CONFERENCE WORKBOOK





Association des Pharmaciens du Canada

Conference 2012

June 1–4 • Trade Show June 2–3 The Westin Resort & Spa, Whistler, and the Whistler Conference Centre, Whistler BC



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Diabetes Strategy for Pharmacists



The **Diabetes Strategy for Pharmacists (DSP)** provides education and tools to help raise the level of care you provide to persons with diabetes, resulting in benefits for pharmacists and Canadians affected by this chronic disease. Updated and reaccredited in April 2012, the DSP continuing education course provides you with clinical expertise and additional patient care resources. Get peer support from other pharmacists providing diabetes management at our new Diabetes Forum. CPhA has also developed an iPhone/Android-based diabetes application, to assist pharmacists in providing point-of-care resources. Find out more at <u>www.pharmacists.ca/diabetes</u>.

Quit Using and Inhaling Tobacco



CPhA's **QUIT (Quit Using and Inhaling Tobacco)** continuing education course is designed to enhance your patient care skills in smoking cessation and expand your role in providing smoking cessation-related professional services. QUIT learning content includes the behavioural and physical aspects of addiction and cessation, pharmacotherapy, patient care and counselling, as well as practical strategies for offering smoking cessation services in your pharmacy. QUIT is available in online and live workshop formats, both structured in 5 separate modules. Now recognized as an approved training program by the Ontairo MOHLTC, the Saskatchewan MOH, and Green Shield Canada. Find out more at www.pharmacists.ca/quit.

Saturday, June 2

CE Satellite Breakfast: Cholesterol-Lowering Properties of Soluble Fibres: Application of Psyllium and Oat Fibres Hosted by Kellogg Canada Inc.

Speaker:

Todd Rideout, PhD Assistant Professor, Department of Exercise and Nutrition Sciences University at Buffalo Adjunct Professor, Department of Human Nutritional Sciences University of Manitoba

Biography:

Dr. Rideout is an assistant professor in the Department of Exercise and Nutrition Sciences at the University at Buffalo and serves as an adjunct professor in the Department of Human Nutritional Sciences at the University of Manitoba. After completing his Doctorate at the University of Guelph, Dr. Rideout initiated a post-doctoral fellowship at the University of Manitoba's Richardson Centre for Functional Foods and Nutraceuticals. Dr. Rideout's current research interests focus on diet and nutraceutical-based strategies that effectively prevent and treat dyslipidemia and associated arterial health conditions. Dr. Rideout has specific interest in examining the lipid-lowering effects of combination diet therapies and in identifying patient-specific factors that influence the variable responsiveness of blood lipids to the consumption of dietary bioactive compounds.

Session Description:

This session will provide information regarding the practical application of oat and psyllium fibres to pharmacy practice by discussing dosages for cholesterol-lowering efficacy, mechanism of action, regulatory guidelines, the use of pysllium and oat fibre as adjuncts to cholesterol-lowering medications and food-derived bioactives as well as personalized therapy.

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Plenary Keynote

Speaker: John Furlong OC, OBC CEO, Vancouver 2010 Olympic & Paralympic Winter Games

Biography:

John Furlong created the vision and led the team that bid for, organized and staged the highly successful Vancouver 2010 Olympic and Paralympic Winter Games. A visionary goal-setter, Furlong's stories of the challenges in bringing the Games to Vancouver and executing what are recognized by the International Olympic Committee as the most successful Winter Games ever, will motivate and inspire you. Furlong has been described as a passionate Canadian with an outstanding message that will encourage you to incorporate the lessons he learned through his experiences into your work environment.

Session Description:

John Furlong has been described as a Visionary Leader, Sports Hero and Nation Builder. Known for his masterful storytelling and inspired crisis management, he was relentless in his pursuit to deliver a Games that would leave a human legacy, touching the hearts and souls of every Canadian. The combination of humility, openness and authenticity intrinsic to John's leadership style, created an almost spiritual bond to VANOC employees and earned him the respect of even his strongest detractors.

Luncheon Presentation: What's New in CPhA Products

Speakers:

Janet Cooper, B.Sc.Pharm Senior Director, Professional and Membership Affairs, CPhA Ottawa, ON

Marc Riachi, B.Sc.Hon, B.Sc. Pharm, R.Ph. Clinical Editor, CPhA Ottawa, ON

Session Description:

Discover how you can improve patient outcomes and develop your daily practice with the expanding suite of products and services from CPhA.

Pharmacy Practice Research: Oral Abstract Presentations Doing what we do best – improving health through the best pharmaceutical care

Chair: Lisa M Guirguis BScPharm., MSc, PhD

1. Can Pharmacists Influence SMBG practices in a Community Pharmacy? Presenting Author: Kerry Mansell, BSP, PharmD

2. Perceptions of Family Doctors Toward Pharmacists Performing Medication Assessments Presenting Author: Julia Bareham, BSc, BSP, MSc Candidate

3. Medication safety implications of quality improvement programs in community pharmacy Presenting Author: Todd A. Boyle, Ph.D. Associate Professor of Operations Management and Canada Research Chair, Gerald Schwartz School of Business, St. Francis Xavier University, Nova Scotia & Adjunct Professor, College of Pharmacy, Dalhousie University, Nova Scotia

4. Increasing Medication Adherence with the PatientConnect[™] Adherence Pharmacy Program Presenting Author: Ruth Ackerman, BSc Phm, MBA, RPh

5. "Best" and the Value of Pharmacy in Medication Reconciliation Presenting Author: Shawn Bugden B.Sc. (Pharm), M.Sc., Pharm.D.

ABSTRACT TITLE: Can Pharmacists Influence SMBG practices in a Community Pharmacy?

AUTHORS: Kerry Mansell, BSP, PharmD, Katherine Jiricka, BA, David Blackburn, BSP, PharmD, FCSHP, Jeff Taylor, BSP, PhD

OBJECTIVE: To determine if pharmacists can influence non-insulin dependent type 2 diabetes (T2DM) patients to reduce self-monitoring of blood glucose (SMBG) testing frequency according to recent CADTH recommendations.

METHODS: T2DM patients were identified through routine encounters and computer-generated medication profiles, and recruited from a single rural community pharmacy. HbA1c was measured via the Bayer A1CNow+[®] and eligible participants received education on SMBG. Participants were provided study supplies and a study calendar to record SMBG activity. During week 1 (run-in phase) participants performed SMBG as per normal. During weeks 2 through 4, participants performed SMBG on their own accord, based upon the education they received at enrollment. SMBG was recorded, unused strips returned at study-end, and participants completed a questionnaire.

RESULTS: Among 19 patients providing informed consent, average weekly strip count decreased in week 2 (n=141), week 3 (n=106), and week 4 (n=109) compared to baseline (228 in week 1) (p for trend =0.007). Overall, patients used an average of 5.8 fewer strips per week during weeks 2 through 4 compared to baseline (12 vs. 6.2 strips/week; p<0.001). Self-recorded strip use was significantly correlated with physical counts (r=0.72; p=.001) and did not influence results when interchanged. A 3-month follow-up phone interview indicated that 12/19 (63%) participants continue to test as per the study, whereas 6/19 (32%) reverted back to original SMBG practices.

DISCUSSION: Participants decreased SMBG by nearly 50% on average upon receiving CADTH recommendations. This suggests that pharmacists, during a short, 10 minute interaction with T2DM patients, have the ability to impact drug utilization.

ABSTRACT TITLE: Perceptions of Family Doctors Toward Pharmacists Performing Medication Assessments

AUTHORS: Julia Bareham, BSc, BSP, MSc Candidate and Derek Jorgenson, BSP, PharmD, FCSHP

CONTEXT: High rates of preventable medication related adverse event are well documented in primary care. Pharmacists can improve medication s by providing comprehensive medication management (CMM). Several North Amercican studies have shown that CMM leads to a significant number of drug therapy problems being resolved. Unfortunately, very few pharmacists currently offer CMM in North America. One hypothesis for the low uptake is that physicians are not supportive of pharmacist-delivered CMM.

OBJECTIVE: To determine the extent to which physicians are supportive of pharmacist-delivered CMM.

METHODS:

Design: Self-administered postal survey sent to practising family physicians. Results were entered into SPSS and analyzed using descriptive statistics.

Participants: 225 family physicians in Saskatoon were mailed a questionnaire. Physicians with tenure track appointments in the College of Medicine at the University of Saskatchewan were excluded.

Instrument: 12-item questionnaire (10 close-ended and 2 open-ended questions).

RESULTS: Response rate was 49.3%. 90.0% of respondents reported that pharmacist-delivered CMM would be valuable and 74.5% would refer their patients. Over 2/3 of respondents could think of one or more patients they would refer immediately; however, almost 1/3 required some guidance regarding which patients to refer. Respondents were most likely to refer patients from the following groups: >65 years of age, \geq 5 medications, \geq 1 chronic medical conditions. Data analysis of the two open-ended questions is in progress.

DISCUSSION: Family physicians value pharmacist-delivered CMM and are willing to refer patients to the service. Despite the fact that many physicians have already identified patients they might refer, it appears that many will require education regarding which patients will benefit from CMM.

ABSTRACT TITLE: Medication safety implications of quality improvement programs in community pharmacy

AUTHORS: Todd A. Boyle, Ph.D., Neil MacKinnon PhD, Certina Ho , R.Ph., B.Sc.Phm., M.I.St., M.Ed., Thomas Mahaffey , Ph.D., Jeffrey Taylor, Research Assistant

OBJECTIVE: Standardized continuous quality improvement (CQI) programs enable medication errors, including their sources and outcomes, to be shared throughout the province or country. Because such CQI programs are new within community pharmacies, little is known about how they impact medication safety. As a result, this research identifies key aspects of medication safety that change as a result of implementing a standardized CQI program.

METHODS: In April 2010, 53 community pharmacies in Nova Scotia adopted the SafetyNET-Rx standardized CQI program (www.safetynetrx.ca). ISMP Canadaês Medication Safety Self-Assessment (MSSA) survey (http://www.ismp-canada.org/amssa/index.htm) was administered to each pharmacy before and one year after their use of the SafetyNET-Rx program. The Wilcoxon signed-rank test was used to assess where changes occurred.

RESULTS: Significant improvements occurred with quality processes and risk management (effect size = .49), staff competence and education (effect size = .45), and communication of drug orders and other information (effect size = .42). Patient education, environment, and the use of devices did not show statistically significant changes.

DISCUSSION: As CQI programs are designed to share learning from medication errors, it is reassuring to see that the largest improvements are related to quality processes, risk management, staff competence and education. A lack of improvement in environmental factors and the use of devices may imply that such changes may take more than a year to do; regardless they were being performed well before implementing SafetyNET-Rx. Patient education is primarily done by means of patient counseling and this element was not intentionally addressed by the current version of SafetyNET-Rx.

ABSTRACT TITLE: Increasing Medication Adherence with the PatientConnect[™] Adherence Pharmacy Program

AUTHORS: Ruth Ackerman, BSc Phm, MBA, RPh, Kurt Almquist, BSc(H), Trish Rawn, BSCPhm, PharmD, RPh, Kathy Tam, BScPhm, RPh, Daniel Kim, BSCPhM, RPh, Paul Kostoff, BSoc, MBA

OBJECTIVE: To assess the impact of pharmacy-level behaviour change intervention on 6 month medication adherence after patients start chronic pharmacotherapy.

METHODS: Two pharmacy chains implemented one-year programs where pharmacies received novel software integrated into their management systems prompting therapy-targeted adherence message printouts at each prescription fill. Sequential messages for each subsequent refill followed a specific behavior change and patient engagement model. New pharmacotherapy initiator adherence rates were compared in 8 chronic medication classes for the intervention year and the year prior (no intervention) in the same stores. Medication classes included were: statins, antidepressants, oral hypoglycemic agents, beta-blockers, bisphosphonates, calcium channel blockers, ACE inhibitors and angiotensin receptor blockers. Additionally, one pharmacy chain included control stores over the same time frame. The adherence metric used was proportion of days covered (PDC). Comparison of intervention and control groups employed nonparametric statistical analyses (Rank Sum Test) for new initiators with ≥6 months of observation.

RESULTS: Both pharmacy chains showed significant 6 month absolute increases in medication adherence, 9.4% and 10.4% respectively (relative increases of 15.6% and 17.7%), for new pharmacotherapy initiators receiving the new intervention model:

- Chain#1:69.5%(N_{Intervention}=2115);60.1%(N_{Control}=1148),p<0.01
- Chain#2:69.2%(N_{Intervention}=1689);58.8%(N_{Control}=598),p<0.01

In contrast, pharmacotherapy initiators in Chain #2 control stores receiving no intervention had a 1% decrease in medication adherence over the same time frame:

Control:57.0%(N_{ControlYear2}=1840);58.0%(N_{ControlYear1}=1664),p>0.05

DISCUSSION: Demonstration of program success for increasing medication adherence in new chronic pharmacotherapy initiators from two community pharmacy chains demonstrates program transferability of this model. Potential benefits on improving patient outcomes and increased pharmacy profitability will be discussed.

ABSTRACT TITLE: "Best" and the Value of Pharmacy in Medication Reconciliation

AUTHORS: Shawn Bugden B.Sc. (Pharm), M.Sc., Pharm.D., Kyle MacNair, BSc (Pharm), ACPR

OBJECTIVE: Our objective was to assess quality of 2 approaches to medication reconciliation to allow an evidence-informed decision of best practice.

METHODS: An online system was used to collect data on pharmacist driven medication reconciliation process over a 1-year period in the Regional Health Authority of Central Manitoba. Using this data as a historical control we examined the coverage and quality of medication reconciliation with a forced function medication reconciliation admission process performed by nurses/physicians.

RESULTS: In pharmacist-based medication reconciliation, the pharmacist identified unintentional discrepancies in 63% of admission orders and 10% of these had the potential to cause severe harm. Medication reconciliation was performed on 10-70% of admissions. Forced function medication reconciliation dramatically improved the coverage of medication reconciliation to 70-100% of admissions. Quality assessment of this process revealed that 43% of these admissions had failed to identify unintentional medication discrepancies.

DISCUSSION: There has been considerable debate on the appropriate level of pharmacy involvement in medication reconciliation. Our data suggest that pharmacist-based medication reconciliation may not be able to provide adequate admission coverage without considerable investment in pharmacy human resources. The forced function medication reconciliation on admission process while providing a high level of coverage fails to fully identify and correct all of the unintentional discrepancies. This data can be used to guide to suggest the best practice solution. With current resources, a matrix approach that provides a high level of coverage for all admissions with a pharmacist-based quality control system implemented for high-risk patients is likely to produce the best overall results.

FIT- Forum for Injection Technique Canada – Recommendations for Best Practice in Injection Technique

Speaker:

Rob Roscoe, BScPharm, ACPR, CDE, CPT Certified Diabetes Educator Pharmacist, Kennebecasis Drugs Team Member, Saint John Regional Hospital Diabetes Teaching Centre Rothesay, NB

Biography:

Since obtaining his CDE, he has been involved in many diabetes initiatives, especially promoting the role of pharmacists and the part they play in patient care and diabetes management. Published in several papers and magazines, his next anticipated work will be as one of the co-authors of the 2013 CDA Clinical Practice Guidelines. Active in scientific committees and on advisory panels/boards, he is one of the founding board members for Forum for Injection Technique in Canada (FIT), he also has represented the pharmacist's role in a patients diabetes care team for a Discovery Channel special. He recently completed writing a 4 module CCCEP approved continuing education program on the New Injection Technique Recommendations and the role of the Pharmacist.

Session Description:

FIT Canada will provide evidence-based best practice information for all those with diabetes using injectable therapies to achieve the best possible health outcomes by ensuring that the dose is delivered in the right injection site, using the right technique, every time. The presentation will highlight key technique recommendations by reviewing the pertinent evidence and includes a real patient case, where a "medication review" style approach is used to apply the FIT recommendations to identify and help resolve insulin injection technique issues to better optimize therapy and outcomes.

Learning Objectives:

- Identify the injection techniques currently being used in practice amongst Canadian Helath Care Professionals (HCP's) and people living with diabetes.
- Raise awareness of the impact that existing and emerging research related to injection technique may have on health outcomes.
- Facilitate opportunities in which best practice can be discussed, developed, implemented, and evaluated throughout Canada.
- Identify some of the common barriers to initiating injectable therapy from both the patient and the prescriber's perspective.
- How to position the role of injectable therapy in the treatment of diabetes
- Identify the role of site selection and injection site care in proper injection techniques.
- Understand the role of injection device training in proper diabetes management.
- Identify proper storage and stability of insulin formulations.
- Understand the relationship between skin thickness and Body Mass Index (BMI).'
- Understand the relationship between Subcutaneous Fat Layer thickness and BMI and other contributing factors.
- Identify available sites for injection and the relative absorption rates of each site.

- Identify the differences in pen needles , and identify advantages, concerns, and proper usage of the different lengths of available needle tips.
- Understand the general process of initiating or reviewing injectable therapy and the role pharmacists can play in that process.
- Identify tips to make injectable therapy more comfortable.

References:

Please see slides





DISCLOSURES

Robert Roscoe is a member of: The Scientific Committee: of Merck Canada

<u>Is a co-author of:</u> 2013 Clinical Practice Guidelines/ Canadian Diabetes Association, *Forum* for Injection Technique Canada: Recommendations for Best Practice in Injection Technique document, "Helping You to Help Your Patients With Type 2 Diabetes "

<u>Is Lead Author of:</u> Recognizing and Managing Painful Diabetic Peripheral Neuropathy: A Pharmacy Case

<u>Consultant and/or Advisory Board Member for:</u> Sanofi Canada, Merck Canada, BD Canada (Becton Dickinson) Abbott Diabetes Care, Janssen Pharmaceuticals, Novo-Nordisk, Canadian Pharmacists Association, New Brunswick Government - Department of Health - (Diabetes Task Force & Diabetes Portal Project)

Robert Roscoe has:

<u>Given lectures for</u>: Pfizer Canada, LifeScan Canada, Sanofi Canada, Eli Lilly, Novo-Nordisk, Abbott Diabetes Care, GSK, Merck Canada, BD Canada (Becton Dickinson), Bayer Healthcare, Medtronic-Canada, Roche Diagnostics, Bio-Vail Pharmaceuticals, Lawton Drugs, Canadian Pharmacists Association, and the Canadian Diabetes Association



Been an Expert reviewer/ Expert Committee Member on projects from:MD Briefcase,Rx Briefcase, Advancing-In, Ontario PharmacistsAssociation,THI, & CTC Communications.



- The scope of the problem
- · Review of the clinical evidence
- Canadian FIT Recommendations
- FIT future directions





Journal of Diabetes	
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ORIGINAL ARTICLE	
Results and analysis of the Technique Questionnaire	e 2008–2009 Insulin Injection survev
Carina DE CONINCK, ¹ Anders FRID, ² Ruth (Gillian KREUGEL ⁶ Jutta LIERSCH, ⁷ Corinne Nadia TUBIANA ¹⁰ and Kenneth STRAUSS ¹	SASPAR, ³ Debbie HICKS, ⁴ Larry HIRSCH, ⁵ LETONDEUR, ⁸ Jean-Pierre SAUVANET, ⁹
¹ BD Medical Systems: Diabetes Care, Erembodegem, Belgiu Sweden; ³ Diabetes Unit, University Hospital La Paz, Madrid, ¹ BD Medical Systems: Diabetes Care, Franklin Lakes, New Ju The Netherlands; ³ Diabetes-Schulungszentrum, Universitätski Diabetes Care, Rungis, France; ¹ Internal Medicine Departmer	n; ² Department of Internal Medicine, Malmö University Hospital, Mali Spain; [*] Dabetes Service, NHS Enfield Community Services, London, V resey, USA; [*] Dabetes Unit, University Medical Genter Groningen, Gro Inikum Giessen und Marburg, Giessen, Germany, [*] BD Medical Syster H Abdiat Sain-Louis, [*] Dibabetes Service, Hörbalt Robert Debré, Paris

















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	Skin Thickness	Subcutaneous Fat Thickness	
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Gender	0.3mm thicker in men	5.1mm thicker in women	
BMI († 10 kg/m²)	o.2mm increase	4.omm increase	
Age	Nil	Nil	

Gibney MA, et al. Skin and subcutaneous adipose layer thickness in adults with diabetes at sites used for insulin injections: implications for needle length recommendations. Curr Med Res Opin 2010;26(6):1519-30.

Combined Skin and Subcutaneous Layer Thickness: Needle Length and *Calculated** Injection Deposition

	90° insertion	90° insertion	90° insertion
Length	Intradermal	Subcutaneous	Intramuscular
4mm	0%	99.6%	0.4%
5mm	0%	98%	2%
6mm	0%	94.3%	5.7%
8mm	0%	85%	15%

*(NOT based on actual injections)



Gibney MA, et al. Skin and subcutaneous adipose layer thickness in adults with diabetes at sites used for insulin injections: implications forneedle length recommendations. Curr Med Res Opin 2010;26(0):1519-30.


































Methods

- Established to promote **best practice** in injection technique for all involved in diabetes care
- Where evidence did not exist, expert opinion has guided the recommendation
- Developed by the Canadian FIT board and reviewed by expert committee

fit

t RN, CDE Pam Osborni s RN, BSCN, CDE Rick Siemens	e RD, CDE BSc Pharm.
RN, BScN, CDE Rick Siemens	BSc Pharm.
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	re RN, CDE, CPT Linda Staresi RPh, CDE, CGP Louise Tremt BN, RN, CDE Lee Ann Trim Ralachki RN, BSCN, CDE Janet Von Wo

















2.1	Use of syringes
	 ITQ tells us 54% of participants who injected into a skin lift said they released it before the end of the injection, instead of holding it until the end of the injection



























.0	Disposal of Injecting Material
	66 ITO tells us
	• 22% of used needles were disposed of in sharps containers
	• 3.5% were thrown into the trash without recapping
	• 50% were thrown into the trash after recapping
U	















5.1	Re-suspension of cloudy insulin
	⁶⁶ ITQ tells us
	 Of the 65% of participants using cloudy insulin, 35% did not re-suspend the insulin mixture before use
	• 44% of participants rolled their insulin <10 times
it	



















8.0	Lipohypertrophy	
	 ITQ tells us Only 36% of participants reported having their injection sites checked every visit 28% could not ever remember having their sites checked 	
fit		
fit		















































Optimizing the Use of Regulated Pharmacy Technicians

Speakers:

Marshall Moleschi, RPh, B.Sc. Pharm, MHA Registrar, Ontario College of Pharmacists

Rachelle Rocha, B.Sc. Pharm, RPh Senior Director, Pharmacy Operations Loblaws

Aurora Doering, Pharmacy Technician Howe Sound Pharmacy Gibsons, BC

Biography:

Marshall Moleschi was appointed Registrar for the Ontario College of Pharmacists in September 2011 having been Registrar for the College of Pharmacists of BC for the six years previous. Mr. Moleschi is the immediate past chair of the Canadian Pharmacy Registrars Council and the Health Regulatory Organization of BC. Through his extensive career in the pharmacy profession he has worked in community, hospital and long term care pharmacy settings as well as in health care administration. Moleschi holds a Bachelor of Science in Pharmacy from the University of British Columbia and a Masters of Health Administration from Hawthorne University in Salt Lake City, Utah.

Rachelle Rocha graduated from University of Toronto in 1993 with a B.Sc. in Pharmacy, worked in hospital pharmacy in Sudbury for 3 years before joining Loblaw/Drugstore Pharmacy in Espanola in 1996. She has been supervising pharmacies in Northern and Eastern Ontario for almost 15 years. She is currently a Senior Director of Pharmacy Operations. Rachelle's home office is in Sudbury Ontario, but she travels the province extensively. In September of 2011, she was elected to the Council of the Ontario College of Pharmacists, where she is serving a 3 year term.

Aurora Doering has resided on the Sunshine Coast for the past twenty years. Her career in pharmacy began four years ago. She has been working at Howe Sound Pharmacy in Gibsons, B.C. for the last two years when her journey began in the fall of 2010 in becoming a Regulated Technician, and has now finished with passing the Qualifying PEBC exam.

Session Description:

Drawing on the actual experiences from Ontario and British Columbia this session will examine the history and integration of pharmacy technician regulation. Introduced and moderated by Marshall Moleschi, current Registrar of the Ontario College of Pharmacists and previous Registrar of the College of Pharmacists of BC the benefits and challenges of technician regulation will be told through the eyes of a Pharmacist from Ontario and a technician from BC.

Learning Objectives:

- · Provide a clear understanding of the distinct scope of practice of technicians and pharmacists
- Gain an understanding of how to use technicians to enable pharmacists to expand services to better meet patient needs
- Gain an understanding of the impact of technicians on dispensary workflow
- Identify obstacles to deployment of technicians and potential solutions to these obstacles

Optimizing the use of Regulated Pharmacy Technicians

Practical Experiences



Ontario College of Pharmacists Marshall Moleschi, Registrar (OCP, Ontario) Rachelle Rocha, Pharmacist (Ontario) Aurora Doering, Technician (BC)

Disclosure Statement

"We have no real or potential conflicts, biases or relevant financial relationships to disclose for this presentation"



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The Role of GLP-1 Receptor Agonists & DPP4 Inhibitors in Type 2 Diabetes

Speaker:

Kerry Mansell, BSP, PharmD, CDE Assistant Professor College of Pharmacy and Nutrition University of Saskatchewan Saskatoon, SK

Biography:

Kerry Mansell is an Assistant Professor at the College of Pharmacy and Nutrition, University of Saskatchewan. He obtained his BSP in 1998 from the University of Saskatchewan, and his PharmD in 2005 from the University of Washington. In 2007, he became a Certified Diabetes Educator, and he is part of an interdisciplinary diabetes team within the Saskatoon Health Region and continues to work in community pharmacy.

Session Description:

This presentation will focus on the newest agents used in the treatment of type 2 diabetes – the incretin agents. The DPP-4 Inhibitors and the GLP-1 receptor agonists will be discussed, highlighting the similarities and differences among these agents, and potential role in therapy.

Learning Objectives:

- Briefly describe how incretin agents work
- Provide a description of the pharmacologic properties of both the DPP4 Inhibitors and GLP-1 Receptor Agonists
- Discuss how incretin agents may play a role in the management of T2DM

References:

Buse et al. Ann Intern Med 2011;154:103-112. Buse et al. Lancet 2009;374:39-47. Canadian Diabetes Association. CJD 2008;32:S1 Chien et al. Diabetes, Obes Metab 2012 doi: 10.1111/j.1463-1326.2012.01606.x Cobble. Diabetol & Met Synd 2012,4:8. Cornell. J Clin Pharm Ther 2012. doi: 10.1111/j.1365-2710.2012.01342.x Davies et al. Diabetes Obes Metab 2011;13:207-20. Davies et al. Diabetes, Obes & Metab 2012. doi:10.1111/j.1463-1326.2012.01595.x Degn, et al. Diabetes 2004; 53:1187-94. Drucker et al. Diabetes Care 2003;26:2929-40. Drucker et al. Curr Pharm Des 2001;7:1399-412. Drucker et al. Mol Endocrinol 2003;17:161-71. Drucker, et al. Diabetes Care 2003; 26:2929-40 Drucker, et al. Curr Pharm Des 2001; 7:1399-412 Drucker, et al. Mol Endocrinol 2003; 17:161-71 Drucker. Diabetes Care 2003;26:2929-2940. Drucker . Diabetes Care 2003;26:2929-2940. Drucker et al. Diabetes Care 2010;33(2):428-33. Drucker et al. Lancet 2008;372:1240-1250.

Esposito et al. Curr Med Res Opin 2011; 27:1519–28. Gerich. Diabetes Res Clin Pract 2010;131-140. Hanna et al. CJD 2012;36:9-14. Harris et al. Diabetes Res Clin Pract 2005; 70:90. Hauber et al. Diabetologia 2006;49(2):247-252. Hollander et al. Diabetes Obes Metab 2011;13:268-75 Horton et al. Diabetes Care 2010;33:1759-65 http://www.cadth.ca/en/cadth http://www.cadth.ca/media/pdf/sec-third-line_type-2-diab_summ_e.pdf http://www.citizen.org/pressroom/pressroomredirect.cfm?ID=3586. April 19, 2012. IDF. *Diabetes prevalence* Inzucchi et al. *Diabetes Care* 2012; DOI:10.2337/dc12-0413. Klarenbach et al. CMAJ 2011;183:E1213-20. Lane et al. Diabetes Tech and Ther 2011;13(5):592-595 Mari, et al. J Clin Endocrinol Metab 2005; 90:4888-94. McIntosh et al. Open Medicine 2011;5(1):E35. National Institute for Health and Clinical Excellence. 2009. Nauck. Am J Med 2011;124:S3-S18. Norris et al. Diabet Med 2009;26:837-46. Qaseem et al. Ann Intern Med 2012;156:218-231. Richter et al. Cochrane Database Syst Rev. 2008. Rodbard et al. Endocr Pract 2009;15:540-559 Saskatchewan Formulary. http://formulary.drugplan.health.gov.sk.ca. Sinha et al. Diabetes Care. 2010;33:695-700. Tsapas et al. BMJ 2012;344:e1369. Unger et al. Arch Intern Med 1969;123:261-266. WHO. Prevalence of diabetes worldwide. Zarowitz et al. Pharmacotherapy 2009;29(12Pt2):55S-67S. Zinman. Am J Med 2011;124:S19-S34.

The Role of GLP-1 Receptor Agonists & DPP4 Inhibitors in Type 2 Diabetes

Kerry Mansell, BSP, PharmD, CDE Assistant Professor College of Pharmacy and Nutrition University of Saskatchewan kerry.mansell@usask.ca

Objectives

This presentation will:

- Briefly describe how incretin agents work
- Provide a description of the pharmacologic properties of both the DPP4 Inhibitors and GLP-1 Receptor Agonists
- Discuss how incretin agents may play a role in the management of T2DM









Challenges of achieving A1C targets

- Clinical inertia
- Poor tolerability
 - Hypoglycemia
 - Weight gain
 - GI AEs
- Adherence
 - Is compounded by poor tolerability¹
- Affordability

1. Gerich. Diabetes Res Clin Pract 2010;131-140.



Biological actions of the incretin hormones GIP and GLP-1

GLP-1

- Stimulates insulin release from β-cell
- Potent inhibition of gastric emptying
- Potent inhibition of glucagon secretion
- Reduction of food intake and body weight
- Significant effects on β-cell growth and survival
- Insulinotropic actions preserved in T2DM

Drucker. Diabetes Care 2003;26:2929–2940

GIP

- Stimulates insulin release from β-cell
- Modest effects on gastric emptying
- No significant inhibition of glucagon secretion
- No significant effects on satiety or body weight
- Potential effects on β-cell growth and survival
- Defective insulinotropic action in T2DM



DPP-4 Inhibitors

- DPP-4 is a serine peptidase found throughout the body
- They inhibit the enzymatic degradation of endogenous incretin hormones

Available DPP4Is in Canada

Approved indications

	Monotherapy	With metformin	With a SU	With a SU and metformin	
Linagliptin (Trajenta®)	Yes	Yes	Yes	Yes	
Saxagliptin (Onglyza®)	No	Yes	Yes	No	
Sitagliptin (Januvia®)	Yes	Yes	No	Yes	
Hanna et al. CJD 2012;36:9-14.					

DPP4I Efficacy

- Compared to placebo, ~ 0.7% ↓ A1C¹
- Clinical trials range from 0.4% 0.9%^{2,3}
- Inferior to metformin as monotherapy²
- Similar to SU as 2nd line therapy⁴
- Inferior to GLP-1RA as 2nd line therapy⁵
- No obvious differences amongst DPP4I
- Richter et al. Cochrane Database Syst Rev. 2008
 Gerich. Diabetes Res Clin Pract 2010.
 Cobble. Diabetol & Met Synd 2012;4:8.
 Hanna et al. CID 2012;36:9-14.
 Tsapas et al. BMJ 2012;344:e1369.

DPP4I and AE's

- AE profiles similar to placebo^{1,2}
 - Contrary to previous reports, no ↑ risk of URTI, UTI, or nasopharyngitis compared to other antihyperglycemics
- Hypersensitivity rxns have occurred with all three^{2,3}

1. Hanna et al. CJD 2012;36:9-14. 2. Tsapas et al. BMJ 2012;344:e1369. 3. Cobble. Diabetol & Met Synd 2012,4:8

DPP4I and Body Weight

- For the most part, are weight neutral
- As monotherapy, inferior to metformin¹
- Added to metformin:¹
 - Favourable to SU and Pioglitazone
 - Not as beneficial as GLP-1RA

1. Tsapas et al. BMJ 2012;344:e1369.

DPP4I and Hypoglycemia

- Overall low incidence
- Very low incidence as monotherapy
- Incidence increases when used in combo with an insulin secretagogue
- Severe hypoglycemia is rare

	Sitagliptin	Saxagliptin	Linagliptin
Dose	100mg po od	5mg po od	5mg po od
Renal Insufficiency	Not recommended in moderate-severe. *USA: 25mg & 50mg doses approved for use	5mg not recommended in mod-severe. 2.5mg OK if EGFR >15 ml/min	Not recommended with severe
Hepatic Insufficiency	Not recommended in severe	Not recommended mod - severe	Not recommended in severe
Drug Interactions	Unlikely	Clearance is reduced / enhanced with strong 3A4 inhibitors / enhancers	Clearance enhanced by strong 3A4 inducers
Pregnancy / Lactation	Not studied		
Adapted from: Hanna et al. CJD 202	12;36:9-14.		

DPP4I Mini-summary

Advantages

- No dose titration
- Minimal DI concerns
- Oral medication
- Once daily
- Weight neutral
- Low risk of hypo
- Minimal AE profile

Considerations

- Bang for buck
- May require dose adjustments of secretagogues

GLP-1RAs						
	Monotherapy	With metformin	With SU	With metformin + SU		
Exenatide (Byetta®)	No	Yes	Yes	Yes		
Liraglutide (Victoza®)	No	Yes	No	Yes		
Bretta 10						



GLP-1RA Efficacy

- Liraglutide 1.2mg OD: -0.8% to -1.5% ↓ A1C¹
- Exenatide 10ug BID: -0.77% to -1.36%²
- *Slightly* greater A1C ↓ has been observed with liraglutide vs. exenatide (-1.23% vs. -1.1%)^{3,4}
- Liraglutide's greater effect on A1C appears to be due to greater reductions in FPG, whereas exenatide may greater affect PPG
- Davies et al. Diabetes Obes Metab 2011;13:207-20.
 Norris et al. Diabet Med 2009;26:837-46.
 - Esposito et al. Curr Med Res Opin 2011; 27:1519–28.
- I. Buse et al. Lancet 2009;374:39-47.

GLP-1RA Efficacy

- Chien et al:¹
- Added to metformin, insulin and GLP-1RAs decrease A1C the most
 - However, GLP-1RAs do not increase hypo and are beneficial wrt effects on body weight
- McIntosh et al:²
- No statistically significant differences on A1C among 2nd-line agents added to metformin
 - However, GLP-1RAs decreased body weight and did not significantly increase hypo

1. Chien et al. Diabetes, Obes Metab 2012 doi: 10.1111/j.1463-1326.2012.01606.x 2. McIntosh et al. Open Medicine 2011;5(1):E35.
GLP1-RA and body weight

- Both GLP-1RAs are associated with similar weight loss
- Mean body weight reductions of up to 3.4 3.6 kg have been observed¹
- Weight loss appears to be sustained or progressive with long-term use²

Zinman. Am J Med 2011;124:S19-S34.
 Horton et al. Diabetes Care 2010;33:1759–65.

GLP-1RA Adverse effects

- Most common are GI: nausea, vomiting, and diarrhea
- Large variances in nausea have been reported in clinical trials with both exenatide (3-51%) and liraglutide (5-40%)¹
- Tends to be transient, lasting between 4 to 8 weeks¹
- Management: dose escalation and watching dietary habits
- Hypoglycemia: overall low incidence
- Associated with less hypoglycemia than comparator drugs² and severe hypoglycemic events are rare³
- May require reducing SU dose when used in combination

Nauck. Am J Med 2011;124:S3-S18.
 Esposito et al. Curr Med Res Opin 2011; 27:1519–28.
 Zarowitz et al. Pharmacotherapy 2009;29(12Pt2):555-67S

GLP-1RA and cancer

- Activation of the GLP-1 receptor has been found to promote C-cell hyperplasia and MTC in rodents
- Rodent MTC may be specific to long-acting GLP-1RAs¹
- Avoid use in those with a personal or family history of MTC or MEN2
- The actions of GLP-1RAs on human C-cells remains uncertain¹

1. Drucker et al. Diabetes Care 2010;33(2):428-33.

	GLP-1RA Comparis	son
	Exenatide	Liraglutide
Dosing	Initial: 5 µg BID x 1month Maintenance: 10 µg BID	Initial: 0.6 mg OD x 1week Maintenance: 1.2 mg – 1.8mg OD
Timing of dose	Within 60 minutes prior to am and pm meals (NOT after meals); meals must be 6 hours or more apart	Meal-independent
Device	5 μg pen; 10 μg pen	Multidose pen (6mg/ml)
Amino Acid Sequence	53% homology	97% homology
Drug Interactions	No major interactions identified	No major interactions identified
	Caution with oral meds that require rapid therapeutic index due to delayed gastric e	GI absorption or have a narrow mptying
Renal Insufficiency	No dose adjustment necessary in mild ren	al insufficiency
Renar insurrenercy	Cleared renally: CrCl 30-50mL/min: caution when initiating or escalating dose CrCl <30ml/min: not recommended	Not recommended in moderate to severe renal insufficiency (due to lack of clinical experience)
Hepatic Insufficiency	Has not been studied; cleared renally, so no expected effects	Has not been studied
Adapted from Mansell,. Pharmacy Pra-	ctice 2012. In Press.	

Coming soon???

- Bydureon[®] (Once weekly exenatide)
- Appears to be more effective than exenatide BID with less nausea¹
- Weight loss comparable or improved vs. exenatide BID²

Drucker et al. Lancet 2008;372:1240-1250.
 Cornell. J Clin Pharm Ther 2012. doi: 10.1111/j.1365-2710.2012.01342.x



Commonalities among GLP-1RAs and DPP4Is

DPP4I, GLP-1RA, and pancreatitis

- The risk of pancreatitis is increased threefold in T2DM over the nondiabetic population¹
- Currently, it is still unknown whether these agents confer an increased risk
- Advise patients to seek medical attention ASAP should they experience severe vomiting and/or persistently severe abdominal pain
- Consider antidiabetic therapy other than GLP-1RAs in patients with a history of pancreatitis or with other risk factors for pancreatitis (gallstones, alcoholism, hypertriglyceridemia)

Incretins and CV effects

- In general, do not appear to have a negative impact on CV disease¹
- DPP4Is do not appear to affect BP²
- Both GLP-1RAs have been shown to have beneficial effects on SBP and various lipid parameters^{3,4}
- GLP-1RAs have also shown to cause a small ↑ in HR⁵
- Long-term studies assessing CV effect are underway
- L. Johansen et al. Cardiovasc Diabetol 2012;11(3).
- Cobble. Diabetol & Met Synd 2012, 4:8.
 Zinman. Am J Med 2011;124:S19-S34.
- 4. Pinelli et al. Pharmacother 2011;45:850-60.

Can incretin-based therapies be used with insulin?

- Off-label use for all
- DPP4I with insulin has shown improved A1C without more hypo or weight gain¹
- GLP-1RA with insulin has shown improved A1C, favourable weight profile, and a requirement for less insulin^{2,3}

Patient Reported Outcomes



- Davies et al reviewed PRO data from 8 clinical trials¹
- Primarily used the DTSQ +/or the IWQOL-Lite
- Looked at GLP-1RAs vs. non-incretins, DPP4Is, and each other
- Result: Incretin therapies = high satisfaction (particularly with GLP-1RAs)

1. Davies et al. Diabetes, Obes & Metab 2012. doi:10.1111/j.1463-1326.2012.01595.x

DPP4I vs. GLP-1RA

	GLP-1RA	DPP4I
Route of admin	SC	PO
GLP1 concentration	Pharmacologic	Physiologic
Stimulates insulin secretion	✓	✓
Inhibits glucagon secretion	✓	✓
Delays gastric emptying	✓	
Increase satiety	✓	
A1C reduction	0.5% - 1.5%	0.5% - 0.9%
Weight loss	\checkmark	
Decrease in SBP	✓	?
N and V	\checkmark	
Potential immunogenicity	✓	
apted from: Hanna et al. CJD 2012;36:9-14. 		

So what do the experts say?

Canadian Diabetes Association

- 2012 Position Statement
- "Treatment decisions have to be made after individual assessment of patients, taking into consideration drug efficacy, safety, and tolerability"

Hanna et al. CJD 2012;36:9-14.

ADA / EASD 2012 Joint Position Statement¹

- Patient centred approach
- Beyond metformin, choose the 2nd line option which you <u>and</u> the patient think is right

NICE²

 Consider DPP4I as 2nd line instead of SU if considerable risk of hypo; or CI/ intolerant

1. Inzucchi et al. *Diabetes Care* 2012; DOI:10.2337/dc12-0413. 2. National Institute for Health and Clinical Excellence. 2009.

American College of Physicians (ACP)¹

• Metformin first; 2nd line up to clinicians

American Association of Clinical Endocrinolgists (AACE) / American College of Endocrinology (ACE)²

Metformin first, various recommendations thereafter (SU's fall to 3rd or 4th line)

1. Qaseem et al. Ann Intern Med 2012;156:218-231. 2. Rodbard et al. Endocr Pract 2009;15:540-559.

What about cost?

 Money spent on diabetes meds increased from \$3.8 billion in 1995 to \$17.8 billion in 2005¹

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	Liraglutide 1.2mg od	Liraglutide 1.8mg od	Exenatide 5ug BID & 10ug BID	Sitagliptin 100mg od	Saxagliptin 5mg od	Linagliptin 5mg od
Cost	\$4.89/d	\$7.33/d	\$4.59/d	\$2.8948 ²	\$2.7560 ²	UR
	Glyburide 5mg	Gliclizide MR 30mg	Pioglitazone 45mg			
Cost	\$.0683/tab ²	\$.1405/tab ²	\$1.34/tab ²			
						1 0

SU more cost effective than DPP4I and GLP-1RA^{2,}

- 1. Hauber et al. Diabetologia 2006;49(2):247-2
- Saskatchewan Formulary. http://formulary.drugplan.health.gov.sk.ca
 Sinha et al. Diabetes Care. 2010;33:695-700.
- Klarenbach et al. CMAJ 2011;183:E1213-20



Public Citizen

- A consumer advocacy group
- Filed a petition asking regulators to withdraw liraglutide from the market due to Trisk of thyroid cancer, pancreatitis and kidney failure

http://www.citizen.org/pressroom/pressroomredirect.cfm?ID=3586. April 19, 2012.

So....what will you do?



Joseph: A Perfect Patient Case



Joseph Johnson T2DM x 3 years

Current Drug Therapy: Metformin 1g bid Quinapril/HCTZ 20mg/25mg qd Atorvastatin 10mg qd

Presentation:

56-year-old male BMI: 31 kg/m² (obesity class 1) FPG = 8.9 mmol/L A1C = 8.1% Blood pressure=130/80 mmHg

Personal History:

Truck driver with private coverage 1-2 units alcohol/week Non-smoker Exercises when he can / trying to eat healthy Concerned about his weight

Medical History:

Family history of diabetes (maternal) Family history of hypertension (maternal)

Action/Interventions



Joseph Johnson T2DM x 3 years

- Additional therapy is required to optimize his diabetes care
- Considerations when selecting a second-line agent?
 - Patient considerations
 - Patient motivation
 - SMBG
 - Risk of hypoglycemia
 - Getting A1C to target level
 - Side effects/interactions
 - Cost and coverage

Recommendations???



Joseph Johnson T2DM x 3 years

Fictitious Patient. Adapted from Novo Nordisk presentatior

 How would you advise Joseph about incretin therapy compared to other therapies?

Learning / Discussing Points

- Try to troubleshoot adherence barriers
- Hypoglycemia is uncommon. If adding an incretin to a SU take the time to remind patients of signs & symptoms of hypoglycemia
- Ensure patients have realistic expectations re: affects on body weight
- When discussing incretins, take the opportunity to remind patients of their blood glucose targets
- These are new agents! Long-term experience and data will help determine their place in therapy

Incretin-based Therapies: Summary

• What are they?

- GLP-1RAs: exenatide and liraglutide
- DPP4Is: sitagliptin, saxagliptin, & linagliptin

• Who are they for?

- Patients currently on metformin with an inadequate glycemic response
- When should they be added?
 - In a timely manner to achieve target A1C

• How do they potentially address the unmet needs in T2D?

- Provide additional A1C reductions
- Are weight neutral or Promote weight loss
- Low hypoglycemia risk
- Reduce blood pressure (GLP-1RAs)
- Improve beta-cell function (animals)

Adapted from Novo Nordisk presentation.

Pharmacy Practice Research: Oral Abstract Presentations Beyond-the-counter – identifying roles for pharmacists on the other side of the dispensary

Chair: Lin Yong, Ph.D. in pharmacology, MBA, CDE

1. The role of community pharmacists in health promotion and prevention Presenting Author: Marie-Claude Laliberté, Ph.D. student in Pharmaceutical Sciences, Faculty of Pharmacy, Université de Montréal

2. Screening Older Adults For Pneumococcal Vaccination In Community Pharmacies Presenting Author: Christine Hughes, BscPharm, PharmD, FCSHP

3. Opportunities for Optimizing the Role of Pharmacists in Family Planning Presenting Author: Judith Soon, BSc(Pharm), RPh, PhD, Assistant Professor, UBC Faculty of Pharmaceutical Sciences Associate Member, UBC School of Population and Public Health

4. Weight management services in community pharmacy: a Scottish view Presenting Author: Anita Weidmann, MRPharmS, PhD

5. Exploring Pharmacists Adoption of Prescribing in Alberta Presenting Author: Lisa M Guirguis BScPharm. PhD ABSTRACT TITLE: The role of community pharmacists in health promotion and prevention

AUTHORS: Marie-Claude Laliberté, Ph.D candidate, Nicole Damestoy, M.D., M.Sc., FRCPC, Sylvie Perreault, B.Pharm., Ph.D., Lyne Lalonde, B.Pharm., Ph.D.

OBJECTIVE: To explore the perceptions of community pharmacists in urban and semi-urban areas regarding their ideal and actual levels of involvement in providing health-promotion and prevention services and the barriers that limit their involvement.

METHODS: In a cross-sectional study, a questionnaire was mailed to a random sample of 1250 pharmacists practicing in Montreal (Québec, Canada) and surrounding areas. Mailings were done using a modified version of Dillman's tailored design method. The questionnaire included 28 multiple-choice or open-ended questions (in 11 pages plus a cover letter). Results are reported using means with standard deviations for continuous variables and proportions for discrete variables.

RESULTS: A total of 571 (45.7%) eligible community pharmacists completed and returned the questionnaire. Most believed they should be very involved in health promotion and prevention, particularly in smoking cessation (84%); screening for hypertension (82%), dyslipidemia (57%) and diabetes (76%); and sexual health (62% to 89%). However, fewer respondents reported actually being very involved in providing such services (6%, 45%, 7%, 35% and 19%, respectively). Main barriers to the provision of these services in current practice were lack of: time (86%), coordination with other health care professionals (61%), staff or resources (57%), financial compensation (51%), and clinical tools (46%).

DISCUSSION: Although community pharmacists think they should play a significant role in health promotion and prevention, they recognize a wide gap between their ideal and actual levels of involvement. The efficient integration of primary care pharmacists and pharmacies into public health cannot be envisioned without addressing important organizational barriers.

ABSTRACT TITLE: Screening Older Adults For Pneumococcal Vaccination In Community Pharmacies

AUTHORS: Christine Hughes, BscPharm, PharmD, FCSHP, Cheryl Sadowski, BScPharm, PharmD

OBJECTIVE: Pneumococcal infections can lead to significant morbidity and mortality in older adults. The primary objective of this study was to determine pneumococcal vaccination rates in community-based older adults (≥65 years old) and identify factors associated with vaccination. The secondary objective was to determine vaccination rates for influenza and herpes zoster.

METHODS: A cross-sectional design using a convenience sample. Senior pharmacy students on community pharmacy clerkship rotations across Alberta recruited ambulatory older adults in 2010/2011. A questionnaire was administered by the student which included patient demographics, past medical history, and vaccination status. Results were analyzed descriptively and using multivariate logistic regression.

RESULTS: 443 participants were enrolled. Mean age (SD) of participants was 76 (8.7) years; 60% were female and 26% lived in a rural setting. 28% had a history of Type 2 diabetes, and 9% had a lung condition. 56% had received the pneumococcal vaccine; female sex and history of lung condition were the only factors significantly associated with increased likelihood of receiving pneumococcal vaccination in multivariate analysis. 78% of participants had received influenza vaccine in the previous year, while 7% reported receiving herpes zoster.

DISCUSSION: Pneumococcal vaccine appears to be underused in community-based older adults, and is well below the national target rate of 80%. Similarly a low percentage of older adults report receiving herpes zoster, however influenza vaccination is close to target rates. Pharmacists may be well placed to address this care gap, and future research will evaluate the most effective strategies involving pharmacists to meet vaccination targets.

ABSTRACT TITLE: Opportunities for Optimizing the Role of Pharmacists in Family Planning

AUTHORS: Judith Soon, BSc(Pharm), RPh, ACPR, MSc, PhD, FCSHP, Wendy V. Norman, MD, MHSc, Shelia Dunn, MD, MSc, Jennifer Hulme, MD, MPH, Edith Guilbert, MD, MSc

OBJECTIVE: Unintended pregnancy and limited access to contraception in Canada disproportionately affects marginalized populations. To inform a national family planning research agenda, healthcare providers were surveyed about contraception access and quality of care.

METHODS: A bilingual online self-administered survey was based upon the family planning frameworks of Bertrand (to evaluate access) and Bruce (to assess quality of care) and piloted to establish content validity and readability. It was distributed using snowball sampling through key English and French organizations and healthcare providers, with reminders at two and six weeks.

RESULTS: Healthcare providers (150 English and 56 French) from all provinces and one territory completed the survey. Respondents identified women of low socioeconomic status, youth, new immigrants and those without health insurance at high risk of experiencing barriers to accessing contraceptives, citing high cost of contraceptives (e.g., IUDs), lack of knowledge (e.g., effectiveness of contraceptives), psychosocial (e.g., lack of cultural sensitivity of providers), health system barriers (e.g., inability to access primary care professional prescribing contraception) and distance (e.g., services too far from home) as key factors. Women most affected by lower quality care were low socioeconomic status, youth, Aboriginals, mentally ill or living in rural areas. Fewer French respondents reported inequities in access and quality.

DISCUSSION: Healthcare providers identified limitations in access to and quality of contraceptive care among marginalized populations. As trusted and knowledgeable healthcare providers, and with increasing legislated practice-related policy changes, pharmacists are well-positioned to assume a greater role in optimizing the consistency of accessible, high quality family planning services across Canada.

ABSTRACT TITLE: Weight management services in community pharmacy: a Scottish view

AUTHORS: Anita Weidmann, MRPharmS, PhD, Scott Cunningham, Ph.D., MRPharmS, Denise Hansford, Ph.D., MRPharmS, Giovanna Bermano, Ph.D., Derek Stewart Professor of Pharmacy Practice

OBJECTIVE: To describe the views of the Scottish general public on the provision of weight management services via community pharmacies.

METHODS: A cross-sectional postal questionnaire survey of 6000 randomly selected members of the Scottish general public aged 18 years and over.

RESULTS: Questionnaires were returned by 20.6% (n=1236). Over half 60.1% (n=751) agreed or strongly agreed that they had easy access to pharmacy services in general and around one third agreed (35%; n=438) that it was more convenient to obtain weight management advice from a pharmacist than it is to make an appointment with a GP. Most respondents however lacked awareness of the types of health services available through community pharmacy (13.2%; n=162) and would not feel comfortable speaking to a pharmacist or medicines counter assistant about weight related issues (25%; n=320). Concerns over privacy (47.3%; n=592) and perceived lack of pharmacists' specialist knowledge (open comments) were identified as potential barriers to service uptake by the general public.

DISCUSSION: Overall, respondents appear to be receptive to the idea of accessing weight management services through community pharmacy but a perceived lack of privacy, poor knowledge of pharmacists' skill level and of public health services available to them may explain the reluctance in the uptake of such services to date. The general public's views expressed in this study may help to shape future community pharmacy led weight management service provision nationally and internationally.

ABSTRACT TITLE: Exploring Pharmacists Adoption of Prescribing in Alberta

AUTHORS: Lisa M Guirguis BScPharm., MSc, PhD, Mark Makowsky, BSP, PharmD, ACPR, Christine Hughes, BScPharm, PharmD, ACPR, FCSHP, Cheryl Sadowski, BScPharm, PharmD, Nese Yukel, BScPharm, PharmD, FCSHP, NCMP

OBJECTIVE: In 2007, Alberta became the first North American jurisdiction to grant pharmacists prescribing privileges. Our objective was to explore how pharmacists have adopted prescribing in practice 3 years after this legislation was implemented.

METHODS: We invited pharmacists to participate in semi-structured telephone interviews to discuss their prescribing practices and explore the facilitators and barriers to implementation. Pharmacists working in community, hospital, primary care network, or other settings were selected using a mix of random and purposive sampling. Two investigators analyzed each transcript using an Interpretive Description approach to identify themes. The analysis was grounded using the Diffusion of Innovation theory.

RESULTS: Thirty-eight participants (n=14 with additional prescribing authorization) agreed to be interviewed. Twenty-nine participants (76%) reported prescribing at least weekly. Overall, pharmacists felt that prescribing made care more convenient for patients and physicians. Community pharmacists valued the ability to issue a prescription for continuity of care but viewed this as a legitimization of previous practice (i.e., "legalized loaning") and related concerns over liability when prescribing "riskier" medications. "Innovation System Fit" was a prominent theme whereby the site's model of practice strongly influenced the adoption of prescribing. Across all practice settings, pharmacists stated that "Relationships with Physicians" impacted prescribing behaviors and the decision to apply for additional prescribing authorization.

DISCUSSION: Our data suggests that the main impact of pharmacist prescribing to date has been to maintain continuity of care, and while there are some cases where core patient care practices have been altered for the most part this has not been the case.

CPhA Advocacy Session Public Policy, Public Perceptions, and The Year That was in Pharmacy

Speaker:

Jeff Morrison, M.A (Science Politique, University of Ottawa) Director of Government Relations and Public Affairs Canadian Pharmacists Association

Biography:

Since May 2010, Jeff Morrison has served as Director of Government Relations and Public Affairs with the Canadian Pharmacists Association, where he is responsible for advocacy, stakeholder relations, policy development, media relations, and external communication for the association. Prior to this role, Jeff served as President of the Association of Canadian Engineering Companies from 2008 to 2009 and as Director of Government Relations and Director of Environment for the Canadian Construction Association from 2000 to 2008.

Session Description:

Pharmacy has once again been at the forefront of several public policy issues and developments in 2011-12. This session will summarize a number of the key public policy challenges faced by pharmacy in 2011-12, and what they mean for the profession. This session will also reveal the results of a national public opinion poll conducted by Environics on Canadians' views of pharmacists and the services they provide.

Learning Objectives:

- a) Provide attendees with insight and updates on key public policy issues impacting pharmacy
- b) Provide insights into public perceptions about pharmacists and the services they provide
- c) Have the opportunity to participate and provide input into public policy discussions

References:

- 1. CPhA
- 2. Parliament of Canada video service

Public Policy, Public Perceptions, and the Year That was in Pharmacy

Jeff Morrison Director of Government Relations and Public Affairs





What Public Policy Changes Have Sometimes Felt Like in 2011/12...



Public Policy – Canadian Context

- Health care remains among top public policy concerns for Canadians.
- Era of expansionary fiscal policy is over; era of short-term austerity is here.
- Western Canada rising in ascendency; Eastern Canada lagging
- Demographic pressures are increasingly a concern for policy makers (eg, Drummond report in Ontario, move to increase OAS recipient age to 67).
- All governments faced with common challenge: lower health care costs, better outcomes.
- Federal government, as we shall see, is increasingly removing itself from the health policy field: increasing balkanization of health care in Canada?





Show webpage <u>www.drugshortages.ca</u> (show a page featuring drug listings)

CANADIAN PHARMACISTS ASSOCIATION DES DU CANADA



House of Commons Emergency Debate – March 12, 2012



Drug Shortages developments – cont.

Developments in reaction to Sandoz:

- House of Commons held emergency debate and voted on unanimous motion for the federal government to devise national strategy.
- Standing Committee on Health held hearings report expected shortly on role of federal government.
- Concerns raised about sole sourcing practice: HealthPro announced it is revising its policy; provinces reviewing their purchasing policies
- Rx&D and Canadian Generic Pharmaceutical Association announced \$200,000 towards drug shortages reporting system (generic companies had previously announced capacity upgrades of \$100 million over three years)
- Health Canada announced proactive measures to source and expedite entry to market of alternative products (CPhA argued this is a role Health Canada could take for all shortages).

CANADIAN PHARMACISTS ASSOCIATION DES DU CANADA



Counci	il of the F	ederatio	n Heal	th Car	e Reform process	
		Council of	the Fede	ration		
Task Fo	orce on Finan	cing	Task Fo Brad W	rce on Inn all (Sask)	ovation (Co-Chairs and Robert Ghiz (PEI)	
	Sco	pe of Practice	CI	PGs	Human Resources	
Model 1	Model 2	Model 3	CPG 1	CPG2	?	
1	Recommenda	itions for pan-(Canadian	, deploya	ble reforms	
CANADIAN PHARMACISTS ASSOCIATION	Association des Pharmaciens DU Canada					



	CANADIAN PHARMACISTS ASSOCIATION DU CANADA	5		Su	ummar Pra	y of Ph ctice /	armaci Activitie	sts' Ex s acro	pandeo ss Can	d Scope ada	e of			
	Implemented in Jurisdiction						Provi	nce/Ter	ritory					
2	Pending Legislation or Regulation or Policy													
64	Provide emergency prescription refills	BC	AB	SK X	P	ON V		NB	NS	VEI	NL	NWT	25	25
lice	Renew/extend prescriptions	1	¥	¥	¥ 2	¥	¥ 1.4	×	¥	¥	×	×	25	20
Pract	Change drug dosage/ formulation	*	*	×	25	P	3,4	×	*	25	*	25	X	26
ope of	Make therapeutic substitution	*	*	1	25	25	3,4	1	*	25	25	25	25	20
st sco	Prescribe prescription drugs as part of a minor ailments scheme	25	22	×	25	25	P ⁴	25	. 🖌	25	25	25	25	26
rmaci	Initiate prescription drug therapy	25	×	1	P	P	× 3	*	1	26	25	25	22	20
Риа	Order and interpret lab tests	25	*	*	P	P	3,4	*	P	25	25	25	2is	2
	Administer a drug by Injection	*	×	25	P	P	P 4.5	*	P	25	25	25	25	2

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March 29, 2012 Federal Budget

A number of provincial governments have recently expanded the health care services that pharmacists are authorized to perform in the course of their professional practice beyond those of dispensing drugs. Examples of nondispensing health care services that pharmacists are authorized to provide in certain provinces include:

- ordering and interpreting lab tests (e.g., to determine if a medication is
- creating an adverse reaction);
- administering medications and vaccinations (e.g., administering flu vaccines);
- changing drug dosages; and
- prescribing drugs for minor ailments.

Tax Measures

Budget 2012 proposes to exempt from the GST/HST services rendered by pharmacists within a pharmacistpatient relationship for the promotion of the patient's health or for the prevention or treatment of a disease, disorder or dysfunction of the patient. The proposal will result in an exemption for the non-dispensing health care services that pharmacists are authorized to provide in the course of their professional practice. Pharmacists' services of dispensing prescription drugs will continue to be zero-rated.

Under the current rules, a prescribed list of diagnostic health care services, such as blood tests, are exempt when ordered by certain health care professionals, such as physicians or registered nurses. Budget 2012 proposes to expand the exemption for these diagnostic services to include those ordered by pharmacists when the pharmacists are authorized to issue such orders under the laws of a province. These measures will apply to supplies made after Budget Day.



Generic Pricing Reforms – race to the

bottom? (Source: Canadian Association of Chain Drug Stores)

Province	Current Generic Drug Pricing	Target Generic Drug Pricing
British Columbia	40% of brand price	25% of brand price by April 1, 2013
Alberta	45% of brand price for new generic products 56% of brand price for existing generic products	Negotiations ongoing – government is on the record targeting 35% (expect to be effective July 1, 2012)
Saskatchewan	40% of brand price for new generics 45% of brand price on selected group of existing generic products	35% of brand price by April 1, 2012
Manitoba	Estimated at 60% (but varies with UMA)	TBD
Ontario	25% of brand price as of 2010	25% of brand price 20% of brand price on top 10 products announced April 20, 2012
Quebec	All generic drugs must be sold at the best available price in Canada. However, first generic drug are reimbursed at 60% of brand price. For a generic drug that has two manufactures, the generic price is set at 54% of brand drug price.	25% of brand price April 2012
New Brunswick	Estimated to be 50 – 70% of brand price	Changes imminent – 35% Dec 1, 2012
Nova Scotia	40% of brand price	35% of brand price July 1, 2012
Prince Edward Island	Estimated at 60%	Targeting 35% by July 1, 2012
Newfoundland & Labrador	45% of brand price as of April 16, 2012	35% of brand price by April 1, 2013

Other policy areas of focus

- *Third party payers*: To see third party payers extend coverage for greater number of pharmacist-provided services and improve administration
- *E-health initiatives*: To see greater use of e-health solutions and Electronic Health Records by pharmacists.
- *First Nations*: Work with provincial associations and NIHB to improve service and working relationship between NIHB and pharmacists.
- *Medicinal Marijuana*: Ensuring new regulations are in the best interest of pharmacists.



Environics National Survey – Results (1)

	All Canadians (n=1505)	Atlantic Canada (n=105)	Quebec (n=356)	Ontario (n=580)	Manitoba (n=55)	Sask (n=47)	Alberta (n=164)	BC (n=198)
Pharmacists are health care professionals who dispense medications AND also provide a range of services related to health conditions, liffestyle management and medication management	74%	80%	71%	73%	82%	100%	67%	75%
Pharmacists are health care professionals who dispense medications	16%	12%	14%	18%	13%		24%	19%
Pharmacists are business people who sell medications and other products	8%	7%	12%	7%	5%		7%	5%
Don't Know/Not Applicable	2%	1%	3%	2%			2%	1%

Environics National Survey – Results (2)

	All Canadians (n=1505)	Atlantic Canada (n=105)	Quebec (n=356)	Ontario (n=580)	Manitoba (n=55)	Sask (n=47)	Alberta (n=164)	BC (n=198)
Consulting with one or more pharmacists whenever you need advice for acute conditions	53%	61%	53%	49%	59%	74%	57%	51%
Instructions on how to use a medical device	36%	35%	33%	37%	29%	44%	35%	38%
Consulting with one or more pharmacists when you need advice on healthy living	24%	23%	23%	26%	18%	22%	29%	20%
Consulting with one or more pharmacists on a regular basis to help you manage chronic conditions	21%	20%	20%	22%	18%	30%	15%	27%
Have never received any counseling or advice from a pharmacist	19%	16%	17%	21%	12%	19%	18%	23%
Consulting with one or more pharmacists for smoking cessation counseling	8%	6%	10%	7%	5%	7%	13%	6%
Don't Know/Not Applicable	6%	6%	7%	5%	12%		7%	9%

Environics National Survey – Results (3)

	All Canadians (n=1054)	Atlantic Canada (n=79)	Quebec (n=260)	Ontario (n=397)	Manitoba (n=37)	Sask (n=37)	Alberta (n=115)	BC (n=128)
Gives good amount of information	52%	49%	52%	53%	60%	65%	40%	59%
Provide better service	17%	13%	22%	14%	16%	20%	21%	15%
Friendly / Courteous staff	17%	22%	10%	18%	15%	27%	14%	26%
Provides prescription / Medication (Filled prescription)	12%	10%	8%	12%	16%	16%	22%	13%
Helpful	12%	17%	8%	13%	4%	11%	14%	18%
Quick / Prompt service	9%	4%	7%	12%	9%	0%	9%	9%
Takes ample time for questions / explanation	6%	4%	7%	6%	7%	10%	3%	4%
Professional	5%	4%	5%	6%	0%	0%	9%	5%
Satisfied with the service (General)	3%	4%	5%	2%	5%	0%	6%	2%

Environics National Survey – Results (4)

			57%						32%			5%	3% 3
			55%			28% 7					79	% 5%	5%
			52%				30%				7%	5%	6%
		42%					379	%			9%	6%	6%
		38%					35%			14%	6	7%	6%
		37%				28%			12%	1	0%	13	%
	27%				349	%			19%		129	%	8%
	27%			32%					16%	12	%	13	%
	24%			23%			19%		2	20%		14	%
	22%		2	3%			19%			%		159	6
	17%		20%			22%			24%			17%	
	16%	15	%	10%		16%		_		43%			
	15%		21%			22%			24%		1	18%	
0%	10%	20%	30%	4	40%	50%	60%	6	70%	80%	6	90%	10

Environics National Survey – Results (5)

	Not very/not	at all likely to	go to a pharm	nacist for		
Reasons for seeking out a pharmacist	Emergency prescription refills (n=175)	Renewal/ extension of prescriptions (n=182)	Prescriptions for minor ailments (n=232)	Non-prescription treatment of minor ailments (n=314)	Flu shot injections (n=579)	Vaccinations (n=608)
You didn't think pharmacists could provide this service	26%	31%	24%	24%	28%	29%
You would not be comfortable getting this service from a pharmacist even if they are allowed to offer it	15%	18%	26%	18%	17%	17%
A pharmacy does not offer a private setting/room in which to get this service	9%	9%	17%	13%	10%	10%
It is simply more convenient for you to get this service from another health care professional	17%	18%	16%	15%	21%	23%
Don't Know/Not Applicable/Service not needed	33%	24%	17%	30%	24%	21%

Environics National Survey – Results (6)

	All Canadians (n=1505)	Atlantic Canada (n=105)	Quebec (n=356)	Ontario (n=580)	Manitoba (n=55)	Sask (n=47)	Alberta (n=164)	BC (n=198)
At your physician's office	25%	26%	29%	22%	27%	27%	22%	25%
Information sessions in a pharmacy	17%	16%	13%	21%	15%	20%	13%	18%
Information mailed to your home	16%	20%	19%	15%	14%	24%	13%	17%
Materials (i.e., posters, brochures, etc) in pharmacies	13%	11%	12%	13%	15%	17%	14%	10%
News articles or stories in the mass media (TV, radio, newspapers, magazines)	8%	6%	6%	10%	11%	3%	8%	9%
On the Internet (websites, social media)	8%	10%	7%	7%	12%	3%	13%	9%
Other	1%	0%	1%	1%				2%
Don't Know/Not Applicable	12%	11%	13%	11%	6%	6%	17%	10%





Merci/Thank you!

Jeff Morrison Director, Government Relations and Public Affairs

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(613) 523-7877, x386

NSAIDs & Cardiovascular Risk

Speakers:

Carlo Marra, B.Sc.Pharm, PharmD, PhD Associate Professor & Director, CORE/Faculty of Pharmaceutical Sciences Scientist/CHEO Providence Health Research Institute UBC, Vancouver Campus

I fan Kuo, B.Sc. Pharm

Biographies:

Carlo Marra received his B.Sc.(Pharm.) in 1992 and completed a hospital pharmacy residency at the University of British Columbia. He went on to complete his Pharm.D. degree in 1995 and worked at Vancouver General Hospital until 2000 when he enrolled in the Ph.D. program in epidemiology/health outcomes at UBC. Dr. Marra joined the Faculty of Pharmaceutical Sciences at UBC in 2004 and is currently an Associate Professor of Pharmacy Practice and a Scientist at the Arthritis Research Centre of Canada.

I fan Kuo graduated with a Bachelor of Pharmaceutical Sciences at the University of British Columbia in 2004. She then did a hospital residency at St. Paul's Hospital and stayed on as a staff pharmacist for two years. I fan returned to UBC and completed her PharmD in 2009. She worked as a Clinical Pharmacy Specialist in the coronary ICU at St. Paul's Hospital before going back to UBC to undertake her postdoctoral research fellowship at the Collaboration for Outcomes Research and Evaluation (CORE) under the guidance of Drs. Larry Lynd and Carlo Marra. Her current research focus is on the risk-benefit analysis of oral anticoagulants in patients with atrial fibrillation.

Session Description:

This session will review the latest evidence on cardiovascular risk and NSAID use and will discuss the use of ASA in various populations.

Learning Objectives:

By the end of this session, participants will be able to

- 1. Describe the mechanisms of cardiovascular risk associated with various NSAIDs
- 2. Describe the role of ASA in various populations with cardiovascular risk
- 3. Discuss the current body of knowledge regarding cardiovascular risk and NSAIDs

Poster Sessions
Pharmacy Practice Research and Innovation Posters and Presenting Authors

1. Perspectives of pharmacy students during a time of significant change.

Kenny Chan, BScPhm Candidate 2014, Bell Ho, HBSc, BScPhm Candidate 2013, Marie Rocchi, B.Sc.Phm., M.D.Ed.

2. Pharmacy students' attitudes about pharmacist prescribing.

Christine Hughes, BscPharm, PharmD, FCSHP, Meagen Rosenthal, MA (Sociology), Beverly Ang, Pharmacy Student, Theresa Charrois, BscPharm, Msc

3. Vaccination services in community pharmacies in the province of Quebec.

Jocelyne Moisan, Ph.D., Chantal Sauvageau, MD, MSc., FRCP(C), Eve Dubé, Ph.D., Richard Bradet, M.Sc., Myrto Mondor, M.Sc.

4. Staff and student satisfaction with Alberta student pharmacists administering vaccination in the University of Alberta annual influenza campaign.

Hoan Linh Banh, Pharm.D., Aron Walker, BSc. Pharm, Kevin Friese

5. Ambulatory pharmacy services specializing in chronic pain and opioid management.

Victoria Su, BSc(Pharm), ACPR, PharmD, Karen Ng, BScPhm, ACPR, PharmD, Laura Murphy, PharmD, ACPR, BScPhm, RPh

6. AGIR: A program for osteoarthritis patients.

Lyne Lalonde, B.Pharm., Ph.D, Élisabeth Martin, M.Sc, Dave Bergeron, Inf., M.Sc., Carole Haworth, pht, Manon Choinière, Ph.D, Phillippe De GrandPré, B.Pharm.

7. Development of a blueprint for a certification examination to register pharmacy technicians.

John Pugsley, B.Sc. Phm., Pharm. D., Carol O'Bryne BSP, Lila Quero Munoz, PhD.

8. Personality traits of hospital pharmacists.

Meagen Rosenthal, PhD Student, Jill Hall, B.Sc.Phm, Ross T. Tsuyuki, PharmD

9. Does personality explain research performance?

Meagen Rosenthal, PhD Student, and Ross T. Tsuyuki, PharmD

10. Factors affecting community pharmacists' participation in pharmacy practice research.

Nicole Tsao, BSc., MSc.Pharm., Meagen Rosenthal, MA, Carlo Marra, BSc(Pharm), PharmD, PhD, Larry Lynd, BSP, PhD, Ross Tsuyuki, BSc(Pharm), PharmD, MSc

11. Is pharmacy-based research network a valuable option for improving research?

Ghaya Jouini M.Sc. Student, Lyne Lalonde, B.Pharm, Ph.D, Joanie Hébert, Marie-Claude Laliberté, M.Sc., Élisabeth Martin, M.Sc.

12. Eyes wide shut – Assessing bias in professional development.

Shawn Bugden B.Sc. (Pharm), M.Sc., Pharm.D.

13. Programme PROFIL - A training-and-communication network program in nephrology.

Ghaya Jouini M.Sc. Student, Lyne Lalonde, B.Pharm, Ph.D, Roxanne Forget, B. Pharm., Anne Lord, B. Pharm., M. Sc., Élisabeth Martin, M. Sc.

14. Pilot community pharmacy based diabetes program using health coaching principles.

Feng Chang, RPh, BScPhm, PharmD, Nishi Gupta, BSc, BScPhm (candidate), Laura Smith, BScN (candidate), Dan Stringer, RPh, BSc, BScPhm

15. How knowledge, attitudes, and relationships influence pharmacists' practices in harm reduction. Tyler Watson, Christine Hughes, BscPharm, PharmD

16. What can we learn from analysis of a pharmacist listserv?

Barbara Farrell B.Sc.Phm., Pharm.D., FCSHP, Melanie Trinacty, B.Sc., B.Sc.Phm, Terri Schindel, B.Sc.Phm, MCE, FCSHP, Lisa Dolovich, B.Sc.Phm., Pharm.D., M.Sc., Grant Russell, MBBS, FRACGP, MFM, PhD, Lisa Sunstrum, B.Sc., B.Sc.Phm. Candidate, Natalie Kennie, B.Sc.Phm., Pharm.D.

17. Patients benefit from health care professionals' use of e-Therapeutics+.

Marc Riachi, BSc(Hons), BSc(Pharm), Carol Repchinsky, BSc, BSP, Pierre Pluye, MD, PhD, Janique Johnson-Lafleur, MSc, Barbara Jovaisas, BSc(Pharm), Roland Grad, MDCM, MSc, CCFP

18. Enhance medication safety and continuous quality assurance in pharmacy practice.

Certina Ho, R.Ph., B.Sc.Phm., M.I.St., M.Ed, Calvin Poon, BScPhm Candidate, Gary Lee, B.Eng, Roger Cheng, RPh, BScPhm, PharmD, Patricia Hung, BScPhm

19. Challenges and benefits of quality improvement programs in community pharmacy.

Todd A. Boyle, Ph.D., Thomas Mahaffey, Neil MacKinnon, Amelia Mahaffey, Kellie Duggin

20. Analysis of medication incidents in community pharmacy.

Certina Ho, R.Ph., B.Sc.Phm., M.I.St., M.Ed., Patricia Hung, BScPhm, Neil MacKinnon, BSc (Pharm), MSc (Pharm), PhD, FCSHP, Tom Mahaffey, PhD, Todd Boyle, PhD

21. Quality related event reporting: Insights from provincial pharmacy regulators.

Thomas Mahaffey, Ph.D., Todd A. Boyle, Ph.D., Meil MacKinnon, Andrea Scobie, Jeffrey Taylor

22. A new tool for evaluating the severity of drug-related problems.

Ghaya Jouini, M.Sc, Patricia Quintana-Bárcena, M.Sc (candidate), Lyne Lalonde, Ph.D, Anne Lord, M.Sc, Élisabeth Martin, M.Sc

23. Safe use of medications in seniors.

Certina Ho, R.Ph., B.Sc.Phm., M.I.St., M.Ed., Calvin Poon, BScPhm Candidate, Atsushi Kawano, BSc, MSc, BScPhm Candidate

24. Medication safety in pediatrics.

Certina Ho, R.Ph., B.Sc.Phm., M.I.St., M.Ed., Calvin Poon, BScPhm Candidate, Atsushi Kawano, BSc, MSc, BScPhm Candidate

25. Oralchemotherapy.ca: A community pharmacy cancer medication safety tool.

Tibor van Rooij, Ph.D. Candidate, Serena Rix, Sharon March

26. Impact of a drug access facilitator in a chemotherapy clinic.

Mei Shi, BSc. Phm., Daniela Gallo-Hershberg, PharmD, Nicole Harvey

27. Pharmacy loyalty and quality of antidiabetes drug use.

Jean-Pierre Grégoire, MPH, PhD, FISPE, Caroline Sirois, B. Pharm., Ph.D., Jocelyne Moisan, Ph.D.

28. Performance and acceptability of different inhaled medication devices in individuals with asthma and/or COPD.

Hoan Linh Banh, Pharm.D., Jenny Hoang, pharmacy student, Sing-yue Lam, pharmacy student, Cheryl Sadowski, BSc. Pharm., Pharm.D., Andrew Cave, MD

29. TRANSIT: Challenges and priorities for cardiovascular prevention in primary care.

Lyne Lalonde, B.Pharm, Ph.D, Éveline Hudon, M. D., M. Cl. Sc., Fabie Duhamel, Inf., Ph. D., Johanne Goudreau, Inf., Ph. D., Marie-Thérèse, M. D., M. Sc., FCMFC

30. TRANSIT: Improving interprofessional management of cardiovascular risk in primary care. Lyne Lalonde, B.Pharm, Ph.D, Celine Bareil, M. Ps., Ph. D., Marie-Thérèse Lussier, M. D., M. Sc., FCMFC, Johanne Goudreau, Inf., Ph. D., Éveline Hudon, M. D., M. Cl Sc.

31. Using blood pressure kiosks to detect high blood pressure in pharmacies.

Sherilyn Houle, BSP, PhD Candidate, Ross Tsuyuki, BSc(Pharm), PharmD, MSc, FACC, FCSHP

32. Business and patient care opportunities using blood pressure kiosks.

Sherilyn Houle, BSP, PhD Candidate, Anderson Chuck, PhD, MPH, Ross Tsuyuki, BSc(Pharm), PharmD, MSc, FACC, FCSHP

33. Attitudes of pharmacists in Alberta regarding traditional Chinese medicine and complementary alternative medicine.

Hoan Linh Banh, Pharm.D., Katie Tam, pharmacy student

34. Improving patient adherence to drug therapy through the PASSAction framework.

Vivian Lee, BScPhm candidate

1. TITLE: Perspectives of pharmacy students during a time of significant change. AUTHORS: Kenny Chan, BScPhm Candidate 2014, Bell Ho, HBSc, BScPhm Candidate 2013, Marie Rocchi, B.Sc.Phm., M.D.Ed.

OBJECTIVE: The impact of drug system reform in Ontario on pharmacy students has not been closely documented. Building on prior work by the Blueprint for Pharmacy (MacKinnon and CAPSI, 2008), this research qualifies and quantifies University of Toronto students' perception on the state of pharmacy.

METHODS: Students for Optimizing and Advocating Pharmacy Endeavours (S.O.A.P.E.) hosted a Blueprint for Pharmacy workshop. Student opinion was gauged using a multiple-choice survey and small discussion groups. 169 students from all four years of pharmacy participated.

RESULTS: On their outlook about their future as pharmacists, students answered 3.12 (mean) on a scale of 1 (very bleak) to 5 (very encouraging). First year students answered 3.54 (mean) while upper year students answered between 2.93 and 2.71 (mean).

Regarding their perception of the public's image of pharmacists, means of 2.97 and 2.79 were obtained for first and second year students, and was 2.83 and 2.29 for third and fourth years, respectively.

Regarding pharmacy practice areas needing the most improvement, students chose: scope of practice, compensation models, and the public's image of pharmacists as the top three priorities.

DISCUSSION: This study presents unique insight into students' perception following recent drug system reform in Ontario. Student impressions on their future prospects within the profession and the public's perception seemed to decline as cohorts progressed through their studies. The trend may be associated with those most affected by 2009 drug system reforms; additional research is in motion.

2. TITLE: Pharmacy students' attitudes about pharmacist prescribing. **AUTHORS:** Christine Hughes, BscPharm, PharmD, FCSHP, Meagen Rosenthal, MA (Sociology), Beverly Ang, Pharmacy Student, Theresa Charrois, BscPharm, Msc

OBJECTIVE: While there is published literature describing attitudes towards pharmacist prescribing from the perspective of pharmacists, physicians, and nurses, there is a paucity of data from pharmacy students. The objective of this research is to understand the perceptions of pharmacy students on pharmacist prescribing.

METHODS: A cohort of consenting fourth year pharmacy students from the University of Alberta were recruited to participate in semi-structured, face-to-face focus group interviews which were audio recorded and transcribed. A qualitative approach using content analysis was used to analyze data and identify themes.

RESULTS: 19 students participated in three focus group interviews in October 2011. Students identified factors affecting their perceptions on three major areas: the role of the pharmacist, pharmacy education and pharmacist prescribing. Students displayed optimism regarding the role of the pharmacist in patient-centered care, however understood that a lack of resources, time, and practice environment were barriers. Students acknowledged the discontinuity between what is learned in their undergraduate training and what they see in practice. Students expressed interest in obtaining prescribing authority, but many felt the need for further specialization and training prior to applying for this authorization. Four factors important to incorporating prescribing into the students' future practices were identified: internal motivation, training and comfort, responsibility, and communication with other health professionals.

DISCUSSION: This work presents some of the first data describing pharmacy students' views on pharmacist prescribing. It has outlined important implications for how students are taught during their formal undergraduate training and pharmacy practice change as a whole.

3. TITLE: Vaccination services in community pharmacies in the province of Quebec. **AUTHORS:** Jocelyne Moisan, Ph.D., Chantal Sauvageau, MD, MSc., FRCP(C), Eve Dubé, Ph.D., Richard Bradet, M.Sc., Myrto Mondor, M.Sc.

BACKGROUND: Although Quebec pharmacists are not allowed to administer vaccines, they can: 1) promote vaccination, 2) counsel clients on vaccination, 3) sell vaccines and 4) provide vaccine administration in their premises.

OBJECTIVES: To 1) describe vaccination services given in Quebec pharmacies and 2) assess the association between, on one hand, pharmacy characteristics, facilitators and barriers perceived by pharmacists and, on the other hand, vaccine administration.

METHOD: A questionnaire was mailed to owners of the 1663 pharmacies in Quebec. Questions were asked on 1) services provided, 2) characteristics of their pharmacy and 3) facilitators and barriers to vaccine administration. In order to identify factors independently associated with vaccine administration, multivariate log-binominal regression was conducted.

RESULTS: 1102 (67%) questionnaires were analysed. The promotion of vaccination was done in 73% of the pharmacies, counselling on vaccination in 65%, sale of vaccines in 90% and vaccine administration in 27%. Were more likely to offer vaccine administration those reporting: a higher number of opening hours, the presence of another health professional in the pharmacy, not being located in the same building than a medical clinic, having an agreement to collaborate with a public health unit or a medical clinic, lower perceived difficulties with insurance cost and with lack of demand from clients. Moreover, 44% of respondents were planning to offer vaccine administration in the next five years and 50% answered they would be willing to administer vaccines themselves if legislative modifications were made.

DISCUSSION: Quebec's pharmacists are involved in immunization and many are willing to increase their involvement.

4. TITLE: Staff and student satisfaction with Alberta student pharmacists administering vaccination in the University of Alberta annual influenza campaign. **AUTHORS:** Hoan Linh Banh, Pharm.D., Aron Walker, BSc. Pharm, Kevin Friese

Administration of vaccinations is an expanded scope of practice that is embraced by most pharmacists in Alberta. In the United States, it has been shown that pharmacy students participating in immunization initiatives can improve the vaccination rates. In 2011, in collaboration with Alberta College of Pharmacists, Alberta Health Services, Alberta Health and Wellness, Human Resources, and Risk Management, and the University Health Centre, the Faculty of Pharmacy and Pharmaceutical Sciences were able to establish 5 clinic days for pharmacy and nursing students to administer vaccines to University of Alberta staff and students. Eighty pharmacy students and 27 community pharmacists were recruited. The last two days of the clinic provided pharmacy students with a unique opportunity to work with nursing students in an interdisciplinary setting.

In 5 days, both pharmacy and nursing students administered a total of 4477 doses of vaccine, with nearly 3000 doses administered by pharmacy students. The clinic was successful in providing the students opportunities to practice and improve their injection skills and patient counseling. The flu clinic was extremely successful in promoting the role of pharmacists as immunizers. Satisfaction surveys were given to staff and students regarding their vaccination experience by pharmacy students. Over 99% of the participants were either satisfied or very satisfied with the service with 92% willing to receive vaccines from a pharmacist in the future.

Because prospective employers expect pharmacists to set up and operate flu clinics in pharmacies, participation of this event, it will facilitate process for students after graduation.

5. TITLE: Ambulatory pharmacy services specializing in chronic pain and opioid management. **AUTHORS:** Victoria Su, BSc(Pharm), ACPR, PharmD, Karen Ng, BScPhm, ACPR, PharmD, Laura Murphy, PharmD, ACPR, BScPhm, RPh

Innovative clinical pharmacy services provide medication management for patients with chronic noncancer pain at Altum Health, an interprofessional ambulatory clinic funded through third party payers. Pharmacists complete assessments in collaboration with consultant physicians and psychiatrists at the request of the payer, focusing on chronic pain, opioid dependence, and mental health disorders. Services include a report outlining an opioid management plan with other medication recommendations for implementation by the patients' primary care provider.

Selected patients are referred for interprofessional group or individualized treatment programs for opioid management, which include pharmacist education, monitoring of opioid rotations, opioid tapering, inpatient medical withdrawal at the Centre for Addiction and Mental Health, and/or initiation of methadone or buprenorphine maintenance therapy. Participation is contingent on payer approval.

After the initial pilot with a 0.5 full time equivalent (FTE) pharmacist in 2010, pharmacy services have expanded to 3 FTE positions. The pharmacists are hired by the University Health Network Pharmacy Department and are contracted to Altum Health.

Billing data from 2011 indicated pharmacists completed 263 interprofessional assessments and 99 treatment consultations for 65 patients. Pharmacy services expanded to all 5 Altum Health satellite clinics across Ontario with the use of video-conferencing equipment to provide live pharmacist-patient interactions.

Preliminary outcome data show 6 patients completed treatment in 2011 and achieved an average 25% reduction in daily morphine equivalent dose. Data collection is ongoing. Success of treatment programs is occasionally limited by a patient's motivation, funding, or difficulty in implementing the treatment plan with the primary care provider.

6. TITLE: AGIR: A program for osteoarthritis patients.

AUTHORS: Lyne Lalonde, B.Pharm., Ph.D, Élisabeth Martin, M.Sc, Dave Bergeron, Inf., M.Sc., Carole Haworth, pht, Manon Choinière, Ph.D, Phillippe De GrandPré, B.Pharm.

BACKGROUND: As part of a knowledge translation program, a one-day workshop was conducted to explore the perception of primary care (PC) actors regarding changes that could be implemented to provide better care to patients with chronic non-cancer pain. Priorities for action included the provision of interprofessional continuing education program and the improvement of patient's self-management.

OBJECTIVE: Translate those priorities for action into a PC program.

METHODS: Over a eight month-period, members of the PC community (physiotherapist, pharmacist, nurses, PC physicians, anaesthesiologist, and researchers) worked together to define the target population and the components of the program and to develop the program.

RESULTS: Patients with osteoarthritis were selected as the target population. The program is entirely supported by a group of interdisciplinary regional clinicians. It includes a self-management program for patients and their family. Over a two session-period, patients will define their objectives and treatment plan (lifestyle changes and medications). A one session interactive interdisciplinary training program will be offered by PC physicians, nurses, pharmacists, and physiotherapists. They will learn about pain management and interdisciplinary collaboration. Pharmacists will also attend a short training session on medication review process and will be invited to meet each patient individually. Finally, PC physicians will have access to pain specialists through a weekly telephone consultation services.

CONCLUSIONS: AGIR program was developed by PC actors in accordance with the chronic care model. A pilot trial will be initiated to assess its feasibility and potential effectiveness.

7. TITLE: Development of a blueprint for a certification examination to register pharmacy technicians. **AUTHORS:** John Pugsley, B.Sc. Phm., Pharm. D., Carol O'Bryne BSP, Lila Quero Munoz, PhD.

BACKGROUND: The Pharmacy Examining Board of Canada (PEBC) was charged with the development of a process and examinations to certify Pharmacy Technician candidates at entry to practice in Canada. Using iterative, consultative methodologies, the National Association of Pharmacy Regulatory Authorities (NAPRA) developed a competency profile that supports an expanded scope of practice for pharmacy technicians.

OBJECTIVE: PEBC needed to develop an examination blueprint and examination content that would be appropriate for Pharmacy Technicians assuming an expanded scope of practice. However, few practitioners were involved in or accountable for the full scope of practice. Thus, PEBC needed to develop an examination blueprint and content on the basis of the NAPRA competencies and the vision of progressive pharmacy technicians who were venturing into these domains.

METHODS: In 2007, PEBC determined that certification would be based on a two-part examination, including a multiple choice examination (Part I) and a performance-based examination (Part-II) using an OSPE format, in order to assess the NAPRA competencies.. PEBC held a "Blueprinting Workshop" to determine the relative importance of NAPRA's Pharmacy Technician competencies, drilling down to the levels of competency units and elements. In 2008, PEBC finalized the blueprint which guided the development of both a written multiple choice and performance-based examination.

RESULTS: The presentation will provide an overview and psychometric results of the blueprinting process, describe challenges and issues encountered in visioning the expectations of a newly regulated profession and demonstrate how the blueprint provides sound support for the pharmacy technicians competencies and an expanded scope of practice, at entry-to-practice.

8. TITLE: Personality traits of hospital pharmacists. AUTHORS: Meagen Rosenthal, PhD Student, Jill Hall, B.Sc.Phm, Ross T. Tsuyuki, PharmD

BACKGROUND: The profession of pharmacy has expressed a vision to become more patient centered; however, change has been very slow. It has been suggested that pharmacists themselves may be the ultimate barrier to change, due to their culture and mindset. The examination of personality traits may uncover some aspects of individual pharmacist's contribution to practice change initiatives. We sought to determine the personality traits of hospital pharmacists.

METHODS: This study was a cross-sectional survey of hospital pharmacists in Alberta. Invitations to participate in the anonymous questionnaire were sent via email to all 684 hospital pharmacists in Alberta. We used the Big Five Inventory (BFI), a validated, reliable instrument that measures five personality dimensions. Each dimension is measured on a five point scale from 1 (strongly disagree) to 5 (strongly agree).

RESULTS: 314 pharmacists completed the questionnaire. Hospital pharmacist respondents were generally agreeable (4.07 SD±0.51), conscientious (3.89 SD±0.43), and open to new experiences (3.45 SD± 0.57). They were also emotionally stable (2.53 SD±0.66). Subgroup analysis yielded significant differences between staff pharmacists and managers on the trait of extraversion (3.21 vs. 3.76, p<0.05) and between staff pharmacists and clinical practice leaders (CPL) (3.90 vs. 3.65, p<0.05) and CPLs and managers (3.65 vs. 4.01, p<0.05) on the trait of conscientiousness.

CONCLUSION: The results of this study provide some of the first population data on hospital pharmacists' personality traits. Hospital pharmacists are generally agreeable, conscientious and emotionally stable. These data will be important to shape hiring and continuing professional development programs to advance pharmacy practice.

9. TITLE: Does personality explain research performance? **AUTHORS:** Meagen Rosenthal, PhD Student, and Ross T. Tsuyuki, PharmD

OBJECTIVE: A frequent observation in pharmacy practice research is that although some pharmacists will volunteer to participate many will drop out or not fully participate, despite attending meetings and receiving training (consuming significance resources). The objective of this study was to determine the relationship between pharmacists' personality traits using the validated Big Five Inventory (BFI) and their performance in a pharmacy practice research study.

METHODS: Pharmacists from a large chain pharmacy in Alberta were asked to volunteer to participate in a pharmacy practice research study involving prescribing. A requirement for participation in the study was obtaining additional prescribing authorization (APA). Pharmacists were provided with support in this process and all were asked to complete the BFI at baseline.

RESULTS: Twenty-four pharmacists expressed interest in participating in the study and attended the launch meeting/training sessions. Ten pharmacists did not complete the BFI and all subsequently dropped out of the study. Of the 14 remaining, 5 more pharmacists dropped out of the study, 4 made progress towards completing their APA application, 3 submitted their APA application and 2 already had their APA. Pharmacists who dropped out of the study had lower levels of extraversion, agreeableness, conscientiousness and openness when compared to those who made progress on their applications or submitted them.

CONCLUSIONS: Even in this small, but real-world study, we observed that pharmacists embracing practice change where more extroverted, agreeable and conscientious than those who did not. This may have future implications for selecting and training/supporting pharmacists through practice change initiatives.

10. TITLE: Factors affecting community pharmacists' participation in pharmacy practice research. **AUTHORS:** Nicole Tsao, BSc., MSc.Pharm., Meagen Rosenthal, MA, Carlo Marra, BSc(Pharm), PharmD, PhD, Larry Lynd, BSP, PhD, Ross Tsuyuki, BSc(Pharm), PharmD, MSc

OBJECTIVE: To determine factors affecting community pharmacists' ability to participate in research and assess their attitudes towards pharmacy practice research.

METHODS: Surveys were mailed to three groups of pharmacists across British Columbia: 1) Active group: pharmacists enrolled in a previous research study [unpublished] and actively participated (n=61); 2) Inactive group: pharmacists enrolled in above mentioned study but did not participate (n=85); and 3) Control group: a sample of pharmacists not enrolled in the study (n=300). Survey questions included demographics, perceived factors affecting research participation, attitudes towards pharmacy research and the Big Five Inventory (BFI) personality test.

RESULTS: Response rates from the three groups were 63%, 37% and 14% respectively. Proportion of pharmacy owners was highest in the active and inactive groups (48%, 42% vs. 27%). Active group pharmacists had higher education levels. No statistically significant differences in BFI scores were found between groups. Overall, the most frequently reported barrier was lack of time (78%) and patient participation (42%). Significantly more pharmacists in the active group perceived lack of patient interest as a barrier. Frequently cited promoters of participation among all groups include interest in research topic (55%) and relevance of research to practice (40%). Majority of pharmacists believe research will lead to increased scope of practice (89%) and reimbursement of pharmacy services (77%).

DISCUSSION: Most pharmacists believe participating in pharmacy practice research will advance the profession, but barriers such as lack of time remain a reality. Future research designs should emphasize relevance to patients and practice.

11. TITLE: Is pharmacy-based research network a valuable option for improving research? **AUTHORS:** Ghaya Jouini M.Sc. Student, Lyne Lalonde, B.Pharm, Ph.D, Joanie Hébert, Marie-Claude Laliberté, M.Sc., Élisabeth Martin, M.Sc.

OBJECTIVE: To determine whether developing a practice-based research network (PBRN) of pharmacists would constitute a strategy for improving and facilitating pharmacy-practice research.

METHOD: In a survey of community pharmacists in Montreal (Quebec, Canada) and surrounding areas, a questionnaire was mailed to a random sample of 1250 pharmacists following a modified version of Dillman's Tailored Design Method. Two of the 28 questions were related to PBRNs: one assessed the pharmacists' interest in participating in a PBRN; the other sought their views on which services and activities such a network might offer.

RESULTS: 571 (45.7%) pharmacists completed the questionnaire. Of the respondents, 58.9% indicated they were "very interested" or "interested" in joining a PBRN, while 41.1% reported little or no interest. The most popular potential services were access to continuing education training programs developed in research projects (75.3%); access to clinical tools developed in research projects (76.4%); information about conferences on pharmacy-practice research (63.7%); and participation in the development of new pharmaceutical practices (55.7%).

DISCUSSION: This study suggests that a PBRN comprising community pharmacists and researchers is of interest to a majority of clinicians and constitutes a valuable option for optimizing and facilitating pharmacy-practice research.

12. TITLE: Eyes wide shut – Assessing bias in professional development. **AUTHOR:** Shawn Bugden B.Sc. (Pharm), M.Sc., Pharm.D.

OBJECTIVE: Our objective was review the recognition of bias in profession development (PD) programs for pharmacists in Manitoba.

METHODS: A review was conducted on the evaluation forms completed on PD programs in Manitoba from 2008-2011. The level of pharmacist recognized bias was compared with the source of sponsorship for the program and the pattern in bias recognition over time was reviewed. The level of bias recognition by pharmacists was compared with the recognition of bias by 3rd year pharmacy students for 3 individual PD programs.

RESULTS: Overall, pharmacists felt the PD programs were free of bias 95% of the time. There was no evidence of a difference in bias recognition between years (ANOVA F=1.292 P=0.302). Bias was more common in programs that received industry sponsorship (18%) than in programs that received only non-commercial support (1%; P= 0.03). When 3 individual programs were evaluated in more detail, 100% of pharmacy students found substantial bias in the PD programs while only 8% of practicing pharmacists indentified bias in these programs.

DISCUSSION: The challenges of bias in PD were identified in a recent Institute of Medicine Report. Our review suggests that pharmacists do not always recognize bias in professional development. The recognition of bias by pharmacy students in a focused critical evaluation exercise suggests that critical evaluation skill development may help pharmacists to become more informed consumers of medical information. Ensuring that pharmacists are able to evaluate drug information in the best interest of patients is key to the provision of quality pharmaceutical care.

13. TITLE: Programme PROFIL - A training-and-communication network program in nephrology. **AUTHORS:** Ghaya Jouini M.Sc. Student, Lyne Lalonde, B.Pharm, Ph.D, Roxanne Forget, B. Pharm., Anne Lord, B. Pharm., M. Sc., Élisabeth Martin, M. Sc.

OBJECTIVE: Chronic kidney disease (CKD) is highly prevalent. ProFiL, a training-and-communication network program, was created to support community pharmacists in the management of these patients. It includes an interactive web-based training program supported by a clinical guide as well as access to essential clinical data and to a consultation service offered by pharmacists with expertise in nephrology. The objectives of this interim analysis were to describe the prevalence of drug-related problems (DRPs) and the current knowledge and skills of community pharmacists about CKD.

METHODS: In a cluster randomized controlled trial, patients were recruited in predialysis clinics. Their community pharmacies were randomised to the ProFiL or the Usual Care (UC) group. Patients' characteristics at baseline were documented and DRPs were assessed. Pharmacists' knowledge was documented at baseline using a self-administered questionnaire.

RESULTS: 169 patients (ProFiL: 118; UC: 51) and 81 pharmacies (ProFiL: 53; UC: 28) participated. Patients were mostly men (60%) with a mean age of 66 year old (SD=13) suffering from severe CKD (59%). A mean of 3.5 and 3.6 DRPs per patient (SD: 2.1) were detected in the ProFiL and the UC, respectively. Most pharmacists were women (66%) with a mean of 10.8 years (SD=9.5) of experience. Their knowledge scores were similar in the two study groups (ProFiL: 68.9%; UC: 70.2%).

DISCUSSION: These results support the relevance of the ProFiL program for community pharmacists: the prevalence of DRPs in CKD patients is high and the current knowledge and skills of community pharmacists is not optimal.

14. TITLE: Pilot community pharmacy based diabetes program using health coaching principles. **AUTHORS:** Feng Chang, RPh, BScPhm, PharmD, Nishi Gupta, BSc, BScPhm (candidate), Laura Smith, BScN (candidate), Dan Stringer, RPh, BSc, BScPhm

Over 9 million Canadians are living with diabetes or are pre-diabetic. A key challenge is effective selfmanagement. Health coaching targets behavioural changes using individually tailored solutions to develop and attain health-promoting goals.

A community pharmacy in rural Ontario set up a pilot diabetes program incorporating health coaching from May to August 2011. A trained pharmacist invited patients to participate and provided supervision. The program set up 1:1 meetings which involved addressing health queries and goal-setting for better self-management. During each meeting, goal progress along with weight, waist circumference, blood pressure and blood glucose were tracked. Participant satisfaction was surveyed at the end.

One female and 3 male participants were recruited. The average age was 61 years. Participants' confidence in achieving their goals and perception of the importance of their goals increased, with one participant doubling in confidence to self-manage. One participant lost 7 lbs while 3 out of 4 participants had either reduced weight or waist circumference. All the participants felt that the pilot benefited them in establishing and working towards a healthier lifestyle.

Hurdles faced included recruitment and perceived overlap with other resources in the community. Patients also did not perceive the pharmacy as a learning setting as compared with a medical clinic. Better recruitment strategies and timing are needed, as are ways to redefine the image of the pharmacist. The pilot was successful in providing benefits to the participants and highlights further needs to be explored. A larger evaluation program is being planned for health coaching provision at community pharmacies. **15. TITLE:** How knowledge, attitudes, and relationships influence pharmacists' practices in harm reduction. **AUTHORS:** Tyler Watson, Christine Hughes, BscPharm, PharmD

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OBJECTIVE: Injection drug use (IDU) causes significant morbidity and mortality, and thus has been the focus of many harm reduction strategies. The objective of this study was to identify current harm reduction services offered in community pharmacies, as well as pharmacists' attitudes toward such services.

METHODS: This was a qualitative study of community pharmacists in Alberta. Pharmacists were purposefully selected based on practice location. Interviews were conducted either face-to-face or by telephone using semi-structured questions, and were recorded and transcribed verbatim. Data were analyzed and coded using content analysis to identify key themes.

RESULTS: Eleven community pharmacists were interviewed. The most common harm reduction services described were methadone dispensing and needle exchange or sale. Most pharmacists viewed their role in providing services to IDU's positively, however some hesitation was expressed toward needle exchange and sale. Increased exposure to IDU's was associated with more positive attitudes. Communication and collaboration with other health care providers was identified as essential to providing optimal care. While most pharmacists felt they had enough clinical knowledge, system gaps such as awareness of related health and social supports hindered pharmacists' effectiveness. Other barriers identified include staffing and lack of reimbursement.

DISCUSSION: Community pharmacists are largely supportive of their role in harm reduction, but require better integration into the health care team to expand this role. Additionally, more exposure to harm reduction service users in educational programs may assist pharmacists in developing this type of practice. Future research is needed to confirm the generalizability of these findings.

16. TITLE: What can we learn from analysis of a pharmacist listserv?

AUTHORS: Barbara Farrell B.Sc.Phm., Pharm.D., FCSHP, Melanie Trinacty, B.Sc., B.Sc.Phm, Terri Schindel, B.Sc.Phm, MCE, FCSHP, Lisa Dolovich, B.Sc.Phm., Pharm.D., M.Sc., Grant Russell, MBBS, FRACGP, MFM, PhD, Lisa Sunstrum, B.Sc., B.Sc.Phm. Candidate, Natalie Kennie, B.Sc.Phm., Pharm.D.

OBJECTIVES: Listservs are increasingly used to share knowledge amongst professionals. This study examined participant use and educational needs revealed by contributions to the Canadian Pharmacists Association and Canadian Society of Hospital Pharmacists joint Primary Care Pharmacist Specialty Network (PC-PSN) listserv.

METHODS: Qualitative inductive and deductive content analysis was used to examine one year of archived PC-PSN listserv posts (2010). This was complemented by documenting participation by practice setting, academic affiliation and province. Simple coding using NVivo classified main content of the posts.

RESULTS: One hundred and twenty-nine participants (52.7% of listserv members) posted to the listserv. Participants worked in family practice (31%), community pharmacy (20%), hospital pharmacy (12%), clinics (11%) and other (26%), with 20% having an academic affiliation. Over half practiced in Ontario (52.7%) with others distributed across Canada. Agreement between coders was excellent (0.78); 623 posts were coded. Postings were diverse including patient-specific therapeutic questions, information exchange and practice management needs. Some questions prompted simple answers while others generated conversation and debate. Participants would benefit from education regarding posing comprehensive clinical questions and extrapolating evidence to individual, complex patients. Several participant roles emerged.

DISCUSSION: The PC-PSN listserv provides participants from varied practice and geographic backgrounds with a forum to discuss issues and solicit input and support. Prominent learning needs that include critical appraisal and formulating focused questions, will assist educators in designing useful education experiences. Participant roles may affect participation and warrant further analysis. Applying this methodology to other listservs would aid understanding of factors that contribute to successful listserv use.

17. TITLE: Patients benefit from health care professionals' use of e-Therapeutics+. **AUTHORS:** Marc Riachi, BSc(Hons), BSc(Pharm), Carol Repchinsky, BSc, BSP, Pierre Pluye, MD, PhD, Janique Johnson-Lafleur, MSc, Barbara Jovaisas, BSc(Pharm), Roland Grad, MDCM, MSc, CCFP

OBJECTIVE: In the context of searching for information in electronic knowledge resources, to produce clinical vignettes describing Primary Health Care Professionals'(PHCP) self-reported information use and subsequent patient health benefits.

METHODS:

Design: Mixed methods research combining prospective observational quantitative study and qualitative multiple case study.

Setting: Canada.

Participants: 10 family medicine residents, 10 family health team pharmacists, 10 registered nurse practitioners.

Intervention: Access to e-Therapeutics+ leading to 787 searches for information over an average of 31 weeks in 2008-2009.

Outcome assessment: Using the Information Assessment Method (IAM), participants rated their searches. Rated searches were examined in interviews guided by log-reports of completed IAM questionnaires. Critical searches (cases) were defined as clearly described searches where clinical information was used for a specific patient. For each case, interviewees described information-related patient health outcomes.

Mixed methods data analysis: Quantitative and qualitative data were merged into clinical vignettes.

RESULTS: 130 critical searches (cases) were described as clinical vignettes. Of those, 52 vignettes corresponded to clinical situations where information use was associated with one or more than one type of patient health outcome: increased patient knowledge (n=34), avoidance of unnecessary or inappropriate intervention (n=28), prevention of disease or health deterioration (n=10), health improvement (n=7), and increased patient satisfaction (n=3).

DISCUSSION: PHCPs' self-reported information use results in patient health benefits. This may encourage clinicians to search for information more often, and provide justification for more information retrieval training. This paper reports the first systematic, comprehensive examination of the use of information retrieved by PHCPs, and subsequent benefits.

18. TITLE: Enhance medication safety and continuous quality assurance in pharmacy practice. **AUTHORS:** Certina Ho, R.Ph., B.Sc.Phm., M.I.St., M.Ed, Calvin Poon, BScPhm Candidate, Gary Lee, B.Eng, Roger Cheng, RPh, BScPhm, PharmD, Patricia Hung, BScPhm

Medication system safety and risk management is a relatively new concept in community pharmacy practice when compared to other health care settings in Canada. This stems in part from the lack of a medication incident reporting and learning program designed for community pharmacies. Based on experience acquired from hospital-based incident reporting, the ISMP Canada Community Pharmacy Incident Reporting (CPhIR) program was designed specifically to provide opportunities to optimize learning from past mistakes in community/ambulatory pharmacies. Core elements of CPhIR were determined through teleconferences conducted with pharmacists from Ontario and Nova Scotia. Since CPhIR's official launch in April 2010, over 23,000 medication incidents have been anonymously reported to ISMP Canada.

CPhIR allows individual pharmacies to perform incident analysis and monitor trends within their own setting and to view the national aggregate. ISMP Canada analyzes CPhIR medication incident data to determine national trends and disseminate shared learning through safety bulletins and newsletters.

Currently, there are over 300 registered CPhIR users in Canada. CPhIR contributes to the Canadian Medication Incident Reporting and Prevention System. Nationwide implementation of CPhIR may be a temporary barrier, as different provinces may have various priorities that need to be addressed regarding continuous quality assurance in community pharmacy practice. It is anticipated that CPhIR will be used by all community pharmacies for medication incident reporting and analysis across Canada, as creating a culture of patient safety with the support of a non-punitive reporting system needs to be encouraged within all areas of pharmacy practice. **19. TITLE:** Challenges and benefits of quality improvement programs in community pharmacy. **AUTHORS:** Todd A. Boyle, Ph.D., Thomas Mahaffey, Neil MacKinnon, Amelia Mahaffey, Kellie Duggin

OBJECTIVE: Standardized continuous quality improvement (CQI) programs, when coupled with webbased technologies, online reporting tools, and a national database, enable quality related event (QRE)(medication error and near miss) outcomes to be widely disseminated. Because such programs are still in their infancy, little is known about the challenges and benefits of sustained program use. This research identifies such benefits and challenges.

METHODS: A multi-site study of the SafetyNET-Rx standardized CQI program (www.safetynetrx.ca) involving 15 community pharmacies in Nova Scotia was conducted in the summer of 2011. Semi-structured interviews occurred with the CQI facilitator (i.e., staff pharmacist or technician) in each pharmacy one year after they began using SafetyNET-Rx. Questions captured the key challenges and benefits of SafetyNET-Rx use including how staff relationships and attitudes towards QRE reporting changed since program adoption.

RESULTS: The top challenges were related to time, cost, and program buy-in. The most significant benefits included decreased QRE occurrence, increased understanding of areas that required improvement, and increased awareness of the benefits of reporting. Attitudes improved with an end to the "blame" culture and increased openness. Overall, pharmacists had strong buy-in for the program, with technicians more hesitant.

DISCUSSION: Regulators and the public are pressuring pharmacies to adopt formal CQI programs. This research provides pharmacy managers with a number of issues to be aware of as they undertake such initiatives, as well as the impact (both positive and negative) that such programs may have.

20. TITLE: Analysis of medication incidents in community pharmacy. **AUTHORS:** Certina Ho, R.Ph., B.Sc.Phm., M.I.St., M.Ed., Patricia Hung, BScPhm, Neil MacKinnon, BSc (Pharm), MSc (Pharm), PhD, FCSHP, Tom Mahaffey, PhD, Todd Boyle, PhD

OBJECTIVE: SafetyNET-Rx is a continuous quality improvement program for community pharmacies in Nova Scotia. A component of this project is to determine the underlying system-based contributing factors to medication incidents in community pharmacies and focus on the need for learning from incident reporting.

METHODS: From August 2008 to January 2010, 1544 incidents were voluntarily reported by 13 community pharmacies participating in the SafetyNET-Rx Phase I pilot project. There were 12 duplicates or test entries. 1532 incidents were analyzed, with a focus on the severity of outcome of the incidents and medication-use areas associated with these incidents.

RESULTS: Of the 1532 incidents, 84% (1281 of 1532) were near misses, 16% (250 of 1532) resulted in no harm, of which 36% (90 of 250) involved patients who actually received and ingested the medication. Only 0.07% (1 of 1532) resulted in temporary patient harm, which required the intervention of contacting the physician immediately. The majority of incidents occurred during the Order Entry/Transcription and the Dispensing/Delivery stages. The most common types of incidents reported were incorrect dose (18%), incorrect duration of treatment (14%), and incorrect strength/concentration (13%). The top five medications reported were metoprolol, amoxicillin, rosuvastatin, lorazepam, and metformin. Possible contributing factors to these medication incidents include look/sound-a-like drug names, interruptions in workflow, misunderstood orders, look-a-like packaging, and illegible prescriptions.

DISCUSSION: This study serves as an initial attempt to study factors that may contribute to medication incidents in community pharmacies. Through the analysis of incidents and sharing of findings, practitioners can learn from reported incidents and implement safeguards.

21. TITLE: Quality related event reporting: Insights from provincial pharmacy regulators. **AUTHORS:** Thomas Mahaffey, Ph.D., Todd A. Boyle, Ph.D., Meil MacKinnon, Andrea Scobie, Jeffrey Taylor

OBJECTIVE: Given recent high profile cases involving quality related events (QRE) (i.e., medication errors and near misses), it is important that key pharmacy stakeholders collectively develop strategies to enhance QRE reporting and learning. Pharmacy regulatory authorities (PRAs) play a critical role in such efforts. This research explores the perceptions of Canadian PRAs with respect to QRE reporting and learning in community pharmacies.

METHODS: In the fall of 2011, two focus groups were conducted with officers from Canadian PRAs. Pharmacy inspectors comprised the first group, while deputy and assistant registrars comprised the second. Questions addressed a number of QRE reporting and learning issues, including PRA perceptions of the various stakeholder roles for reducing QREs and strategies for enhancing QRE reporting and learning.

RESULTS: A total of 15 individuals were involved in the focus groups, representing nine Canadian PRAs. Each focus group lasted for approximately 90 minutes. Differences existed with the perceived roles of the PRAs with respect to QRE reporting and learning, relationships between PRAs and their respective advocacy groups, PRAs experience with using CQI programs to improve QREs, and how to best measure if QRE learning is occurring in community pharmacies.

DISCUSSION: Increasing training and education on the benefits of QRE reporting and learning, developing complete and meaningful metrics to assess QRE reporting and learning, and developing formal and mandatory CQI programs were viewed to be immediate steps to enhance QRE reporting and learning. Creating a national minimum standard related to QRE reporting and learning was viewed to be a more long-term goal.

22. TITLE: A new tool for evaluating the severity of drug-related problems. **AUTHORS:** Ghaya Jouini, M.Sc, Patricia Quintana-Bárcena, M.Sc (candidate), Lyne Lalonde, Ph.D, Anne Lord, M.Sc, Élisabeth Martin, M.Sc

OBJECTIVE: The quality of medication use in chronic kidney disease (CKD) patients is not always optimal with a mean of 3.5 drug-related problems (DRPs) per patient. However, no information is available regarding their severity. Therefore, the aim of this study was to develop a set of criteria to evaluate the severity of DRPs in CKD patients from a community pharmacy perspective.

METHODS: The Schneider criteria were initially adapted by a team of clinicians and researchers to take into account the type of community pharmacists interventions required to manage DRPs at each level of severity. Thereafter, ten community pharmacists were consulted individually. Finally, the relevance of each criterion was first individually rated by 12 experts on a scale from 1 (not relevant) to 4 (relevant). Thereafter, in a consensus meeting, criteria initially judged as irrelevant by more than 20% of experts were discussed.

RESULTS: Three levels of severity (mild, moderate and severe) were defined and each level is further categorized in two sub-levels. For each level and sub-level, the specific pharmaceutical interventions required to manage DRPs were listed. These include the provision of information to patients, the application of a collective prescription, the monitoring of physiologic parameters (e.g. blood pressure or glycemia), the adaptation of a prescription, the writing of a pharmaceutical opinion, and the referral of patients to their primary care physician or to the emergency department.

CONCLUSION: The psychometric properties of these criteria will now be evaluated. If satisfactory, these criteria will constitute a new tool for pharmacy practice researchers.

23. TITLE: Safe use of medications in seniors.

AUTHORS: Certina Ho, R.Ph., B.Sc.Phm., M.I.St., M.Ed., Calvin Poon, BScPhm Candidate, Atsushi Kawano, BSc, MSc, BScPhm Candidate

OBJECTIVE: Geriatric populations are at risk for medication errors due to increased likelihood of complex disease states and use of multiple medications. Identification of geriatric medication incident themes can facilitate positive changes within community practices to meet future demands of an aging population. By analyzing medication incidents involving geriatric patients, medication incident themes related to the medication-use process can be identified in the community pharmacy practice setting.

METHODS: An aggregate analysis of geriatric medication incidents was performed using reports anonymously submitted to the Institute for Safe Medication Practices Canada (ISMP Canada) Community Pharmacy Incident Reporting (CPhIR) Program from September 2010 to September 2011. The analysis was performed using a search criterion of "> 65 years" for the age category of a medication incident.

RESULTS: A total of 265 reports were included in the analysis. The 3 most common types of medication incidents within the geriatric population were incorrect quantity (23.0%), incorrect drug (17.7%), and incorrect dose/frequency (13.2%). An aggregate/qualitative analysis identified four major themes that are associated with geriatric medication incidents - "allergy" (in particular, sulfonamide allergies), "blister packs" (due to frequently adjusted medications), "multiple medications" (leading to confusion at refills), and "formulations" (related to the use of dangerous abbreviations and mix-up of suffixes to drug names).

DISCUSSION: Multiple risk factors associated with geriatric patients make medication incidents more prevalent in this population. Understanding the common themes and contributing factors of geriatric medication errors in community pharmacy practices can reduce the occurrence of such incidents.

24. TITLE: Medication safety in pediatrics.

AUTHORS: Certina Ho, R.Ph., B.Sc.Phm., M.I.St., M.Ed., Calvin Poon, BScPhm Candidate, Atsushi Kawano, BSc, MSc, BScPhm Candidate

OBJECTIVE: Pediatric is a unique population with characteristic and vulnerable practices in medication safety. The administration of safe medication practices with pediatric medications requires special attention to unique areas. This research project aims to identify themes and corresponding contributing factors of pediatric medication incidents that occur in community pharmacy practice.

METHODS: An aggregate analysis of pediatric medication incidents was performed using reports anonymously submitted to the Institute for Safe Medication Practices Canada (ISMP Canada) Community Pharmacy Incident Reporting (CPhIR) Program from January to August 2011. The analysis was performed using a search criterion of "0-28 days inclusive" or ">28 years to 18 years inclusive" for the age category of a medication incident.

RESULTS: A total of 454 reports were included in the analysis. Incorrect dose/frequency represented the most prevalent incident type (29.7%). Pediatric medication incident themes were identified based on medication-use processes. Major themes identified were "general order entry errors" (for example, unit errors, typing in the wrong number, look-alike or sound-alike drug names), "incorrect patient", "allergy", "high alert medications", "reconstitution", and "weight-based dosing".

DISCUSSION: The complexity surrounding pediatric medication administration increases the risk of medication errors. Pediatric mediation incidents can be reduced by understanding the common themes and potential causes of errors that are unique to this population group. This project highlighted two medication incident themes that are unique to the pediatric population – "reconstitution" and "weightbased dosing". Community pharmacists can improve delivery of care to the pediatric population by resolving contributing factors that are associated with these medication incidents.

25. TITLE: Oralchemotherapy.ca: A community pharmacy cancer medication safety tool. **AUTHORS:** Tibor van Rooij, Ph.D. Candidate, Serena Rix, Sharon March

OBJECTIVE: With increasing availability and use of oral chemotherapeutics agents, a greater chance of prescribing error arises, especially when the healthcare professionals involved have limited experience with these medications. We present an innovative solution to help the dispensary and pharmacists identify problems associated with oral chemotherapy quickly, to achieve timely resolution, and most importantly, avoid patient harm. We have constructed a repository to disseminate information to pharmacists related to oral chemotherapy prescribing: "www.oralchemotherapy.ca".

METHODS: This website features researched, comprehensive, one-page monographs for each oral chemotherapeutic available in Canada, including risk stratification (high, moderate, low) associated with each medication, as well as drug interaction tables.

RESULTS: The website, oralchemotherapy.ca is now available. Monographs and drug interaction tables are now available through the website. Printable pdf versions of the monographs will be accessible in the near future.

DISCUSSION: It is hoped that the use of this simple yet innovative solution will empower non-oncology pharmacists and other healthcare professionals in the safer prescribing and dispensing of oral chemotherapeutic agents, optimise patient safety, and improve patient-centred care. We plan to host workshops to educate pharmacists on potential issues they when dispensing oral chemotherapy, and introducing them to oralchemotherapy.ca as an easy access, rapid and concise resource to improve patient safety.

26. TITLE: Impact of a drug access facilitator in a chemotherapy clinic. **AUTHORS:** Mei Shi, BSc. Phm., Daniela Gallo-Hershberg, PharmD, Nicole Harvey

OBJECTIVE: Obtaining reimbursement and access for treatment and supportive therapies for outpatient chemotherapy clinics has been fragmented where multiple stakeholders, including patients, are involved. The role of a Drug Access Facilitator (DAF) was investigated to reduce wait time to treatments, clinician administrative workload, and stakeholder frustration.

METHODS: Through interviewing key stakeholders, a needs assessment of the existing reimbursement process was conducted. This led to the development of a new streamlined workflow and creation of a centralized DAF role and drug-specific access protocols. A pharmacy technician was selected to fulfill this role, as the DAF would require extensive knowledge of medication products and experience dealing with third-party payers. A pharmacist was available for consultation for clinically challenging cases.

RESULTS: Over a 6-month period, the DAF managed 140 reimbursement cases. Average time to approval for Exceptional Access Program applications was decreased from 35 days to 10 days. A similar pattern was observed with Special Access Program and Trillium Program applications. Also, centralization of the drug access workflow to a single individual reduced administrative workload for members of the interprofessional team. Staff and patients reported high levels of satisfaction with average scores of 90.8% and 88.3%, respectively, in a follow-up survey.

DISCUSSION: The DAF demonstrated a positive impact for the chemotherapy clinic. This role can be applied to various medical specialities outside of oncology for medications with reimbursement and access barriers. This concept also aligns with the future of pharmacy practice as it empowers pharmacy technicians to expand their scope of practice to promote seamless care.

27. TITLE: Pharmacy loyalty and quality of antidiabetes drug use.

AUTHORS: Jean-Pierre Grégoire, MPH, PhD, FISPE, Caroline Sirois, B. Pharm., Ph.D., Jocelyne Moisan, Ph.D.

OBJECTIVES: Among individuals treated with oral antidiabetes drugs, to assess patients' pharmacy loyalty, factors associated with loyalty and effect of loyalty on the quality of drug use.

METHODS: Using the Quebec health administrative databases we carried out a cohort study of individuals aged ≥18 years who had started an oral antidiabetes treatment. Predictors were measured during the 1st year of treatment. Were considered loyal, those who had filled all their prescriptions in 1 pharmacy during the 2nd year. The following indicators of quality of use were measured in the 3rd year: compliance with antidiabetes drug, use of Ace inhibitors (ACEI) or Angiotensin receptor blockers (ARB) and use of statins. Predictors and outcomes were assessed using multivariate logistic regressions.

RESULTS: Among 122,596 individuals, 64% were loyal. Were more likely to be loyal: those aged 41-64 years [adjusted odds ratio: 1.50; 95% confidence intervals: 1.42-1.58] and \geq 65 years (1.75; 1.66-1.85); those who used an atypical antipsychotic (1.07; 1.01-1.13); those who visited a pharmacy \geq 29 times (1.06; 1.03-1.10); who were hospitalized (1.04; 1.00-1.08). Were less likely to be loyal: females (0.93; 0.91-0.96); those using an antidepressant (0.91; 0.88-0.94); using 8-11 drugs (0.95; 0.91-0.98) and \geq 12 drugs (0.83; 0.80-0.86); having visited a physician 10-20 times (0.89; 0.86-0.91) and \geq 21 times (0.76; 0.74-0.79). Loyal individuals were more likely to be compliant with their antidiabetes drug treatment (1.26; 1.22-1.30), to use an ACEI/ARB (1.17; 1.14; 1.21) and a statin (1.15; 1.12-1.18).

DISCUSSION: Results confirm the hypothesis that loyalty to a pharmacy is associated with a better quality of drug use.

28. TITLE: Performance and acceptability of different inhaled medication devices in individuals with asthma and/or COPD.

AUTHORS: Hoan Linh Banh, Pharm.D., Jenny Hoang, pharmacy student, Sing-yue Lam, pharmacy student, Cheryl Sadowski, BSc. Pharm., Pharm.D., Andrew Cave, MD

OBJECTIVES: The primary objective of this study is to evaluate the number of patients with COPD and/or asthma who correctly use their inhaled devices. The secondary objective is to determine the acceptability of inhaled devices in these patients.

METHODS: We conducted a prospective observational study on patients with asthma and/or COPD who were receiving an inhaled device. Patient recruitment was conducted in: specialty respirology clinics, family medicine clinics and community pharmacies in the Edmonton area.

RESULTS: Only results of the specialty clinics are presented. The study is still ongoing in the community pharmacies and family medicine clinics. A total of 73 patients were recruited, with 63% female, mean age 59 years (SD=16). The percentage of patients who demonstrated correct techniques for handihalers, MDI's, MDI's with spacers, turbuhalers, and diskus were 25%, 52%, 69%, 50%, and 64% respectively. The percent of patients who reported that the devices were acceptable were 90%, 85%, 58%, 86%, and 81% respectively. Acceptability of the devices included those who found the device easy or very easy to use as well as convenient or very convenient to carry.

CONCLUSIONS: Handihalers had the least number of patients with correct technique, while MDI's and spacers had most patients with correct technique. MDI devices had the highest acceptability, whereas MDI's with spacer had the lowest acceptability. The data obtained from specialty clinics supports that the addition of a spacer to a MDI promotes better technique; however this may be offset by patients finding them less acceptable.

29. TITLE: TRANSIT: Challenges and priorities for cardiovascular prevention in primary care. **AUTHORS:** Lyne Lalonde, B.Pharm, Ph.D, Éveline Hudon, M. D., M. Cl. Sc., Fabie Duhamel, Inf., Ph. D., Johanne Goudreau, Inf., Ph. D., Marie-Thérèse, M. D., M. Sc., FCMFC

BACKGROUND: The management of cardiovascular risk factors in patients with multiple chronic conditions is not always optimal in primary care (PC). The involvement of members of the PC community is recommended to develop new models of care, and to successfully reshape clinical practices.

OBJECTIVE: To identify challenges and priorities for action in PC to improve cardiovascular risk management among patients with multiple chronic conditions.

METHODS: Physicians (n=6), nurses (n=6), community pharmacists (n=6), other health professionals (n=6), patients (n=6) and family members (n=6), decision makers (n=6), and researchers (n=6) took part in a one-day workshop. Using the Chronic Care Model (CCM) as a framework, participants in focus groups and nominal groups identified the challenges and priorities for action.

RESULTS: Providing patients with appropriate support to lifestyle change and implementing collaborative practices are challenging. Priorities for action fall in three CCM domains: 1) Improve the clinical-information system by providing computerized tools for interprofessional and interinstitutional communication; 2) Improve the organization of health care and delivery system-design by enhancing interprofessional collaboration, especially with nurses and pharmacists, and creating care teams that include a case manager; and 3) Improve self-management support by giving patients access to nutritionists, to personalized health-care plans including lifestyle recommendations, and to other resources (community resources, Web sites).

CONCLUSION: Electronic medical records, collaborative practices, and self-management support are perceived as pivotal aspects of successful PC prevention program. Developing and implementing such models are challenging and will require the mobilization of the whole PC community.

30. TITLE: TRANSIT: Improving interprofessional management of cardiovascular risk in primary care. **AUTHORS:** Lyne Lalonde, B.Pharm, Ph.D, Celine Bareil, M. Ps., Ph. D., Marie-Thérèse Lussier, M. D., M. Sc., FCMFC, Johanne Goudreau, Inf., Ph. D., Éveline Hudon, M. D., M. Cl Sc.

BACKGROUND: In primary care (PC), the management of cardiovascular risk factors is often suboptimal. The Chronic Care Model (CCM) is a guide for the development of effective chronic disease management. However, such interventions cannot be easily defined and implemented. In participatory research, PC community identified collaborative practices and self-management support as priorities for action to improve cardiovascular prevention.

OBJECTIVE: With the PC community, translate those priorities in an interprofessional intervention program to manage cardiovascular risk factors in multimorbid patients.

METHODS: Members of the PC community, including clinicians, health managers, researchers, administrative support staff, and patients and family members took part in 3 large group meetings and 2-3 sub-group meetings to develop the intervention program. Other members of the community and professional corporations contributed to its validation.

RESULTS: Preventive care is provided by a team of PC clinicians. Nurse assumes a pivotal role by coordinating interprofessional care. She performs motivational interview, evaluates family support, and refers patient when appropriate to other PC clinicians (nutritionist, kinesiologist, psychologist, tobacco cessation expert, and pharmacist). Advanced nursing and pharmaceutical care is supported by collective prescriptions. Patients are actively involved in the selection of their treatment plan, which is supported by a health booklet and an electronic directory of available regional health resources.

DISCUSSION: The TRANSIT program is based on the CCM and was developed by and for the PC community, which ensures optimal relevance and applicability. TRANSIT will be implemented in a pragmatic trial, where 2 implementation strategies will be tested: facilitation and passive diffusion.

31. TITLE: Using blood pressure kiosks to detect high blood pressure in pharmacies. **AUTHORS:** Sherilyn Houle, BSP, PhD Candidate, Ross Tsuyuki, BSc(Pharm), PharmD, MSc, FACC, FCSHP

OBJECTIVE: Public-use blood pressure (BP) kiosks are present in most community pharmacies and are frequently used, yet their role in patient care is not defined. The purpose of this study was to determine the distribution of BP measurements obtained at BP kiosks in community pharmacies to determine the proportion of users who may benefit from pharmacist intervention.

METHODS: BP results were obtained from 341 PharmaSmart PS-2000 kiosks from January 2010 – November 2011 from casual users and those enrolled in the SmartCard program (which uses an electronic card to track individual patient BP results). Readings were classified as optimal (<130/80 mmHg), pre-hypertensive (130-139/80-89), uncontrolled (140-159/90-109) or very high (\geq 160/110). When systolic and diastolic BP fell into different classifications, the higher of the two was applied.

RESULTS: Of 8,457,552 casual readings analyzed, mean BP was 131/78 (SD 13.7/13.4) mmHg with mean pulse of 76 beats/minute (SD 5.6). 37% of measurements were optimal, 27% pre-hypertensive, 29% uncontrolled, and 7% very high. Results from casual users did not differ significantly from SmartCard users. Correlation between heart rate and BP was weak except for diastolic BP among SmartCard users (R2=0.77), suggesting that insufficient rest before measurement is unlikely to be responsible for elevated results in most cases.

DISCUSSION: Pharmacy-based BP kiosks are used frequently by the public, and two-thirds of readings obtained are elevated. This is an untapped opportunity for pharmacists to become involved in the detection of uncontrolled hypertension and provide education and care to patients with the goal of reducing their risk of cardiovascular events.

32. TITLE: Business and patient care opportunities using blood pressure kiosks. **AUTHORS:** Sherilyn Houle, BSP, PhD Candidate, Anderson Chuck, PhD, MPH, Ross Tsuyuki, BSc(Pharm), PharmD, MSc, FACC, FCSHP

OBJECTIVE: Most pharmacies have public-use blood pressure (BP) kiosks, and we have recently shown that two-thirds of results obtained at these kiosks are elevated. This is a missed public health opportunity and a missed opportunity for remunerable medication therapy management activities for pharmacists. This study estimated potential remuneration obtainable as a result of pharmacists providing care to patients with elevated BP using these kiosks.

METHODS: Through economic modeling, we estimated revenues achievable by utilizing BP kiosks to identify a cohort of patients with blood pressure ≥130/80 mmHg and caring for those patients over one year. We used Ontario as the reference population where pharmacists are reimbursed \$60 for an annual MedsCheck review, \$25 for a follow-up MedsCheck, and \$15 for a Pharmaceutical Opinion.

RESULTS: A typical pharmacy could identify 189 patients monthly who have elevated BP and qualify for MedsCheck. Of these, 28 would likely require a follow-up MedsCheck within the year, and an additional 95 would not be eligible for MedsCheck but could receive Pharmaceutical Opinion intervention. Providing such care for 1 year could generate on average \$12,270 (range \$4,523-\$24,420) annually in revenue as a result of billing for these services for all eligible patients.

DISCUSSION: BP kiosks can help identify patients with elevated BP who may benefit from reimbursable cognitive services. Revenues generated can potentially be used to pursue automated dispensing technology or offset the costs of pharmacy technicians to free the pharmacist to provide pharmaceutical care. Improved patient outcomes, increased patient loyalty, and improved adherence are additional potential benefits.

33. TITLE: Attitudes of pharmacists in Alberta regarding traditional Chinese medicine and complementary alternative medicine. **AUTHORS:** Hoan Linh Banh, Pharm.D., Katie Tam, pharmacy student

OBJECTIVE: Pharmacists in Canada are the most widely accessible health care professionals to obtain information on Traditional Chinese Medicine (TCM)/complementary Alternative Medicine (CAM) products. The purpose of this study is to:

1. Evaluate the attitudes of practicing pharmacists in Alberta with respect to TCM/CAM.

2. Assess how prepared pharmacists in Alberta are to provide patient counselling and education on TCM/CAM.

METHODS: After receiving approval from research ethics board at the University of Alberta, an online survey was created using Google Documents[®]. The Alberta College of Pharmacists then distributed the link of the survey to pharmacists registered in Alberta. Informed consent was obtained for all subjects involved before beginning the survey. Data were extracted from the Google Documents[®] and analyzed three months from the time the link was circulated.

RESULTS: A total of 130 pharmacists completed the survey. Eighty eight (68%) pharmacists felt that they were not prepared to counsel patients regarding TCM/CAM, while 117 (90%) pharmacists agreed that TCM/CAM should be included in the pharmacy curriculum at the University of Alberta. With regards to the use of TCM/CAM, 24 (19%) pharmacists either disapprove or strongly disapprove of TCM/CAM use, while 26% are neutral and 55% either agree or strongly agree with TCM/CAM use.

DISCUSSION: Most pharmacists agreed that they are not prepared to counsel patients regarding TCM/CAM. While most pharmacists have a positive attitude towards CAM/TCM, they do not feel prepare in providing counselling/education to patients. It has also been identified that TCM/CAM should be included in the pharmacy curriculum at University of Alberta.

34. TITLE: Improving patient adherence to drug therapy through the PASSAction framework. **AUTHOR:** Vivian Lee, BScPhm candidate

Medication non-adherence results in poor health outcomes and significant health care costs. According to 2006 data provided by the Canadian Institute for Health Information (CIHI), medication non-adherence led to a cost of \$8-10 billion which correlated to about 140,000 hospital admissions and 35,000 deaths. Factors that have been shown to repeatedly correlate with non-adherence are related to the medication (e.g., regimen complexity), disease (e.g., asymptomatic conditions), patient (e.g., fear of adverse effects), and health care provider (e.g., lack of or poor communication with the patient). Because non-adherence is a complex, patient-specific and multi-factorial problem, multi-faceted approaches instead of single interventions should be considered when attempting to improve patient adherence.

PASSAction is a framework developed to help community pharmacists systematically devise and implement medication adherence strategies individualized for their patients. PASSAction encompasses:

- P a description of the Problem or Patient Encounter that reflects non-adherence
- A Adherence factors that may have contributed to non-adherence
- SS Set a Strategy based on the identified adherence factors
- Action put the strategy to Action

This framework is currently being applied in an adherence study conducted at the University of Waterloo's School of Pharmacy. The study identifies from the literature that complex administration requirements of oral bisphosphonates are a prominent barrier to adherence among postmenopausal women. Based on the PASSAction framework, the study examines the impact of a multi-faceted approach to educating patients on proper drug administration (consisting of a medication information leaflet, video clip and telephone follow-up) on patient-perceived adherence to bisphosphonate therapy.
Trade Show

Abbott Laboratories Limited – Booth 121

Abbott is focused on the discovery and development of innovative treatments for immunologic diseases. Humira is the only selfinjectable anti TNF treatment.

Information about HUMIRA, including Canadian full prescribing information for RA, PsA, AS, Crohn's and Psoriasis, is available on www.abbott.ca. Biaxin XL is a once-a-day macrolide in 7 and 10 days PAC for the treatment of AECB and sinusitis.

Advanced Innovations Inc. (Bio Oil) – Booth 150

Bio-Oil, Canada's No. 1 selling scar and stretch mark product, is also effective against other skin concerns such as uneven skin tone, aging and dehydrated skin.

For more information, visit www.bio-oil.com.

Afexa, a division of Valeant Pharmaceuticals – Booth 139

Afexa Life Sciences manufactures and distributes innovative and naturally sourced healthcare products, including the #1 selling cold and flu remedy in Canada – COLD-FX – and the newest entrant into the cold sore category, COLDSORE-FX. Recently acquired by Valeant Pharmaceuticals International Inc., Afexa is being partnered with as VitalScience Corporation to form the new Valeant Canada Consumer Products division and to commercialize, launch, and market a robust pipeline of compelling OTC health and beauty products for the Canadian market.

For more information, visit www.cold-fx.ca.

AmerisourceBergen Canada (AutoMed) – Booth 113

AmerisourceBergen Canada is a leader in pharmaceutical distribution offering same-day delivery, medication management technology and consulting services to help pharmacy achieve; increased efficiencies, lower operating costs and increased patient safety.

For more information, visit www.amerisourcebergen.ca

Apotex Inc. – Booth 119

Founded in 1974, Apotex Inc. is the largest Canadian-owned pharmaceutical company. The company employs over 6,000 people across 20 R&D, manufacturing and distribution facilities. The Apotex product portfolio includes more than 300 generic pharmaceutical products used to fill over 86 million prescriptions a year in Canada and are exported to 115 countries. Apotex is also a top pharmaceutical research and development company in Canada with planned expenditures of \$2 billion over the next ten years.

For more information, visit www.apotex.com.

aveosleep – Ethics International Inc. – Booth 123

Ethics International Inc., a "fair health" company, provides non-invasive sleep therapies for snoring, Obstructive Sleep Apnea, insomnia, and Restless Leg Syndrome. The flagship device is the aveoTSD (tongue stabilizing device), a simple oral medical device that is clinically proven to treat mild to moderate Obstructive Sleep Apnea and snoring.

For more information, visit www.aveosleep.ca.

BackJoy – Booth 116

BackJoy's mission is to change the way the world sits, stands and sleeps. Leveraging what experts (and moms) have known for years – that better posture prevents back pain – the company creates and distributes innovative solutions that enhance posture so consumers can get more out of life.

For more information, visit www.backjoy.com.

BC Ministry of Health, Pharmaceutical Services, Drug Use Optimization Branch – Booth 130

We educate prescribers, other healthcare professionals, patients and public on the optimal use of drugs to achieve improved health outcomes in a fiscally responsible manner. We also support pharmacists to work to full scope, facilitate evaluation of real world safety and effectiveness; and evaluate the impact of programs and services.

For more information, visit www.health.gov.bc.ca./pharmacare/ and www.medmatters.bc.ca.

BD Medical – Diabetes Care – Booth 158

BD Medical is among the world's leading suppliers of medical devices and a leading innovator in injection- and infusion-based drug delivery since 1906. The BD Medical segment is focused on providing innovative solutions to reduce the spread of infection, enhance diabetes treatment and advance drug delivery.

For more information, visit www.bddiabetes.ca.

Berry Plastics Corporation – Booth 141

Over 80 manufacturing locations, 17,000 employees, annual sales of over 5 billion dollars. Sold both Prescription Packaging lines in Canada for 20 years. Berry has a complete line of containers and closures for pharmacy. We also offer colour & UV protected vials, custom printed child resistant and non safety caps.

For more information, visit www.berryplastics.com.

Blueprint for Pharmacy – Booth 131

Blueprint for Pharmacy is a long-term collaborative initiative designed to catalyze, coordinate and facilitate changes required to align pharmacy practice with the health care needs of Canadians. The Vision for Pharmacy is: *Optimal drug therapy outcomes for Canadians* through patient-centred care. Contact us at blueprint@pharmacists.ca or follow on Twitter @BluePrintPharma.

For more information, visit www.blueprintforpharmacy.ca.

BMO Bank of Montreal – Booth 144

BMO Bank of Montreal's Financial Services Program for Independent Pharmacists consists of banking services that will assist you in achieving your goals throughout your professional lifecycle. Our representatives can help customize a financial solution to meet your student, personal and commercial banking needs, including pharmacy acquisition financing.

For more information, contact Pino Loverro at 1-877-629-6262; pino.laverro@bmo.com, or www.bmo.com/professionals.

Boehringer Ingelheim (Canada) Ltd. – Booth 132

Boehringer Ingelheim has earned a reputation as a leader in the treatment of respiratory disease, in particular Chronic Obstructive Pulmonary Disease (COPD), and has broadened the scope of its work to include diseases such as hypertension, stroke, atrial fibrillation, arthritis, Parkinson's disease, HIV/AIDS, Hepatitis C and Type II diabetes.

For more information, visit www.boehringeringelheim.ca.

Canada Health Infoway – Booth 155

Canada Health Infoway is an independent, notfor-profit organization funded by the federal government. *Infoway* jointly invests with every jurisdiction to accelerate the deployment and use of electronic health information systems. Fully respecting patient confidentiality, these secure systems will support safe care decisions and help patients manage their own health. For more information, visit www.infoway-inforoute.ca.

Canadian Pharmacists Association (CPhA) – Booth 152/154

The Canadian Pharmacists Association advocates for pharmacists and supports its members to advance the profession and enhance patient outcomes. We see the pharmacist as the health care professional whose practice, based on unique knowledge and skills, optimizes medication use and enhances patient outcomes.

For more information, visit www.pharmacists.ca.

Canadian Pharmacists Journal (CPJ) – Booth 109

The Canadian Pharmacists Journal is Canada's leading pharmacy publication for clinical practice guidelines, research and in-depth clinical content. Our mission is to attract, disseminate and discuss research and contemporary health care issues and link knowledge to practice.

For more information, visit www.cpjournal.ca.

Caverly Consulting Group /Uniweb Canada – Booth 127

Solutions by Design; Providing efficient and productive pharmacy designs; Efficient Pharmacy Solutions; Providing dispensary automation analysis and simulation software applications; Efficient Pharmacy Institute: Providing educational seminars and scholarly articles on issues of pharmacy design, automation and re-engineering; Exclusive Canadian distributor for Uniweb.

For more information, visit www.caverly.ca/ccg.

Cobalt Pharmaceuticals – Booth 112/114

For more information, visit www.cobaltpharma.com.

Department of National Defence – Booth 138

DND is an equal opportunity employer. We educate the general public on the different facets of military pharmacy. We deploy within Canada and around the world to assist people in need.

For more information, visit www.forces.ca.

Ferring Pharmaceuticals – Booth 133

Ferring Pharmaceuticals is a specialty, researchdriven biopharmaceutical company active in the global market. Ferring has a number of new products that provide clinical advantages for your patients. Featured products will include: DDAVP Melt – Ideal form of desmopression that stops bedwetting, Pico-Salax – at last a purgative that is easy to take, BioGaia – effective treatment for colic, TuZen – natural way to treat IBS, and more.

For more information, visit www.ferring.com.

Galenova – Booth 166

Galenova, founded in 1994, provides Canadian pharmacies, with all their compounding needs. We are the leaders in the distribution of fine chemicals, equipment, narcotic and controlled substances throughout Canada and the only Canadian repacking company designated ISO9001. We have over 250 products in McKesson as well as numerous products in Amerisource, McMahon, Nu-Quest and other wholesalers.

For more information, visit www.galenova.com.

GenMed, a division of Pfizer – Booth 143

GenMed, a division of Pfizer Canada's Established Products Business Unit (EPBU), was created in response to the growing demand for quality generics in Canada. The goal of GenMed is to provide customers and patients with quality service and reliable access to generic medicines with a focus on quality, safety and innovation.

For more information, visit www.genmed.ca.

GlaxoSmithKline Consumer Healthcare – Booth 129

GlaxoSmithKline Inc. (GSK) is a research-based pharmaceutical company. GSK's nonprescription division, GlaxoSmithKline Consumer Healthcare Inc., is a leader in the worldwide consumer healthcare market. Our brands include: Sensodyne® and Aquafresh® toothpastes, Spectro Jel® skincare products, Polident® and Poli-Grip® denture care products, biotene®, abreva®, Tums® and Breathe Right®.

For more information, visit www.gsk.ca.

Glenwood Label & Box Mfg. Ltd. – Booth 134

Leading Canadian label manufacturer specializing in pharmacy and prescription labeling. We manufacture labels for all printing systems – desktop laser printer (dual web label formats), roll labels for direct thermal and thermal transfer and dot matrix labels. Serving the Canadian pharmacy and health authorities for over 40 years!

For more information, visit www.glenwoodlabel.com.

ISMP Canada – Booth 128

ISMP Canada is committed to the advancement of medication safety. ISMP Canada works with the healthcare community, regulatory agencies, patient safety organizations, the pharmaceutical industry and the public to promote safe medication practices. ISMP Canada's mandate includes analyzing medication incidents and making recommendations for the prevention of harmful medication incidents. For more information, visit www.ismpcanada.org.

Jones Packaging Inc. – Booth 120

Jones Healthcare offers an expansive range of dispensing products and medical carts that drive patient safety and improve staff efficiency. Our goal is to supply pharmacies and long-term care providers with high quality, innovative and user-friendly products that allow them to provide the best patient care possible.

For more information, visit www.jonespackaging.com.

Kroll Computer Systems Inc. – Booth 140

Kroll Computer System's suite of pharmacy specific applications provides software solutions to fulfill all of your pharmacy's requirements today and beyond. Kroll is the most efficient and innovative pharmacy management software available in the market today, backed by over 28 years of experience and customer satisfaction.

For more information, visit www.kroll.ca.

LEO Pharma Inc. – Booth 108

Founded in 1908, LEO Pharma is a global independent, research-based pharmaceutical company. LEO Pharma is committed to the discovery and development of novel drugs within the areas of dermatology and Thrombosis, with the goal of ensuring we are improving patients' lives. LEO Pharma has its own sales forces in 61 countries and employs more than 4,600 employees worldwide.

For more information about LEO Pharma, visit www.leo-pharma.ca.

LifeScan Canada Ltd. – Booth 164

LifeScan Canada Ltd., a Johson & Johnson company and the manufacture of OneTouch[®] blood glucose monitoring products, is dedicated to creating a world without limits for people with diabetes. Through our industry-leading OneTouch[®] products and award-winning support, we provide comprehensive blood glucose monitoring systems tailored to meet the needs of patients and healthcare professionals.

For more information, visit www.onetouch.ca

Login Canada – Booth 167

"Bringing Quality Publishers and Exceptional Customer Service Together". Stop by our booth to see the latest publications and Electronic Databases available to the pharmacy market.

For more information, visit www.lb.ca.

ManthaMed Inc. – Booth 117

ManthaMed Inc. is a medical device distributor specialized in supplying retail pharmacists with diagnostic and monitoring systems needed to effectively perform disease sate management. Products include, BpTRU Blood Pressure Monitors, AFIB detection and automated ABI Testing Systems, the Cholestech LDX lipid analyzer, Siemens DCAVantage A1C analyzer, INRatio INR Monitors, A&D TM-2430 24-Hour ABPM, EasyOne Spirometers.

For more information, visit www.manthamed.com.

McKesson APS – Booth 102

Based in Canada, McKesson APS partners with world-renowned manufacturers to offer pharmacies enhanced speed, accuracy and safety with an expandable line of products and dedicated after-sales support. Enter the APS ERA today!

For more information, visit <u>www.mckesson.ca</u>.

National Arthritis Awareness Program (NAAP) – Booth 104/105

Defining new channels to expand the conversation about arthritis, the National Arthritis Awareness Program is Canada's leading source of arthritis information and tools, including the ArthritisID PRO app for iPhone. Visit our booth to find out more about the recently launched Arthritis Broadcast Network – your new daily source for arthritis news.

For more information, visit www.ArthritisIsCured.org.

Paladin Labs Inc. – Booth 148

Paladin Labs Inc. was founded in 1996 and is headquartered in Montreal, Canada. Paladin is a diversified specialty pharmaceutical company that acquires, in-licenses, develops, markets and sells pharmaceutical products. Paladin commercializes a portfolio over 60 pharmaceutical products in the Canadian market including prescription, over-the-counter (OTC), natural health and medical devices.

For more information, visit www.paladinlabs.com.

PCCA – Booth 162

PCCA is the independent compounding pharmacy's complete resource for fine chemicals, equipment, devices, flavours, training and education, pharmacy software, marketing, business, and pharmacy consulting assistance. Our membership includes more than 3,900 independent community pharmacists in the United States, Canada, Australia, and other countries around the world.

For more information, visit www.pccarx.com.

Pendopharm, Division de/of Pharmascience Inc. – Booth 126

A Strong Focus on Specialty Medicines. Pendopharm is a rapidly growing and independent business that focuses on commercializing a portfolio of specialty prescription products and an established line of OCT/BTC products. Strategically committed to growth, Pendopharm is actively engaged in licensing, developing and marketing late-stage prescription products as well as consumer brands.

For more information, visit www.pendopharm.com.

Pfizer Canada – Booth 145/147

Pfizer Canada Inc. is the Canadian operation of Pfizer Inc., the world's leading biopharmaceutical company. Pfizer discovers, develops, manufactures and markets prescription medicines for humans and animals. Pfizer's ongoing research and development activities focus on a wide range of therapeutic areas following our guiding aspiration...Working together for a healthier world.

For more information, visit www.pfizer.ca.

Pfizer Consumer Healthcare – Booth 149

Pfizer Consumer Healthcare would like to welcome all delegares to the CPhA 2012 and we look forward to seeing you at our booth. At Pfizer, we're proud to offer Canadians a comprehensive range of products including Advil, Caltrate, Centrum, Robax, Robitussin and Diflucan, to support their health and well-being.

For more information, visit www.pfizer.com.

PharmaSmart Canada Corp. – Booth 118

Now administering 65 million blood pressure tests/year, PharmSmart is a world leader in innovative blood pressure screening systems to assist in the detection and management of hypertension. In partnership with over 6000 pharmacy locations, PharmaSmart provides clinically validated Out-of-Office blood screening services and to help physicians, pharmacists and patients collaborate to achieve improved outcomes. For more information, visit www.pharmasmart.com.

Purdue Pharma – Booth 115

Purdue Pharma is dedicated to developing and providing innovative medicines for patients and health care professionals and to supporting quality education for the safe use of its products.

For more information, visit www.purdue.ca.

Richards Packaging Inc./Dispill Inc. – Booth 146

Richards Packaging is a Canadian company celebrating its 100th anniversary serving Canadian pharmacies. Richards offers a wide variety of quality, environmentally friendly Canadian made prescription containers and compliance packaging.

For more information, visit www.dispill.com.

Rogers Pharmacy Group – Booth 151

Rogers Pharmacy Group consists of Canada's 4 leading professional pharmacy publications Pharmacy Practice, Drugstore Canada, l'actualite Pharmaceutique and Quebec Pharmacies. Together these magazines reach over 26,000 hospital and retail pharmacists in English and French and our #1 web site www.canadianhealthcarenetwork.ca reaches over 50,000 English and French pharmacists, technicians and pharmacy students.

RxFiles Academic Detailing Program – Booth 101

RxFiles Academic Detailing is a non-profit drug information and education service. Come by and see our recent drug therapy reviews, such as Peri-pregnancy and Behaviour Management in Dementia. Find out more about the upcoming 9th Edition RxFiles Drug Comparison Charts book, as well as our online and mobile app options. For more information, visit www.rxfiles.ca.

Sanofi – BGStar/Lantus – Booth 111

Sanofi is a diversified global healthcare leader that discovers, develops and delivers healthcare solutions focused on patients needs. With approximately 110,000 employees in 100 countries, Sanofi and its partners act to protect health, enhance life and respond to the potential healthcare needs of the 7 billion people around the world. Sanofi has core strengths in the field of healthcare with seven growth platforms: diabetes solutions, human vaccines, innovative drugs, rare diseases, consumer healthcare, emerging markets, animal health and the new Genzyme.

For more information, visit www.sanofi.ca.

Sanofi - Lovenox – Booth 110

A diversified healthcare leader focused on patient needs.

For more information, visit www.sanofi.com.

Scotiabank – Booth 153

Scotiabank is a provider of full service banking, tailored financing options, wealth management, investment planning which are delivered by dedicated advisors who provide members of the Canadian Pharmacists Association the *Scotia Professional®* Plan, a customized financial package designed to allow Pharmacists to focus on building successful practices.

For more information, visit www.scotiabank.com/professional.

ScriptPro – Booth 142

ScriptPro develops, provides and supports state-of-the-art, robotics-based pharmacy management, workflow and telepharmacy systems. ScriptPro is dedicated to helping pharmacies lower operating costs, reduce dispensing errors and maximize customer satisfaction. ScriptPro technology helps pharmacies operate efficiently, safely and profitably so they can make the maximum contribution to the healthcare system.

For more information, visit www.scriptpro.com.

Servier Canada Inc. – Booth 106

Life through discovery. Servier possesses a unique cultural heritage as a privately owned, French research based ethical pharmaceutical company. We produce innovative drugs for doctors and their patients around the world.

For more information, visit www.servier.ca.

STI – Booth 156

STI connects physicians, patients, pharmacy and pharma with a variety of card-based programs empowering choice amongst healthcare professionals and patients, ultimately improving patient outcomes. We facilitate valuable interactions between each of these four distinct groups, using our advanced patient-centric technology platform to power all of our solutions.

For more information, visit www.smartsti.com.

Stiefel, a GSK Company – Booth 124

For more information, visit www.stiefel.ca.

Takeda Canada Inc. – Booth 122

In September 2011, Takeda welcomed Nycomed to the Takeda family. The combination creates a New Takeda, and the 12th largest pharmaceutical company in the world. Takeda's traditional strengths in North America, Japan, and the rest of Asia, are now complemented by Nycomed's position in Europe and the high growth emerging markets. The combined Takeda and Nycomed product portfolio provides a strong worldwide presence in the therapeutic areas of metabolic diseases, gastroenterology, oncology, cardiovascular health, CNS diseases, inflammatory and immune disorders, respiratory diseases and pain management. In Canada, Takeda is committed to bringing innovative medicines to the patients who need them.

For more information, visit www.takeda.com.

Taro Pharmaceuticals Inc. – Booth 125

Taro is a multinational, science - based pharmaceutical company dedicated to meeting the needs of its customers through the discovery, developments, manufacturing and marketing of topical dermatological preparations, oral cardiac, neurological and pediatric medications. The company also produces its own API for use in its own facilities and sold to other drug makers. Taro's customer base includes drug wholesalers, drugstore and grocery chains and discount retailers. In September 2010, Sun Pharmaceutical Industries an international specialty pharmaceutical company with a large presence in the US, India, and 40 other markets across the globe acquired controlling interest in Taro Pharmaceuticals Industries.

For more information, visit www.taro.ca.

TEVA Canada Limited – Booth 168/169

Teva is Canada's largest generic pharmaceutical company and a leader in providing affordable healthcare solutions. We develop, practice and market generic pharmaceuticals, from diabetic agents to antibiotics, from heart medications to cancer treatments. In 1965, we began operations as one of the first generic pharmaceutical companies in Canada. Today, we employ more than 1,400 dedicated and talented Canadians. We invest in families in this country and we're proud to be part of Teva Pharmaceutical Industries Ltd. – the world's largest generic pharmaceutical company.

For more information, visit www.tevacanada.com.

The Personal Insurance Company – Booth 103

From basic coverage to complete protection, CPhA members can save with The Personal on the right insurance for your home, vehicle and budget. What's more, your spouse and dependants can benefit from all we have to offer. Get your exclusive quote in as little as 10 minutes.

For more information, visit www.thepersonal.com/cpha.

Trudell Medical International – Booth 160

Trudell Medical International manufactures innovative devices for respiratory disease management including AEROCHAMBER* Valved Holding Chambers, TRUZONE* Peak Flow Meters and AEROECLIPSE* Breath Actuated Nebulizers. VISIT OUR BOOTH TO LEARN MORE ABOUT: 1) How devices that provide feedback to patients may improve compliance 2) Why chambers are considered non-interchangeable 3) How patients can get insurance coverage for their devices.

For more information, visit www.trudellmed.com.

uniPHARM Wholesale Drugs Ltd. – Booth 136

uniPHARM Wholesale Drugs Ltd. is a full service distributor and support organization for Independent Pharmacies in Western Canada. Our suites of programs include pharmacyownership.ca, uniTV, focusCare, Medicine Centre and UMC Charity. uniPHARM has held the designation as one of Canada's 50 Best Managed Companies since 2006.

For more information, visit www.unipharm.com.

Valeant Canada – Booth 135/137

Valeant Canada is a specialty pharmaceutical company and a subsidiary of Valeant Pharmaceuticals International, Inc. Valeant Canada manufactures, markets, and/or distributes pharmaceutical products to both primary care and specialist physicians in Canada. The Company focuses its efforts primarily in the areas of Pain Management, Cardiovascular Disease, Neurology and Dermatology.