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COMMUNICATION

The Voice of Pharmacists in Manitoba

Continuing Education

Therapeutic Options Update on Sulfonamide Allergy and Cross-Reactivity

The Last Word

Catastrophic Drug Coverage: If Drug Bills Soar, Help Depends on Who and Where You Are

Feature

Smoking and Drug Interactions

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Stress In The Workplace

I have been practicing as a pharmacist now for 11 years. I feel that I have sharpened my skills pretty well over the last decade but if there is one thing that has not changed it is daily stressors in the dispensary. I have worked many physically demanding jobs throughout school but had my eyes opened when I started in retail pharmacy. It is a very stressful job, especially in a busy dispensary. Customer demands, third party issues, time constraints, staffing cutbacks have all made the job more difficult. It is more important than ever to take steps to help manage all of these issues or we will see more and more pharmacists burning out at a younger age and staff turnover will continue to be high.

Many pharmacists are exposed to one pharmacist per shift scenarios. This makes for a tough day and can be a stressful one as well. It is very important to have some type of break mid shift to not only refresh the mind but the spirit as well. Yes, I know, easier said than done but if workflow is co-ordinated properly it should allow for some time to eat lunch and step back for awhile. This situation is ideal but by working hand in hand with the technicians, and stating reasonable prescription ready times maybe all pharmacists will get that necessary breather to not only stay mentally alert but reduce the potential for errors as well.

ALAN LAWLESS

It would be very interesting to hear from the membership about work place stress and ways to help manage it. As we all know the profession will be undergoing change and there may be more pressure at the beginning before all the kinks are ironed out. This will be a very important time for pharmacists to recognize the importance of time management.

I know that many reading this article will think of this as a no-brainer but everyone gets that reality check every so often when we realize that an error could slip by us and that consequences could result due to mental exhaustion. Nobody likes the gut-wrenching feeling of that happening. So, pharmacists, please remember to take that much needed mental break during the day no matter how short that may be as this is a very tough job and everyone deserves it!

Pam Johnson – 2011 Recipient of the MSP Award of Merit

The recipient of this year's Manitoba Society of Pharmacists Award of Merit, Pam Johnson, epitomizes the values of the award with her commitment to excellence in the field of pharmacy.

The Manitoba Society of Pharmacists gives this award each year to an active member of the Society who has made a significant contribution to the profession throughout the duration of his or her career.

Johnson was happy to express her gratitude for the recognition of her peers. "I was very honoured to have been chosen to be the recipient of the MSP Award for 2011," Johnson said. "I am so thankful for the support of my colleagues and the Board of Directors of the Manitoba Society of Pharmacists. Winning the award has motivated me even more to work hard in future endeavours."

Originally from Brandon and a 2006 graduate of the Faculty of Pharmacy at the University of Manitoba, Johnson is now a community pharmacist at Loblaw Pharmacy in Winnipeg. Johnson recognized Gayle Romanetz, director for Loblaw Pharmacy and Kristine Petrasko, community pharmacist in Stonewall, as being important mentors and teachers in her career.

Johnson has also been involved with the Professional Relations Committee with the Manitoba Society of Pharmacists and contributed articles on the H1N1 pandemic to the *Communication* Journal. Johnson sees the sharing of information as a vital part of the pharmacist's role.

"I feel it is important to write about current issues, as I have the ability to provide education through the magazine to fellow pharmacists who may not have the time to research all of the needed information for themselves," Johnson said.

In addition to these other activities, Johnson also makes presentations to high school students on the role of the pharmacist.

"I want young people to be aware of how much of a difference pharmacists can make in people's lives, both young and old. It's a great profession for them to consider when they enter university," Johnson said.

She has also been the recipient of a Young Leader Award in 2010 and Pharmacist of the Year in her Zone with Loblaw Pharmacy for 2009.

Despite all of these accomplishments Johnson sees her work as a reward in and of itself.

"My major success in my career is making a difference in people's lives," Johnson said. "The most rewarding moment for me in my career was when a previous cancer patient came up to me during remission and told me how much she appreciated my time and expertise during that very difficult time in her life. She thanked me for helping her through her tough moments, and told me how much she appreciated me. I hadn't even realized how much of a difference I had made in her life until she expressed her gratitude. The feeling you have when a patient thanks you like that is indescribable and is a true blessing."

Trevor Shewfelt – Magnum Opus Award Winner

Sponsored by Nycomed Canada Inc., the Magnum Opus Award specifically recognizes pharmacists who have completed advanced training or education and have successfully expanded their practice as a result. The award also raises awareness of the value and availability of advanced training for pharmacists. Winners are selected by the Manitoba Society of Pharmacists Board of Directors. Trevor Shewfelt, the 2011 recipient, exemplifies everything this honour represents.

MARSHALL WIEBE

"The award is nice recognition that if you do extra training in your field you will be recognized," Shewfelt said about the honour.

Born and raised in Pinawa, Manitoba, Trevor is a 1997 graduate of the University of Manitoba's Faculty of Pharmacy. He took a circuitous route before joining his chosen profession. Originally he wanted to follow in his father's footsteps but soon changed his mind during University physics class. He also considered a career as an actuary and a teacher before his father suggested applying at the Faculty of Pharmacy, a decision he has never regretted.

Shewfelt has spent his entire career working at the Dauphin Clinic Pharmacy. The Dauphin Clinic Pharmacy was opened in 1979 by Myles Haverluck, a man that Shewfelt considers a mentor in his profession. "Myles is the king of customer service," he said.

Shewfelt received his Certified Asthma Educator designation in 1999 at the same time as Haverluck. In 2007, he got his Certified Respiratory Educator designation. Since then, he has enjoyed putting his knowledge into practice, including contributing articles to the local paper and to Dauphin's local radio station on smoking cessation, asthma and COPD management; partnering with various pharmaceutical companies on inhaled medication compliance programs; home visits to assess possible asthma triggers and presenting pharmacist oriented education programs to colleagues.

The prevalence of asthma and other respiratory conditions in Manitoba were factors that helped lead to Shewfelt's pursuit of advanced training.

"In every community we deal with asthmatics," he said. "By providing a little bit of education we can make a big difference in people's lives."

Shewfelt sees pharmacists as playing a beneficial role in the communities that they serve.

"The pharmacist continues to be the most accessible health care professional and we do an excellent job of providing front line health care information," Shewfelt said. "People can call about all kinds of issues from heart burn to trouble breathing. After seeing their doctor they can come to us and ask 'What do I do now?'"

According to Shewfelt one of the most rewarding aspects of being a pharmacist is working with children. "As a father of two small children I really enjoy being able to help kids and young parents," he said.

As winner of the 2011 Nycomed Magnum Opus Award, Shewfelt receives a trophy and $1,000 that he has chosen to donate to his alma mater, the Faculty of Pharmacy at the University of Manitoba.

New Practice Environment: Empowering Your Patients through Self Managed Care

The 2011 Manitoba Pharmacy Conference was held at the Delta Winnipeg Hotel from April 15th to 17th, 2011. The profession of pharmacy in Manitoba is faced with changing times and eagerly awaits an expanded scope of practice. The conference theme for 2011, "New Practice Environment: Empowering Your Patients Through Self Managed Care" was most applicable. The professional development sessions were well presented and the Conference Planning Committee would like to thank all speakers for their contribution to making the conference a success.

The Conference Planning Committee would like to thank MSP Past-President Jay Rich for serving as the Honourary Conference Chair. Jay graced the event with his relaxed nature and quick wit and added to the enjoyment of the weekend. The highlighted theme "New Practice Environment: Empowering Your Patients Through Self-Managed Care" was reflected in many of the presentations throughout the conference and for the third consecutive year, pharmacy technicians took part in the conference and hosted concurrent sessions specifically tailored for technicians.

The Conference Planning Committee for 2011 included: Shawn Bugden, Councillor, the Manitoba Pharmaceutical Association and PrISM; Bonita Collison, Assistant Director of Conferences and Event Planning, the Manitoba Society of Pharmacists; Alison Desjardins, MSP Board Member; Rose Dick, Canadian Association of Pharmacy Technicians; Jill Ell, Assistant Executive Director, the Manitoba Society of Pharmacists; Marnie Hilland, Director of Conferences and Event Planning, the Manitoba Society of Pharmacists; Susan Lessard-Friesen, Deputy Registrar, the Manitoba Pharmaceutical Association; Kristine Petrasko, Councillor, the Manitoba Pharmaceutical Association and Board Member, the Canadian Pharmaceutical Association; Scott Ransome, Executive Director, the Manitoba Society of Pharmacists; Jay Rich, MSP Past President and Honourary Conference Chair; and Gayle Romanetz, MSP Vice-President.

Honorary Conference Chair Jay Rich, MSP President Mel Baxter, and Canadian Pharmacists Association President Ruth Ackerman

Friday, April 15, 2011

The Friday Wine and Cheese Reception is always well attended and this year was no exception. The event featured a tarot card reader and a caricature artist for the entertainment of those who chose to partake. Stay tuned for photos of some of the artwork in future issues of *Communication*.

The Young Leaders Awards which are sponsored jointly by the Manitoba Society of Pharmacists (MSP) and the Manitoba Pharmaceutical Association (MPhA) were presented by MSP President Mel Baxter and were the highlight of the evening's festivities. The awards are presented to pharmacists who are in their first 5 years of practice or pharmacy students in the fourth year. Congratulations to all the winners!

This year's Young Leaders Awards winners include (from top left to top right) Geoff Namaka, Divna Calic, Scott Bowles, Angel Bhathal, Manjit Bains, (from bottom left to bottom right) Pat Wat, Ashley Walus, Rebecca Thiessen, Melissa Jacob, and Advit Shah (no photo).

Saturday, April 16th, 2011

Saturday always proves to be a full day and this year was no exception. Both the Manitoba Society of Pharmacists and the Manitoba Pharmaceutical Association Annual General Meetings took place in the morning followed by the Exhibitors Buffet Lunch.

The lunch featured a host of Exhibitors displaying a variety of products and services. Conference participants were able to browse through the many booths, do some networking and enjoy a hot lunch. The afternoon featured continuing education sessions which were very well attended.

Saturday evening featured the Conference Chair Reception and Silent Auction. The reception provided conference participants an opportunity to chat with colleagues and browse through the many prizes at the silent auction made available through the generosity of the corporate sponsors. Proceeds from the silent auction go towards the Pharmacists at Risk program which is celebrating their 30th anniversary. The committee was able to raise $1,280 thanks to all those who donated prizes and placed bids.

Prodigy Youth Choir

The Annual Awards Banquet followed the Conference Chair Reception. Entertainment was provided by the Prodigy Youth Choir, a vocal group from Miles Macdonell Collegiate known for excellence in vocal performance. The focus of the banquet is the award winners and congratulations are extended to all individuals recognized for their accomplishments throughout the evening.

Greg Harochaw, recipient of the Bonnie Schultz Memorial Award for Practice Excellence

Pam Johnson, recipient of the MSP Award of Merit

Trevor Shewfelt, recipient of the Nycomed Magnum Opus Award

Shawn Yaffe presents Rem Weiss with the Pfizer Consumer Healthcare Bowl of Hygeia.

MPhA President Shawn Bugden presents Pat Trozzo with the Pharmacist of the Year Award.

Ear Conditions

MEERA B. THADANI
M.Sc.(Pharm.)

What is ear wax?

Cerumen or earwax is a yellow waxy substance produced by the glands in the outer ear. It is composed of shed layers of skin, keratin, saturated and unsaturated long chain fatty acids, alcohols, squalene and cholesterol.[1]

Earwax serves to trap dust, bacteria, fungi, other small particles and water preventing them from reaching and potentially harming the eardrum. Cerumen usually dries up and falls out of the ear along with the trapped dust and debris.

There are two genetically distinct type of earwax, wet and dry (Figure 1). The wet type is yellowish and soft while the dry type is flaky and grayish in color. East Asians and Native Americans have predominantly the dry type which has been linked to a single base change in the gene ATP-binding cassette C11 gene.[2] This gene also decreases sweat production and it is postulated by anthropologists that this was beneficial to people living in cold climates.[3]

Figure 1 – Samples of wet (left) and dry (right) earwax

Earwax is naturally removed by the body as epithelial cells migrate along the skin surface. Movement of the jaw while eating, chewing and speaking facilitates this process. Cerumen is carried to the outside along with the trapped debris.

Causes of earwax impaction

The most common cause of earwax impaction is the use of cotton swabs, bobby pins, rolled paper or napkin corners in the ear canal. The use of hearing aids and earplugs also makes the ear more prone to blockage (Figure 2). In some cases, the glands produce more wax than can be removed. The extra wax can harden and block the ear.

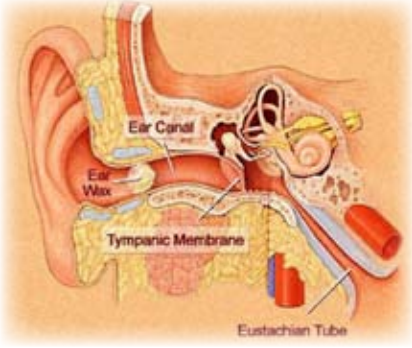

Figure 2 – Cross section of ear showing location of earwax

Cotton swabs are intended to clean outside the ear. They should not be inserted into the ear canal. There is the danger of perforating the eardrum by pushing the swab too far into the ear (Figure 3).

Symptoms of earwax blockage

These include:

- Earache
- Dizziness
- Hearing loss
- Tinnitus
- Fullness in the ear
- Sensation of the ear being plugged

Treatment

In most cases, earwax can be treated by softening the wax by using:

- Mineral oil or fragrance free baby oil
- Glycerin
- Commercial ear-drop softening preparations (carbamide peroxide)

Irrigation using a bulb must be done carefully by a health professional. The eardrum must be intact. If done incorrectly, trauma to the eardrum can result in hearing loss and/or infection. Devices such as a jet irrigator for teeth (water pick) must not be used. They are not designed for this purpose and can harm the ear.

The physician may decide to use a small spoon called a curette (Figure 4). The wax is scooped out gently to clear the ear canal.

Avoid dubious cures such as ear candling. Ear candles are hollow cones with cloth on the tapered end. The tapered end is placed inside the ear while the opposite end is lit. It is suggested that a vacuum is created as the candle burns causing the earwax to be sucked out of the ear. There is risk of burning the hair and burning the patient as the candle melts. There is no scientific evidence to support the use of this absurd method (Figure 5).

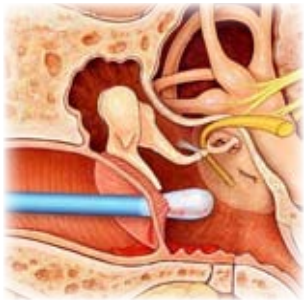

Figure 3 – Cotton swabs are not intended to be inserted into the ear.

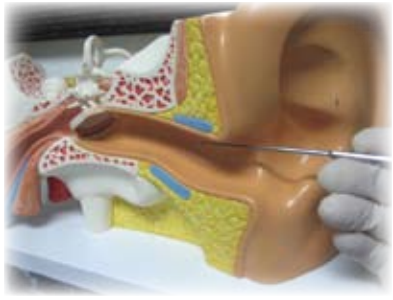

Figure 4 – Earwax removal with a curette.

When to seek help

Refer patients to the doctor if they are experiencing:

- Vertigo
- Nausea or vomiting
- Fever
- Loss of hearing
- Ear pain
- Drainage from the ear

Complications such as a perforated eardrum, middle ear infection, external-ear infection or hearing loss caused by trauma need medical attention.

Figure 5 – Placing burning objects into the ear is not safe. Besides the potential for setting hair on fire, dripping hot melted wax into the ear can cause injury.

Prevention of earwax

Blockage can be prevented or minimized by:

- Avoiding the use of cotton swabs or any other object that pushes earwax into the ear
- Having the ear checked routinely if hearing aids are used
- Application of topical emollients (mineral oil) to prevent the wax from hardening and blocking the ear canal.

What is Swimmer's ear (diffuse otitis externa)

This is inflammation of the ear canal after it has been exposed to water for long periods. It is most common when the air is humid. Swimming, water sports, high temperatures or local trauma are risk factors. Patients with a history of allergies are also more prone to otitis externa.

The ear canal does not allow fluids introduced into the ear to drain. It is not advisable to introduce cotton swabs into the ear to soak up this fluid (Figure 3) for fear of damaging the tympanic membrane. The presence of water can change the pH in the ear canal from being acidic to alkaline allowing *Pseudomonas aeruginosa* to infect the ear.

Symptoms of swimmer's ear include:

- Pain
- Itching
- Inflammation
- Drainage or discharge

Because these symptoms can also be associated with more serious ear conditions, physician referral is appropriate. Nonprescription products can be provided to treat otitis externa if there is a history of swimmer's ear. If the condition is not improving within 36 to 48 hours, the patient should be seen by a physician.

Treatments available for swimmer's ear include:

- Antibiotic ear drops
- Acetic acid (2 – 2.5%)
- Aluminium acetate (0.5%)
- Oral pain medications

The bottom line

Earwax blockage is not a serious problem and is resolved with the removal of the wax. Hearing loss returns completely.

Otitis externa can be treated if there is a history of swimmer's ear. Physician referral is necessary if the patient has:[4]

- experienced vertigo, pain, fever, tinnitus, drainage, or rash
- experienced symptoms longer than 2 to 3 days
- had ear surgery, ear tubes or experienced ruptured ear drum(s)
- a foreign body in the ear
- symptoms after swimming, diving and water sports that have not resolved in 24 hours
- an upper respiratory infection
- diabetes or is immunocompromised.

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1. J. H Dirckx, Stedman's Concise Medical Dictionary for the Health Professions, 3rd edition, Williams & Wilkins, Baltimore, 1997.
2. Online Mendelian Inheritance in Man (OMIM) 117800.
3. Yoshiura K, Kinoshita A, Ishida T, et al. (March 2006). "A SNP in the ABCC11 gene is the determinant of human earwax type". Nature Genetics, 38 (3): 324–30.
4. Merck Manual on line, http://www.merckmanuals.com/home/index.html, accessed April 2011.

MPhA Awards Luncheon

Sunday, April 17th, 2011

The Manitoba Pharmaceutical Association Awards Luncheon was held on Sunday and was very well attended. Awards presented included the Patient Safety Award, Honorary Life Memberships, and the 50 Year Gold Pins and the 25 Year Silver Pins. MSP would like to congratulate all the Award winners.

Honorary Life Memberships were presented to Raymond Biglow and Alistair Pringle.

50 Year Gold Pins were presented to Eugene Baron, Kenneth Biberdorf, Harry Chunick, Darryl Darling, Larry Ladyman, Duane Nieman, Alistaire Pringle, Patricia Sedun, and David Thompson.

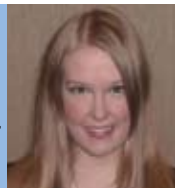
25 Year Silver Pins were presented to Michael Allen, Alvaro Bras, Cenzina Caligiuri, Alan Dilay, Halyna Ferens, Charles Li, Tara Lyons Cork, Susanne Maskell, Angela McGuirk, Iqbal Riyaz, Natalie Thickson, Wanda Turner, and Alan Wilson.

MPhA President Shawn Bugden presents Venetia Bourrier with the MPhA Patient Safety Award.

A Consultation Program – Making It Work

Every day, patients come into our pharmacies to fill new prescriptions, pick-up refills or inquire about OTCs or Natural Health Products. Many of these patients may benefit from a more in-depth consultation with their pharmacist. And they may be more willing to pay for your services than you think.

The concept of cognitive services is now being recognized as fundamental to the profession. How to put the concept into practice is the missing piece of the puzzle. This can be best expressed by sharing my experience in a community setting. It is only one story, but I believe there can be many more as Manitoba pharmacists take the initiative to stand for their value, their expertise and their profession.



TARA MALTMAN-JUST

As Director Integrative Clinical Programs at CD Whyte Ridge Pharmacy, I am privileged to spend 100% of my time focused on both conducting fee-for-service consultations and expanding our range of clinical programs. I began a consultation program at another location by meeting with a few patients for more in-depth discussions. After realizing a strong patient demand for individualized guidance on the menopausal transition, a formalized consultation process was laid out. Structure was vital to maintaining the consistency and integrity of the program. Initial details considered included: the consultation duration, the fee, the advertisement of the service, the booking schedule, the note-taking process during the consult, the reporting process for physicians, a filing system, the fee for follow-ups, follow-up reminders, a waiver and of course - a private counseling space.

Each one of these could be elaborated upon, and priorities likely differ from site-to-site. Streamlining such details takes time and energy, which can be difficult in a busy dispensary setting. Workflow and time management produce challenges as the dispensing model is disrupted. The consulting process itself is understandably different from dispensing prescriptions. Seemingly simple issues come into play; like is the room ready, is the computer on, is the patient late, or - am I done checking this prescription, calling this doctor or cleaning up the messy counter so that my colleague can fill in. For a simple 1-hour appointment, there can be more time required than anticipated. Planning workflow and minimizing disruption to dispensary functions is very important as workflow is very different in a retail setting than in an appointment-only or clinic setting. Once the consult is finished, where do we go from here? There is the physician communication and patient reports to be written; filed and sent. And, as we all know in pharmacy practice, it is not unusual for new or current patients to call along the way with questions.

It is because of these and similar reasons I have found that separating the consulting aspect from the dispensing shift is key. A small start, even a devoted half-day a week, can work better than single appointments spread out over a few days. Regardless of the schedule, even with multiple pharmacists on staff, the pharmacist pulled from dispensing is no longer contributing to the principal means by which most community pharmacies in Manitoba *currently* support their business. This is where the professional fee comes into play. At the same time, the sale of OTCs and natural health products, specialty tests (for example, cholestech or a bioimpedence analysis on-site) increased traffic and prescriptions from consult patients and their families should also be factored in. All of these areas have the potential to be expanded as the program develops. We can expand this to include sale of other products. Books or DVDs written by healthcare practitioners for the patient can be found in applicable areas of interest, such as stress management, menopause or nutrition, e.g. glycemic index. Even so, a starting goal, e.g. aiming to break even at the first consult, may be unrealistic.

New patients of mine sometimes ask about the consulting fees and costs for follow-up appointments down the road. They are not often used to paying healthcare practitioners for direct services. Many of them have explored other opportunities with no results. Some, sadly, feel brushed off with our conventional healthcare system. They may feel passed along from one practitioner to another, without their GPs or NPs having the ability to conduct an indepth 1-hour or 30-minute review. And a majority of patients simply value their pharmacist. I tell them that the consultation is an investment, an investment in their health. In a similar way, a consultation program is an investment in the business of pharmacy, and its future.

It certainly didn't happen overnight. As more and more women came in for their 1-hour consultation, some with friends or spouses, word spread quickly. Soon, husbands were asking how they could be helped with their cholesterol. Others were asking about diabetes, insulin resistance and weight management. Then came stress management, fatigue and fibromyalgia. The opportunities are limitless.

Although word-of-mouth can't be underestimated, outreach was essential to building a strong client base. And we're still building. A number of techniques have been useful in their own ways: seminars, exhibits, advertisements and doctor referrals. Seminars with a known guest speaker can be a great hook, promoted simply through leaflets with prescription pick-ups, posters in local doctors' offices and on the website. A maintained email database has been very useful in sending out invitations. Charging for a seminar is a must. It puts a value on the information that you are sharing and can also increase retention. Though costly, properly positioned advertisements can bring new clients. Exhibits at trade fairs and health fairs geared for both patients and other practitioners can be a good investment in promoting the services. Visiting doctors' offices and maximizing opportunities when doctors call with questions have been a great source of referrals for our program. I

have even had a doctor see good results from her patients and then book and pay for an appointment for herself.

There are other practitioners who may have differing views. These can include misconceptions about the scope of services or concerns with future changes in regulations and future prescribing rights for pharmacists. A waiver outlining our role is always provided and signed prior to the consult. The waiver reinforces that we are not diagnosticians, and that the patient will continue to meet with their doctor for their physical exams and follow-ups. An ongoing willingness to meet with practitioners and discuss the process and program has been crucial. In many cases, local physicians and other practitioners are interested in coming to public seminars. Practitioner events can be held as well.

With our pharmacy training, we are taught to look at evidence-based medicine to understand the role of pharmacological and non-pharmacological approaches in our patients. We are trained not to diagnose, but to recognize patient health problems, make recommendations on interventions and communicate these to their GP or other members of their health care team in the best interest of our patient. This is exactly what the consultation process allows.

Medication Reviews may be the gateway to consultation services for pharmacies servicing personal care homes, for example. With the ADAPT and Q.U.I.T. Programs launched by CPhA, we have another chance to hone our skills and offer smoking cessation services. Certified Diabetes Educators and Respiratory Educators have a special and recognizable niche. At CD Whyte Ridge Pharmacy, our programs presently focus on Integrative Medicine, the combination of evidence-based conventional and complementary therapies. This is supported by training in an Advanced Fellowship in anti-aging, regenerative and functional medicine and I am also completing a Masters of Science in Medicine with a concentration in Metabolic and Nutritional Medicine. After each consultation, my patients leave with a comprehensive plan that addresses their health care goals. It may include recommendations on: prescriptions, natural health products, nutrition and lifestyle. It usually includes all of the above, and always includes an outline of our priorities moving forward, follow-ups with their doctor and a follow-up timeline with me. We generally meet in another 2-3 months.

The patient response and gratitude have been like nothing else I have seen in my years of practice. The consultation environment is conducive to listening, a skill which pharmacists know well. This opens the opportunity for the patient to share. This can be a sensitive process. This can also be the first time the patient fully describes their detailed health concerns. Although there are at times tears with the sharing of their concerns, there is by far more gratitude and appreciation for the value pharmacists can bring. One stirring quote I noted recently from a patient was "Thank-you. I've been waiting for someone to help me this way for decades". As more of us continue to take on a consultative role, I am confident that fewer patients will be left waiting.

MSP Annual Student Night

Pharmacy students are awesome!

This year the Manitoba Society of Pharmacists (MSP) staff had a blast with the students at the King's Head Pub. The MSP puts together this function to celebrate future pharmacists and the profession of pharmacy.

The well attended evening included mixing and mingling while enjoying munchies and a little competition we like to call, "The King's Head Challenge."

1st Place – RX Rated
The trophy winners from left to right: Scott Andresen, William Giang, Mark Allan, Karin Ens and Chris Sochan

The MSP staff enjoyed the opportunity to meet the students. This year the event was held on Thursday, March 5th and included a tournament of pool, darts and golf putting.

A total of 9 teams participated in this year's tournament with the teams pictured being the prize winners.

Karin Ens

Karin Ens, the student liaison to the MSP Board of Directors, was an integral part of putting this night together and the MSP Board and staff say, "Thank you Karin for all of your help!"

Staff at the Manitoba Society of Pharmacists would like to congratulate those who have completed their studies and to encourage those who are continuing in the pharmacy program.

MSP is looking forward to hosting another event again next year and encourages the students to participate. Have a fantastic summer!

2nd Place – Hot Chicks
The 2nd place finishers from left to right: Joel Pankewich, Jasdeep Ruprai, Alvin Agpalza, Michael Jassal, and Derek Wong

3rd Place – The Best There Was, the Best There Is, the Best There Ever Will Be!
From left to right: Jay Rich (MSP Past President), Jason Pankratz (Former MSP Board Member) and Jill Ell, (MSP Assistant Executive Director)

Meet the 2011–2013 Board of Directors

Mel Baxter, *President*

Mel Baxter graduated from the Faculty of Pharmacy at the University of Manitoba in 1970. He is employed in community retail pharmacy as a Pharmacist Manager at Valley Super Thrifty Pharmacy in Morris. Mel has been a Director on the Board of the Manitoba Society of Pharmacists since 2005 and is currently President. He is Chair of the Government Relations Committee, and Co-Chair of the Insurance Committee. Mel also serves on the Economics and Pharmacare Committees. He was the MSP representative on the Manitoba Government Pharmacare Expert Review Advisory Panel to review the Auditor General's Report on the Provincial Pharmacare Program. Mel was a member of the MSP-MPhA Steering Committee Working Group to develop new regulations to Bill 41 which were successfully passed in 2010. Mel strives to increase the scope of practice for pharmacists through medication therapy review and management, prescription adaptation and injection authority. With drug shortages and dwindling health dollars, Mel continues to advocate for pharmacists at government and stakeholders levels to enhance the delivery of healthcare to Manitobans. Mel is married to Yvonne and they have four grown children and three grandchildren.

Gayle Romanetz, *Vice-President*

Gayle has been an active participant in many provincial regulatory and advocacy groups throughout her career. She currently serves on the MSP Board and Executive as Vice-President. She Co-Chairs the Professional Relations Committee which oversees a number of working groups including Pharmacy Awareness, Tobacco Reduction, Pharmacist Education, and the Manitoba Medication Return Program. She held an interim position as co-secretary treasurer and is a member of the MPhA Board of Examiners and the Standards of Practice Committee. Gayle is actively involved with the Manitoba Tobacco Reduction Alliance which is developing recommendations in respect to a comprehensive provincial smoking cessation framework.

Gayle is a 1984 University of Manitoba graduate and is licensed in Manitoba and Ontario. She is employed as a community pharmacist and provides support to pharmacists in Manitoba, Saskatchewan and NW Ontario. Her experience working for a national employer has given her the opportunity to experience the reality of drug reform and an expanded scope of practice in Ontario and most recently, Saskatchewan.

Gayle considers it a great privilege to work on behalf of Manitoba pharmacists.

Jeff Uhl, *Second Vice-President*

Jeff was born in Winnipeg and raised on the family farm in Erickson, Manitoba. He graduated from the Faculty of Pharmacy here in Manitoba in 1992, and has been involved in the practice of community retail pharmacy ever since. Jeff has worked with various Aboriginal groups in remote communities to advance the availability of pharmacy and physician services. He has recently been a member of various groups including the MPhA Distance Care Sub-committee and the MPhA Records Sub-committee, and believes that this is a very exciting time for pharmacy in Manitoba. Jeff was appointed to the MSP Board of Directors in April of 2010 and was elected to the Board in April of 2011. He has served on the Professional Relations Committee and chaired the Pharmacist Awareness Week Sub-Committee. Jeff chairs the newly created Public Relations Committee.

Jeff is married to Jeanne, a physiotherapist, and they are kept busy with two teenagers. His personal interests include cooking and photography.

Alison Desjardins, *Honorary Secretary Treasurer*

Alison (Whitaker) Desjardins has been practicing community pharmacy for 16 years, the first 5 years in Winnipeg and Brandon, and the past 11 years as a pharmacy owner/manager in Birtle. Alison was elected to the MSP Board of Directors in April 2009 and subsequently re-elected in 2011. She previously served on the Board for three years earlier in her career. As an MSP Board member, Alison's particular focus has been Economics and to that end she is an active participant in the current Personal Care Home and NIHB negotiations. She is Chair of the Pharmacare Committee and the Good Governance Committee, and is a member of the Economics, Communication, and Professional Relations Committees. Alison was elected to the MSP Executive as Honourary Secretary Treasurer in 2010 and again in 2011. Alison participates on MPhA's Standards of Practice committee, particularly the Methadone and PCH groups. Closer to home, she is a member of the local palliative care committee, and on the board of the local nursery school and daycare. Alison is committed to MSP's role in advancing the pharmacy profession and seeks to continue working hard to promote the value of the pharmacist on the health care team. She is married to Steve and they have three children.

Greg Harochaw, *Economics Committee Chair*

Greg graduated in 1982 with a B.Sc. Pharmacy from the University of Manitoba. Greg joined Tache Pharmacy as the pharmacy manager in July of 2000 increasing his skills in the art of specialty compounding

and specializing in erectile dysfunction, palliative care and most notably pain management. As a result, he has become a knowledgeable and accessible resource to physicians, nurse practitioners, nurses, pharmacists and patients.

Gregory embraces every opportunity to expand and increase his knowledge on cutting edge technology in his areas of expertise. He has been a guest speaker for various venues and has recently appeared in "Pharmacy Practice" magazine for his work with pain management. He had an article published about the treatment of erectile dysfunction in "Our Voice" magazine and has also been recently nominated for a Commitment to Care and Service Award.

A man of deep commitment to others, Greg pours a lot of energy into his family and his faith. Aside from these passions, Greg has maintained a lifelong relationship with the game of golf and has discovered an interest in home renovations. Gregory resides in Winnipeg with his beautiful wife Kathryn and their family of five.

Britt Kural, *Professional Relations Co-Chair, Insurance Committee Co-Chair*

Britt Kural graduated from the University of Manitoba in 1999. She has had varied experiences in her practice. She has worked in both rural and urban Manitoba, starting her career in Thompson. Britt spent approximately 2 years practicing in Alberta working as a staff pharmacist and a pharmacy manager with Shoppers Drug Mart. She spent some time providing international pharmacy services upon returning to Manitoba. Following that, she returned to working as a staff pharmacist with Shoppers Drug Mart while working with the Faculty of Pharmacy as a part time Pharmacy Practice instructor. For the last two years, Britt has been an owner of Shoppers Drug Mart, currently operating a 24 hour location on Pembina Hwy in Winnipeg. Her practice interests include providing unique patient specific dosage formulations as well as Diabetes Education, having been certified twice with the Canadian Diabetes Association since 2001.

Alan Lawless, *Communication Committee Chair*

Alan Lawless graduated from the Faculty of Pharmacy at the University of Manitoba in 2000. He started his career at Shoppers Drug Mart on Marion Street in Winnipeg, MB and spent three years working in IPS pharmacy. Since 2005 he has been the Associate owner of the Shoppers Drug Mart at 1017 McPhillips Street in Winnipeg. Alan has furthered his pharmacy education by completing specialty certificates in pharmacy compounding and methadone maintenance therapy. His involvement in pharmacy outside of the dispensary began with a four year term as a Shoppers Drug Mart Peers Representative. He currently serves as the chair of the Herzing College Advisory Board for their Pharmacy Technician Program and is a member of the MPhA Discipline Committee. His involvement with MSP includes serving on the Professional Relations Committee and Communication Committee. He was recently elected to the MSP Board of Directors and is determined to see advancement in the profession of pharmacy. Through his involvement in MSP, he will work towards fostering the newly acquired expanded scope of pharmacists and the economic interests of the profession. Recently, Alan married his wife, Kim, and couldn't be happier.

Darren Murphy

Darren graduated pharmacy at the University of Manitoba in 2007. Since then he has practiced for 8 months in a corporate-community setting before taking over the practice at Broadway Pharmacy in May of 2008. In August, 2009 Darren became a part-owner of Leila Pharmacy and then a part-owner of Greencrest Pharmacy a few months later. During this time Darren has been the recipient of a Young Leader's Award issued jointly by MSP and MPhA as well as a Life-long Learning certificate and has participated in both the Asthma-Trek and COPD-Trek programs. Darren has been working in collaboration with other pharmacists in his practice to extend pharmaceutical-care services to the community to benefit his patients and help promote the profession of pharmacy to the general public. With a long future ahead of him in this profession Darren would like to do his part to ensure the profession of pharmacy has a strong future both professionally and financially for all pharmacists in Manitoba.

Amy Oliver

Amy Oliver (Grossberndt) graduated in 2009 with a BSc. Pharm from the University of Manitoba. Upon graduation she started as a pharmacist at Shoppers Drug Mart in Osborne Village, then as a pharmacy manager at Simply Pharmacy in Selkirk. Amy has been the Associate Owner of Shoppers Drug Mart in Polo Park since January of 2010. Amy has 5 peer reviewed publications, 4 published abstracts, and 9 presented research posters in areas such as multiple sclerosis and neuropathic pain. Amy received a Canadian Institute for Health Research scholarship in 2008 for her work with the Multiple Sclerosis Clinic. In 2009 Amy was awarded the CSHP Hospital Pharmacy Student Award, an MSP/MPhA Young Leader Award, the Audrey Koz Memorial Prize, and the A. Langley Jones Leadership Award for aptitude in community pharmacy. She sat on the MPhA Regulation Drafting Ad Hoc Committee and currently sits on the Professional Development Committee, is an advisory board member and lecturer at Robertson College, and is a speaker at the Manitoba Pharmacy Conference. She also volunteers time giving community presentations and working with international pharmacy graduates seeking licensure. Amy is married to Robin Oliver, Associate Owner of Shoppers Drug Mart in Selkirk.

Six Essential Tips Toward An Effective Estate Plan

Your Estate Plan Is An Important Part Of Your Financial Health

I had the pleasure of meeting with a client family back in February. The son and daughter brought in their elderly mother to update her estate plan. As it turns out, it was a very good thing they did—the mother passed away at the age of 91 not three weeks after our meeting.

I think this underscores the importance of having an up-to-date estate plan. Without a well-written, co-ordinated estate plan, you risk leaving your family a legacy of legal hassles, financial hardship, and potential conflict. That's something nobody wants to leave behind.

Even if you don't have a large estate, a proper estate plan is essential. With that in mind, here are six tips that can help you create your estate plan.

Communicate early – and often

I encourage my clients to involve their families in the estate planning process. That doesn't mean you need to seek your family's approval on how you distribute your estate, but letting family members know your general intentions can help solve problems before they begin. A family discussion can give heirs a chance to voice their concerns before the plan is finalized. Appointing an executor from outside the family is another good idea as an outsider can function as a neutral mediator in case of disputes.

Write your will

Without a will, you will leave the distribution of your assets to a prescribed government formula that may not reflect your true intentions. Perhaps more importantly, the absence of a will can delay the distribution of assets to family members: someone will have to apply to the court for such authority, and that can take time, and create hassles for grieving family members. Because finances and family situations change (and so does tax law), you'll want to review your will every two years, or whenever your individual circumstances change dramatically.

Appoint an executor and assign a power of attorney

Think of the executor as the "manager" of your estate. He or she will handle paperwork, settle bills, and distribute assets. That takes a fair bit of organization and financial know-how, so make sure your choice has the experience necessary for the job. In a similar fashion, make sure to assign a Power of Attorney—the person responsible for handling your affairs should you become incapacitated. If you are reluctant to place all that power in the hands of one person, name two to act jointly.

Think about charitable giving

As well-meaning as it may be, a charitable donation is still a financial decision, with important tax implications. A charitable donation shouldn't be a last-minute decision. You should think carefully about any intended charitable bequests before you finalize your estate plan, and utilize strategies to minimize taxes and maximize money for your chosen cause.

Succession planning

If you have a business, make sure to address succession issues thoroughly. Depending on the complexity of your business affairs, it may make sense to create a separate succession plan that exists alongside your estate plan. Such a plan would appoint an appropriate successor for the business (whether from within the family or someone from outside it), and clarify issues of ownership and management (two different things!) among family members.

Seek professional help!

An absolute must when it comes to estate planning. Because of the legal and financial complexities involved with organizing an estate plan, it's essential to seek out a professional opinion. After all, not only can proper estate planning make a substantial difference to your tax liability, it can make all the difference to your family's future!

Smoking and Drug Interactions

Professional Relations Committee

Objective:

To provide education to pharmacists with regard to drug interactions and smoking.

PAM JOHNSON
B.Sc.(Pharm.)

Highlights:

1.) Prelude
2.) Types of Interactions
3.) Pharmacokinetic Drug Interactions
4.) Pharmacodynamic Drug Interactions
5.) Drug Interactions After Smoking Cessation
6.) Postlude

Prelude:

When researching this article, I found it very difficult to locate information on this topic, and therefore would not be surprised to hear that pharmacists in general are not very familiar with smoking and drug interactions. Every day pharmacists are faced with situations involving different drug interactions. Based on their experience and expertise, pharmacists react instinctively to call the physician, counsel the patient, or fill the prescription relying upon their appropriate professional judgement to make the most suitable decisions regarding the safety of the patient.

Yet there is one forgotten drug interaction that continues to be a missed opportunity for us. When you interact with your patients or other health care professionals, do you remember to ask if your patient smokes? Do you document each patient profile with information with regards to your patient's smoking status? When someone is trying to quit smoking, do you consider how his or her current medications may be affected? These are all important points to consider.

Types of Interactions:

Smoking primarily increases the metabolism of the interacting medication, therefore a patient who smokes often requires higher doses of the medication in order for it to be effective. Conversely, after quitting smoking, the metabolism of the medication is no longer affected, therefore indicating that patients may need a lower dose of that same medication.

There are two types of interactions that need to be considered when it comes to smoking: pharmacokinetic drug interactions, and pharmacodynamic drug interactions.

Pharmacokinetic drug interactions:

'Pharmacokinetic drug interactions affect the absorption, distribution, metabolism or elimination of other drugs, potentially causing an altered pharmacologic response.'[1] These types of interactions arise from substances in smoking called polycyclic aromatic hydrocarbons (PAHs). These polycyclic aromatic hydrocarbons come from incomplete combustion of the chemicals found in a cigarette, and these are the most common types of drug interactions found in smoking.'The PAHs are potent inducers of cytochrome P-450 (CYP) isoenzymes 1A1, 1A2, and possibly 2E1.'[1]Therefore, medications involved with this type of metabolic pathway may need to be adjusted to higher doses to be effective in a patient who smokes. 'Other compounds such as acetone, pyridine, heavy metals, benzene, carbon monoxide, and nicotine may also interact with hepatic enzymes, but their effects appear to be less significant.'[1] Medications that are metabolised through glucuronide conjugation can also be affected by cigarette smoke and also need to be considered.[1] Because it is the polycyclic aromatic hydrocarbons that primarily affect CYP interactions, and not nicotine itself, the drug interactions involving pharmacokinetic interactions are not affiliated with nicotine replacement therapies, as there are no polycyclic aromatic hydrocarbons involved. However, nicotine can have pharmacodynamic interactions which will be discussed later in the article.

Listed in the following chart are the various types of smoking and drug interactions that have been identified. Some of the most important pharmacokinetic drug interactions involve caffeine, clozapine, fluvoxamine, insulin, olanzapine, tacrine and theophylline. This chart has been reproduced with permission, from the Rx for Change: Clinician-Assisted Tobacco Cessation program. http://rxforchange.ucsf.edu.

Caffeine: Caffeine is a very significant drug interaction with smoking. It is metabolised by the CYP 1A2 pathway by over 99%, and its clearance is increased by 56% in non-smokers.[1] Due to these facts it is extremely important to assess a smoker's caffeine intake when they are going to quit smoking. It is recommended to decrease one's intake by 50% to avoid excessive caffeine in the body, paying attention to all forms of caffeine including coffee, soft drinks, chocolate, supplements, herbal products, etc. The symptoms of excessive caffeine include similar symptoms of nicotine withdrawal including irritability and insomnia, and this can make it difficult to assess whether these symptoms are from nicotine withdrawal or caffeine toxicity.

Drug Interactions with Tobacco Smoke

Many interactions between tobacco smoke and medications have been identified. Note that in most cases it is the tobacco smoke—not the nicotine—that causes these drug interactions. Tobacco smoke interacts with medications through pharmacokinetic (PK) and pharmacodynamic (PD) mechanisms. PK interactions affect the absorption, distribution, metabolism, or elimination of other drugs, potentially causing an altered pharmacologic response. The majority of PK interactions with smoking are the result of induction of hepatic cytochrome P450 enzymes (primarily CYP1A2). PD interactions alter the expected response or actions of other drugs. The amount of tobacco smoking needed to have an effect has not been established, and the assumption is that any smoker is susceptible to the same degree of interaction. The most clinically significant interactions are depicted in the shaded rows.

Drug/Class	Mechanism of Interaction and Effects
Pharmacokinetic Interactions	
Alprazolam (Xanax)	▪ Conflicting data on significance, but possible ↓ plasma concentrations (up to 50%); ↓ half-life (35%).
Bendamustine (Treanda)	▪ Metabolized by CYP1A2. Manufacturer recommends using with caution in smokers due to likely ↓ bendamustine concentrations, with ↑ concentrations of its two active metabolites.
Caffeine	▪ ↑ Metabolism (induction of CYP1A2); ↑ clearance (56%). Caffeine levels likely ↑ after cessation.
Chlorpromazine (Thorazine)	▪ ↓ Area under the curve (AUC) (36%) and serum concentrations (24%). ▪ ↓ Sedation and hypotension possible in smokers; smokers may require↑ dosages.
Clopidogrel (Plavix)	▪ ↑ Metabolism (induction of CYP1A2) of clopidogrel to its active metabolite. ▪ Clopidogrel's effects are enhanced in smokers (≥10 cigarettes/day): significant ↑ platelet inhibition, ↓ platelet aggregation;while improved clinical outcomes have been shown, may also ↑ risk of bleeding.
Clozapine (Clozaril)	▪ ↑ Metabolism (induction of CYP1A2); ↓ plasma concentrations (18%). ▪ ↑ Levels upon cessation may occur; closely monitor drug levels and reduce dose as required to avoid toxicity.
Erlotinib (Tarceva)	▪ ↑ Clearance (24%); ↓ trough serum concentrations (2-fold).
Flecainide (Tambocor)	▪ ↑ Clearance (61%); ↓ trough serum concentrations (25%).Smokers may need ↑ dosages.
Fluvoxamine (Luvox)	▪ ↑ Metabolism (induction of CYP1A2); ↑ clearance (24%); ↓ AUC (31%); ↓ plasma concentrations (32%). ▪ Dosage modifications not routinely recommended but smokers may need↑ dosages.
Haloperidol (Haldol)	▪ ↑ Clearance (44%); ↓ serum concentrations (70%).
Heparin	▪ Mechanism unknown but ↑ clearance and ↓ half-life are observed. Smoking has prothrombotic effects. ▪ Smokers may need ↑ dosages due to PK and PD interactions.
Insulin, subcutaneous	▪ Possible ↓ insulin absorption secondary to peripheral vasoconstriction; smoking may cause release of endogenous substances that cause insulin resistance. ▪ PK & PD interactions likely not clinically significant; smokers may need ↑ dosages.
Irinotecan (Camptosar)	▪ ↑ Clearance (18%); ↓ serum concentrations of active metabolite, SN-38 (~40%; via induction of glucuronidation); ↓ systemic exposure resulting in lower hematologic toxicity and may reduce efficacy. ▪ Smokers may need ↑ dosages.
Mexiletine (Mexitil)	▪ ↑ Clearance (25%; via oxidation and glucuronidation); ↓ half-life (36%).
Olanzapine (Zyprexa)	▪ ↑ Metabolism (induction of CYP1A2); ↑ clearance (98%); ↓ serum concentrations (12%). ▪ Dosage modifications not routinely recommended but smokers may need↑ dosages.
Propranolol (Inderal)	▪ ↑ Clearance (77%; via side-chain oxidation and glucuronidation).
Ropinirole (Requip)	▪ ↓ Cmax (30%) and AUC (38%) in study with patients with restless legs syndrome. ▪ Smokers may need ↑ dosages.
Tacrine (Cognex)	▪ ↑ Metabolism (induction of CYP1A2); ↓ half-life (50%); serum concentrations 3-fold lower. ▪ Smokers may need ↑ dosages.
Theophylline (Theo Dur, etc.)	▪ ↑ Metabolism (induction of CYP1A2); ↑ clearance (58–100%); ↓ half-life (63%). ▪ Levels should be monitored if smoking is initiated, discontinued, or changed.Maintenance doses are considerably higher in smokers. ▪ ↑ Clearance with second-hand smoke exposure.
Tricyclic antidepressants (e.g., imipramine, nortriptyline)	▪ Possible interaction with tricyclic antidepressants in the direction of ↓ blood levels, but the clinical significance is not established.
Tizanidine (Zanaflex)	▪ ↓ AUC (30-40%) and ↓ half-life (10%) observed in male smokers.
Warfarin	▪ ↑ Metabolism (induction of CYP1A2) of R-enantiomer; however, S-enantiomer is more potent and effect on INR is inconclusive. Consider monitoring INR upon smoking cessation.
Pharmacodynamic Interactions	
Benzodiazepines (diazepam, chlordiazepoxide)	▪ ↓Sedation and drowsiness, possibly caused by nicotine stimulation of central nervous system.
Beta-blockers	▪ Less effective antihypertensive and heart rate control effects; possibly caused by nicotine-mediated sympathetic activation. ▪ Smokers may need ↑ dosages.
Corticosteroids, inhaled	▪ Smokers with asthma may have less of a response to inhaled corticosteroids.
Hormonal contraceptives	▪ ↑ Risk of cardiovascular adverse effects (e.g., stroke, myocardial infarction, thromboembolism) in women who smoke and use oral contraceptives. Ortho Evra patch users shown to have 2-fold ↑risk of venous thromboembolism compared to oral contraceptive users, likely due to ↑ estrogen exposure (60% higher levels). ▪ ↑ Risk with age and with heavy smoking (≥15 cigarettes per day) and is quite marked in women ≥35 years old.
Opioids (propoxyphene, pentazocine)	▪ ↓ Analgesic effect; smoking may ↑ the metabolism of propoxyphene (15–20%) and pentazocine (40%). Mechanism unknown. ▪ Smokers may need ↑ opioid dosages for pain relief.

Adapted and updated, from Zevin S, Benowitz NL. Drug interactions with tobacco smoking. *Clin Pharmacokinet* 1999;36:425–438.

Also, the addition of these two symptoms can make it more difficult for a patient to successfully quit. Health Canada recommends a daily caffeine intake of no more than 400mg per day (equivalent to three 8 ounce cups of brewed coffee), and 300mg per day for pregnant women, so it is important to consider caffeine intakes, especially for smokers, but even for non-smoking individuals as well.

Provided below is a chart with foods and the quantity of caffeine they contain (from Health Canada website). For more information about caffeine intake recommendations, and caffeine in general please visit the Health Canada website at: http://www.hc-sc.gc.ca/hl-vs/iyh-vsv/food-aliment/caffeine-eng.php.

Clozapine: 'is metabolized primarily by CYP1A2 but also by CYP2C19 and possibly CYP3A4.'[1] There have been a few studies indicating that plasma clozapine levels of smokers are less than that of non-smokers, one study by 81%, and another for male smokers by 67.9%.[1] Heavy smoking of more than 30 cigarettes a day affected plasma clozapine concentrations at a daily dose of 100mg.[1] However, studies did not show significant differences between smokers and non-smokers receiving 300 to 600mg doses.[1]

Olanzapine: '… is metabolized by N-glucuronidation, with CYP1A2 and CYP2D6 being minor metabolic pathways.

Smokers have been found to have an approximate five-fold-lower dose-corrected steady-state plasma olanzapine concentration compared with non-smokers. Another study found the dose-corrected plasma concentrations of olanzapine to be 12% lower in patients who smoke. Olanzapine's clearance is increased by 98% in smokers.'[1]

It is important to note that quetiapine is not affected by smoking. In patients taking clozapine and olanzapine it is recommended to use an 'average dosage-correction factor of 1.5 ... in smokers'[1] for both medications. That means that the dosage of these medications may have to be increased by 1.5 within the first 2-4 weeks in someone who starts smoking, and a dose decrease needs to be considered in someone who quits.

Fluvoxamine: '…is extensively metabolised by CYP1A2 and polymorphic CYP2D6 and is a potent inhibitor of CYP1A2.'[1] Various studies show different results of differences in the steady-state serum concentrations of those who smoke vs. non-smokers, so currently dosage modification is not routinely recommended. It is important to note, however, that some patients who smoke may still need higher doses of this medication in order for fluvoxamine to be equally effective as it is in a non-smoker.

Tacrine: 'an infrequently used drug for the treatment of Alzheimer's disease significantly interacts with smoking. The half-life of tacrine is decreased by 50%, and serum tacrine concentrations are threefold lower in patients who smoke.'[1]

Product	Serving Size (unless otherwise stated)	Milligrams of Caffeine (approx. Values)
Coffee		
Brewed	8 oz 237 ml (1 cup)	135
Roasted and ground, percolated	8 oz 237 ml (1 cup)	118
Roasted and ground, filter drip	8 oz 237 ml (1 cup)	179
Roasted and ground, decaffeinated	8 oz 237 ml (1 cup)	3
Instant	8 oz 237 ml (1 cup)	76-106
Instant decaffeinated	8 oz 237 ml (1 cup)	5
Tea		
Average blend	8 oz 237 ml (1 cup)	43
Green	8 oz 237 ml (1 cup)	30
Instant	8 oz 237 ml (1 cup)	15
Leaf or bag	8 oz 237 ml (1 cup)	50
Cola Beverages		
Cola beverage, regular	12 oz 355 ml (1 can)	36-46
Cola beverage, diet	12 oz 355 ml (1 can)	39-50
Cocoa Products		
Chocolate milk	8 oz 237 ml (1 cup)	8
1 envelope hot-cocoa mix	8 oz 237 ml (1 cup)	5
Candy, milk chocolate	1 oz 28g	7
Candy, sweet chocolate	1 oz 28g	19
Baking chocolate, unsweetened	1 oz 28g	25-58
Chocolate cake	2.8 oz 80g	36
Chocolate brownies	1.5 oz 42g	10
Chocolate mousse	3.2 oz 90g	15
Chocolate pudding	5.1 oz 145g	9

Table 1: The Caffeine Content of Specific Beverages and Foods

Values in table referenced from the following sources: Harland, B.F. 2000. Caffeine and nutrition. Nutrition 16(7-8):522-526. Shils, et al., 1999. Modern nutrition in health and disease. 9th Edition. Williams and Wilkins. Waverly Company, Baltimore

Theophylline: 'is highly metabolized by CYP1A2'[1] which leads to an increased clearance by 58-100% and its half-life decreased by 63% in smokers compared with nonsmokers.[1] Second-hand smoke can also affect concentrations, and it is important to also consider children

exposed in these environments, as 'theophylline's clearance increases by 51% in children exposed to the second-hand smoke of parents who smoke at least 20 cigarettes daily.'[1] Various studies have shown this interaction, and 'plasma theophylline levels should be routinely monitored in smokers, and dosages should be adjusted accordingly.[1]'

Pharmacodynamic Drug Interactions:

Pharmacodynamic drug interactions are those types of interactions that alter the expected response or actions of other drugs.[1]

Contraceptives: The most clinically relevant pharmacodynamic interaction with smoking is with combined hormonal contraceptives. Smoking over 15 cigarettes a day and using contraceptives together over the age of 35 is not recommended due to the increase risk of heart attack and stroke, as well as thromboembolism including venous thrombosis and pulmonary embolism. Although the risk of this interaction is lower than previously indicated due to the decrease in dose of contraceptives that are routinely prescribed today vs. years ago, it is still clinically relevant and important. For those in this category, progesterone only contraceptives can be used as the alternative. It is important to note that this interaction is for all ages, not only those over 35, and in general, a woman who is using contraceptives should try to avoid smoking altogether. 'The clinical efficacy of hormonal contraceptives is not reduced in smokers'.[1]

Other types of contraceptives are also considered to be clinically important. Evra for example, now has a warning indicating that estrogen levels may be 60% more than that of a 35ug estrogen containing tablet, and Nuvaring is also considered to fit into this drug interaction category.

Inhaled Corticosteroids: Another important pharmacodynamic interaction is the use of inhaled corticosteroids. The efficacy of these types of medications may be reduced in patients who smoke. One study showed that in 'patients with mild asthma receiving 1000ug daily of inhaled fluticasone (as two puffs twice daily with a metered-dose inhaler), the increase in peak expiratory flow at three months was significantly greater in non-smokers (27 L/min), compared with a decrease of 5 L/min in smokers (p=0.006).'[1] There was also a study comparing smokers and non-smokers with mild asthma using 400ug daily of beclomethasone; it was found that in smokers there was significantly less improvement in morning peak expiratory function but this was not found in a daily dose of 2000ug.[1] In general, patients with asthma who smoke should obviously be encouraged to quit smoking not only due to their asthma alone, but also with regard to the potential decrease in efficacy of inhaled corticosteroids.

Drug Interactions After Smoking Cessation:

When a patient quits smoking, it important to note what medications that person is taking to assess any drug interactions that may become evident along the way. Each person clearly reacts to different medications in different ways, and it can be difficult to assess when the induction of CYP1A2 dissipates. In a study by Faber and Fuhr using caffeine clearance, it was determined that the half-life of CYP1A2 activity after smoking cessation was 38.6 hours.[1] Based on this and other information found within that study, the authors recommended a reduction in dose of an interfering medication metabolised by CYP1A2 by 10% per day for the first four days of quitting smoking.[1] The subjects in the study were heavy smokers, but in general, this conservative approach perhaps should be considered in all smokers, especially with medications with a narrow therapeutic index such as theophylline.[1]

Postlude:

Smoking is associated with many drug interactions including pharmacokinetic and pharmacodynamic interactions. It is important to note that smoking interacts primarily with CYP1A2 medications, and smokers may need a higher dose of a medication in order to benefit from its full effectiveness, and conversely may need a lower dose once the patient has quit smoking. Smoking interactions can occur with many medications, including caffeine, theophylline, clozapine, olanzapine, tacrine, inhaled corticosteroids, hormonal contraceptives, and others. It is important to ask your patients about their smoking habits and perhaps incorporate this information into the pharmacist's plan to help the patient quit smoking. With the education and regular access to hundreds of patients who smoke, pharmacists can really play a role in helping a patient with smoking information, whether it be drug interactions, or how to help a patient successfully quit.

References:

1.) Kroon, Lisa A. Pharm. D. Drug Interactions With Smoking (From American Journal of Health-System Pharmacy). Posted 10/01/2007; American Journal of Health-System Pharmacy. 2007;64(18):1917-1921. © 2007 American Society of Health-System Pharmacists. Printed by Medscape, and accessed on April 21 – May 1, 2011.

2.) Rx for Change: Clinician-Assisted Tobacco Cessation program. Copyright © 1999-2011 The Regents of the University of California. All rights reserved. http://rxforchange.ucsf.edu.

3.) Health Canada Website: Caffeine (Healthy Living). Website: http://www.hc-sc.gc.ca/hl-vs/iyh-vsv/food-aliment/caffeine-eng.php. Accessed May 1, 2011.

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Treatment and Prophylaxis of Deep Vein Thrombosis: So Many Choices

Introduction

Anticoagulation can often be an intimidating subject in the realm of cardiology due to the vast number of evidence-based studies that often contradict one another. In an attempt to clarify the current recommendations for both the treatment and prophylaxis of venous thromboembolism (VTE) and pulmonary embolism (PE), this article will touch on the 2008 CHEST guideline recommendations, highlight several important clinical trials supporting these guidelines and will conclude with brief descriptions of some of the newer therapies emerging in this field.

GRACE FRANKEL
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Anticoagulant Treatment Options

Treatment of VTE/PE can include a first-line choice of one of the following anticoagulants: unfractionated heparin (UFH), low molecular weight heparins (LMWH) or fondaparinux. But what are the reasons for choosing one agent over another?

Unfractionated heparin administered by intravenous infusion is generally reserved for patients with severe renal impairment defined as a creatinine clearance of <30mL/min. This is due to the fact these patients are often being followed closely by a renal specialist and can obtain the required aPTT monitoring, are generally more sick and/or hospitalized or do not qualify for LMWH therapy due to their severely impaired renal function. UFH can also be administered subcutaneously twice daily. This regimen requires less frequent aPTT monitoring as the SC depot is released at a predictable rate and is more convenient for the patient since they do not require an intravenous line.

Low molecular weight heparins have many advantages over UFH and are generally the recommended therapy of choice for VTE treatment. LMWHs do not require aPTT monitoring. This is due to the pharmacology of LMWH. Only the small saccharide chain that inhibits factor Xa (and some IIa activity) is required to produce anticoagulant effects. This differs from heparin's large molecular size that binds to antithrombin and encourages deactivation of clotting Factors II, IX, X, XI and XII. The specificity of LMWHs as well as the prolonged half-life allow for once-daily or twice-daily dosing which provides a viable outpatient regimen.

Fondaparinux, an indirect Factor Xa inhibitor is another alternative for treatment of DVT. Due to its high cost, this drug is generally reserved for patients who have had a history of heparin-induced thrombocytopenia. This condition is characterized by a delayed (5-14 days post-start of heparin) immune reaction that generates antibodies to heparin and produces a pro-coagulant state. The most relevant clinical finding is a drastic drop in platelets, ≥50% from baseline. Patients must be switched immediately to an alternative anticoagulant (bivalrudin, argatroban, fondaparinux) for the platelets to recover and to prevent thrombosis. Fondaparinux has been approved for the treatment of DVT and PE.

Prophylaxis and Bridging Therapies

After a patient has experienced a VTE regardless of contributing factors, anticoagulation therapy with warfarin or other newer anticoagulants is warranted to prevent future thromboembolic events.

The current guidelines recommend starting warfarin therapy *with either* UFH, LMWH or fondaparinux together on day 1. Delaying warfarin therapy results in an increased risk of recurrent thromboembolic events. But what about bleeding risk? Warfarin's vitamin K antagonist activity can take up to 5 days to be fully effective. This is due to the pharmacokinetics of clotting factors and their differing half- lives. The UFH/LMWH or fondaparinux immediately inhibits its active clotting factors and allows for them to be cleared from the body. Warfarin is added to prevent the generation of new clotting factors. This is why a "bridging" regimen is necessary for anticoagulation. A minimum of 5 days of overlap is required until the INR is stable in the therapeutic range for 2 days. It is at this time the UFH/LMWH or fondaparinux can safely be discontinued.

EXECUTIVE SUMMARY

1. First-line treatment options for DVT/PE include UFH, LMWH or fondaparinux
2. Bridging therapy to warfarin is required when switching from UFH/LMWH or fondaparinux for a minimum of 5 days and until INR >2.0 for 2 days
3. Duration of warfarin (or other anticoagulant therapy) depends on precipitating factors of the thromboembolic event
4. Fondaparinux should be reserved for patients with a history of heparin-induced thrombocytopenia
5. Dabigatran, rivaroxaban and apixaban are newer anticoagulants that have promise to potentially replace warfarin and do away with monthly INR monitoring

Duration of Therapy

The overall *duration* of anticoagulant therapy differs between patients based on previous VTE history, secondary causes of the event or if the event was idiopathic. Figure 1 below summarizes the recommended treatment durations based on cause(s) of thrombotic event.

Emerging anticoagulants

Many patients express that monthly INR monitoring for warfarin therapy is inconvenient and undesirable. Genetic variability, dietary vitamin K intake as well as endless drug interactions can all affect INR. The ideal anticoagulant would include the following characteristics: once-daily dosing, no monitoring required, affordable, easy to reverse if signs of bleeding are present and few side effects or drug interactions. Although this is an idealistic situation, there are some emerging therapies that are aiming to fulfill these goals.

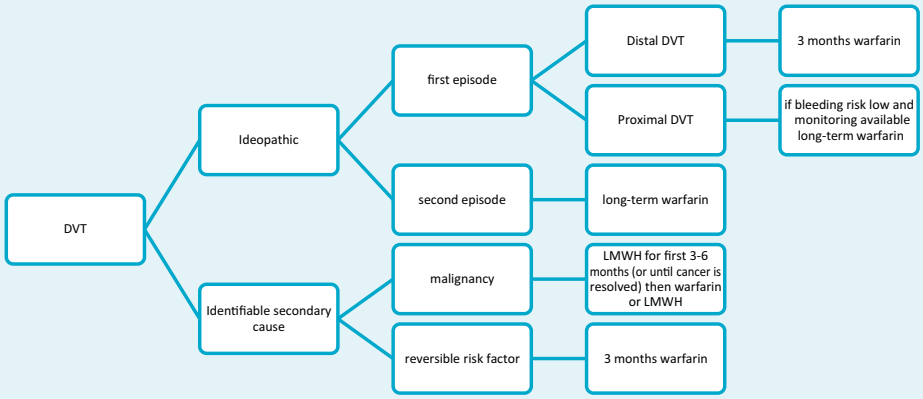

Figure 1: *Duration of anticoagulant treatment based on cause of thrombotic event*

Dabigatran

Classified as a direct thrombin inhibitor, dabigatran inhibits thrombin formation, thus preventing the formation of clots. The usual dose is 150mg twice daily, but in renal impairment (<30mL/min) 75mg twice daily. Due to its specificity, INR monitoring is not required and is potentially safer in terms of bleeding risk as compared to warfarin therapy. However, due to the fact this is a newer agent, generics are currently not available, drug plans are reluctant to cover this medication and the expense may be a barrier for many patients.

The RE-COVER trial compared dabigatran 150mg twice daily versus LMWH or UFH for 6 days with bridging to warfarin (INR 2-3) in patients with acute symptomatic VTE. Primary outcomes of this trial included recurrent VTE or fatal PE. In the dabigatran group, the primary outcome occurred in 2.4% of patients versus 2.1% of patients on warfarin therapy (p=0.002). Major or minor bleeding occurred in 5.6% of dabigatran patients vs. 8.8% of patients on warfarin. This trial showed that dabigatran is non-inferior to warfarin in terms of efficacy and shows *less* of a bleeding risk.

Anticoagulant	Usual Dose	Dosage Adjustment in Renal Impairment	Comments
Unfractionated Heparin	*Treatment:* 80 units/kg IV load then 18 units/kg/hr IV infusion *Prophylaxis:* 5000 units SC BID	Not required	Recommended for patients with severe renal impairment
Enoxaparin LMWH	*Treatment:* 1mg/kg BID or 1.5mg/kg OD SC *Prophylaxis:* *30mg BID or 40mg OD SC*	<30 mL/min 30mg SC OD	Use BID dosing in obese patients, and consider monitoring Xa due to high dose
Daltaparin LMWH	*Treatment:* 100 Units/kg BID or 200 units/kg OD *Prophylaxis:* 5000 units SC daily for VTE prophylaxis	<30 mL/min dose adjustment not necessary but monitoring anti Xa levels is recommended	Use BID dosing in obese patients, and consider monitoring Xa due to high dose
Fondaparinux indirect thrombin inhibitor	*Treatment:* *5 mg SC OD if <50kg, 7.5mg SC if 50-100kg and 10mg SC if >100kg* *Prophylaxis: 2.5mg SC OD*	<30 mL/min – contraindicated	Recommended for patients with a history of heparin induced thrombocytopenia
Dabigatran Direct thrombin inhibitor	*Prophylaxis:* 150mg BID	Decrease to 75mg BID if <30mL/min	Decrease to 110 mg BID if high risk of bleeding or elderly (>80 years)
Rivaroxiban Direct Factor Xa inhibitor	*Prophylaxis:* 20 mg OD	<30mL/min – not recommended	For knee/hip replacement DVT prophylaxis

Rivaroxaban and Apixaban

Both rivaroxaban and apixaban are direct Factor Xa inhibitors. Currently, apixaban is not available in Canada, but rivaroxaban has been approved for the prevention of thrombosis post knee-replacement or hip-replacement surgery. These agents also do not require monthly INR monitoring.

The EINSTEIN-DVT Evaluation evaluated rivaroxaban 15mg BID for 3 weeks, then 20mg OD versus enoxaparin 1mg/kg BID for 5 days bridging to warfarin (INR2-3) in patients with acute, symptomatic DVT (excluded PE) for a mean treatment duration of 6 months. The primary outcome of recurrent VTE occurred in 2.1% of patients in the rivaroxaban group and 3.0% of patients in the enoxaparin/warfarin group ($p<0.001$). There were equivalent rates of major and minor bleeds in both groups (8.1%).

The ADVANCE-2 and ADVANCE-3 trials evaluated apixaban 2.5mg BID versus enoxaparin 40mg SC OD in patients undergoing knee replacement (ADVANCE-2) or hip replacement (ADVANCE-3) surgery. Both trials used composite of DVT, nonfatal PE and all-cause mortality as primary endpoints and found in both trials that apixaban is more effective than enoxaparin and poses similar bleeding risks.

Although direct thrombin inhibitors and direct Factor Xa inhibitors show promise, a major disadvantage to both is their reversibility. Where heparin can be reversed with protamine and warfarin with vitamin K, there are currently no antidotes for these newer medications in cases of severe bleeding. Infusions of packed red blood cells, hemodialysis and/or activated charcoal are the management strategies for over-anticoagulation.

To conclude, specific patient factors govern the choice of anticoagulant therapy. There are several exciting developments in the prevention and prophylaxis of DVT, but currently warfarin still remains the mainstay of anticoagulant management. Monitoring of warfarin plays a huge role in clinical outcomes of preventative therapy, a role which the pharmacist can definitely contribute.

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Q&A: GETTING TO KNOW YOUR MANITOBA PHARMACISTS

Name: **Harvey Cantin**

Graduation: U of M 1956, and have been practicing ever since, 55 years

Currently Working: Taylor Pharmacy, Gimli, MB.

Accomplishments in Pharmacy:

- Past President MSP (1975-1978)
- Past Member Pharmacists at Risk Committee
- Past Member MPhA Honors & Awards Committee
- Vice President ACCP (Association of Canadian Community Pharmacies)
- Past Director CPhA, Charter Member
- Pharmacist of the Year 1980
- Opened Sakku Drugs in Rankin Inlet, NU and managed it for 4 years (the best 4 years of my life)
- Owned and operated Cantin Drugs Limited in Charleswood for 30 years.

Family: Two sons, one an economist in Boston and one a journalist, and a daughter who is a Child Clinical Psychologist.

Hobbies: Golf and photography

Community Activities:

- Charter member of the Charleswood Optimist Club
- Past Board member of the Charleswood Curling Club
- Board member Winnipeg Blue Bombers (10 years)

Favorite thing about Manitoba: It is the centre of Canada and it is easy to get anywhere.

Most relaxing vacation choice: Spending a few months each year in Texas where I have to golf whether I want to or not.

Pet Peeves: I don't have any.

Favorite fictional character: L'il Abner. Daisey Mae never did catch him on Sadie Hawkins Day.

What could you do without forever: Mosquitoes

What couldn't you do without: The daily newspaper, after all, my son and his wife are both journalists.

What do you love about pharmacy: I love talking to people. Also it gives me the opportunity to get out of the house. My wife says "it serves as her MENTAL HEALTH DAYS."

Do you know someone who is making a difference in the pharmacy community? We would like to highlight them in this article! Please contact the MSP office at (204) 956-6681 or info@msp.mb.ca.

Catastrophic Drug Coverage:

If Drug Bills Soar, Help Depends on Who and Where You Are

To be very sick in Canada is no easy thing. Not only must the patient endure it, but his budget, perhaps his family's fortune, can be hostage to the illness. Depending on where the patient lives and perhaps with what population group he or she is associated, catastrophically high drug costs will be covered a) generously, b) parsimoniously, or c) not at all. It is a patchwork of rules and a demonstration that budgetary compromises do not add up to a national policy.

"Provinces vary in their coverage of catastrophic drug costs," says Joel Lexchin, M.D., Professor in the School of Health Policy and Management at York University in Toronto. "You can get a lot of coverage or none at all, just depending on where you live."

ANDREW ALLENTUCK

The case of the cancer medication bevacizumab is illustrative of how catastrophic cost coverage works. Often known by its brand name, Avastin, it is used to treat colorectal cancer and some forms of lung and brain cancer by inhibiting the growth of new blood vessels in the tumour. The cost, however, is high – around $30,000 for several months of extended life for patients.

Approved by Health Canada in 2005, provinces at first refused to cover the cost. Then, prodded by an avalanche of demands by patients and drug plan activists, the provinces, led by Ontario in 2008, agreed to cover patients' bills. In 2010, Prince Edward Island was the last province to agree to pick up the tab. Yet which province pays for what is still in the midst of bureaucratic and political analysis. Roche Canada, which sells the product, wants to expand coverage to patients with glioblastoma multiforma, a kind of brain cancer. B.C. covers it for that use. People with the bad luck to have the illness and to live elsewhere may, depending on their insurance plans, have to pay the bill themselves.

There is an issue in how much government and taxpayers should pay for catastrophic drug costs. At present, depending on one's province of residence, how long one has lived in the province, income level, and illness, drug costs must usually exceed 2% to 20% of income before a province or the feds cough up funding. Government fears that unqualified agreements to pay any and all drug costs would open the floodgates of expense as entitlements and allow drug makers and their sometime allies, prescribers, to drain the public purse. There is some merit in this fear.

The broadest drug plan in Canada by some measure is Quebec's. For a maximum premium of $954 per year, any patient without other drug insurance is enrolled. In the late 1990s, the plan collected $169 million in premiums and required $700 million of government funding. A decade on, the program has collected about $750 million in premiums and the provincial contribution has risen to $2.5 billion. That is 4% of Quebec's estimated $64 billion provincial budget for the 2010-2011 fiscal year.

In 2003, following recommendations by Roy Romanow of the commission that bore his name and the Senate Standing Committee on Social Affairs, Science and Technology, chaired by Senator Michael Kirby, Ottawa and the first ministers agreed to "take measures to ensure that all Canadians have reasonable access to catastrophic drug coverage." The intentions are good, but the language is inexact, for it is residence that qualifies patients for drug insurance, not nationality. Employment, being a member of the right population subgroup and even being in the right province at the right time determines if cancer or heart disease or other serious illness will kill a person's budget before it kills the patient.

If it is good policy to ensure that prescribed drugs do not bankrupt the sick, then a national drug policy is in order. Ottawa embarked on the National Pharmaceuticals Strategy, noting that there are 19 publicly funded drug plans in Canada: ten provincial, three territorial, and six federal. They add to the more than 1,000 private drug insurance plans offered by insurance companies, employers, unions and professional associations.

In a series of moves in the 1990s, the federal government defined its willingness to pay for prescription drugs for members of First Nations, Inuit, veterans, federal prisoners, members of the Canadian Forces, Mounties, refugee claimants and federal public service employees. The irony is that a prisoner in a federal institution may get more liberal coverage of drug costs than a resident of any province with an unblemished record of civic rectitude. It has to be noted, of course, that prisoners have little or no earned income. There is no choice but to pay their drug bills.

For persons who must rely on provincial catastrophic drug plans, all provinces and territories except Alberta,

which limits payouts on a formulary basis, and Nunavut, which pays 100% of qualifying costs, use income tests. Those tests range from 2% of net family income in British Columbia to 20% of net family income in Newfoundland and Labrador. Net family income is a skewed measure, for it widely includes grossed up dividends that are employed merely as a base for the dividend tax credit. Dividends received from public companies inflate gross income by 44%. As a basis for drug cost assistance, it is Alice in Wonderland accounting.

It is inevitable that a federal system of government, such as Canada's, will have inconsistent regulations for the coverage of catastrophic drug expense and, for that matter, the cost of children's lunches at school. For those who do not have sufficient income to pay for expensive drugs, the oddities of coverage are more than ironies. They can be the difference between getting a prescription filled and paying a heat bill in winter.

For example, as the 2009 Parliamentary report noted, a single person whose annual household income is $14,000 and whose drug costs to treat hypothyroidism is $807 would pay $490 a year through Saskatchewan's Special Support Program but only $375 under Ontario's Trillium Drug Program. Manitoba Pharmacare, by comparison, would pay $425.

What to do? In the decade or so that has elapsed since Ottawa and the provinces created the National Pharmaceuticals Strategy, good intentions have been announced and worthy goals set forth. One example is the pronouncement from Health Canada in 2006 asserting that "no Canadian should suffer undue financial hardship in accessing needed drug therapies," and that "affordable access to drugs is fundamental to equitable health outcomes for all our citizens."

For now, Canada remains the rare case of a developed country that does not have a national catastrophic drug insurance program. Britain has one, though it is sometimes seen as chintzy in refusal to cover advanced gene therapies such as those for colorectal cancer. Australia has a catastrophic drug coverage plan that cuts drug costs to a few dollars per fill once drug costs reach $1,300. In the U.S., Medicare Part D has a drug cost $310 deductible, after which the copay is 25% to $2,830 Then the plan has a gap, the so-called "donut hole" of no drug insurance. Then, beginning at $4,550, Medicare covers 95% of eligible expense. The plan, which has a schedule of premiums and subsidies, is criticized for leaving many in the lurch when their bills are high but fail to reach thresholds.

What's next? Pamela Fralick, president and CEO of the Canadian Healthcare Association in Ottawa, a group of nongovernmental provincial and territory healthcare organizations, says, "We don't have the prescription, but we believe that governments must take responsibility for catastrophic drug costs. There has been a commitment to put some action behind the words that they have used in the National Pharmaceuticals Strategy. One of the tenets of the Canada Health Act is universality. It has not happened for prescription drugs in the absence of a pan-Canadian strategy." Adds Dr. Lexchin, "the position of the present federal government is that the provinces should determine their own policies. But without the financial involvement and financial assistance of the federal government, there will be no national catastrophic drug policy."

FEATURE ARTICLE

Hidy Girgis – Winner of the 2010/2011 A. Langley Jones Award

The A. Langley Jones Leadership Award was presented at the MPhA Welcome to the Profession 2011 Graduation Ceremony on June 2nd at the Immanuel Pentecostal Church. The award is presented annually to a graduating student who exemplifies leadership qualities, has obtained a sufficiently high academic standard and who has an aptitude for Community Pharmacy as assessed through such courses as Pharmacy Practice, and Consumer Health Care Products.

The award honours the memory of Mr. A. Langley Jones who served as the first Executive Director of the Manitoba Society of Pharmacists. The recipient of the award is nominated by his/her peers and is recommended to the Selection Committee. The award consists of a framed certificate and a cheque in the amount of $500.00.

This year the A. Langley Jones Award was presented to Hidy Girgis by Manitoba Society of Pharmacists Vice-President Gayle Romanetz.

Congratulations Hidy and all the best for a bright future in the profession of Pharmacy!

Oguzhan Ozturk
Consultant

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