the generic drug industry to willing pharmacists, a long-standing practice. It appears that pharmacists were demanding more than a free pen. I hope Matt doesn't join that crowd.

— Ray Chepesiuk
PAAB Commissioner
Pickering, Ontario

Reference

1. Koehler M. Who's calling the shots? The influence of pharmaceutical industry advertising on drug use. *Can Pharm J* 2010;143:249.

I thank the PAAB Commissioner for his comments, but I disagree that the references I used in my article have little relevance to Canada. First, health outcomes of people living outside of Canada are important to most health professionals in this country. Furthermore, the 2 references discussed in most detail both attributed first authorship to Canadians, and included participation from several Canadian institutions.[1,2] Despite missing Ray's lecture, I am aware of international differences in advertising control, and also aware that US ads are still reaching Canadian consumers. Moreover, it is not just national regulations that impact Canada, as consequences of global inappropriate drug use have reached Canadians by way of antimicrobial resistance.

I appreciate PAAB's acknowledgement that "advertising by definition is biased." The purpose of my article was to increase recognition of the patient consequences related to such biases, through traditional marketing means and otherwise. In fact, the article's content focuses more on marketing-related issues outside the scope of PAAB, such as pharmacist and physician education, unethical practices surrounding clinical trials, industry-sponsored events, drug samples and gifts from industry representatives. And while grateful for PAAB's contributions towards balanced advertising material, I don't believe it alone can overcome all the possible causes of intentional drug "disinformation."

Contrary to Ray's suggestion, I am aware of recent legislation changes in Ontario. I agree professional allowances and drug prices are important matters that must be addressed by strategies promoting public health and the viability of pharmacies. Having said that, this issue digresses so far from the subject matter of my article that I wonder why this comparison was drawn, other than to take a shot at community pharmacists. Regardless, I hope the original message was not lost and practitioners and academic institutions continue to strive for unbiased pharmaceutical practice.

— Matt Koehler, BScPhm, RPh
Thunder Bay, Ontario
Former intern and consultant,
Good Governance for Medicines,
World Health Organization

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You can learn more about Canadian advertising law and guidelines through the following references:
PAAB and the PAAB Code: www.paab.ca
Health Canada Advertising Policies and Guidances: www.hc-sc.gc.ca/dhp-mps/advert-publicit/pol/index-eng.php
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NOTES

BY KATHIE LYNAS

Universal pharmacare could cut up to $10.7 billion from Canada's annual drug bill

A universal pharmacare program would save Canada between $2.9 and $10.7 billion a year in annual drug costs, according to a study conducted by a researcher at Carleton University in Ottawa.

The study, released September 13, 2010, was commissioned by the Canadian Centre for Policy Alternatives and authored by Marc-André Gagnon, assistant professor in the university's School of Public Policy.

Canada's current system — with different provincial drug plans and a mix of public and private insurance — is not only inequitable, says Dr. Gagnon, but also highly inefficient. The result, he says, is that Canada's $25 billion a year drug bill is higher than it needs to be, with prices exceeding those in many other countries with universal drug coverage such as the UK, Australia, France, Sweden and New Zealand.

"I was surprised myself by the extent of the savings we could achieve with universal pharmacare," Dr. Gagnon says. "One of the main drivers of high and rising drug costs in Canada is the high level of private insurance — the second-highest in the world after the US."

Private insurers receive a percentage of plan expenditures, he says, so their incentive is to provide coverage for all expensive new drugs, even if the new, more costly medications don't provide a therapeutic advantage over older, cheaper drugs.

> "One of the main drivers of high and rising drug costs in Canada is the high level of private insurance — the second-highest in the world after the US"
>
> — Marc-André Gagnon
> School of Public Policy, Carleton University

Dr. Gagnon also discusses the impact of Canada's policy of "artificially inflating the prices of brand-name drugs" in a bid to attract more pharmaceutical company investment and R&D into new drug development. "The additional costs created by these industrial policies are higher than the total spinoffs from the sector. This is pure nonsense from an economic point of view and explains why costs are so high in Canada."

The study looked at the potential savings from a universal pharmacare program combined with rigorous pharmacoeconomic assessments to ensure therapeutic choices are evidence-based, under 3 scenarios. The savings ranged from $2.9 billion to $10.7 billion — with the latter number based on the replacement of current pharmaceutical industrial policies by a system of purchasing drugs based on market competition.

His study urges governments to examine the British Columbia model.

BC has the lowest per capita drug costs of all the provinces, and Dr. Gagnon notes that the province has had a system of clinical assessment to ensure cost-effective choice of therapies since the 1990s. "Health outcomes are better in BC than in the rest of Canada and the cost is also 8% per capita lower than the Canadian average because of evidence-based therapeutic substitution."

Given that provincial governments are ready to look at new options in order to control rising drug costs, Dr. Gagnon says, there may be a new appetite to examine a fully public drug system, despite differing provincial approaches.

"We managed to find a formula to provide universal medicare in Canada and there is absolutely no reason why we can't find a similar formula for universal pharmacare," says Dr. Gagnon. ■

Steps being taken to ease drug shortages

Shortages of generic drugs should begin to ease in the coming weeks, according to a spokesperson for Canada's generic pharmaceutical industry.

"Our members advise us that improvements to the situation can be expected over the next few weeks," Jeff Connell, director of public affairs for the Canadian Generic Pharmaceutical Association (CGPA), told *CPJ* in late September. "A number of companies say production of certain products is coming back online or being expanded."

As an example, Mr. Connell points to a recent statement from leading generic drug manufacturer Teva Canada (formerly Novopharm), in which the company reports it has increased resources, and invested in new systems and equipment to overcome some of the shortage challenges. Action includes an expansion of its solid-dose production facility in Stouffville, Ontario.

According to the CGPA, there are a variety of factors influencing shortages, including worldwide shortages of active pharmaceutical ingredients (APIs); changes to regulatory requirements; production issues; and changes in production equipment and processes.

Some critics have suggested that the generic industry is contracting production in the face of new generic pricing policies in Ontario, but that is not true, says Mr. Connell. "Current shortages are not the result of drug reforms," he says. "We've been hearing about shortages since early 2010 and they are occurring coast to coast, as well as in other countries like the United States."

Pharmacists and other health care professionals in Canada have been dealing with more frequent and longer periods of shortages of primarily generic but also some brand-name medications for most of this year. The Canadian Pharmacists Association (CPhA) planned to hold discussions with manufacturers, wholesalers and Health Canada in October, in a bid to get a better grasp of what is behind the shortages, as well as potential remedies.

There are signs that some of the shortages may be lessening, says Dr. Jeff Poston, executive director of the CPhA, "but if there is a recovery, we're in early days."

Drug shortages are becoming a more common topic of discussion at international meetings, adds Dr. Poston. "Shortages are becoming more of a problem in other countries," he says. "The pharmaceutical industry around the world is going through tremendous changes and the whole activity of marketing, distributing and selling of pharmaceuticals is under significant pressure. This raises questions about the long-term implications of changes occurring at a macro-level in the global environment."

In September, CPhA updated its guide for pharmacists on assessment and management of patients in the event of drug shortages. The guide is available at www.pharmacists.ca/content/hcp/resource_centre/practice_resources/pdf/Drug%20Shortages_Sept2010.pdf. ■

New momentum for a pan-Canadian purchasing alliance for prescription drugs

Governments in Canada have been talking about it for years — the idea that provincial/territorial health ministries could lever their collective purchasing power to negotiate lower prices for prescription drugs in public plans. Despite the stated support for a pan-Canadian drug purchasing alliance, little has been done — but that appears to be changing.

Canada's premiers agreed in early August to establish a pan-Canadian purchasing alliance to consolidate public-sector procurement of common drugs and medical supplies and equipment. Health ministers advanced the planning at a meeting in mid-September, agreeing that Ontario would take the lead in developing a strategy for drug purchases, while British Columbia would lead with respect to procurement of medical supplies and equipment.

Stakeholders acknowledge that it is far from clear whether provinces and territories can collaborate at this level — given their individual responsibilities for health care within their boundaries — and what the impact would be of any resulting joint purchasing agreement. Some observers say experience has shown that such approaches do bring important benefits, but others are concerned that governments are focusing on drug pricing to the detriment of the larger effectiveness of the health care system.

"The experience of every single hospital in this country demonstrates that you can acquire medicines at a much better price if you acquire as a bulk purchaser"

— Steve Morgan, Health Economist, University of British Columbia

New Zealand results show benefits of national buying strategy: BC health economist

University of British Columbia (UBC) health economist Steve Morgan has conducted research into New Zealand's national agency, Pharmac, and its use of a national purchasing strategy for prescription drugs. His research found that between 1996 and 2006, drug spending per capita grew by 0.15% a year in New Zealand, compared to Canadian spending growth of 11.3% annually.

He says savings occurred for both brand-name drugs and generics, with the latter being particularly important given the growing predominance of generic drugs as more blockbuster brand-names come off patent.

"Even compared to Ontario's new regime where generics cannot exceed 25% of the brand-name cost, New Zealand prices are still significantly lower for some of the top molecules in the marketplace," says Dr. Morgan.

Canada can also look to domestic examples in other parts of health care, he adds. "The experience of every single hospital in this country demonstrates that you can acquire medicines at a much better price if you acquire as a bulk purchaser."

Pharmacists seeking involvement in strategy development

The Canadian Pharmacists Association (CPhA) has some concerns about the consequences of joint purchasing and wants to ensure that pharmacists have a seat at the table as the strategy is being developed.

CPhA has written to all premiers to request participation in discussions around a bulk purchasing scheme. "Pharmacists are the end of the distribution chain to the patient and they are very well aware of the issues involved in the whole purchasing and distribution process," says Dr. Jeff Poston, executive director of the CPhA.

One of the concerns, says Dr. Poston, is that joint purchasing on a wide scale can lead to drug shortages, when manufacturers who don't win contracts drop out of the market. "Then if you have a manufacturing problem with your chief supplier of a product, you really are stuck from a supply chain perspective."

Focus on drug bills ignores larger issues

Governments need to look beyond the cost of drugs if they are seriously interested in enhancing patient care while curbing health care expenditures, Dr. Poston adds. If the focus is on cutting drug spending, there is a risk that costs will rise in other parts of the system. "Research shows that when pharmacists get more involved in managing drug therapy, they may recommend more medications," Dr. Poston says. "So savings aren't necessarily in the drug budget, but come from reduced visits to hospitals

and physicians."

The association representing brand-name pharmaceutical manufacturers is also concerned that governments are taking a narrow view. "If it's just about pricing, I have a hard time understanding where they are going to go," says Russell Williams, president of Canada's Research-Based Pharmaceutical Companies (Rx&D). "In New Zealand, for example, Pharmac reduced the cost of medicine by an average of about $165 per person, but other health expenditures rose by an average of $500 per person."

Rx&D urges governments to focus on value as opposed to just price and to consider other effective ways to reduce costs — through better disease management, compliance and appropriate utilization of pharmaceuticals.

This debate about a more national approach to prescription drugs could produce some benefits, says Mr. Williams. "If the government is talking about making innovative medicines available equally in all jurisdictions, we would certainly welcome that discussion. Unfortunately, today there are huge inequalities among provinces in terms of access." ■

PharmaTrust hopeful it can work with OCP to resolve concerns about remote dispensing regulations

The developer of the MedCentre prescription drug kiosks didn't get the changes it was seeking in Ontario's proposed remote dispensing regulations, but PharmaTrust believes its chief concerns will be addressed.

On September 13, 2010, the Council of the Ontario College of Pharmacists (OCP) ratified proposed regulations to permit remote dispensing by accredited Ontario pharmacies, and submitted the proposals to the Ontario Ministry of Health and Long-Term Care. The ratification followed a period of consultation with pharmacists and other pharmacy stakeholders.

PharmaTrust had serious concerns about the regulation prohibiting pharmacists from dispensing medications from a prescription scanned by a patient. Since the MedCentre relies upon patient-scanned prescriptions, such a provision would undermine the business model.

"They haven't specifically changed the regulations, but we are working cooperatively with the College on the scanning issue," says Susan Fenton, vice-president, government and stakeholder relations with PharmaTrust. "The OCP feels they can deal with it through policy development as opposed to regulatory change."

The OCP has retained a consultant to develop policy recommendations — expected to be complete by the end of October. "Much like the College developed a policy around faxing prescriptions, there is a hope that they can develop a scanning policy despite the way the regulations are written," says Ms. Fenton. "We feel strongly that scanning is perfectly legitimate and safe, and a tried-and-true way to do it; we've been scanning safely since 2008 in our sites of operation."

PharmaTrust's other main concern was a provision requiring the owner of the MedCentre to have a pharmacist present in the home pharmacy during the transaction at the remotely located kiosk. "We had a concern that the regulation would disadvantage small independent pharmacies that wouldn't be able to work with us to flip over to a call centre when they weren't in their pharmacy," Ms. Fenton says.

The College has a different interpretation, she says. The OCP says a call centre could still be used, as long as the patient clearly understands who owns the MedCentre and who the dispensing pharmacist is. "We are going to seek some further clarification but we are hopeful that the College's is the correct interpretation."

Meanwhile, PharmaTrust is expanding its operations internationally, with plans to roll out 5 MedCentre kiosks in the United Kingdom over the next few months. It has also set up a Chicago office, now that the state of Illinois has passed regulations authorizing remote dispensing.

The company is also keeping an eye on developments in Manitoba, where pharmacists are to vote on proposed regulations — including those to allow remote dispensing — in early November. ■

CPJ is looking for a writer for our Product Update column. Interested pharmacists should contact Rosemary Killeen (rkilleen@pharmacists.ca) for more information.

Nova Scotia pharmacists have their say as provincial government looks for way to cut Pharmacare costs

Faced with a public drug bill that has doubled in the past 8 years, the Nova Scotia government is exploring a number of cost-cutting options for Pharmacare — including a cap on generic drug prices, and elimination or reduction of pharmacy rebates.

The provincial health department has begun consultations on the potential measures, seeking input from pharmacists, physicians, seniors, drug manufacturers and the public. Nova Scotians were invited to submit their comments online, while a number of organizations, including the Pharmacy Association of Nova Scotia (PANS), made presentations to a provincially appointed group.

PANS told the government that any generic price reductions will have to be offset by higher dispensing fees and direct funding of professional services. "If the government is going to cut the revenue stream that has been paying for core dispensing and professional services, it will have to start paying the real value of those services," says Allison Bodnar, executive director of PANS.

"...the government should stay out of the business of the private market"

— PANS executive director, Allison Bodnar

PANS has been holding discussions with the province for some time on compensation to reflect recent expansions in pharmacists' scope of practice, and hopes to begin formal negotiations on a new tariff agreement early in 2011.

The Association has made it clear to the province where it stands on the option of limiting or eliminating pharmacy rebates. "We have unequivocally stated that the government shouldn't involve itself in this area," Ms. Bodnar says. "Pharmacy rebates will naturally reduce through generic price reductions and our position is that the government should stay out of the business of the private market. These are commercial terms that promote effective and efficient supply chains."

The province is also exploring use of tendering to achieve more competitive pricing. It has already begun to test this option by issuing a request for proposal for suppliers of atorvastatin, the generic form of Lipitor that became available in Nova Scotia in August. Lipitor took up the largest proportion of Pharmacare spending in 2009–10, costing a total of $14.7 million.

When the bidding process closed October 6, 2010, the health department had received proposals from 8 companies. ■

Better accounting needed for narcotic supplies

The board of the College of Pharmacists of British Columbia has approved a new professional practice policy that requires pharmacy managers to improve their record-keeping with respect to supplies of narcotics.

The new policy took effect October 1, 2010. According to minutes of the board meeting where the policy was adopted, the College was concerned because routine inspections "have identified that many pharmacy managers are not completing regular narcotic counts and that this lack of accountability has the potential to significantly increase the risk of drug diversion."

Pharmacy managers are now required to conduct a narcotic count and reconciliation every 3 months, as well as after a change of manager or a break-in or robbery. ■

Ontario moves to combat narcotics abuse — new monitoring system "a great first step"

The Ontario government has introduced legislation to enable tracking of all narcotics and other controlled substances prescribed and dispensed across the province.

"This legislation will provide us with the knowledge we need to combat narcotics abuse in Ontario," said Deb Matthews, Minister of Health and Long-term Care, when the bill was tabled in the legislature September 15, 2010.

Under the Narcotics Safety and Awareness Act, 2010, the provincial health ministry will collect information on prescribing and dispensing of narcotics, and keep personal health information in a provincial narcotics database. The province already has a smaller version of the database for prescriptions under the Ontario Drug Benefit (ODB) Program.

Ontario has the highest rate of narcotics use in Canada and one of the highest in the world. Between 1991 and 2009, prescriptions for products containing oxycodone increased by 900% in the province, and the number of oxycodone-related deaths has nearly doubled in Ontario since 2004.

In cases where inappropriate or excessive prescribing or dispensing is found, the government could respond with educational support and resources, or by reporting to regulatory colleges or the police.

"This legislation is a great first step," says Dennis Darby, CEO of the Ontario Pharmacists' Association (OPA). "Implementing an electronic medication record also has to happen. Ultimately, health professionals need to be able to get information in real time, so that they can instantaneously see if something inappropriate is occurring."

The OPA participated in the province's Narcotics Advisory Panel, which provided input into the development of the government's broader Narcotics Strategy, which is also to include education of physicians and pharmacists on appropriate prescribing and dispensing, as well as public education and addictions treatment.

The Association has been implementing several initiatives in this area, says Mr. Darby. "Members of our profession are very concerned. We're looking at ways to put safety procedures in place for pharmacists and pharmacies, and to provide education to help pharmacists identify potential cases of abuse or signs that someone may be trafficking narcotics."

The OPA is also collaborating with the College of Physicians and Surgeons of Ontario in a bid to implement guidelines developed by the National Opioid Use Guideline Group, and is working with Health Canada's First Nations and Inuit Health Branch to address particular problems with Aboriginal citizens. (A number of First Nations communities in Ontario have declared a state of emergency over the abuse of drugs containing oxycodone.)

Six other provinces in Canada have some form of monitoring system to track narcotics. ■

CFP announces 2010 Innovation Fund Grant winner

The Canadian Foundation for Pharmacy is delighted to announce this year's recipient of its Innovation Fund Grant to advance the profession of pharmacy through optimizing patient care.

Just over $48,000 has been awarded to Dr. Neil MacKinnon (College of Pharmacy, Dalhousie University) and his interdisciplinary research team.

In line with the 2010 grant theme to expand the scope of pharmacy practice, Dr. MacKinnon's application, entitled "SafetyNET-Rx: Development and Testing of Evaluation Guides" was selected from 12 solid submissions to the Foundation. SafetyNET-Rx is a standardized community pharmacy quality improvement program, where pharmacists and pharmacy technicians first learn to identify and categorize specific medication errors and "near misses" (errors intercepted before a patient receives a prescription), then anonymously submit each error to a national database for subsequent analysis so pharmacy may implement practice changes to help prevent such errors from occurring again.

Dr. MacKinnon's team will use the CFP grant to build upon 2 existing elements of their SafetyNET-Rx initiative. Specifically, researchers will create "how to" manuals and identify learning strategies for community pharmacists and pharmacy technicians. Also to be developed are standardized tools for provincial regulatory bodies to assess, monitor and help pharmacies improve both quality and safety. Finally, these tools will undergo formal evaluations to encourage their application in practice.

Particularly attractive is the development of this program in Nova Scotia — the first province to recently require a continuous documented quality assurance program. As such, SafetyNET-Rx is being built upon grassroots, real-life situations, an important factor in one of the project's main objectives, which is to disseminate tools and findings for use by pharmacies and regulatory bodies in other provinces.

— Dale Acorn,
Executive Director
Canadian Foundation for Pharmacy

Product Update

Advisories

Hoffmann-La Roche Limited is alerting health care professionals to international cases of severe anaphylactic reactions in patients receiving **Actemra** (tocilizumab). A case of fatal anaphylaxis has been reported in a patient with rheumatoid arthritis who was undergoing treatment with Actemra. The patient experienced dizziness and hypotension and despite emergency intervention became apneic and unresponsive. The patient died within 24 hours. Health care professionals are advised to be aware of the possibility of hypersensitivity reactions, often observed following the second to fifth infusion of Actemra, and must discontinue treatment if such reactions occur.

Erfa Canada Inc. is advising health professionals on important safety issues regarding the inadvertent injection of concentrated topical/nasal **Adrenalin** (epinephrine chloride 1:1000), due to the similar packaging of less concentrated injectable Adrenalin vials. Several cases in both Canada and the United States have been reported, some of which have resulted in fatalities. Erfa Canada Inc. is working with the Institution for Safe Medication Practices (ISMP) to alter the appearance of the topical use vial in order to make it easier to differentiate between it and the injectable product vial. In the meantime, the manufacturer has recommended that health professionals continue to observe safe practices to prevent accidental misuse.

Hoffmann-La Roche Limited is informing health care professionals about the occurrence of hypersensitivity and infusion reactions in patients treated with **Avastin** (bevacizumab). Clinical trials have reported that 5% of patients receiving Avastin have had either anaphylactic or anaphylactoid reactions. Serious hypersensitivity and infusion reactions have also been reported in postmarketing trials. If a reaction is detected, the infusion must be stopped immediately and followed by proper medical intervention. The product monograph has been updated and now contains this new safety information.

Sandoz Canada Inc. has announced a number of changes to the product monograph for **Droperidol injection USP**. This medication is now only indicated for the prevention and alleviation of postoperative nausea and vomiting in patients when other treatments have been ineffective or are contraindicated. It is no longer indicated for use in anesthesia for sedation or tranquilization, neuroleptanalgesia or in the management of acute stages of Ménière's disease. Dosing revisions have also been introduced — 0.625 mg to 1.25 mg for adults, and for the elderly, only 0.625 mg is advised. For children 2 to 17 years of age, a dosage of 20 to 50 mcg/kg up to a maximum of 1.25 mg is recommended. Cases of QT prolongation and/or torsades de pointes have been reported, and so this medication is contraindicated in patients with known or suspected QT prolongation. Due to these reports, a warning has been added recommending that patients have ECG readings prior to administration, as well as cardiac monitoring throughout treatment.

Hospira Healthcare Corporation has issued a voluntary recall on specific lots of **Gemstar pump sets** distributed in Canada between November 2008 and June 2009. The Gemstar pump sets are used in hospital and ambulatory settings, and at home for intravenous, arterial or epidural infusion. This recall is in response to reports that under-delivery has occurred under low rate settings (under 10 mL/hour) during clinical use. No adverse events have been reported and this recall is being conducted solely as a precautionary measure. The cause of the problem has been identified and proper measures have been conducted to prevent the recurrence of the problem. The following products and lots have been recalled: Gemstar Pump Set 110 in YELLOW (Lot: 740545H) and Gemstar Pump Set — AMB INFUS (Lot: 680295H and 770875H). Check your inventory immediately and contact Hospira if you possess the affected product.

Abbott Laboratories and Health Canada would like to inform health care professionals that the prescription weight-loss drug **Meridia** (sibutramine) is being voluntarily withdrawn from the market. This decision was made due to the results of the Sibutramine Cardiovascular OUTcomes (SCOUT) trial, which suggested patients with heart problems were at increased risk of serious cardiovascular events when using sibutramine. Pharmacists should stop dispensing the product. Patients currently taking Meridia should discontinue treatment and are advised to speak with their physician about alternative methods of weight loss. As sibutramine is also available in generic forms, Health Canada will be taking action regarding all sibutramine-containing products in Canada.

Schering-Plough Canada Inc., a subsidiary of Merck & Co., Inc., and Health Canada advise that a manufacturing defect has been observed in the delivery system for chronic hepatitis C treatment, **Pegetron** (ribavirin 200 mg capsules plus peginterferon alfa-2b powder for solution in Redipen Single-Dose Delivery System). The defect involves the glass stopper-sealing flange at one end of the glass cartridge, which may prevent the seal from sustaining a vacuum. This may affect the sterility of the product and possibly lead to contamination and injection site infection. Consequently,

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supply constraints are being experienced for all strengths of the Redipen: 80 mcg per 0.5 mL, 100 mcg per 0.5 mL, 120 mcg per 0.5 mL and 150 mcg per 0.5 mL.

Currently, Merck is working to manufacture new supplies of the Redipen so that supplies at the pharmacy/retail level can be replenished. In the meantime, it is important that patients currently taking this medication visually inspect the powder chamber of the Redipen before use. If the lyophilized powder appears to be collapsed/shrunken or is absent from the chamber, it is likely the product is contaminated. However, even if the powder appears normal, the defect in the glass may be present and sterility may still not be assured. Patients experiencing injection site infections are advised to contact their health care provider immediately. Pegetron Redipen treatment should not be initiated for new patients until new supplies have been manufactured. This will ensure the availability of supplies to patients already using this product, who may be at risk of relapse from interruption or discontinuation of therapy. For further information, contact Schering-Plough Customer Service at 1-800-361-6550.

New products

Dexilant (dexlansoprazole by Takeda Canada Inc.) is indicated for the healing and maintenance treatment of erosive esophagitis and the treatment of heartburn associated with gastroesophageal reflux disease (GERD) in patients 18 years of age and older. Adverse events reported in clinical trials were mainly gastrointestinal disorders, including diarrhea, abdominal pain, nausea, constipation and flatulence, but an increased incidence of headaches was also found. For healing erosive esophagitis, the recommended dose is 60 mg once a day for up to 8 weeks. A dose between 30 mg and 60 mg once a day, depending on the severity, is recommended for the maintenance therapy of healed erosive esophagitis for up to 6 months. For heartburn associated with GERD, the recommended daily dose is 30 mg for up to 4 weeks. It is important to note that Dexilant can be taken with or without food. Dexilant is available as dual delayed-release capsules containing dexlansoprazole 30 mg or 60 mg. The dual delayed-release technology allows for peak blood concentrations approximately 1–2 hours after administration and again after 4–5 hours, thus allowing for full-day symptom relief.

FluMist (influenza vaccine live, by AstraZeneca Canada) is a live, trivalent vaccine indicated for the active immunization of individuals 2–59 years of age to prevent influenza caused by subtypes A and B. The most common adverse events reported in all age groups were nasal congestion and rhinorrhea. FluMist is contraindicated for patients with a history of hypersensitivity to eggs, gentamicin, gelatin or any other ingredient in the formulation. FluMist is available as a spray for intranasal administration by a health care professional. For children 2–8 years of age who have not previously been vaccinated with a seasonal influenza vaccine, 2 doses (0.2 mL each) spread out over at least a month are recommended. The remaining population should receive 1 dose. The sprayer contains a dose-divider clip on the plunger to ensure that half of the dose can be delivered into the first nostril, and then is removed to allow for the delivery of the remaining contents into the other nostril. FluMist is supplied as a package of five 0.2 mL pre-filled, single-use glass sprayers that must be refrigerated at 2°C to 8°C.

Intanza (influenza vaccine [split virion, inactivated] by Sanofi Pasteur Limited) is a vaccine that contains 3 strains of influenza virus and is indicated for active immunization of adults 18 and older to prevent influenza caused by subtypes A and B. The most common adverse events reported in clinical trials were injection site erythema, swelling and local indurations, as well as headache, myalgia and malaise. Intanza is supplied as a sterile, colourless, opalescent suspension in a pre-filled syringe with micro-injection system, designed to improve patient comfort, and is available in 0.1 mL doses that contain 9 mcg or 15 mcg of influenza antigens of each strain. For patients 18 to 59 years of age, one 0.1 mL injection containing 9 mcg/strain is administered intradermally. Patients 60 years of age and older receive one 0.1 mL injection containing 15 mcg/strain. Check the vaccine for foreign particles and ensure that it is at room temperature. Packages of 1 and 10 vaccines are available and must be stored refrigerated at between 2°C and 8°C.

Invega Sustenna (paliperidone palmitate injection by Janssen-Ortho Inc.) is a once-monthly injection for the treatment of schizophrenia. The most common adverse events reported in clinical trials were injection site reactions, dizziness, extrapyramidal disorders, somnolence and akathisia. It is recommended that patients be established on oral paliperidone or oral respiridone prior to initiating treatment with Invega Sustenna. The drug is not indicated in elderly patients with dementia. Invega Sustenna is initially administered as a 150 mg intramuscular injection in the deltoid muscle. A week later, a dose of 100 mg is injected. Subsequent maintenance doses of between 25 mg to 150 mg are administered monthly. Although the recommended monthly dose is 75 mg, it will vary depending on the patient's response and tolerance to the

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medication. Invega Sustenna is supplied in a pre-filled syringe and is available in the following doses: 50 mg/0.5 mL, 75 mg/0.75 mL, 100 mg/1 mL and 150 mg/1.5 mL. It should be stored at room temperature.

Kuvan (sapropterin dihydrochloride by BioMarin Pharmaceutical (Canada) Inc.) is an oral phenylalanine hydroxylase activator used for patients with hyperphenylalaninemia caused by tetrahydrobiopterin-(BH4)-responsive phenylketonuria (PKU). The most common adverse effects reported in clinical trials were headache, diarrhea, abdominal pain, upper respiratory tract infection, pharyngolaryngeal pain, vomiting and nausea. A starting dose of 10 mg/kg/day is administered for up to one month. Blood phenylalanine (Phe) levels should be checked regularly. If a drop of Phe levels is not observed after a month, an increase to 20 mg/kg/day with frequent monitoring is advised. If, after a month, Phe levels still have not dropped, the patient is considered a "non-responder," and the medication should be discontinued. Kuvan is available in 100 mg immediate-release tablets.

Menveo (meningococcal [Groups A, C, W-135 and Y] oligosaccharide CRM_{197} conjugate vaccine by Novartis Vaccines and Diagnostics Inc.) is for the active immunization of adolescents (11–18) and adults (19–55) against disease caused by *Neisseria meningitidis* serogroups A, C, W-135 and Y. Menveo is not indicated to prevent disease caused by other subgroups of *N. meningitidis* or for the treatment of meningococcal disease. The most common adverse events observed in clinical trials were pain at the injection site, headache, myalgia and nausea. The vaccine must first be reconstituted and then administered as a single 0.5 mL intramuscular injection. Each reconstituted vaccine is preservative-free and contains potassium dihydrogen phosphate, sucrose, sodium chloride, sodium dihydrogen phosphate monohydrate, disodium hydrogen phosphate bihydrate and water for injection. Ensure the vaccine is free of foreign particles and administer immediately after reconstitution. Menveo is distributed in cartons containing 5 doses (5 glass vials containing lyophilized MenA conjugate component and 5 glass vials containing liquid MenCWY conjugate component) that require refrigeration at 2°C to 8°C.

Prolia (denosumab 60 mg solution for subcutaneous injection by Amgen Canada Inc.) is a biologic agent for the treatment of osteoporosis. It is indicated for postmenopausal women at high risk for fracture and/or patients who are intolerant of or who have had inadequate responses to other osteoporosis treatment options. The most commonly observed adverse effects during the clinical trials were back pain, pain in the extremities, hypercholesterolemia, musculoskeletal pain and cystitis. A 60 mg dose of Prolia is administered via subcutaneous injection into the abdomen, upper arm or upper thigh once every 6 months. Check to ensure the vaccine is free of any foreign particles before administering. While on this medication, patients must also take calcium and vitamin D supplement at their recommended doses. Prolia is available in a single-use prefilled syringe (60 mg denosumab) and must be stored in a refrigerator set to 2°C to 8°C.

New indications

Herceptin (trastuzumab for infusion by Hoffmann-La Roche Limited) used in conjunction with capecitabine or intravenous 5-fluorouracil and cisplatin, has been approved for the treatment of HER2-positive metastatic adenocarcinoma of the stomach or gastroesophageal junction in patients who have not received prior anti-cancer treatment. HER2 overexpression must be determined by an accurate and validated assay method.

Humatrope (somatotropin for injection by Eli Lilly Canada Inc.) is now approved for the stimulation of growth for children born small for their gestational age (2 standard deviations below the average) and who fail to reach normal size after 2 to 4 years.

Sativex (delta-9-tetrahydrocannabinol 27 mg/mL and cannabidiol 25 mg/mL by Bayer Inc.), a buccal spray, is now approved as an adjunct treatment for the symptomatic relief of spasticity in adults with multiple sclerosis who have not responded well to other treatments. An initial trial of Sativex is necessary to determine if it provides significant symptomatic relief.

Zocor (simvastatin by Merck Frosst Canada Ltd.) is now approved as an adjunct to diet, to lower total cholesterol, LDL-cholesterol, triglyceride and apo-B levels in pediatric patients 10 to 17 years of age with a heterozygous familial history of hypercholesterolemia.

New generic

Risedronate 5 mg, 30 mg and 35 mg tablets are now available from several generic manufacturers, including Teva Canada, Pharmascience, ratiopharm, Laboratoire Riva and Sandoz. These products provide generic alternatives to Actonel. ■

— Peter Rempel, Contributing Clinical Editor, CPJ

Hypertension Canada Awards

CPJ was recognized by Hypertension Canada during its Annual General Meeting in Vancouver, September 28, 2010, for our contribution to increased awareness and improved control of blood pressure in Canada. Receiving the Certificate of Excellence on behalf of the journal is Editor-in-Chief/Deputy Publisher Rosemary Killeen (centre). The Canadian Pharmacists Association, represented by President-Elect Jody Shkrobot (left), and Ann Thompson, Director, Experiential Education, Faculty of Pharmacy and Pharmaceutical Sciences, University of Alberta (right), were also recognized for their efforts.

Thanks!

The *Canadian Pharmacists Journal* would like to thank all the authors, reviewers, editors and other contributors who worked with us in the past year.

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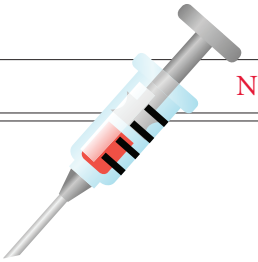

Influenza

New seasonal flu vaccine available

By mid-October, preparations for the 2010–2011 flu season were underway across Canada, as a new vaccine became available and public health officials began promoting the benefits of vaccination. It is unclear how Canadians will respond to such a call — during last season's pandemic, only 4 in 10 Canadians received the vaccine.

October 12 — Canadian provinces and territories begin rolling out this year's seasonal flu vaccine, which includes protection against 3 viruses — H1N1 A, H3N2 influenza A Perth and influenza B Brisbane.

October 8 — The US Centers for Disease Control and Prevention (CDC) says it expects more activity with the H3N2 virus, one often linked to more severe flu infections, this flu season in the US.

October 4 — A US study published in the *Archives of Pediatrics & Adolescent Medicine* says that newborn babies whose mothers received a flu shot while pregnant are less likely to get the flu or be admitted to hospital with respiratory ailments in the first 6 months of life.

September 30 — Statistics Canada reports that roughly 40% of Canadians aged 12 and over received the H1N1 flu shot during last season's pandemic. Health care workers were most likely to be vaccinated (a vaccination rate of 66%), while 55% of Canadians with chronic conditions had the shot.

Researchers at the National Institutes of Health in the US say approximately two-thirds of Americans may already be immune to H1N1, making an explosive new wave unlikely. They also say pandemic H1N1 may soon become extinct — unless it mutates.

September 29 — Appearing before a Senate committee reviewing Canada's response to the H1N1 pandemic, Canada's chief public health officer, Dr. David Butler-Jones, credits years of preparation by the federal and provincial governments for the effective and smooth rollout of the country's mass vaccination campaign.

September 27 — It is revealed that the Canadian government is seeking backup in the event that its main supplier of flu vaccine can't deliver in the case of another pandemic — requesting proposals for one main domestic supplier and for another company to be a backup supplier if needed.

September 20 — Researchers in Britain release study results that show getting a seasonal flu vaccination may reduce an individual's chance of having a heart attack.

It is revealed that the federal government's advertising budget was a record $130 million last year; the government says one of the reasons the ad bill soared was the $24 million spent on promoting the H1N1 mass vaccination campaign.

September 10 — The World Health Organization (WHO) announces it will no longer post weekly flu situation reports and will move to reports every other week — in the wake of August's declaration that the H1N1 pandemic is over. The WHO says that in late August and early September, influenza infections, including from H1N1, increased most markedly in Chile and India, with spikes also noted in Australia. ■

The 2010 Canadian Hypertension Education Program (CHEP) recommendations: Guidelines for pharmacists

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Introduction

The 2010 Canadian Hypertension Education Program (CHEP) guidelines were released in May 2010, and represent the 11th annual update of these guidelines.[1-3] This document marks the 5th update of the hypertension guidelines specific to pharmacists. Its purpose is to provide pharmacists with a summary of the changes to the CHEP guidelines for 2010. Readers who are interested in further details should view the full guidelines published in the *Canadian Journal of Cardiology* (**www.pulsus.com/cardiol**) or view them at **www.hypertension.ca**. The key messages from CHEP 2010 are outlined in Box 1.

The key new CHEP recommendations are outlined below.

Recommendation 1: Keep up to date with the latest hypertension treatment recommendations and resources

The field of hypertension is rapidly changing, and maintaining awareness of the newest hypertension recommendations and initiatives can be challenging for health care professionals. In order to keep up with current information, pharmacists are encouraged to register at **www.htnupdate.ca**, which provides automatic updates via e-mail as new recommendations become available. Second, the Hypertension Canada website, **www.hypertension.ca**, provides a wealth of information, including the latest guidelines, slide sets for professional and public education, dietary sodium resource material, guidance on the use of home blood pressure monitors and practice tools.

Recommendation 2: Keep patients engaged and up-to-date

Pharmacists should direct their patients to reliable information sources on the Internet. Hypertension Canada has produced a website specifically for patients with hypertension. The website, **www.mybpsite.ca**, is an excellent resource for patient information, which includes the CHEP 2010 public hypertension recommendations, tips on home blood pressure measurement and information on dietary sodium. Members of the general public who register on this website will be informed when new resources are added to the site.

BOX 1 CHEP 2010 key messages

1. Know the current blood pressure of all your patients.
2. Encourage people with hypertension to use approved devices and proper technique to measure blood pressure at home.
3. Assess and manage cardiovascular risk factors in all people with hypertension, including high dietary sodium, smoking, dyslipidemia, dysglycemia, abdominal obesity, unhealthy eating and physical inactivity.
4. Sustained lifestyle modification is the cornerstone for the prevention and control of hypertension and the management of cardiovascular disease. Encourage patients to reduce their sodium intake according to Health Canada recommendations.
5. Treat blood pressure to less than <140/90 mmHg in most people and to <130/80 mmHg in people with diabetes or chronic kidney disease. More than one drug is usually required. Many people with diabetes or chronic kidney disease require 3 or more antihypertensive drugs, including diuretics, to achieve blood pressure targets.
6. To keep up to date with the latest evidence and resources for the prevention and control of hypertension, go to **www.htnupdate.ca**. Download current resources at **www.hypertension.ca/tools**. Have your patients sign up at **www.mybpsite.ca** to access the latest hypertension resources.

Recommendation 3: Use of automated blood pressure monitors

A new recommendation for 2010 is that pharmacists should consider use of approved (see link below) automated blood pressure monitors that take multiple readings when assessing blood pressure. Evidence suggests that automated blood pressure devices

are more accurate than manual blood pressure measurement. Devices used should be those that are approved by Hypertension Canada (**www.hypertension.ca/chs/deviceendorsement/devices-endorsed-by-chs/**) and used under the proper conditions.

Recommendation 4: New targets for dietary sodium intake

For 2010, CHEP recommends decreasing the target for dietary sodium intake, to be consistent with that of Health Canada's recommendations. This means a target sodium intake of 1500 mg per day for ages 19 to 50, 1300 mg per day for those aged 51 to 70 years, and 1200 mg per day for those 71 years and older. In all cases, the upper limit for sodium intake is less than 2300 mg per day. High dietary sodium intake is a significant risk factor for death, and lowering sodium intake has significant beneficial effects on blood pressure. Some practical advice that pharmacists can give to patients regarding sodium intake is shown in Box 2.

BOX 2 Advice for people to assist them with reducing dietary sodium intake

Do:

- Buy and eat more fresh foods, especially fruits and vegetables.
- Choose processed foods with low salt labels or brands with the lowest percentage of sodium on the food label.
- Rinse canned or other salty foods with water before eating or cooking.
- If desired, use unsalted spices and herbs to increase flavour of foods.
- Eat less often at restaurants and fast food outlets and ask for less salt to be added to food orders.
- Use fewer sauces and condiments on your food.
- Eat foods with less than 200 mg of sodium or less than 10% of the daily value per serving.

Do not:

- Buy or eat heavily salted foods, e.g., pickled foods, salted crackers or chips, processed meats, etc.
- Add salt in cooking and at the table.
- Eat foods with more than 400 mg of sodium or more than 20% of the daily value per serving.

Recommendation 5: Angiotensin receptor blockers (ARBs) are equivalent to angiotensin-converting enzyme (ACE) inhibitors in patients with ischemic heart disease

CHEP recommends that most people with ischemic heart disease should be treated with an ACE inhibitor or an ARB. Based upon recent studies, CHEP now considers that ARBs can be used interchangeably with ACE inhibitors, except for patients with hypertension and heart failure or stroke, where ACE inhibitors are preferentially recommended. Pharmacists should recommend the use of ACE inhibitor or an ARB in most of their patients with ischemic heart disease.

Recommendation 6: Combination therapy for hypertension

Most patients will need more than one antihypertensive medication to reach the recommended target blood pressure. Previous guidelines have recommended combining thiazide diuretics with ACE inhibitors or ARBs and to generally avoid combinations of ACE inhibitors, ARBs and beta blockers (except in patients with heart failure). In 2009, the ACCOMPLISH Trial evaluated benazepril and amlodipine versus benazepril and a thiazide diuretic in hypertensive patients over the age of 55 years with high cardiovascular risk.[4] Although both combinations drew similar reductions in blood pressure, there was a 20% relative risk reduction in cardiovascular events and death in those receiving the ACE inhibitor and calcium channel blocker combination. Based on these results, CHEP has recommended that the combination of ACE inhibitor and calcium channel blocker may be considered in high-risk hypertensive patients. (Note: ACE inhibitor/ARB + diuretic combination tablets are still very useful for many patients). Pharmacists may recommend the use of ACE inhibitor plus dihydropyridine calcium channel blockers in their patients who are at high cardiovascular risk (those with multiple risk factors or previous cardiovascular disease).

Recommendation 7: Focus on adherence to medication and lifestyle recommendations

Pharmacists are uniquely placed to assess adherence to pharmacotherapy and can help improve adherence in those who are having problems. Pharmacists should consider the following multipronged approach to help patients adhere to treatment regimes:

- Assess adherence to pharmacological therapy and lifestyle changes at every visit.
- Simplify medication regimens using once-daily dosing of long-acting medications, combination tablets and medication adherence aids such as Dosetts or blister packaging.
- Tailor pill-taking times to fit patients' daily habits.
- Support greater patient responsibility by encouraging home blood pressure monitoring.
- Adherence to an antihypertensive prescription can be improved by an interdisciplinary care team.
- Suggest alternative therapies when poor adherence is due to adverse effects.
- Educate patients and patients' families about hypertension and its treatment.

Conclusions

Hypertension continues to be a significant public health problem.[5-6] Although rates of treatment and control have improved over time, there are still about 6 million Canadians, or more than 1 in 5 adults, with hypertension.[5] The prevalence of hyperten-

sion increases to about 44% in those aged 60–64 and 73% in those aged 80–84.[5] And 34% of those with hypertension are inadequately controlled, with two-thirds of people with diabetes and hypertension uncontrolled.[6] Pharmacists are frontline primary health care providers who can and should play an important role in screening for hypertension, teaching patients how to measure blood pressure properly, ensuring that appropriate combinations of drug therapy are used, assessing medication adherence and ensuring that blood pressure targets are achieved.[7-10] ■

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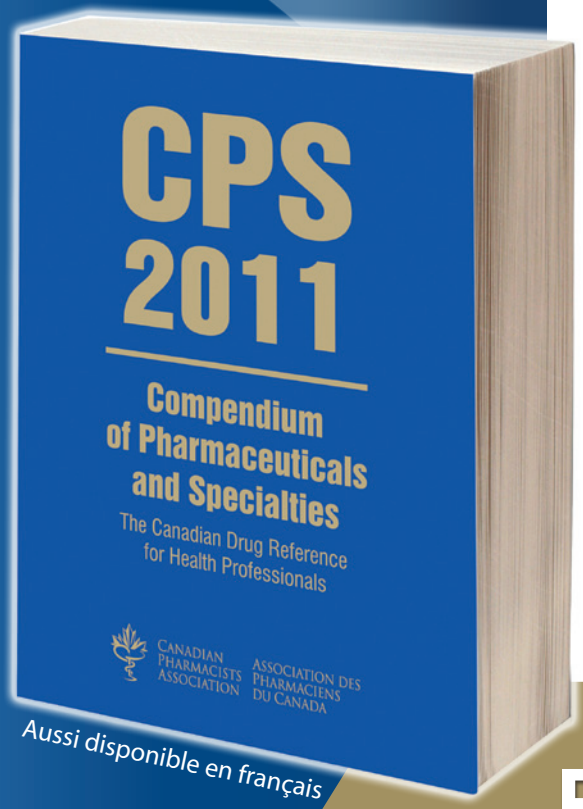

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ORIGINAL RESEARCH

PEER-REVIEWED

F. Marra

Assessing pharmacists' attitudes regarding delivery of the pandemic influenza vaccine in British Columbia

Fawziah Marra, BSc(Pharm), PharmD; Janusz A. Kaczorowski, PhD; Carlo Marra, BSc(Pharm), PharmD, PhD

We pursued this research to help implement the pharmacists' immunization program for the H1N1 vaccine during the pandemic. Evidence from this study helped to bridge the gap between legislative change, development of a policy and operationalizing the delivery of the H1N1 vaccine to clients during the pandemic.

Nous avons mené cette recherche afin d'aider à la mise en œuvre du programme d'immunisation par les pharmaciens du vaccin H1N1 pendant la pandémie. Les résultats de cette étude ont contribué à harmoniser le changement législatif, l'élaboration d'une politique et la mise en œuvre de la vaccination des clients pendant la pandémie.

Abstract

Background: In response to the clear indication that the second wave of the pandemic (H1N1) 2009 would arrive in North America during fall 2009, the Ministry of Health Services in British Columbia proposed expanding pharmacists' scope of practice to include administering vaccinations. This change in regulations was prompted by the anticipated need to provide millions of doses of the pandemic (H1N1) influenza vaccine in a short period of time.

Objectives: To determine pharmacists' willingness and preparedness to deliver vaccines, especially the pandemic (H1N1) influenza vaccine, as well as their preferences related to providing this service.

Methods: A survey was developed to elicit pharmacists' opinions concerning administration of vaccines. Staff pharmacists and pharmacy managers and owners licensed to practice in British Columbia were invited to complete the online survey. The survey results were analyzed descriptively.

Results: In total, 151 pharmacists participated in the study. The majority of respondents were men (84 [55.6%]) and most had practised for at least 5 years (108 [71.5%]). Most respondents (123 [81.5%]) were interested in administering vaccines to their clients, including the pandemic (H1N1) influenza vaccine (113 [74.8%]). In general, respondents preferred to vaccinate adults rather than children and understood the importance of documentation, reporting of adverse events and reporting to their local health authorities. More than half of participants (84 [55.6%]) felt that they were prepared to provide vaccine services in time for the pandemic (H1N1) vaccination program in fall 2009. The majority of these were prepared to offer vaccination services during daytime hours (91 [74.0%]), and some were willing to do so during the evenings (43 [35.0%]) and on weekends (40 [32.5%]). Ninety (73.2%) of the participants thought they had adequate space to administer vaccinations and maintain patient confidentiality and 111 (90.2%) indicated that they had adequate space to store the vaccines in their refrigerators, but only 82 (66.7%) had adequate storage space in their freezers.

Conclusion: Pharmacists in British Columbia were willing to offer vaccination services to their clients. Given this willingness and a general level of preparedness, pharmacists who have undergone appropriate training should be allowed to vaccinate against seasonal and pandemic influenza and to offer pneumococcal vaccine in their pharmacies. ***Can Pharm J*** **2010;143:278-284.**

Introduction

A novel strain of influenza A (H1N1) virus was first detected in Mexico in April 2009.[1] Over the 12 months following its detection, there was sustained person-to-person transmission in many parts of the world, including Canada.[2,3] In response to the global spread of the virus, the World Health Organization (WHO) raised the worldwide pandemic alert level to phase 6 on June 11, 2009. The Canadian government committed to producing at least one dose of the pandemic (H1N1) influenza vaccine for every Canadian and 2 doses per person for some special populations such as younger children.[4] Production of the vaccine started after production of the 2009/10 regular influenza vaccine was complete; therefore, both trivalent and pandemic (2009) influenza vaccine were available in fall 2009. Unlike the trivalent vaccine, which was to be administered to high-risk groups only, the 2009 (H1N1) influenza vaccine was made available to all Canadians who wanted to receive it. Assuming 100% uptake and one dose for each person residing in British Columbia, it was estimated that about 4.2 million doses would be produced and administered (by public health and other health care providers) between late October and the end of December 2009.

As of 2008, a total of 29,010 pharmacists were practising in retail outlets across Canada, of whom 3753 were working in British Columbia.[5] Pharmacists are among the most accessible, qualified health care professionals available to the public. In many jurisdictions, including Canada, the profession of pharmacy has been moving away from the technical function of dispensing medications and pharmacists' scope of practice is being expanded to encompass pharmaceutical care and helping people to safely achieve desired health outcomes.[6,7] The expanded scope of practice includes services related to management of chronic diseases, emergency contraception, adaptation of prescriptions, writing of prescriptions and provision of medications by injection.

In the United States, pharmacists have had the authority to provide vaccinations to the public since 2001.[8,9] On July 21, 2009, the BC Ministry of Health Services announced proposed changes to regulations governing the scope of practice for pharmacists to include administering certain injections, including vaccinations. This regulatory change was prompted by the anticipated need to provide 4.2 million doses of the pandemic (H1N1) influenza vaccine in a short period of time. In a press release dated October 21, 2009, Health Services Minister Kevin Falcon said, "As we are facing both regular flu season and the H1N1 flu pandemic, pharmacists can now help administer the annual flu vaccine, including vaccinations for H1N1. Expanding the role of pharmacists gives patients more choice for and increased access to health care."[10]

According to provincial regulations, pharmacists applying to the College of Pharmacists of British Columbia for authorization to administer injections must be registered on the College's register of "full pharmacists," must have successfully completed appropriate training from a College-approved, accredited training program and must possess current certification in first aid and cardiopulmonary resuscitation from a recognized provider such as the St. John Ambulance or the Canadian Red Cross.

The objectives of this study were to evaluate pharmacists' willingness to provide vaccination services, the essential components that would have to be in place to allow pharmacists to perform this activity and pharmacists' preparedness to provide the pandemic (H1N1) influenza vaccine to the population.

Knowledge into practice

- The profession of pharmacy has been moving away from the technical function of dispensing medications and pharmacists' scope of practice is being expanded to encompass pharmaceutical care.
- Provision of medications by injection can be part of the expanded scope of practice.
- Pharmacists are willing to meet requirements by various regulatory bodies and local public health to provide vaccinations.
- Pharmacists are willing to provide vaccinations to their clients.

Methods

We conducted an online survey of staff pharmacists and pharmacy managers and owners licensed to practise in British Columbia. The Behavioural Research Ethics Board of the University of British Columbia granted ethics approval for the study.

We approached the major pharmacy chains operating in British Columbia (e.g., Pharmasave, Safeway Canada) to obtain their approval to recruit staff members as participants. We then asked the regional managers of the chain stores to send our "letter of initial contact" to all of their pharmacies, through both in-store e-mail and in-store fax. To reach independent community pharmacists, we asked pharmaceutical buying groups to send the "letter of initial contact" to their members. In addition, we approached pharmacists who had previously participated in research with the University of British Columbia's Collaboration for Outcomes Research and Evaluation and who had consented to be contacted for future research. Finally, all pharmacists on the membership list of the Brit-

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ish Columbia Pharmacy Association were asked to participate through the organization's e-mail distribution list.

The "letter of initial contact" and the e-mail message from the British Columbia Pharmacy Association pointed potential respondents to a secure website for the survey. To increase the participation rate, we offered gift cards as prizes for 8 respondents, to be chosen at random. Participation was voluntary, and pharmacists had the right to refuse to participate. A decision to participate was not binding and participants could choose to withdraw from the study at any time without any negative consequences to their professional standing. The survey was opened on October 1 and closed on October 31, 2009.

We analyzed the results of the survey using SPSS version 10.0 software (SPSS Inc., Chicago, Ill.). We used the χ^2 test for statistical comparisons of categorical data and $p < 0.05$ was considered statistically significant.

Results

Demographic characteristics

A total of 151 pharmacists completed the questionnaire, 84 men (55.6%) and 67 women (44.4%). The majority of participants (108 [71.5%]) reported having practised as a pharmacist for more than 5 years.

Almost all participants had completed a bachelor of science in pharmacy degree (145 [96.0%]) and a substantial minority had also completed some form of postgraduate education, either a hospital residency (17 [11.3%]) or a university graduate degree (16 [10.6%]). About one-third of participants (49 [32.5%]) reported that they had current certification from a recognized provider for first aid and a similar proportion (46 [30.5]) had certification in cardiopulmonary resuscitation. Only a small minority of participants (19 [12.6%]) had current certification to administer vaccinations from the College of Pharmacists of British Columbia.

Pharmacy practice settings

The majority of participants reported current employment as community pharmacists, either in staff pharmacist positions (48 [31.8%]) or as store managers (46 [30.5%]); about one-fifth of participants were owners of a community pharmacy (29 [19.2%]). Just over 10% of participants were employed in a hospital setting, as either inpatient (13 [8.6%]) or outpatient (4 [2.6%]) hospital pharmacists. A few participants reported being employed as regional managers of pharmacy (5 [3.3%]), long-term care pharmacists (3 [2.0%]) or primary care pharmacists (3 [2.0%]).

Well over half of the participants (93 [61.6%]) reported working in large chain-store pharmacies. A substantial number of participants reported working in independent community pharmacies (11 [7.3%]), banner store or small chain-store pharmacies (25 [16.6%]) and other types of pharmacies (7 [4.6%]), whereas the remainder indicated that the question about place of employment was not applicable (15 [9.9%]).

In describing the geographic setting of the workplace, only 1 participant (0.7%) reported practising in a rural area, whereas substantial minorities reported practising in very small or small urban areas (population < 50,000) (52 [34.4%]) or small to medium-sized urban areas (population 50,000 to 99,999) (27 [17.9%]). Just under half of participants reported practising in urban settings with a population over 100,000 (71 [47.0%]).

Just over half of participants (78 [51.7%]) reported working in settings where 100 to 299 prescriptions were dispensed daily. Nearly one-fifth of participants (29 [19.2%]) were employed in pharmacies that dispensed more than 300 prescriptions daily. Respondents reported providing a wide variety of services on a regular basis (Table 1).

Willingness to administer vaccines

One hundred and twenty-three participants (123/151 [81.5%]) indicated an interest in administering any type of vaccine. Most respondents were willing to administer vaccines to adults over the age of 18 years (120/123 [97.6%]) and adolescents 12 to 17 years of age (105 [85.4%]), but fewer than half (57 [46.3%]) were willing to administer vaccines to children under 12 years of age.

TABLE 1 Types of services regularly provided to patients

Service	No. (%) of respondents* (*n* = 151)
Screening for chronic disease	50 (33.1)
Managing chronic disease	85 (56.3)
Tailoring of prescriptions	21 (13.9)
Providing drug information unrelated to dispensing	60 (39.7)
Therapeutic drug monitoring	24 (15.9)
Renal dosing of medications	21 (13.9)
Influenza vaccination clinics (staffed by nurses)	54 (35.8)
Travel vaccination clinics	3 (2.0)
Patient counselling	133 (88.1)
Other	14 (9.3)

*Respondents were asked to list all types of services offered, so percentages add up to more than 100.

Most of these participants (113/123 [91.9%]) were willing to administer the pandemic (H1N1) influenza vaccine. More than half of these reported their willingness to administer this vaccine in the pharmacy (103/113 [91.2%]) and in a mass clinic setting (78 [69.0%]) and more than one-third were willing to do so in walk-in clinics (56 [49.6%]), doctors' offices (52 [46.0%]) and schools (60 [53.1%]). A small number of participants (8 [7.1%]) reported that they would be willing to administer the pandemic (H1N1) vaccine in other settings. The most common suggestions for locations to administer the vaccine were hospitals and long-term care facilities.

Further analysis showed no significant differences between pharmacists' willingness to administer any vaccine or the pandemic (H1N1) vaccine. The following nonsignificant trends were observed: a greater proportion of men than women were willing to vaccinate patients, pharmacists with more than 20 years of experience were less willing than those who had graduated more recently, pharmacists working on Vancouver Island were less willing than those working in other health authorities and pharmacists dispensing large numbers of prescriptions each day were less willing than those dispensing fewer prescriptions (Table 2).

At the time this study was performed, pharmacists were required to complete an online training program as well as a clinical practicum session in order to obtain certification from the College of Pharmacists of British Columbia to adminis-

TABLE 2 Willingness to provide general vaccination services in relation to demographic and other characteristics

Characteristic	No. (%) of respondents	
	Willing to administer vaccines (n = 123)	Not willing to administer vaccines (n = 28)
Sex		
Male	71 (57.7)	13 (46.4)
Female	52 (42.3)	15 (53.6)
Years in practice		
<5	38 (30.9)	5 (17.9)
5–9	14 (11.4)	3 (10.7)
10–19	37 (30.1)	6 (21.4)
20–29	26 (21.1)	13 (46.4)
>30	8 (6.5)	1 (3.6)
Health Authority where pharmacy is located		
Vancouver Coastal	24 (19.5)	7 (25.0)
Fraser	27 (22.0)	7 (25.0)
Vancouver Island	27 (22.0)	4 (14.3)
Interior	34 (27.6)	7 (25.0)
Northern	11 (8.9)	2 (7.1)
Provincial Services	0 (0)	1 (3.6)
Population of area where practice is located		
Rural (<1000)	1 (0.8)	0 (0)
Very small urban (1000–9999)	21 (17.1)	3 (10.7)
Small urban (10,000–49,999)	18 (14.6)	10 (35.7)
Small–medium urban (50,000–99,999)	23 (18.7)	4 (14.3)
Medium urban (100,000–499,999)	24 (19.5)	3 (10.7)
Large urban (500,000–999,999)	11 (8.9)	3 (10.7)
Large metropolitan (≥1 million)	25 (20.3)	5 (17.8)
No. of prescriptions dispensed daily		
<50	7 (5.7)	1 (3.6)
50–99	24 (19.5)	5 (17.9)
100–199	33 (26.8)	7 (25.0)
200–299	31 (25.2)	7 (25.0)
300–399	10 (8.1)	6 (21.4)
≥400	12 (9.8)	1 (3.6)
No response	6 (4.9)	1 (3.6)

La connaissance en pratique

• La profession de pharmacien s'éloigne de la fonction technique consistant à délivrer des médicaments, et le rôle du pharmacien s'élargit pour englober les soins pharmaceutiques.
• L'administration de médicaments par injection pourrait faire partie du rôle élargi du pharmacien.
• Les pharmaciens sont prêts à se conformer aux exigences des différents organismes de réglementation et de la santé publique locale pour administrer les vaccins.
• Les pharmaciens sont disposés à administrer les vaccins à leurs clients.

ter vaccines. About 10% of all 151 participants (15 [9.9%]) felt that the 8-hour online training program alone would be adequate to make them feel comfortable vaccinating patients, whereas a larger proportion (22 [14.6%]) felt that the 8-hour clinical practicum alone would be sufficient. More than half of participants (83 [55.0%]) preferred to take both the online training program and the clinical practicum. Relatively few participants reported that they would need a 2-day online program without a practicum (5 [3.3%]), a 2-day practicum without an online course (17 [11.3%]), or a 2-day online program combined with a 2-day practicum (17 [11.3%]).

Eighty-three out of 123 participants (67.5%) agreed with the current recommendation for certification of immunization (i.e., an 8-hour online program and 8 hours of practicum). Well over half of participants (91 [74.0%]) agreed with the College of Pharmacists of British Columbia's plan to institute a recertification requirement for pharmacists offering vaccinations. Forty-three percent of participants (53 [43.1%]) thought that every 5 years was an appropriate recertification interval. Approximately equal proportions of participants thought that a frequency of every 2 years (19 [15.4%]) or every 10 years (18 [14.6%]) would be appropriate and only a few agreed with annual recertification (6 [4.9%]). Fewer than one-fifth of participants (27 [22.0%]) indicated that vaccine recertification should never be required.

The College of Pharmacists of British Columbia requires that pharmacists who plan to administer vaccinations obtain and maintain certification in first aid and cardiopulmonary resuscitation. Most participants agreed with this requirement (101 [82.1%]).

Preparedness to provide vaccine services

The results of this survey indicate that a substantial number of pharmacists were prepared to offer vaccine services immediately. More than half of participants (84 [55.6%]) stated that they would be able to mobilize vaccine services in time for the pandemic (H1N1) immunization program in fall 2009. Participants planned to advertise vaccination services using posters in the pharmacy and letters to clients, among other methods (Table 3) and most (106 [70.2%]) reported that plans for appointment or walk-in services for pharmacist-administered vaccinations would be applied to the pandemic (H1N1) vaccine. More than half of participants (91 [60.3%]) indicated that vaccination services would be provided by appointment only, whereas 32 (21.2%) reported that vaccinations would be offered on a walk-in basis.

TABLE 3 Pharmacists' planned means of advertising vaccination services

Means of advertising	No. (%) of respondents* (*n* = 123)
Posters in pharmacy	92 (74.8)
Radio	8 (6.5)
Television	5 (4.1)
Reminder letters to clients	41 (33.3)
Opportunistically	67 (54.5)
Other	27 (22.0)

*Respondents were asked to list all modes of advertising that they planned to use, so percentages add up to more than 100.

Out of those who agreed to vaccinate (*n* = 123), most participants reported that they would be able to provide pharmacy-based vaccination services during daytime hours (91 [74.0%]), and a substantial number reported ability to provide these services during evening clinics (43 [35.0%]) and on weekends (40 [32.5%]). About one-third of the participants indicated that they would be able to provide vaccination services on specific days of the week (39 [31.7%]) and one-quarter (30 [24.4%]) thought they would be able to offer these services for only a few hours each week. Most (108 [87.8%]) indicated that the same hours of availability would apply to the pandemic (H1N1) vaccine.

Through the survey, participants (*n* = 123) were given some additional information about the pandemic (H1N1) vaccine, including the fact that its adjuvant had to be mixed with the active ingredient just before administration. On the basis of these details, 27 participants (22.0%) reported that they would be able to vaccinate fewer than 10 patients daily, 33 (26.8%) could accommodate between 10 and 19 patients daily and 31 (25.2%) could vaccinate between 20 and 29 patients daily. The greatest proportion of participants thought it would take 5 to 10 minutes to vaccinate one patient (70 [56.9%]), 36 (29.3%) thought it would take 11 to 15 minutes and 8 (6.5%) participants thought it

would take longer than 15 minutes.

Out of the 123 participants, 90 (73.2%) indicated that their pharmacies had adequate space to administer vaccinations and maintain patient confidentiality, and 33 (26.8%) indicated that adequate space was not available. Most participants (111 [90.2%]) reported that their stores had adequate fridge space to store vaccines and 12 (9.8%) reported insufficient refrigerator space. The majority of participants reported having adequate freezer space (82 [66.7%]), while about one-third reported having inadequate freezer space (41 [33.3%]). Most participants (120 [97.6%]) were prepared to monitor and log refrigerator temperatures twice daily. More than half of the participants (76 [61.8%]) reported that procedures were in place to respond to situations in which refrigeration temperatures fell outside the recommended range for storing vaccines (2°C to 8°C), as might occur if a fridge failed; 39 (31.7%) reported that no such procedures were in place. Among the 76 participants who reported having procedures in place, the greatest proportion (48 [57.1%]) reported that the manufacturer was to be called. Of the 123 participants, about 20% indicated that they would automatically discard the vaccine (16 [19.0%]) or call the local health unit (19 [22.6%]). Only one participant (1.2%) reported that the vaccine would be used after a fridge failure.

Most participants (117/123 [95.1%]) indicated that they would be willing to use a standard form for recording information about clients who had received vaccinations and reporting back to the local health unit at various intervals (Table 4); 6 (4.9%) were not willing to use a standard form. When asked specifically if they would be willing to report back once a week, the majority of participants (81 [65.9%]) responded in the affirmative, with 14 (11.4%) even willing to report back once daily. The majority of participants (99 [80.5%]) also indicated that they would be willing to pick up vaccines from the local public health unit; in contrast, 24 (19.5%) were not willing to pick up vaccines.

TABLE 4 Pharmacists' preferences regarding frequency of reporting information about vaccinations to a public health agency

Frequency	No. (%) of respondents (n = 123)
Once daily	14 (11.4)
Once a week	81 (65.9)
Once a month	19 (15.4)
Never	3 (2.4)
Other	6 (4.9)

Less than one-third of participants (47/123 [38.0%]) reported being familiar with the procedures for reporting adverse events occurring after vaccination; 76 (61.8%) were not familiar with these procedures. A large proportion of participants (87 [70.7%]) reported being familiar with the EpiPen auto-injector but had never used one of these devices; only 13 (10.6%) had used an auto-injector to manage a severe allergic reaction. A total of about 23 (18.7%) of participants reported that they were not at all prepared or only somewhat prepared to provide treatment for anaphylaxis.

Discussion

The results of this survey show that BC pharmacists were willing to vaccinate their patients during the pandemic (H1N1) 2009. However, most were more comfortable administering vaccines to adults than to children. Participants felt that the existing certification program, consisting of an 8-hour online session and a practicum, was appropriate and that more extensive training was not needed. Participants were also comfortable with the recertification interval of every 5 years, as set by the College of Pharmacists of British Columbia.

A substantial number of pharmacists were prepared to provide vaccine services immediately, including services related to the pandemic (H1N1) influenza, pneumococcal and seasonal influenza vaccines. Participants thought that they would be able to mobilize these services in time for the pandemic (H1N1) vaccination program in fall 2009 and were planning to advertise these services to their clients via posters and reminder letters. The use of pharmacy-based vaccination clinics would increase accessibility to the influenza vaccines, given that most participants reported being able to provide pharmacy-based vaccination services not only during daytime hours on weekdays, but also through night-time clinics and on weekends. Pharmacists acknowledged that pick-up of the vaccines should be through their local health units, and they understood that there were requirements for reporting back to local public health units, including providing information about what vaccines had been used and their lot numbers, the patients who had received vaccines and when, logs of refrigerator temperatures and reports of adverse events.

Our study had a number of limitations, including its small sample size. Although we initially

hoped to recruit more than 1000 pharmacists, we were unable to do so because of time constraints. We wanted to use the results of the survey to inform stakeholders about pharmacists' willingness to administer the pandemic (H1N1) vaccine and could therefore keep the survey open for only 1 month. During that period, pharmacists were busy dispensing antiviral agents for treatment of pandemic (H1N1) influenza, in addition to their other tasks; as a result, many were unable to participate in this research. A further limitation related to the representativeness of the sample, given that participants were self-selected. As such, pharmacists interested in administering vaccinations might have been more likely to participate in the survey.

Over the past decade, various stakeholders have suggested that community pharmacists are well situated to provide public health services because they represent one of the most potentially accessible, qualified health care professions available to the public.[11,12] The results of this study suggest that pharmacists are willing to administer vaccinations and that they would have been able to offer vaccinations against the pandemic (H1N1) virus during the 2009 influenza season, provided the logistic components could be worked out quickly. Overall, these health promotion and disease prevention activities would enhance the role of pharmacists within public health.

Conclusions

On the basis of these findings, pharmacists in British Columbia seem willing and prepared to provide immunization services, including H1N1 vaccination. Therefore, pharmacists who have undergone the appropriate training should be allowed to vaccinate against seasonal and pandemic influenza and to provide pneumococcal vaccine at their respective pharmacies, in order to enhance or expand patients' opportunities for disease prevention. ■

From the University of British Columbia (F. Marra, Kaczorowski, C. Marra), Vancouver, BC, and the BC Centre for Disease Control (F. Marra), Vancouver, BC.

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ORIGINAL RESEARCH

PEER-REVIEWED

Discontinuing benzodiazepine therapy: An interdisciplinary approach at a geriatric day hospital

Lori Chen, BScPhm, ACPR; Barbara Farrell, BScPhm, PharmD, FCSHP; Natalie Ward, BA(Hons), MA; Grant Russell, MBBS, MFM, PhD, FRACGP; Pamela Eisener-Parsche, MD, CCFP, FCFP; Naomi Dore, BSc(Hons), MSc

L. Chen

Polypharmacy and insomnia are 2 of many problems today's seniors may face. As pharmacists, how we address these issues can significantly impact a patient's daily life. This study describes an interdisciplinary team's approach to benzodiazepine tapering. I contributed to this as my residency project for its focus on an important issue and its qualitative methods.

La polypharmacie et l'insomnie sont deux des nombreux problèmes que les personnes âgées peuvent rencontrer aujourd'hui. En tant que pharmaciens, la manière dont nous nous attaquons à ces problèmes peut avoir un effet non négligeable sur la vie quotidienne d'un patient. Cette étude décrit l'approche d'une équipe interdisciplinaire concernant la diminution progressive de la benzodiazépine.

Abstract

Background: Despite the known adverse effects of benzodiazepines, elderly people commonly use these drugs over long periods to treat insomnia and anxiety. This qualitative study was conducted to examine the experiences of patients and care providers in a geriatric day hospital (GDH) as patients participated in a benzodiazepine tapering process, to identify the components and processes of the benzodiazepine tapering intervention, and to begin exploring how they influence patient outcomes.

Methods: The study was conducted in a GDH in a Canadian city. Data were gathered from a discussion group and from individual semistructured interviews with 13 health care providers and 5 patients. Charts were reviewed to gather demographic data and confirm provider activities. A reflexive approach was conducted whereby each care provider reviewed and modified the role description created from information provided during his or her interview. Themes were determined through constant comparative analysis of transcripts, which included 5 meetings of the research team.

Results: The tapering of benzodiazepines at the GDH was effected primarily by 3 people: the physician, the pharmacist and the nurse. Other members of the interdisciplinary team were not always aware of which patients were tapering their benzodiazepine therapy, but they supported patients in a variety of ways. The patients included in this analysis were willing to taper their benzodiazepines and did not consider the experience significant in any way.

Conclusion: The health care provider roles, processes and tools described here could be replicated in other environments to assist patients who are tapering benzodiazepine therapy. Further research is needed to understand the interrelationships of all components of GDH care to determine their relative importance in facilitating behaviour change related to benzodiazepine tapering. *Can Pharm J* 2010;143:286-295.

Introduction

The overuse of benzodiazepines is a commonly recognized problem among elderly patients. Between 22% and 27% of adults over age 65 use benzodiazepines regularly.[1,2] This rate rises to over 30% among those above age 85.[2,3] Up to 50% of people taking benzodiazepines do so over the long term, sometimes for decades.[4] This practice is contradictory to evidence showing that benzodiazepines are effective for treatment of insomnia only for short periods (up to 6 weeks).[5,6] Health Canada has recommended that benzodiazepine treatment for anxiety not exceed 2 months, including the tapering-off period.[7-9]

The use of benzodiazepines by elderly patients has been associated with sedation, cognitive impairment, dizziness, confusion and motor vehicle crashes.[6,10,11] Patients using benzodiazepines are exposed to a 3-fold greater risk of falls, and their risk of hip fractures is 80% greater than for people not taking benzodiazepines.[10,12-18]

Despite the risks of continuing to take benzodiazepines, patients have difficulty discontinuing these drugs,[19,20] and they may be reluctant to do so. Linden et al.[19] found that 68.8% of patients taking benzodiazepines for more than 6 months were unwilling to take a "drug holiday." Furthermore, reports of withdrawal symptoms, some of them severe (e.g., seizures, psychosis, perceptual changes), may be frightening for both patients and health care providers.[21,22] Health care providers often have difficulty helping patients to taper these drugs.[20,23] Physicians prescribe benzodiazepines for their short-term efficacy in treating insomnia, but hesitate to discontinue them because of the aforementioned concerns about withdrawal symptoms and the more pressing health care issues that many elderly patients experience.[23]

A variety of approaches have been used to help people discontinue benzodiazepines. The most consistently effective methods include tapering the drug slowly over many weeks and providing support through cognitive behavioural therapy, psychological counselling and self-help approaches.[5,24-29] Simply providing written information to patients or giving audit feedback to physicians has not been very effective in previous studies.[30,31]

Geriatric day hospitals (GDHs) are founded on the principle of helping elderly people regain and maintain their independence, in part by improving their cognition and reducing the risk of falls and fractures. We perceived that many patients had successfully discontinued their benzodiazepine therapy while receiving care in our GDH. However, it was not clear which interventions and processes were most effective. Given the inherent challenges in discontinuing these medications, we sought an improved understanding of the reasons for our apparent success. This study was designed, according to the Medical Research Council framework for building a research program for complex interventions,[32] as the beginning of a multistage program to address key issues related to the use of medications, including benzodiazepines, that adversely affect both cognition and mobility in elderly patients. Our goals were to examine the experiences of patients and care providers during benzodiazepine tapering, to identify the components of our benzodiazepine tapering intervention and to begin exploring the mechanisms by which they influence outcomes.

In this paper we describe the roles of health care providers and the processes of care and patients' experiences as they taper benzodiazepines. A companion paper will address other components of care, including interactions between providers and patients, team functioning and the role of the GDH environment itself (manuscript in preparation).

Knowledge into practice

- The use of benzodiazepines in elderly patients has been associated with sedation, cognitive impairment, dizziness, confusion and motor vehicle accidents.
- Discontinuing benzodiazepine therapy is difficult for patients and for the practitioners who care for them.
- Intensive therapies (e.g., tapering combined with cognitive behavioural therapy and continual support) are more successful than simply providing information.
- This study provides examples of interdisciplinary roles, processes and tools that help patients to discontinue benzodiazepine therapy. These roles, processes and tools can be applied in day hospitals, primary care practices and other settings.
- We show that patients can have positive experiences with tapering, which in turn reassures pharmacists that tapering is tolerable and possible.

Methods

Design

This qualitative study used semistructured interviews, group discussion and a chart review to examine the experience of GDH patients and providers in the cessation of benzodiazepine therapy in the GDH setting. Approval was granted by the Élisabeth Bruyère Research Ethics Board and the study was funded by the Élisabeth Bruyère Research Institute.

Setting

The study GDH, located in a large Ontario city, served a frail, community-dwelling elderly population with chronic medical problems and functional, social and cognitive impairments. The program's goals were to optimize the functioning of these patients, through early identification and treatment of geriatric issues and to prevent admission to hospital or premature admission to a long-term care facility, through team-based interdisciplinary assessment, planning of care and treatment. The team consisted of nurses, physicians, physiotherapists, occupational therapists, a recreation therapist, a psychometrist, a social worker, a speech language pathologist, a dietitian, a general aide, a secretary, volunteers and a consultant pharmacist (BF). At the time of the study, this outpatient program served a total of about 50 patients each week, with 20 spaces available each day. Most patients attended twice weekly for 5 hours at a time, for an average of 13 visits.

Financial acknowledgement: *This study was funded by the Élisabeth Bruyère Research Institute.*

Participants

All members of the GDH team (excluding the manager and volunteers) were eligible to participate in the study. In addition, English-speaking patients over 65 years of age who had been referred to the pharmacist for assistance with benzodiazepine tapering were also recruited. Patients were excluded if a physician recommended that they not participate in the study. We aimed to recruit 10 patients over 3 months (February to April 2008).

Recruitment

All eligible providers were invited to attend an information session about the study and were offered the opportunity to participate in a discussion group, an interview, or both. After the information session, the research associate (NW) or pharmacy resident (LC) approached each person individually to request participation and consent.

Six weeks after the admission of an eligible patient to the GDH, the GDH physician asked the patient (or a substitute decision-maker, if the patient had cognitive impairment), whether researchers could contact him or her with information about the study. If the patient or substitute decision-maker agreed, the research associate or pharmacy resident explained the study, reviewed the information and consent forms, and obtained consent for an interview and chart review.

Data collection

Consenting providers first attended a group session, the goals of which are listed in Figure 1 (available online at **www.cpjournal.ca**). This session was recorded and transcribed. The research associate or pharmacy resident then carried out semistructured interviews with individual team members. The interview guide used elements of the PRECEDE framework (Predisposing, Reinforcing and Enabling factors and Causes in Educational Diagnosis and Evaluation), which assists in guiding identification of appropriate interventions.[33] Team members were asked to pay particular attention to their usual processes for documenting the details of interactions with patients, especially with regard to withdrawal of benzodiazepines and associated symptoms, to assist with subsequent chart review.

The research associate or pharmacy resident used a similar structured interview guide for the interviews with patients, which were also recorded and transcribed (Figure 1, available online). After discharge, each patient's chart was reviewed for information pertinent to benzodiazepine withdrawal.

Data analysis

The data analysis was performed by an interdisciplinary team consisting of a pharmacist (BF), a family physician specializing in care of the elderly (PE-P), an academic family physician (GR), a pharmacy resident (LC) and a research associate (NW). Transcripts and field notes were coded and entered into NVIVO software (QSR International Pty Ltd., Doncaster, Australia) to organize analy-

TABLE 1 **Demographic and medication-related characteristics of patients***

Characteristic	Patient 1	Patient 2	Patient 3	Patient 4	Patient 5
Age (yr)	85	79	91	88	87
Benzodiazepine and starting dose	Lorazepam 1 mg every night	Diazepam 5 mg tid Flurazepam 30 mg every night as needed	Oxazepam 25 mg every night	Lorazepam 1 mg daily (taken in the morning)	Lorazepam 0.5 mg every night
Approximate duration of use (years)	6	30	2 (intermittent)	4	NA (recent initiation of therapy)
Tapering schedule	Dose decreased by 50% (1 mg to 0.5 mg to 0.25 mg) weekly for 2 weeks, then discontinued	NA (stopped abruptly, without tapering)	Dose decreased to 15 mg, then to 7.5 mg 1 week later, then switched to temazepam (because of insomnia)	Dose decreased by 50% (1 mg to 0.5 mg) for 1 month, then discontinued	NA (stopped abruptly, without tapering)
Final medication	None for sleeping	Trazodone 50 mg every night as needed	Temazepam 15 mg every night	None for sleeping or anxiety	None for sleeping

NA = not applicable.

*All patients were women.

sis. The principal investigator (BF), resident and research associate reviewed all transcripts. They also prepared summaries, which were reviewed by the rest of the team. Data analysis was an iterative process involving constant comparative analysis to determine common themes, variations, explanations and meanings and included 5 full team meetings in the later phases of the project (April through June 2008). A pharmacy student (ND) assisted with analyzing patient data for discussion by the research team.

Results

Eighteen providers and 9 patients were eligible, and 13 providers and 5 patients participated (Figure 2, available online; Table 1). This study identified provider roles and processes, as well as emerging patient themes.

Usual approach of the GDH team

The GDH team worked closely together, with the philosophy of providing patient-centred care. Figure 3 outlines the usual process of admission, assessment and care of patients employed by the team. With regard to benzodiazepine tapering, providers combined tapering with support and counselling, often provided on a weekly basis, over an 8- to 12-week GDH admission.

Roles and processes of individual providers

The physicians, pharmacist and nurses discussed benzodiazepines directly with patients, whereas other health care providers were often unaware that individual patients were tapering their benzodiazepines. The roles of various providers are detailed in Table 2.

Physicians' role

During the initial assessment, physicians identified patients who should stop taking benzodiazepines. Tapering was often mentioned at this time but was generally not initiated until several weeks after

FIGURE 3 Overview of usual care at the geriatric day hospital (GDH)

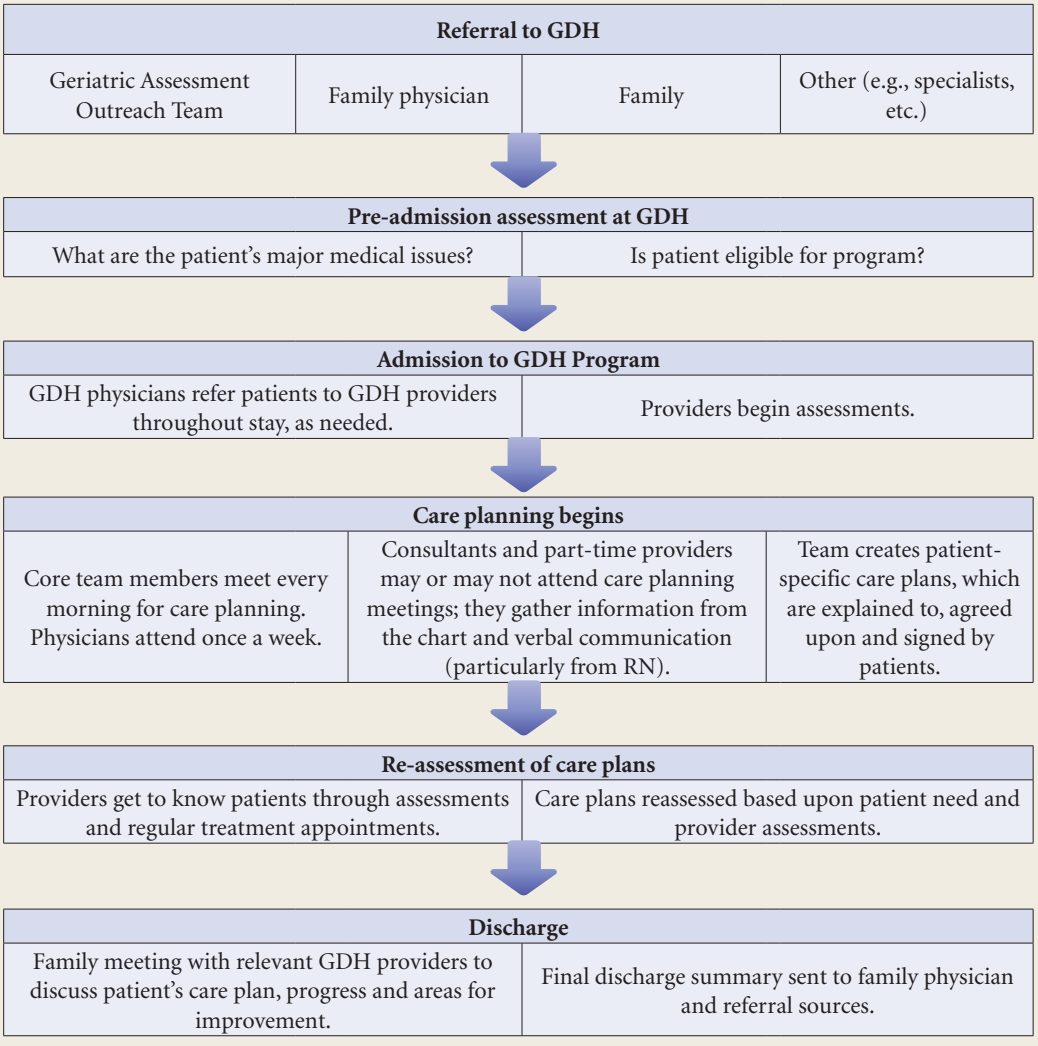

TABLE 2 Summary of provider roles in benzodiazepine tapering in a geriatric day hospital (GDH)

Provider	Overall role in GDH*	Role in benzodiazepine tapering
Physician	Assesses, provides medical care to and monitors patients; refers patients to other providers as required. Part-time positions; attends rounds once weekly.	Discusses concerns about benzodiazepines with patients, using examples related to the patient's reason for admission to GDH, to emphasize importance of stopping the drug (may require multiple attempts). Involves other providers in tapering process as needed. Initiates, educates patients about and monitors tapering. Communicates with professionals in the community (e.g., other physicians, other health care providers) about patient's progress.
Nurse	Assesses, provides nursing care to, and routinely monitors patients' progress and concerns throughout the GDH stay; acts as liaison among various GDH providers. Full-time and part-time positions; attends rounds.	May discuss effects of benzodiazepines and tapering at initial assessment. Monitors and supports patients throughout their GDH stay for dosage changes, adverse effects and withdrawal symptoms, including provision of objective and subjective measures of improvement to encourage and reinforce patients' progress. Refers patients to other providers as needs are identified throughout GDH stay.
Pharmacist	Interviews and develops rapport with referred patients (usually focusing on the most pharmacologically complex admissions); obtains medication history from patient, family, and/or community providers; identifies and addresses DRPs; provides comprehensive written and verbal information or education about DRPs and how to solve them; prepares and updates patient medication chart (see Table 3); provides frequent (often weekly) follow-up and monitoring of medication changes and their effects; facilitates and communicates medication changes with community providers; conducts home visits if needed. Consultant to GDH (no funded pharmacist position at GDH at the time of this study)†; does not attend rounds.	Discusses concerns about benzodiazepines with patients, using patient's reason for GDH admission to emphasize importance of stopping these drugs. Initiates, educates about, and monitors tapering by meeting frequently with patients and providing written information about coping strategies (see Table 3). Negotiates and provides specific written and verbal directions for tapering; provides weekly support. Helps patients to acquire resources for tapering (e.g., pill cutters, dosettes) by liaising with community providers (e.g., community pharmacists). Liaises with family members as needed to educate them about helping the patient to achieve tapering goals.
Social worker	Learns about patients' issues and personalizes care plan; tries to find root cause of insomnia, anxiety, falls and cognitive impairment and, in conjunction with other health care professionals, tries to devise solutions to these problems; helps to implement recommendations at home and to connect the patient with community resources. Full-time position; attends rounds.	Not generally aware of which patients are tapering, but regularly tries to find nonpharmacological approaches to address insomnia and anxiety. Discourages polypharmacy. Refers patients to other providers as needs are identified throughout GDH stay.
Physiotherapist	Helps patients to improve their balance and/or increase their confidence after a fall; creates individualized physiotherapy programs; continually monitors for falls during GDH stay; observes patients with cognitive impairment more carefully than other patients; encourages anxious patients to be active and use relaxation exercises. Part-time positions; attends rounds.	Not generally aware of which patients are tapering, but appears to address issues related to tapering, particularly falls.
Occupational therapist	Assesses referred patients on the basis of GDH visits and home visits, if required and patient provides consent; performs thorough home visits, reviewing patient's home routine, environment and (sometimes) medications; counsels patients with insomnia and anxiety; addresses potential causes of falls and suggests solutions; uses repetition to teach patients with cognitive impairment. Part-time positions; tries to attend rounds.	Not generally aware of which patients are tapering but appears to address issues related to tapering, through counselling on insomnia, anxiety and prevention of falls. Looks at patient's home medications during home visits, upon pharmacist's request. Feels that knowing which patients are tapering would allow a greater contribution to the GDH tapering approach.

TABLE 2 *cont'd*

Provider	Overall role in GDH*	Role in benzodiazepine tapering
Dietitian	Evaluates and discusses nutrition with referred patients; listens to and supports anxious patients; writes down instructions for patients with cognitive impairment and communicates with family members. Part-time consultant to GDH; does not attend rounds.	Not generally aware of which patients are tapering but appears to address issues related to tapering, through support of anxious patients. Would like to know about all patients who are tapering.
Psychologist	Conducts cognitive assessments over 2–3 weeks for selected patients referred by physicians; determines cognitive abilities (e.g., memory, attention, concentration, language, executive functions, visuospatial processing, problem-solving and reasoning); may discuss strategies to help improve memory and concentration. Part-time position; usually attends rounds.	Not aware of which patients are tapering. Does not suggest medication changes.
Speech language pathologist	Provides interventions related to communication and swallowing (assessment, therapy, education, counselling); discusses sleep hygiene with patients who have insomnia; lets anxious patients talk about their worries; individualizes the care of patients with confusion and/or cognitive impairment. Part-time position; sometimes attends rounds.	Not generally aware of which patients are tapering but appears to address issues related to tapering, through discussions about sleep hygiene and anxiety. Would like to know which patients are having trouble tapering.
General aide	Greets patients when they arrive at GDH and accompanies them to GDH gym; waits with patients at end of day for their transportation; conducts daily exercise group; develops excellent rapport with patients, providing support and reassurance and monitoring patients' progress at GDH; communicates findings and suggestions to other team members. Full-time position; does not attend rounds.	Not aware of which patients are tapering but very aware of how patients are affected by sleeping pills (e.g., falls, confusion) and tapering (e.g., insomnia, anxiety); helps team members monitor for these effects; notifies team members, particularly the nurse, when signs and symptoms of concern are observed.

DRP = drug-related problem.
*Especially with regard to patients with insomnia, anxiety, risk of falls or cognitive impairment.
†A 0.5 full-time equivalent pharmacist position has since been funded through the Local Health Integration Network's Aging at Home funding.

admission. Although some patients were able to stop benzodiazepines with the aid of the physician alone, the most pharmacologically complex cases were referred to the pharmacist for assistance.

Pharmacist's role

The pharmacist was a central figure in benzodiazepine tapering. She helped facilitate patient buy-in by providing information and motivation specific to each patient's situation. She explained the tapering process and met at least once a week with patients who were tapering their medication, to discuss concerns and provide reassurance and education about withdrawal symptoms. Each patient received a personalized tapering schedule. Some cut each dose in half at weekly intervals, whereas others decreased the frequency of doses. If the patient was taking more than one benzodiazepine, usually only one of the drugs was tapered at a time. Information was provided verbally and was also available in written form (e.g., in a file folder) in a central location accessible to both patients and their families. A variety of resources were used to help patients with the tapering process (Table 3). The pharmacist documented information about tapering (e.g., schedule, progress, patient's concerns) in the patient's chart.

Access to supplies (e.g., tablet cutters, new prescriptions) was coordinated among the pharmacist, physicians and the patient's community pharmacist. Sometimes the GDH pharmacist also attended the final family conference or spoke directly to the family members of patients with substantial cognitive impairment. It usually took several weeks to months to completely discontinue a benzodiazepine, and this represented a time-consuming portion of the pharmacist's work at the GDH.

Nurses' role

The nurses monitored patients' progress and provided continual support and advice related directly

TABLE 3 Resources commonly used by pharmacist to facilitate tapering of benzodiazepines

Resource	Comments
Patient-specific medication chart	
• List of current and past medications • Rationale for and progress with medications • Relevant medication information sheets • Specific instructions about making medication changes (e.g., tapering, switching) and why this is being done	Created and maintained by pharmacist Updated regularly throughout patient's stay
Pamphlets about benzodiazepine tapering and sleep hygiene	
• The Why and How of Stopping Sleeping Pills (B. Farrell) (see Appendix 1 online) • Seniors, Sleeping Pills and Tranquilizers (Health Canada)[35] • Wake Refreshed! How to Get a Good Night's Sleep (Sleep Wake Disorders Canada)[36]	Verbal and written information provided and reiterated throughout GDH stay

to the benzodiazepine tapering, as well as other issues. The nurses represented a key information source for other team members and referred patients to providers as appropriate for assistance with problems such as withdrawal symptoms or management of the symptoms that triggered the prescription in the first place.

Involvement of other team members

Other team members were not always aware of which patients were tapering benzodiazepines; however, they regularly provided supportive care to patients who experienced potential benzodiazepine-related effects (e.g., insomnia, anxiety, cognitive impairment, falls). There was no clear guidance about the type of care or advice, outside of their specific area of expertise, that each team member should provide to patients in relation to benzodiazepine tapering. Some providers stated that they could provide reinforcement and consistent support to patients if more specific guidelines were available about each provider's role.

Patients' experience

The 5 patients recalled that they had generally started taking benzodiazepines for relief of insomnia or anxiety. The patients reported that during their benzodiazepine therapy, they experienced symptoms that could be attributed to these drugs, such as daytime drowsiness, confusion, memory impairment and falls.

Three of the patients tapered off their benzodiazepines slowly, but 2 were able to stop without tapering. All 5 patients succeeded in stopping their original benzodiazepine therapy, and 2 of the patients switched to other medications for sleep (one from a combination of diazepam and flurazepam to trazodone and the other from oxazepam to temazepam). Patients' motivations and experiences with tapering are detailed below.

Willingness to taper

Several factors appeared to facilitate patients' willingness to taper. Most patients wanted to decrease their use of medications, to give up sleeping pills and to get a better, "more natural" sleep. Also, none of the patients had known about the adverse effects of benzodiazepines before their admission to the GDH. All were more willing to taper once adverse effects relevant to their complaints were described. When asked if anyone had described the adverse effects of sleeping pills before this study, one patient said, "No, no, I've never heard anything bad about it, except it was very much in use."

Another patient remarked, "[The GDH pharmacist] said it was a very dangerous drug, 'I wish you'd be off it,' and I said, 'All right.' So, when she told me how dangerous it was, you know, I said, 'That's fine.' "

Sometimes, initial resistance gave way to a willingness to undertake tapering: "I thought to myself, no way [will I taper] and then I thought about it and I thought, well, there's no reason why you shouldn't try."

Tolerance of tapering

Tapering was generally well tolerated, and most patients did not find the process difficult, nor did they consider it a significant aspect of their GDH admission.

Some patients had mild, transient insomnia. Others commented that they were so tired from the daytime activity at the GDH that they were able to sleep without taking a sleeping pill.

After stopping their original benzodiazepines, several of the patients noticed positive changes, such as an increase in daytime clarity and improvement in balance. One patient had experienced morning drowsiness while taking oxazepam. Upon switching to temazepam — which she had previously used — she stated, "I'm so happy and I feel good enough that I went out Saturday night and they made me dance and I danced." In this case, the patient clearly understood the risks of continued benzodiazepine use, but had not wanted to experience even the short duration of insomnia that would result as part of the withdrawal, stating, "For heaven's sakes! I'm going to be 91 years old. What difference does it make if you give me something that . . . will hurt me in the future? How long do you think my future is?"

Most of the patients had come to view their benzodiazepines as a comfort. They liked the idea of having a "security blanket" and were hesitant to relinquish it. Nevertheless, overall, patients did not view the process of discontinuing these drugs as a significant event during their GDH admission.

Discussion

The discontinuation of benzodiazepines is viewed as difficult because of potential withdrawal effects and reluctance on the part of both provider and patient.[19,20,23] Success rates have been higher with intensive approaches.[27-29] Over a period of many years, our GDH has succeeded in helping many patients to taper their benzodiazepine therapy. We set out to describe the components of care related to benzodiazepine tapering, as well as patients' experiences with the process, to better understand what we were doing that was helping patients with this change in medication-taking behaviour.

We discovered that many members of our interdisciplinary team appeared to be involved in supporting patients through benzodiazepine withdrawal. Care providers both knowingly (on the part of the physicians, pharmacist and nurses involved in initiating and monitoring tapering) and unknowingly (on the part of the other care providers providing support and counselling about possible withdrawal effects and coping strategies) contributed to supporting patients through the benzodiazepine tapering process. Collectively, their approaches appeared to mimic the combination of tapering and cognitive behavioural therapy (CBT) that is already known to be effective in helping patients to stop benzodiazepines.[5,24,25,27-29] When provided by psychologists, this type of therapy involves behavioural, cognitive and educational components that address stimulus control and procedures for sleep restriction, thoughts that may exacerbate sleep disorders and information about sleep hygiene and benzodiazepine effects, respectively. The support of social workers in dealing with anxiety and insomnia is probably an important aspect of the CBT-like approach. The provision by a pharmacist of written information about tapering and about potential withdrawal effects and their duration is likely also an important component of a CBT-like approach.

The involvement of many members of the health care team in the process of benzodiazepine tapering goes beyond the typical activities of CBT. Similar messaging from a physician, a nurse and a pharmacist may encourage behaviour change; in fact, these providers may be seen as champions of the intervention. Nevertheless, other team members employ practices that may help patients as well. A physiotherapist's observation of and comments on improvements in balance, as well as the focus of physiotherapy on fall prevention, may provide reinforcement to patients to continue tapering. In addition, a physiotherapist's recommendations about activity and relaxation exercises may help with the management of anxiety. Similarly, occupational therapists focus on fall prevention and often offer counselling about insomnia and anxiety. The speech language pathologist allows anxious patients to talk about their worries. The psychometrist discusses strategies to improve memory and concentration. The general aide identifies patients who are particularly anxious or who have had a bad night's sleep and informs the nurse, who will know if the patient is tapering medication and who can provide support through the withdrawal process.

Our findings suggest that health care providers can share tapering tasks and CBT-like supportive care and may thus achieve satisfactory results in helping patients to taper their benzodiazepines. We further hypothesize that such interventions may be even more successful if all team members are made aware of benzodiazepine tapering and provide support through a programmatic approach.

Although we knew that many GDH patients had successfully discontinued their benzodiazepines in the past, we did not know much about their individual experiences. Our findings, albeit for a small group of patients, suggest that patients who had been taking benzodiazepines over the long term for insomnia or mild anxiety were able to stop these drugs. Initially, most of the patients had taken benzodiazepines without knowing the potential risks; however, once the risks were explained, the patients were willing to stop or, if their insomnia did not resolve, to change to a potentially safer agent with fewer apparent adverse effects. Patients and providers have traditionally perceived tapering as a difficult process, but the

La connaissance en pratique

• Arrêter un traitement par les benzodiazépines est difficile pour les patients et pour les praticiens qui les soignent, même si des études publiées ont montré que ces traitements avaient des effets indésirables potentiellement dangereux.

• Les thérapies intensives (p. ex., diminution progressive combinée à une thérapie cognitivo-comportementale et à un soutien continu) se révèlent plus efficaces que la simple communication d'information.

• Cette étude fournit des exemples de rôles, de processus et d'outils interdisciplinaires qui aident les patients à arrêter leur traitement par les benzodiazépines. Ces rôles, processus et outils peuvent être utilisés dans les hôpitaux de jour, dans le cadre de soins primaires et d'autres situations.

• Nous montrons que les patients peuvent avoir des expériences positives avec la diminution progressive, ce qui incite les pharmaciens à penser que la diminution progressive est tolérable et possible.

patients in this study tolerated weaning well. The tolerability and potential benefit of tapering indicates that patients eligible to stop benzodiazepines should be encouraged to try doing so.

Practitioners can use the results of this study to design their own benzodiazepine tapering interventions. Spending time informing patients of the risks of benzodiazepine use, in particular those relevant to their personal situations, can be useful in motivating behavioural change. Providing written information about tapering, the expected symptoms and their short duration can help to alleviate fears related to withdrawal. Providing counselling on sleep hygiene and anxiety can be useful in addressing the symptoms that might have originally prompted the benzodiazepine prescription or those that might recur with tapering. Offering frequent follow-up and involving other members of the health care team can keep patients motivated.

Although we were able to identify specific roles, processes and tools used by members of our team in tapering benzodiazepines, we believe that a more intensive observation of their activities will allow us to better understand the relative impact of each component of the intervention. Our chart review did not allow us to capture as many details as we had hoped, because some providers did not document their actions in much detail. Regarding patient experiences, single interviews helped to highlight some important aspects of the tapering experience but limited the validity of the themes that we identified. Future research using ethnographic methods (e.g., shadowing, diaries), combined with longitudinal observation of patients and providers, should bring more depth and clarity to the record of their experiences.[34] These methods will also help us to understand the interrelationships of all components of GDH care (i.e., provider roles and processes, provider–patient interaction, team function and the GDH environment). We plan to use the findings of our current study (described in this and a companion paper, in preparation) to develop a detailed model for tapering benzodiazepines. In this model, we will respond to providers' requests that they be informed as to which patients are tapering their medications and what "messaging" they should use with individual patients. Once we have implemented the model, we will use ethnographic methods, as described above, to evaluate its effectiveness.

Conclusion

Health care providers in a GDH team environment appeared to contribute both knowingly and unknowingly to care associated with benzodiazepine tapering, by providing appropriate information and dedicated and ongoing support to patients. In our GDH setting, the pharmacist provided pertinent information and support in collaboration with physician and nurse colleagues and patients received support regarding their symptoms from other team members. Patients appeared to find the combination of a structured approach to benzodiazepine tapering and support from an interdisciplinary team acceptable and tolerable. A companion article (currently in preparation) will outline components of care related to providers' work with individual patients, aspects of team functioning and the GDH environment as they relate to the benzodiazepine-tapering intervention. Future work will identify the relative significance of these various components of care, as well as additional details about the success of this intervention. ■

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ORIGINAL RESEARCH

PEER-REVIEWED

Perceptions of community pharmacy staff regarding strategies to reduce and to improve the reporting of medication incidents

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This research was conducted as part of the SafetyNET-Rx research program. The mission of SafetyNET-Rx is to encourage and support an open dialogue on medication errors and near misses within community pharmacies. SafetyNET-Rx enables pharmacies to learn from medication errors and near misses and assess and improve key processes to prevent their reoccurrence.

Cette recherche on a été menée dans le cadre du programme de recherche SafetyNET-Rx. La mission de SafetyNET-Rx est d'encourager et de soutenir un dialogue ouvert sur les erreurs de médicaments et les accidents évités de justesse au sein des pharmacies communautaires. SafetyNET-Rx permet aux pharmacies d'apprendre des erreurs de médicaments et des accidents évités de justesse, puis d'évaluer et d'améliorer les processus clés pour éviter que cela ne se reproduise.

Abstract

Background: Medication incidents can have serious consequences for the health of patients and the perceived safety of community pharmacy practice. This study was designed to assess the perceptions of pharmacy staff members about various strategies for reducing and improving the reporting of medications incidents, with the ultimate goal of helping pharmacy managers to determine which practices are likely to be widely accepted.

Methods: Staff members of community pharmacies were recruited from 13 pharmacies in Nova Scotia. This convenience sample consisted of pharmacists, pharmacy managers and owners, and pharmacy support staff (i.e., technicians, interns and pharmacy students). The questionnaire had 5 sections, including sections on demographic characteristics, organizational culture within the pharmacies, strategies for reducing and for improving the reporting of medication incidents and existing reporting processes and desired changes, along with an open-ended section on reporting of medication incidents in general. The current article reports data from the 20-question section that sought respondents' perceptions, according to a Likert-type scale, of selected practices for reducing medication incidents and for identifying and disclosing any such incidents that do occur. Multivariate analysis of variance (MANOVA) was used to examine overall differences in mean ratings for various strategies by staff group or ownership type. Follow-up univariate analysis and Tukey test were used to examine differences in staff groups and ownership types for each reduction and reporting strategy. Correlation analyses were performed to determine strategies for which individual respondents had similar perceptions. Only pairs of strategies with moderate or strong correlations ($r \geq 0.60$) are discussed.

Results: MANOVA indicated significant differences in the perceived effectiveness of various strategies for reducing and for improving the reporting of medication incidents. Respondents indicated that having clinical pharmacists help physicians to select drug therapies would be the most effective strategy to reduce the frequency of medication incidents, and they thought that sharing with colleagues any lessons learned from incidents that did occur and assuring anonymity of reporting would be the most effective ways to increase the reporting of medication incidents.

Conclusions: Instituting strategies for reducing and enhancing the reporting of medication incidents that are viewed as effective by pharmacy staff members may help to increase reporting rates and to reduce the number of such incidents occurring at the community pharmacy. *Can Pharm J* 2010;143:296-301.

Introduction

A medication incident is defined as any preventable or unintended injury or complication caused by a medication while it is still in the control of the health care professional.[1] Medication incidents can have serious consequences for the health of patients and the perceived safety of community pharmacy practice. For example, according to the seminal Canadian Adverse Events Study, 7.5% of patients admitted to acute care hospitals in Canada in 2000 experienced one or more adverse events, of which 36.9% were judged highly preventable.[2]

Most of the limited research focusing on medication safety in Canada has been restricted to the hospital setting, yet community pharmacies are not exempt from the potential to cause harm. In one study, 3328 patients (23%) experienced an adverse event after discharge from hospital,[3] and almost 3 of every 4 events were related to medications. Although some patient safety practices may not be particularly relevant to community pharmacy, some strategies have particular importance in this setting, such as electronic prescriptions, continuous quality improvement strategies, computer monitoring for adverse events, automated drug dispensing and protocols for high-risk drugs.[4]

Reporting tools designed to help staff members learn from medication incidents when they do occur represent an effective means by which to reduce the frequency of medication incidents in the community pharmacy setting. Reporting and learning can improve safety by promoting long-term changes in dispensing practices, pharmacy processes and organizational culture. Previous research in the hospital setting has shown that if reporting tools are to be successful, they must be nonpunitive, responsive and integrated into existing practices.[2] In the United Kingdom, Ashcroft et al.[5] found that community pharmacists greatly underreported errors, even though the UK National Patient Safety Agency was administering an established reporting tool at the time of the study. In Canada, community pharmacists can report medication incidents and near misses through an online reporting tool administered by the Institute for Safe Medication Practices Canada, in addition to following their employers' internal policies and procedures for reporting medication incidents. Nonetheless, it is probable that the underreporting of medication incidents in Canada is similar to that in the United Kingdom.

Given that multiple practices exist for reducing the frequency of and increasing learning from medication incidents and given that individual community pharmacies are unlikely to be able to implement every tool, practice or strategy intended to reduce medication incidents or encourage their reporting, it is important to understand the perceptions of pharmacy staff about the effectiveness of each method. Such an understanding should help pharmacy managers and regulatory authorities to better determine which practices are likely to be accepted and widely used in the community pharmacy setting and which practices may meet resistance.

The objective of this study was to assess the perceptions of pharmacy staff members about various strategies for reducing and encouraging the reporting of medication incidents in community pharmacies, to determine if perceptions differed by staff group or ownership type and to identify practices for which individual respondents had similar perceptions.

Knowledge into practice

- Medication incidents in the community pharmacy setting can have serious health consequences. Unfortunately, underreporting of medication incidents has limited knowledge about and learning from such events.
- This study assessed the perceptions of pharmacy staff members regarding the effectiveness of various strategies being used in Nova Scotia to reduce medication incidents and to encourage the reporting of such events.
- Respondents felt that having clinical pharmacists help in selecting drug therapies would be the most effective strategy to reduce the frequency of medication incidents, whereas sharing lessons learned with colleagues and assuring anonymity in the reporting of medication incidents would increase reporting.
- The results of this research will help pharmacy managers to better determine which strategies for reducing medication incidents and encouraging the reporting of such incidents are most likely to be accepted and widely used within community pharmacy and where such practices may meet resistance.

Methods

Community pharmacy staff were recruited as volunteers from 13 pharmacies in Halifax, Nova Scotia, and the surrounding area. Although this was a convenience sample, it consisted of respondents from a variety of pharmacies representing rural and urban locations, independent and chain ownership, and high and low prescription volumes. Questionnaires were sent by e-mail and regular mail to all pharmacy staff members in each of the participating pharmacies in June 2008. Respondents completed the questionnaires anonymously and sent the forms back to the researchers directly. Ethical approval for the study was obtained from the Research Ethics Board of St. Francis Xavier University, Antigonish, Nova Scotia.

The Pharmacy Perceptions of Safety Survey was used to assess respondents' perceptions of methods to reduce, report and learn from medication incidents in community pharmacies. The survey was developed by examining the research litera-

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ture on reporting of medication incidents in both the hospital and community pharmacy settings.[4,5] The survey had 5 sections. The first 4 sections covered the basic characteristics of respondents and their pharmacies (e.g., position, experience, store services offered, weekly prescription volume), the pharmacies' organizational culture (e.g., values a harmonious working atmosphere, punishes mistakes), respondents' perceptions of strategies for reducing and for improving the reporting of medication incidents (e.g., limit use of abbreviations, share with colleagues lessons learned from errors) and existing processes for reporting medication incidents and desired changes to such process (e.g., modern and up-to-date, easy to complete). The last section was an open-ended section where respondents could comment on reporting of medication incidents in general. This article focuses on the 20-question section on perceptions of selected practices for reducing medication incidents and for identifying and disclosing such incidents (Table 1).

TABLE 1 Strategies for reporting and reducing medication incidents

Strategy	Mean rating* ± SD
To reduce medication incidents	
Limit use of abbreviations	2.7 ± 1.1
Use computerized prescriber order entry	3.4 ± 1.0
Have physicians produce prescriptions electronically	3.4 ± 0.9
Use protocols for high-risk drugs	3.5 ± 0.9
Have clinical pharmacists help physicians in selecting drug therapy	3.6 ± 0.8
Use barcoding and automated medication dispensing devices	3.3 ± 1.1
Set new regulations to better control how drugs are named and labelled	3.5 ± 1.0
Increase number of pharmacists per shift	3.1 ± 1.0
Regulate pharmacy technicians	3.0 ± 1.0
To improve the reporting of medication incidents	
Celebrate reporting of errors	2.6 ± 1.1
Make preventing errors a higher priority	3.2 ± 1.0
Create a safe reporting environment	3.5 ± 0.9
Do not punish those who report and commit drug errors	3.4 ± 1.0
Establish a provincial centre on patient safety	3.0 ± 1.0
Mandate reporting of errors to this provincial centre†	
Pharmacists	3.6 ± 1.1
Managers	3.5 ± 1.1
Support staff	2.9 ± 0.8
Celebrate situations where errors are prevented	3.2 ± 1.2
Share with colleagues "lessons learned" from errors	3.8 ± 0.9
Assure anonymity for pharmacists and pharmacy technicians	3.7 ± 1.0
Institute regular meetings to discuss medication incidents	3.4 ± 0.8
Have training sessions devoted to learning from medication incidents	3.4 ± 0.9

SD = standard deviation.
*Respondents rated each option on a Likert-type scale, ranging from 1 (would not reduce medication incidents or would not increase the reporting of medication incidents) to 5 (would definitely reduce medication incidents or would definitely increase the reporting of medication incidents).
†Statistically significant differences among staff groups (Wilks' λ; $p \leq 0.05$).

Specifically, this study examined the relation between characteristics of respondents (e.g., staff position) and of pharmacies (e.g., type of ownership) and the perceived effectiveness of strategies for reducing and reporting medication incidents. To determine the perceived effectiveness of selected strategies for reducing medication incidents, respondents were asked to rate each strategy according to a 5-point Likert-type scale ranging from "would not reduce" (rating of 1) to "would definitely reduce" (rating of 5) medication incidents in community pharmacies. To determine the perceived effectiveness of strategies for improving the reporting of medication incidents, respondents rated each strategy according to a 5-point scale ranging from "would not increase" (rating of 1) to "would definitely increase" (rating of 5) the reporting of medication incidents in community pharmacies. The complete questionnaire can be obtained by request to the corresponding author.

Multivariate analysis of variance (MANOVA) was used to examine differences in mean ratings for each strategy by staff group and ownership type. For this type of study, MANOVA is preferred over standard analysis of variance (ANOVA) because of the presence of multiple, possibly correlated dependent variables and the risk of type I error (i.e., "false positives") that might occur with individual ANOVAs. To further explore MANOVA results, follow-up univariate and post-hoc analysis with the Tukey test were performed to identify significant differences within staff groups and ownership types related to reduction and reporting strategies. Significance for all analyses was set a priori at the 0.05 level. Following MANOVA, correlation analyses were performed to determine strategies for which individual respondents had similar perceptions; only moderate (correlation coefficient $r = 0.6–0.7$) and strong ($r \geq 0.7$) correlations are reported and discussed below. All calculations were performed using SPSS software (version 15.0, SPSS Inc., Chicago, Illinois).

Results

A total of 109 surveys were sent to staff members working in 13 community pharmacies in Nova

Scotia. Seventy-nine (72%) of the surveys were completed. Of the 79 surveys returned, 28 (35%) were completed by staff pharmacists, 18 (23%) were completed by pharmacist managers and 33 (42%) were completed by support staff (technicians, pharmacy students and interns). Of the 79 respondents, 37 (47%) worked in independent pharmacies, 19 (24%) worked in corporate pharmacies and 21 (27%) worked in franchise pharmacies (2 [3%] declined to provide information on type of pharmacy). The scales for determining perceptions of strategies for reducing and for improving the reporting of medication incidents were internally consistent, with values of Cronbach's α well above the commonly accepted cutoff value of 0.7 (0.83 for reduction strategies, 0.92 for reporting strategies).

Strategies to reduce medication incidents

There were no significant differences in perceptions of strategies for reducing medication incidents by staff type (Wilks' $\lambda = 0.690$, $F_{18,122} = 1.38$, $p = 0.15$) or by ownership type (Wilks $\lambda = 0.659$, $F_{18,118} = 1.52$, $p = 0.10$). The results of the correlation analysis highlighted a number of strategies for reducing medication incidents for which the perceptions of individual respondents were similar, specifically use of prescriber order entry and electronic production of prescriptions by physicians ($r = 0.799$) and use of protocols for high-risk drugs and employment of clinical pharmacists ($r = 0.608$). All correlations were significant at $p \leq 0.01$. Having clinical pharmacists help in the selection of drugs reflected the need to reduce medication incidents at the hospital level and at the time of discharge from hospital, which would reduce the number of incidents occurring at the community pharmacy level.

Strategies to improve the reporting of medication incidents

As was the case for strategies to reduce the occurrence of medication incidents, there were no statistically significant differences among types of pharmacy ownership with regard to perceptions of methods for improving reporting (Wilks' $\lambda = 0.628$, $F_{22,114} = 1.36$, $p = 0.15$). However, the differences among staff groups were statistically significant (Wilks' $\lambda = 0.565$, $F_{22,118} = 1.78$, $p = 0.027$). Univariate follow-up analysis of this result indicated a difference between staff types with regard to perceptions of mandated reporting to a provincial centre ($p = 0.040$). To further explore this relation, post hoc analysis with the Tukey test was performed. This post hoc test is appropriate when the assumption of homogeneity of variances holds, as was the case here (i.e., nonsignificant result for Levene's test statistic; $p = 0.28$), and its results are conservative when group sizes vary, as they did in this study. This analysis showed that the perception of the value of mandated reporting to a provincial centre in improving the reporting of medication incidents differed significantly between pharmacists (mean rating 3.6) and support staff (mean rating 2.9) ($p = 0.048$). No significant differences were found between pharmacist managers (mean rating 3.5) and pharmacists ($p = 0.968$) or between pharmacist managers and support staff ($p = 0.164$). As such, pharmacist manager, pharmacist and support staff perceptions for each strategy, except for mandated reporting, were combined and analyzed as a single group. Table 2 presents pharmacist manager, pharmacist and support staff's combined mean ratings of strategies for reducing medication incidents and for enhancing the reporting of incidents that do occur.

The following pairs of strategies for improving the reporting of medication incidents were strongly correlated: creating a safe reporting environment was strongly correlated with making error prevention a higher priority ($r = 0.602$), with sharing lessons learned from incidents with colleagues ($r = 0.608$) and with not punishing those who commit errors ($r = 0.638$); establishing a provincial centre on patient safety was correlated with celebrating situations where errors have been prevented ($r = 0.621$); and instituting regular meetings to discuss medication incidents was strongly correlated with providing training sessions devoted to learning from medication incidents ($r = 0.741$) and sharing learning from errors with colleagues ($r = 0.623$). All correlations were significant at $p \leq 0.01$.

La connaissance en pratique

• Les incidents médicamenteux dans les pharmacies communautaires peuvent avoir des conséquences graves pour la santé. Malheureusement, la sous-déclaration des incidents médicamenteux limite les connaissances à ce sujet et les leçons que l'on en tire.

• Cette étude a évalué la perception que les membres du personnel d'une pharmacie ont de l'efficacité des diverses stratégies utilisées en Nouvelle-Écosse pour diminuer les incidents médicamenteux et encourager le signalement de tels événements.

• Les personnes interrogées avaient le sentiment que la stratégie la plus efficace pour réduire les incidents médicamenteux serait de choisir la pharmacothérapie avec l'aide d'un pharmacien clinicien, et pensaient que le fait de parler des enseignements tirés de ces incidents avec des collègues et de garantir l'anonymat pour les signalements encouragerait cette pratique.

• Les résultats de cette recherche aideront les gérants de pharmacie à mieux déterminer quelles stratégies pour réduire les incidents médicamenteux et encourager le signalement de tels incidents sont les plus susceptibles d'être acceptées et largement utilisées dans les pharmacies communautaires, ainsi que les endroits où ces pratiques risquent de se heurter à une certaine résistance.

Discussion

The results of this study indicate that some strategies for reducing medication incidents and improving the reporting of such events may be more successful than others within the community pharmacy context.

Respondents felt that having clinical pharmacists help prescribers select drug therapy was the most effective strategy to reduce the frequency of medication incidents (mean rating 3.6, on a Likert-type scale of 1 to 5). Regulating pharmacy technicians was seen as somewhat effective in reducing the occurrence of medication incidents (mean rating 3.0) and limiting the use of abbreviations was seen as even less effective (mean rating 2.7). Although both of these strategies have certain merits, they were viewed by health care workers in the community pharmacy setting as less important than other strategies for reducing medication incidents.

Among the strategies suggested for reducing medication incidents, the use of prescriber order entry and the electronic generation of prescriptions were strongly correlated. This correlation is highly intuitive, as prescriber order entry involves the electronic production of prescriptions and provides decision support to physicians when they are preparing prescriptions. Having clinical pharmacists help physicians to choose drugs and the use of protocols for high-risk drugs were also correlated. Again, this correlation is intuitive, in that pharmacy staff who perceive that involvement of pharmacists in the prescribing process is effective in reducing incidents are likely to also perceive a need for more checks during prescribing.

Sharing lessons learned with colleagues was perceived as the most effective strategy for improving the reporting of medication incidents across all staff groups and ownership types (mean rating 3.8). This indicates that staff may rely heavily on the actions of their colleagues; in this way, creating a comfortable environment in which to share error experiences may lessen people's hesitance to report. Respondents also viewed anonymity for pharmacists and pharmacy technicians as an important strategy to increase the reporting of medication incidents (mean rating 3.7). This finding coincides with literature suggesting that ensuring anonymity can improve the reporting of errors because it limits fears of blame and punishment.[4,6] Conversely, respondents indicated that the establishment of a provincial centre on patient safety was less critical to improving the reporting of medication incidents than were other strategies (mean rating 3.0). Celebrating the reporting of errors was not viewed as a useful strategy to increase reporting (mean rating 2.6).

The analysis highlighted differences in perceptions regarding the value of mandated reporting to a provincial body (mean ratings 3.6 for pharmacists and 2.9 for support staff). Pharmacists appeared to view reporting to a provincial body as a useful way to increase reporting, but support staff were not convinced. Support staff may be reluctant to report errors to a governing body for fear of punishment or blame. As such, it would be important for any such strategy to be coupled with anonymous reporting and clear support from management for the reporting of medication incidents. Staff perceptions of how managers view current reporting strategies may also have a substantial impact on the willingness of staff to report errors.[5,7] Thus, managers' approval of reporting systems and their encouragement to participate in reporting programs could have a positive effect on provincial and national medication incident reporting systems in Canada.

Two of the strategies for improving the reporting of medication incidents — creating a safe reporting environment and sharing lessons learned from errors with colleagues — were correlated with numerous other strategies. Interestingly, respondents gave both of these strategies relatively high ratings in terms of their likelihood of increasing the reporting of medication incidents. Creating a safe reporting environment was most significantly correlated with not punishing those who commit errors, which indicates that community pharmacists feel that nonpunitive reporting tools would create an atmosphere in which they would feel safe in reporting medication incidents. Sharing learning from errors was most strongly correlated with instituting regular meetings to discuss medication incidents. This indicates that pharmacy staff who feel it is useful to share lessons learned also see regular meetings as a good forum in which such sharing can take place. The institution of regular meetings was also correlated with the implementation of training sessions devoted to learning from medication incidents. Thus, regular meetings were seen as enhancing overall knowledge about and reporting of medication incidents, which would contribute to organizational learning and help to prevent medication incidents in the future.

Limitations

This study had several limitations. Respondents were recruited from a convenience sample of 13 pharmacies, rather than being randomly selected. Although the pharmacies were chosen to represent

a diversity of community pharmacies in Nova Scotia (including chain and independent pharmacies in urban and rural settings with high and low volumes of prescriptions), the participants were likely to be pharmacies and individuals with an interest in reducing medication incidents and improving the reporting of such events. The study focused on 3 groups of key pharmacy stakeholders: pharmacists, managers and support staff. Additional insight might be gained by assessing the views of other stakeholders, such as regulatory authorities and pharmacy associations. Finally, despite the fact that responses to the Pharmacy Perceptions of Safety Survey were reported on a Likert-type scale from 1 to 5, mean responses were clustered around the middle of the scale, ranging from a low of 2.6 to a high of 3.8.

To address these issues, future studies of this type should survey larger groups of pharmacy stakeholders to support or refute the key findings of this study and to identify potential differences based on demographic characteristics and stakeholder type, for example.

Conclusions

This study has revealed a great deal of variation among pharmacy staff with regard to their perceptions of the likely effectiveness of various strategies for reducing medication incidents and improving the reporting of such occurrences. This variation will present challenges for improving reporting at both the community pharmacy and the regulatory authority levels. However, some strategies were clearly perceived by community pharmacy staff as more effective than others, such as assuring anonymity and having clinical pharmacists help in the selection of medications. Incorporating the perceptions and expectations of community pharmacy staff into strategies for reducing and reporting medication incidents will ultimately increase the likelihood of widespread adoption of these strategies. Furthermore, instituting strategies that are viewed as similarly effective, such as instituting regular meetings to share lessons learned with colleagues, may help to increase reporting rates and thereby reduce the number of medication incidents in community pharmacies. ■

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ORIGINAL RESEARCH

PEER-REVIEWED

Symptomatic coronary artery disease: A call to action for pharmacists

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Current guidelines for the management of chronic stable angina state that treatment should result in complete, or near complete, elimination of pain caused by angina. This study was conducted to assess the extent to which Canadian patients are reaching this treatment goal, and the current treatment gaps that could be addressed by community pharmacists.

Les lignes directrices actuelles concernant la gestion de l'angine stable chronique stipulent que ce traitement doit dissiper totalement, ou presque totalement, la douleur causée par l'angine. Cette étude a été réalisée pour évaluer la mesure dans laquelle les patients canadiens atteignent cet objectif de traitement, et les lacunes quant aux traitements actuels qui pourraient être comblées par les pharmaciens communautaires.

Abstract

Background: Research indicates that successful treatment of angina is associated with improved patient quality of life. This pharmacist-conducted patient survey sought to assess patients' overall satisfaction with their current angina therapies.

Methods: Patients in Quebec, Alberta and Ontario taking nitrates for angina were asked if they would be willing to participate in the Symptomatic Coronary Artery Disease (SCAD) survey administered by study pharmacists. Results of the study survey were sent to the research lead and tabulated.

Results: A total of 208 surveys were completed. Almost 42% of patients reported at least 1 angina episode per week. When asked to choose the category that best described the frequency of their chest pain controlled by medication, 30% of patients indicated "on occasion," "rarely" or "never." More than one-quarter of respondents felt that the impact of their heart condition on quality of life was significantly or extremely negative.

Conclusions: Current guidelines state that the treatment goal for most patients with chronic stable angina should be complete, or near complete, elimination of the pain. Results of this survey suggest that in many instances treatment for angina-related symptoms could be optimized. Pharmacists are in an ideal position to identify and recommend therapeutic strategies for patients with symptomatic coronary artery disease. *Can Pharm J* 2010;143:302-308.

Background

Angina pectoris is defined as discomfort in the chest and/or adjacent area resulting from myocardial ischemia. It is a symptom of coronary artery disease (CAD) and affects approximately 7.2% of people 60 years of age and older.[1] A recent international survey revealed that over one-half of patients with angina experience at least 1 angina attack per week after being diagnosed and treated.[2] The pain and anxiety associated with new attacks can significantly limit the daily activities of patients.[3] Research indicates that a reduction in angina attacks is associated with improved patient quality of life.[4]

Medications are an important component of the control of angina symptoms. In order for a medication regimen to be deemed effective, it should improve a patient's quality of life to an acceptable level, through benefits such as increased exercise tolerance, and reduce the risk of mortality secondary to CAD. The present community practice research study was designed to assess angina patients' overall satisfaction with their current treatments and to identify treatment gaps. Additional objectives included raising awareness among health practitioners about their understanding of angina and its appropriate treatment through the activities of research and provision of education.

Methods

Pharmacists in Quebec and Alberta were recruited through their provincial pharmacy associations, while pharmacists in Essex County, Ontario, were recruited by the Essex County Pharmacists' Association via invitation by mail. A total of 32 pharmacists in Ontario and 10 pharmacists in Alberta attended a continuing education program outlining the objectives, methodology and responsibilities of the study and agreed to participate. In Quebec, each pharmacist expressing interest was contacted individually and provided with the same information as their counterparts from Ontario and Alberta. Patients with a diagnosis of angina were identified by virtue of having a current prescription for a nitrate product on their medication list. During the time period February 20, 2008, to April 30, 2008, study pharmacists contacted patients either by phone or in person, confirmed the diagnosis of angina and asked patients if they would be willing to engage in a survey to help better understand their condition and treatment. Pharmacists completed the Symptomatic Coronary Artery Disease (SCAD) survey based on answers offered by the patients to the survey questions. The SCAD survey was developed by the research team with components of the Seattle Angina Questionnaire and the Current State of Angina Treatment in Outpatient Population and Heart Rate Monitoring Survey, along with survey questions based on current treatment guidelines and others deemed to be of importance for the understanding of angina management in the community setting.[5,6] The results of each question were sent to the research lead and tabulated. Current medication lists were constructed by means of refill history and patient interview.

Results

A total of 208 surveys were completed by 28 pharmacists (7 in Quebec, 6 in Alberta, 15 in Essex County, Ontario). Over one-half (137) of the surveys were completed in Quebec.

Respondent profile

There were 102 male respondents and 99 female respondents; 7 respondents did not indicate gender. Survey respondents tended to be older, with 77% older than 65 years (Table 1). This group of angina patients included those who were newly diagnosed as well as those who had been taking medication for an extended period of time. Body mass index (BMI), as calculated from documented weight and height, indicated that approximately 58% of the study population was either overweight or obese. Comorbid conditions such as hypertension (42% of patients), dyslipidemia (54%) and diabetes (34%) were all more prevalent among those surveyed than among the general population. These findings are consistent with metabolic syndrome, in which clustering of these cardiovascular risk factors along with high BMI is linked to increased risk for CAD.[6] In addition, many respondents had a history of vascular disease events: 30% had suffered a myocardial infarction, 38% had suffered a stroke, 22% had received coronary artery bypass surgery and 30% had undergone angioplasty with or without a stent.

Table 2 outlines the medications taken by the study population at the time of the survey. With

Knowledge into practice

- Current guidelines suggest that treatment of patients with chronic stable angina should result in complete, or near complete, elimination of the angina pain.
- Thirty percent of chronic stable angina patients surveyed by pharmacists indicated that their chest pain was controlled by medication "on occasion," "rarely," or "never."
- Pharmacists are in an ideal position to identify and make appropriate therapeutic recommendations for angina patients in order to optimize management of their condition. Specifically, chronic stable angina patients should be questioned about chest pain occurrence on a regular basis and anti-anginal therapy appropriately optimized. Pharmacists should also recommend ASA and RAAS inhibitor therapy for those chronic stable angina patients who do not have contraindications to these agents.

TABLE 1 Baseline information of participants (n = 208)

Age (years)		BMI (kg/m²)		Time since angina diagnosis		Comorbidities	
Age range	%	Category	%	Number of years	%	Condition	%
35–55	7	Below normal	4	30–59	4.5	Hypertension	42
56–65	16	Normal	34	20–29	10	Dyslipidemia	54
66–75	32	Overweight	37	10–19	26	Diabetes	34
76–85	34	Obese	21	6–9	27	Heart disease other than CAD	54
>85	11	Unknown	4	0–5	28.5	Respiratory disease	19
				Unknown	4		

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La connaissance en pratique

• Les lignes directrices actuelles suggèrent que le traitement des patients atteints d'angine stable chronique devrait aboutir à la disparition totale, ou quasi totale, de la douleur causée par l'angine.

• Trente pour cent des patients atteints d'angine stable chronique interrogés ont indiqué que les médicaments contrôlaient la douleur thoracique « occasionnellement », « rarement » ou « jamais ».

• Les pharmaciens se trouvent dans une position idéale pour déterminer et faire des recommandations thérapeutiques appropriées aux patients atteints d'angine pour optimiser la gestion de leur état. Il faudrait en particulier interroger régulièrement les patients atteints d'angine stable chronique sur la fréquence de la douleur thoracique qu'ils ressentent et optimiser le traitement antiangineux en fonction. Les pharmaciens devraient aussi recommander un traitement par l'AAS et un inhibiteur du système rénine-aldostérone-angiotensine aux patients atteints d'angine stable chronique qui n'ont pas de contre-indications pour ces agents.

TABLE 2 Medication use

Antiplatelet agents (%)		**Anti-anginals (%)**	
Acetylsalicylic acid (ASA)	65	Beta-blocker	69
Clopidogrel	21	Calcium channel blocker	63
Both ASA and clopidogrel	10	Long-acting nitrate	62
ASA/dipyridamole	0.5	Immediate-acting nitrate	82
RAAS inhibitors* (%)		**Antidyslipidemic agents (%)**	
ACE inhibitor†	39	Statin	79
Angiotensin receptor blocker	36	Fibrate	5
Both ACE inhibitor and angiotensin receptor blocker	2	Ezetimibe	7

*RAAS = renin-aldosterone-angiotensin system;
†ACE = angiotensin-converting enzyme.

respect to medications typically used to manage angina episodes, 82% of survey respondents were taking an immediate-acting nitrate, 69% were taking a beta-blocker, 63% were taking a calcium channel blocker and 62% were taking a long-acting nitrate. Six percent of patients were not taking a long-acting anti-anginal agent (i.e., long-acting nitrate, calcium channel blocker or beta-blocker), 27% were taking 1 agent, 35% were taking 2 agents and 32% were taking 3 agents.

Table 3 outlines the number of angina episodes reported by respondents in an average week and the number of prn (as needed) nitroglycerin doses used. About 42% of patients reported at least 1 angina episode per week and 41% reported using at least 1 dose of nitroglycerin per week.

When asked to rate the average severity of their chest pain on a scale of 1 to 10, where 1 indicates no pain and 10 indicates the worst pain, 54% of survey respondents rated their chest pain to be at least a 4 (Table 4).

Quality of life

Of the 208 patients interviewed, 68% indicated that their heart condition had at least a "somewhat negative" impact on their quality of life and 27% felt that the impact was "significantly negative" or "extremely negative" (Table 5).

Nearly one-quarter (22%) of respondents felt that their chest pain was controlled with their medication only "on occasion," and 8% reported that their chest pain was "rarely" or "never" controlled by their medication. Regarding circumstances around which chest pain arises, 24% of respondents reported that their chest pain occurred at rest either "on occasion" or "frequently." Nearly one-half (46%) reported that they experienced occasional or frequent fatigue, which they believed to be related to their angina or heart medications. More than one-quarter (27%) reported that their medication resulted in occasional (20%) or frequent (7%) dizziness or weakness (Table 6).

Discussion

This survey conducted by community pharmacists was designed to assess overall patient satisfaction with angina treatment and to raise awareness of angina and the potential for pharmacists to improve the management of this condition. Results of the study suggest that health professionals should be more aware of the challenges faced by angina patients on a day-to-day basis and the potential to help their patients manage this condition. Pharmacists may be unaware of the impact of angina on patients in part because of patients' assumptions that they are receiving optimal treatment and their subsequent acceptance of any consequences without question.

Clinical guidelines promote the use of risk factor modification and anti-anginal drug treatment for the management of chronic stable angina.[7] According to current guidelines and the most recent clinical evidence, the following pharmacotherapy should be considered for a patient with stable angina secondary to CAD (unless contraindicated)[6-9]:

- Anti-anginal agents (i.e., beta-blockers and/or long-acting nitrates and/or long-acting calcium channel blockers)
- Antiplatelet agents (e.g., ASA or clopidogrel)
- RAAS inhibitors (e.g., ACE inhibitor or angio-

tensin receptor blocker when patient is ACE-inhibitor intolerant)

• Antidyslipidemic agents (e.g., statin, ezetimibe) if low-density lipoprotein greater than 2.0 mmol/L

• Immediate-acting nitroglycerin

Please refer to Box 1 for additional information about these medications.

The results of this survey suggest that not all patients are treated according to the current pharmacotherapy recommendations mentioned above. In particular, the less-than-desirable angina symptom control suggests that patients should be questioned about chest pain occurrence and that anti-anginal therapy should be appropriately optimized on a more regular basis than is currently the case. While some drug classes such as statins and immediate-acting nitrates are used by the majority of patients, other therapies such as ASA and RAAS inhibitors are taken by far fewer patients.

With respect to overall patient satisfaction, previous studies conducted in patients with cardiovascular disease, including angina, have suggested that treatment is often suboptimal and that side effects of treatment may have a significant impact on patient quality of life.[2,10] According to the American College of Cardiology/American Heart Association guidelines, the goal for most patients with angina should be "complete, or nearly complete, elimination of anginal chest pain."[9] The results of this survey provide evidence suggesting that treatment may be less than optimal for many patients. It is striking that for close to one-third (30%) of patients surveyed, their medication only occasionally manages their chest pain. In these instances, patients should be referred to their physician for further assessment in order to verify the source of the pain and manage it appropriately.

The survey results also support earlier evidence that angina can have a profound effect on people's day-to-day lives, as more than one-quarter (27%) of survey respondents felt that the impact of their condition was "significantly negative" or "extremely negative."[3] In addition, some potential side effects such as headaches, fatigue and dizziness were quite prevalent among survey responders.

TABLE 3 Angina episodes and nitroglycerin use per week

	Never	< 1	1–3	4–7	> 7	No response
How many angina episodes do you experience in an average week? (%)	7	51	32	8	2	0
How many prn doses of nitroglycerin do you use per week? (1 dose = 1 spray or tab) (%)	1	47	25	11	5	11

prn = pro re nata (meaning, "as needed")

TABLE 4 Rating of chest pain

	1–3	4–7	8–10	No response
On a scale of 1 to 10 (1 = no pain and 10 = worst pain) please rate the average severity of your chest pain.	31%	39%	15%	15%

Limitations

This study has a number of limitations. First, the number of patients approached to participate in the study is not available. If a significant number of patients declined to participate, the study results may not be generalizable to the overall population of Canadians with stable angina. Second, the survey was subjective in nature and there may have been differences among interviewers in the explanations and interpretations of questions used in the survey. Third, although the survey questions were based on validated questionnaires, the final tool used for information gathering in this study was not validated. Finally, information on medication adherence, dosing and medication-related adverse events would have been helpful to better characterize the role of therapy in managing chest pain.

The pharmacist's role

Pharmacists have an important role in the review of medications taken by patients and in making recommendations based on best available evidence. Many circumstances may result in patients not receiving the anti-anginal medication regimen best suited to their treatment needs. Physi-

TABLE 5 Impact of heart condition on quality of life

	No impact	Somewhat negative	Significantly negative	Extremely negative	No response
Overall, what impact does your heart condition have on your quality of life?	26%	41%	22%	5%	6%

TABLE 6 Angina symptoms and quality of life

Angina symptoms (%)					
	Never	**Rarely**	**On occasion**	**Frequently**	**No response**
Since diagnosis, has chest pain caused you to visit an emergency room?	47	23	25	5	0
Does your chest pain occur upon exertion?	32	34	21	11	2
Does your chest pain occur upon stress?	45	21	25	8	1
Does your chest pain occur upon eating?	73	7	17	3	0
Does your chest pain occur at rest?	65	10	18	6	1
Medication side effects (%)					
Have you experienced the following side effects related to your angina/heart medications?	**Never**	**Rarely**	**On occasion**	**Frequently**	**No response**
Shortness of breath	39	22	28	11	0
Headaches	47	26	22	5	0
Fatigue	35	18	26	20	1
Swelling of ankles, feet or hands	52	16	18	13	1
Slowed heart rate	54	27	9	5	5
Reduced sexual activity	46	13	7	7	27
Depression or anxiety	54	16	22	8	0
Dizziness or weakness	51	21	20	7	1
Do you feel your chest pain is controlled by your medication?	4	4	2	65	5
Quality-of-life issues (%)					
Does your heart condition or fear of chest pain impact the following?	**Never**	**Rarely**	**On occasion**	**Frequently**	**No response**
Cause you to cut down on exercise	33	19	29	16	3
Result in less sexual activity	42	13	8	9	28
Cause difficulty in getting a good night's sleep because of your symptoms	53	21	16	9	1
Cause you to often need to rest or lie down?	38	24	21	16	1
Cause you to take part in fewer social/family activities	63	18	10	8	1
Cause you to worry about having a heart attack	41	21	24	13	1
Affect your ability to dress yourself	81	12	3	3	1
Affect your desire to go for a leisurely walk	52	19	15	10	4
Affect your ability to climb a flight of stairs without stopping	36	22	20	17	5
Affect your ability to do housework	42	23	19	12	4
Affect your ability to walk briskly	33	13	27	22	5
Affect your ability to participate in strenuous activity	26	13	29	24	8
Affect your ability to do your job properly	39	25	15	8	13

cian-related barriers to appropriate prescribing include a willingness to accept test results outside of recommended ranges, insufficient time and excessive complexity of treatment regimens.[10] Patient-related issues may include poor adherence, financial barriers and lack of education about their medications.[10]

This survey highlighted a number of issues in the management of angina that could be optimized. By identifying patients with chronic stable angina and inquiring about angina symptoms and patient satisfaction with current therapy, pharmacists could play a critical role in reviewing therapy and improving the management of angina.

Conclusions

This survey highlights the potential for optimization of the management of angina for some patients. Pharmacists are in an ideal position to identify patients with chronic stable angina and to inquire about the frequency of angina episodes and patient satisfaction with current therapies. When less-than-optimal treatment is apparent, evidence-based recommendations made to the appropriate prescribing health professional are warranted, notwithstanding the need to reinforce important lifestyle modifications to the patient, such as smoking cessation, healthy weight, healthy diet and appropriate physical activity. ■

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BOX 1 Review of pharmacotherapy for patients with chronic stable angina secondary to coronary artery disease

Anti-anginals

Beta-blockers lower heart rate, blood pressure and free fatty acid levels and prevent angina by reducing oxygen demand on the heart.[11] Selective and nonselective beta-blockers have been shown to reduce the risk of myocardial infarction (MI) and mortality in patients with prior MI. Beta-blockers should be avoided in patients with coronary arterial spasm. Non-dihydropyridine calcium channel blockers (i.e., verapamil and diltiazem) lower heart rate and reduce blood pressure.[11] The 2007 Chronic Angina Focused Update of the ACC/AHA 2002 Guidelines for the Management of Patients with Chronic Stable Angina recommends a beta-blocker for all patients with prior MI, previous acute coronary syndrome and those with left ventricular dysfunction with or without heart failure symptoms.[8]

A reason for not using beta-blockers as a first-line therapy would be heart rate < 60 beats per minute or other risks associated with this class of drug.[10] In addition, the 2009 Canadian Hypertension Education Program (CHEP) recommendations state that beta-blockers or calcium channel blockers should be used by patients who have both angina and hypertension (42% of patients). Other reasons for prescribing alternative drugs include side effects of beta-blockers, such as dizziness and fatigue, which may result in patients not tolerating the medication.

Dihydropyridine calcium channel blockers (amlodipine, felodipine, nifedipine) dilate arterioles. Calcium channel blockers are the agent of choice in patients with coronary arterial spasm.[11] There is no evidence to support the use of calcium channel blockers based on diagnosis alone in uncomplicated stable angina, although rate-lowering calcium channel blockers may be used as an alternative to beta-blockers post-MI in patients without heart failure who do not tolerate beta-blockers.[11]

Nitrates for chronic angina are available in tablet or transdermal form. They are effective for the treatment of chronic angina.[11] A 10- to 12-hour nitrate-free period must be observed to prevent tolerance (decreased sensitivity) to the effects of the drug.

It is important to assess each patient carefully on a case-by-case basis to ensure that first-line agents are used appropriately and angina symptoms are optimally controlled.

Antiplatelet agents

The use of ASA in over 3000 patients with angina resulted in a 33% reduction in cardiovascular adverse events compared to placebo in large studies.[12,13] The 2007 ACC/AHA chronic stable angina guidelines update recommends that ASA should be started at 75–162 mg per day and continued indefinitely unless contraindicated.[8] Clopidogrel is at least as effective as ASA in patients with a history of MI, but is more expensive.[14] The combination of ASA plus clopidogrel offers no advantage over ASA alone in patients with established vascular disease.[15]

RAAS inhibitors

ACE inhibitors and angiotensin receptor blockers decrease sympathetic adrenergic transmission, reduce afterload and blood pressure and improve coronary flow reserve.[16,17] The 2007 American College of Cardiology (ACC) and American Heart Association (AHA) Chronic Stable Angina Guidelines Update recommends that ACE inhibitors be started and continued indefinitely in all patients with left ventricular ejection fraction less than or equal to 40% and in those with hypertension, diabetes or chronic kidney disease unless contraindicated.[8] Angiotensin receptor blockers are recommended in this group of patients for those who are intolerant of ACE inhibitors.

Antidyslipidemics

The 2009 recommendations for the diagnosis and treatment of dyslipidemia and prevention of cardiovascular disease published by the Canadian Cardiovascular Society assert that LDL cholesterol levels should be targeted at 2.0 mmol/L or less in patients at high 10-year global cardiovascular risk, which includes those with chronic stable angina.[7] Statins are the most effective agents for lowering LDL cholesterol and would normally be the primary treatment choice unless the patient exhibits contraindications or intolerance. Ezetimibe and fibrates are examples of additional treatment options.[7]

Immediate-acting nitrates

Immediate-acting nitroglycerin is a drug for which pharmacist intervention and patient education about proper use (according to dosage form) and dosing is critical. The immediate-acting nitrate should be used in the prescribed dose at the first sign of an acute angina attack. To ensure early recognition of MI and timely treatment, ACC/AHA guidelines now advocate that patients seek medical attention immediately if discomfort persists or worsens 5 minutes after 1 dose. Continue to repeat the dose approximately every 5 minutes to a maximum of 3 doses until the ambulance arrives.[18] All patients that have been diagnosed with chronic stable angina should carry an immediate-acting form of nitroglycerin. It is particularly important that patients understand that there are no known long-term consequences, so they should not be reluctant to use it. When stored in the original container at room temperature and protected from heat, light and moisture, sublingual (SL) nitroglycerin maintains its potency until the expiration date specified by the manufacturer. Patients should be advised not to transfer tablets to another container and to tightly seal the container after each use.

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The School of Wellness

Collette Minish; Lynn E. Paus; Paul Melnyk, BSP, MSc; Janet Bradshaw, BSP, CDE

As Canada's population ages, the total direct health care costs associated with diabetes are expected to increase to over $8 billion annually by 2016.[1] That statistic, while sobering, presents pharmacists with many opportunities to provide professional services that can make a positive impact on the health and well-being of patients in their communities.

In these times of industry change, public and private payers are actively looking for ways to cut health care costs, and the Pharmasave Central Region has been part of a health program that does just that. The School of Wellness takes an interactive educational approach to providing individuals with knowledge that will help them improve and maintain their health. The ultimate goals of the School of Wellness are to empower participants to adopt and practise a healthier lifestyle that they can share with their families and communities and to create a sustainable program that can be implemented by others in a variety of settings.

The School of Wellness originated from a partnership between Pharmasave and the Saskatchewan Association of Health Organizations (SAHO) in 2005 — the idea was to create a unique initiative to encourage individuals to become more engaged with their health. This became a reality when the first School was conducted in Saskatoon in 2007. Pharmasave, SAHO and the University of Saskatchewan, with funding from Pfizer, collaborated to create a 6-week-long series of health science seminars directed toward a general audience, which met with minor success.

Although evaluations of the first School were very positive, it did not have the hoped-for effect on the participants. The organizations involved envisioned helping high-risk target populations with health promotion and maintenance, enabling them to take better control of their own health. With this in mind, a different approach was decided upon for the second School. Target groups were identified, including First Nations, workplace wellness, rural communities, home health care and chronic disease management.

The second School of Wellness was then formulated with plans to focus on diabetes education and management in First Nations communities. This time Pharmasave and SAHO, with sponsorship from Pfizer, partnered with the Regina Qu'Appelle Health Region, the University of Regina Faculty of Kinesiology and Health Studies, and the File Hills Qu'Appelle Tribal Council to create the School of Wellness Community Health Challenge. The 12-week Challenge, held from September to December of 2009, added an element of competition, as the neighbouring Peepeekisis and Standing Buffalo First Nations, from the Balcarres and Fort Qu'Appelle area, competed against each other. Individuals from both communities applied, and approximately 10 people from each community were selected to compete. The challenge was to determine which community could lose the most cumulative inches from their waist circumferences. The prize for the first place team was a $5000 donation to be used to implement a wellness initiative in their community, and the runner-ups would receive $1000 for the same purpose.

Two students in the Health Studies program at the University of Regina were selected as coordinators for the weekly sessions. At these sessions, the participants gathered in their respective communities to learn about topics pertinent to them, including diabetes, healthy eating, physical activity and smoking cessation. Each week, talking circles were held after the educational seminar. These were a powerful component to the sessions, as participants were able to share their successes and challenges with one another. The interactive nature of the Challenge added to its success, with participants attending group sessions in Fort Qu'Appelle, including a cooking demonstration and a grocery store tour. Periodically, the participants had their waist circumference, blood pressure and blood glucose measured. At the end of the Challenge, the Peepeekisis First Nation came out on top with an impressive average loss of 8.2 cm from their waist circumferences. The Standing Buffalo First Nation received the runner-up prize for their average loss of 6 cm.

Initially, the competition seemed to add to the motivation of the people involved, but this evolved over the 12 weeks of sessions. The Challenge became much more to the participants. At the Final Celebration, an elder from the Peepeekisis First Nation spoke about this in her participant speech, saying, "After a while I realized the Challenge wasn't against the other people, it was a Challenge with myself to keep up with healthy ways of eating and to keep up my exercise."[2] Another Peepeekisis First Nation participant said the program "was really encouraging and inspiring... It's made me feel the urge to do more for myself and my family."[3] The School of Wellness had a huge impact on the people who took part in it by motivating them to make changes to improve their lifestyles, while still respecting their cultural values and traditions.

Through the School of Wellness Community Health Challenge, participants demonstrated a considerable improvement in their health. A Standing Buffalo First Nation participant spoke of the vast changes in her life that resulted because of the competition: "Before this I'd never looked at doing exercise; I didn't believe it would work. I've been diabetic for 14 years, but didn't listen to my doctor. Now, I've cut down on a lot of junk food and pop and I'm doing lots of exercises at home. It used to be hard to go up the stairs, but now I've moved my bedroom downstairs and can run up and down... I'm so energetic."[2] This Challenge made an invaluable difference in these participants' lives.

The participants also seemed to appreciate the time and effort all the organizations put toward their health. The Peepeekisis First Nation elder spoke warmly of the program, saying, "It's so nice for us to see that people care about us. No one has ever done something like this for us."[2]

The organizations involved faced many challenges of their own. They were at the mercy of numerous uncontrollable factors, including bad weather and the H1N1 pandemic. Location also presented a problem, and sometimes there was a struggle to get the participants out to the meetings. Through the hard work of the volunteers, these problems were all overcome to make the Community Health Challenge a great success.

Plans are now underway to hold a third School of Wellness. This one will be aimed at employee health and will be known as the School of Wellness Workplace Health Challenge. It will be held in Swift Current over a 12-week period. It will resemble the Community Health Challenge in many ways, but instead of communities competing, it will be employees within a local business, Innovation Credit Union. Just as the Community Health Challenge focused on issues that were relevant to the communities involved, the Workplace Health Challenge will focus on the needs and lifestyles of the employees involved.

The School of Wellness program is a unique initiative, and with each school, lessons are being learned and modifications are being made to meet the needs of the participants. The next initiative will display the versatility of the program and help meet its goals by demonstrating its sustainability — giving the participants the tools to carry on with a healthier lifestyle long after the Challenge has finished.■

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Ad Index November/December 2010

Jeff Morrison, MA

CPhA on national and international stages

In the midst of unprecedented change and discussion over national pharmaceutical policy, CPhA continues to make strides to enhance services to members and to represent the profession of pharmacy on the national stage. The following accomplishments represent just a few of the ways in which CPhA is working on behalf of Canadian pharmacists.

Drug shortages

There have been ongoing reports throughout 2010 of shortages of assorted over-the-counter and prescription drugs. CPhA has held meetings with various drug manufacturing organizations and Health Canada to gain a better understanding of the causes of the drug shortages and determine whether better communications mechanisms can be put into place. With the cooperation of a number of provincial associations, CPhA has conducted a poll of pharmacists to gain a better sense of the scope of problems associated with shortages, for both pharmacists and patients.

We have also updated our 2001 document, "Drug Shortages: A Guide for Assessment and Patient Management." Copies of the revised guide are available at www.pharmacists.ca.

First Ministers' announcement regarding bulk purchasing

In August, provincial and territorial First Ministers announced they had directed their Ministers of Health and Ministers of Finance to create and implement a national bulk-purchasing scheme for common drugs. In September, Ministers of Health announced that Ontario and British Columbia would be leading this initiative.

In response, CPhA has written all First Ministers, as well as Ministers of Health and Finance, outlining our position on the proposal. CPhA observed that the potential monopolization of drug markets caused by bulk purchasing could have serious consequences on supply of necessary drugs. CPhA also stated that any new purchasing scheme should include reforms to the scope of practice of pharmacists, as they can deliver significant efficiencies in the medication management system. A copy of the letter to the First Ministers is available on the CPhA website under the "about CPhA" tab, in the Government Relations section.

Pharmacy-jobs.ca goes live!

A national job board, Pharmacy-jobs.ca, has been launched by CPhA and the Canadian Association of Pharmacy Students and Interns (CAPSI), in partnership with Workopolis NicheNetwork. The site is Canada's premier job board for professional pharmacy jobs in Canada, connecting students and practising pharmacists and pharmacy technicians with up-to-date job opportunities from a variety of employers across Canada.

As the profession moves forward and changes, jobs and the way pharmacists practise pharmacy will also be transformed. Pharmacy-jobs.ca will help pharmacists and pharmacy students stay on top of job requirements and current job postings. The job board will also include student and intern positions across the country.

Canadian Pharmacy Services Initiative moving ahead

Over the past several months, CPhA and the Canadian Association of Chain Drug Stores have been leading the Canadian Pharmacy Services Initiative, an effort designed to identify a broad array of new professional services that pharmacists could offer under the overall heading of Medication Therapy Management (MTM), and to put forth evidence-based reasoning as to why these services should be adequately compensated. Various tools are being produced as part of this Initiative, and more information will be available as they are finalized.

International meetings

President Ruth Ackerman and Executive Director Jeff Poston recently attended 2 key international gatherings — the Pharmintercom (comprising national advocacy organizations from 7 English-speaking countries) and the International Pharmaceutical Federation (FIP) conferences. Aside from providing an excellent opportunity to network with pharmacy leaders from around the world, the meetings provided a chance to share common international concerns and trends, such as drug shortages, generic price reductions and profitability. ■

Jeff Morrison is the Director of Government Relations and Public Affairs for the Canadian Pharmacists Association.

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